DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
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SACRAMENTO CA 95814-2922

Operations and Readiness Branch

MITIGATED FINDING OF NO SIGNIFICANT IMPACT
408 Permission Numbers 19047, 19047-1, and 19027
Putah Creek Channel Restoration
Winters, California

I have reviewed and evaluated the information presented in the May 2018 Environmental Assessment (EA). The proposed projects encompass three locations within Putah Creek: WPCNP Phase I and II (408 Permission #19047), WPCNP Phase III (408 Permission #19047-1), and NAWCA 3 (408 Permission #19027) in Winters, California. In compliance with U.S.C. Title 33, Chapter 9, Subchapter 1, Section 408, the Solano County Water Agency (requester) has requested permissions through the Central Valley Flood Protection Board (CVFPB) from the U.S. Army Corps of Engineers (Corps) to alter the Sacramento River Flood Control Project, an existing federal flood risk management project, authorized by the Flood Control Act of 1917.

The proposed project includes stream re-contouring, in-channel structural improvements, low-flow channel reconfiguration and minor bank stabilization to prevent erosion, and habitat enhancement following a vegetation management plan. The permission request for 19047 is to authorize an existing project completed in 2011 that converted former gravel extraction pits into a river parkway. Project 19047-1 is requesting permission to convert former gravel extraction berms and pits, and a closed wastewater treatment plant into a river parkway, while connecting Phase I and II trails. Project 19027 is requesting permission to recontour the floodplain, restore riparian forest and salmonid spawning habitat.

A public notice was made available from July 11, 2016, to August 9, 2016, on the Corps' website, for public and agency review and comment for 19047-1. A public notice for 19027 and a second public notice for 19047-1 was made available from February 06, 2017, to March 08, 2017. All comments received were addressed and incorporated as appropriate in the EA.

The possible consequences of the work described in the EA have been studied with consideration given to environmental, social, economic, and engineering feasibility. The potential effects have been coordinated with federal and state agencies and the required consultations under Section 7 of the Endangered Species Act have been completed with the U.S. Fish and Wildlife Service (USFWS), and National Marine Fisheries Service (NMFS). Consultations under Section 106 of the National Historic Preservation Act have been completed with Native American tribes and the California State Historic Preservation Officer (SHPO).

Based on my review of the EA (incorporated herein by reference), information provided by the requesters, and interested parties, I have determined these permissions

will not have a significant effect on environmental, social, or cultural resources. Based on these considerations, I am convinced that there is no need to prepare an Environmental Impact Statement. Therefore, the EA and Mitigated Finding of No Significant Impact provide adequate environmental documentation to grant 408 permissions for the proposed action.

Rick L. Poeppelman, P.E.
Chief, Engineering Division
Levee Safety Officer

5/14/18
DATE SIGNED

ENVIRONMENTAL ASSESSMENT – PUTAH CREEK CHANNEL RESTORATION WINTERS, CALIFORNIA

408 PERMISSION #19027, 19047, AND 19047-1
UNITED STATES ARMY CORPS OF ENGINEERS

PREPARED FOR:

UNITED STATES ARMY CORPS OF ENGINEERS

US Army Corps of Engineers®

May, 2018

408 PERMISSION #19027, 19047, AND 19047-1
UNITED STATES ARMY CORPS OF ENGINEERS

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United States Army Corps of Engineers

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ENVIRONMENTAL ASSESSMENT
408 Permission # 19027, 19047, and 19047-1
Central Valley Flood Protection Board
United States Army Corps of Engineers
Putah Creek Channel Restoration
Winters, California

INTRODUCTION AND LOCATION

The Solano County Water Agency (SCWA) proposes to complete channel restoration involving re-contouring and realignment of the low-flow channel of Putah Creek, upstream, within, and downstream of the City of Winters' Putah Creek Nature Park (WPCNP). The overall Putah Creek Channel Restoration Project (Project) encompasses three areas within Putah Creek. The most upstream Project Area is identified WPCNP Phase I and II (408 Permission #19047) and is split by WPCNP Phase III (408 Permission #19047-1), and the most downstream Project Area is North American Wetlands Conservation Act 3 – Lower Putah Creek Floodplain (NAWCA 3) (408 Permission #19027). The proposed Project is a series of restoration activities intended to restore Putah Creek to a more natural condition, one that is self-maintaining and supports native plant and animal species.

The Project activities include stream re-contouring, in-channel structural improvements, such as natural stone feature construction, and low-flow channel reconfiguration to prevent erosion; minor bank stabilization; and, habitat enhancement following a vegetation management plan. The Project Area encompasses a total of approximately 42 acres and 5,900 linear feet of Putah Creek. Figure 1 shows the overall Project Area and surrounding vicinity. Figure 2a, 2b, 2c, and 2d show the individual Project Area details. These figures are included at the end of the document.

This National Environmental Policy Act (NEPA) Environmental Assessment (EA) document will focus on the restoration of Putah Creek and the potential environmental impacts of the project at the Project Area and its vicinity for the purposes of obtaining a US Army Corps of Engineers (USACE) 408 Permit.

Project Locations

The overall Project encompasses three locations within Putah Creek, from upstream to downstream: WPCNP Phase I and II (408 Permission #19047), WPCNP Phase III (408 Permission #19047-1), and NAWCA 3 (408 Permission #19027). The specific locations of this Project Area are discussed below.

Winters Putah Creek Nature Park Phase I and II (#19047)

The WPCNP Phase I and II (#19047) site is located along a small stretch of Putah Creek, beginning approximately 1,000 ft. west of the railroad bridge within the City of Winters, Yolo County, California. The WPCNP Phase I and II site is approximately 3,500 linear feet and incorporates approximately 25 acres (Figure 2b). WPCNP Phase I and II has two areas that are separated by WPCNP Phase III (#19047-1). The WPCNP Phase I and II site is located within portions of Section 21 and 22, Township 8 North, Range 1 West, Mount Diablo Baseline & Meridian; from approximately Latitude 38°31'02.84" N Longitude 121°58'09.58"W to 38°31'18.63" N 121°57'53.24"W and continuing downstream of WPCNP Phase III (#19047) from 38°31'22.40"N 121°57'40.39"W to 38°31'28.22"N 121°57'25.22"W on the Winters quadrangle topographic map.

Winters Putah Creek Nature Park Phase III (#19047-1)

The WPCNP Phase III (#19047-1) site is located along a small stretch of Putah Creek, from approximately 1,000 ft. east of the railroad bridge, within the City of Winters, Yolo County, California. The WPCNP Phase III site is approximately 11 acres, and incorporates approximately 1,300 linear feet (Figure 2c). The site is located between Phases I and II of WPCNP (#19047). The WPCNP Phase III site is located within portions of Section 21 and 22, Township 8 North, Range 1 West, Mount Diablo Baseline & Meridian; from approximately Latitude 38°31'18.63" N Longitude 121°57'53.24"W to 38°31'22.40"N 121°57'40.39"W on the Winters quadrangle topographic map.

NAWCA 3 (#19027)

NAWCA 3 is located downstream of the City of Winters and extends beneath the I-505 freeway. NAWCA 3 begins approximately 1,100 feet upstream of I-505. The NAWCA 3 site is approximately 6.16 acres, of which 3.04 acres are located below the OHWM, and incorporates approximately 1,050 linear feet of creek channel. The Project runs from approximately Latitude 38°31'26.69" N Longitude 121°57'24.67"W to 38°31'32.06"N 121°57'11.65"W on the Winters quadrangle topographic map.

1.1 Project Detail

The entire Project Area is approximately 42 acres and 5,900 linear feet of Putah Creek and encompasses 3 locations: WPCNP Phase I and II (#19047), WPCNP Phase III (#19047-1) and NAWCA 3 (#19027). Construction of WPCNP Phase I and II (#19047) was completed in 2011. WPCNP Phase III (#19047-1) is next to be completed, followed by NAWCA 3 (#19027). Construction is estimated to be a total of approximately 6 months, with approximately 8 weeks of earth moving activity. Each of these area's site details are described below.

WPCNP Phase I and II (#19047)

WPCNP Phase I and II (#19047) converted former gravel extraction pits into a river parkway, while creating approximately twelve-foot wide meandering trails on a twenty-foot wide terrace, ten feet above the low-flow water surface elevation on both banks. The Watershed Management Action Plan (EDAW, 2007a) ranks the park as "highest priority" for restoration throughout the creek. WPCNP Phase I and II is approximately 3,500 linear feet and approximately 25 acres.

WPCNP Phase I and II (#19047) minimized impacts to vegetation by leaving the largest trees in place, and the other native trees and shrubs in the construction area were relocated where feasible into the final realignment configuration of the channel. Approximately 110 non-native and native trees were removed to facilitate grading. After construction, the floodplain was seeded with native grasses and planted with native trees and shrubs. Approximately 1,200 native trees and 300 native shrubs will be planted following construction. Approximately 77,130 cy of existing, onsite material was used to re-contour the floodplain in Phase 1 and 2 of this site. Approximately 2,000 cy of spawning gravel was imported. This construction work was completed in 2011.

WPCNP Phase III (#19047-1)

WPCNP (#19047-1) would convert former gravel extraction berms and pits, and a closed wastewater treatment plant into a river parkway, while connecting the proposed Phase I and II trails. WPCNP Phase III (#19047-1) is approximately 11 acres and 1,300 linear feet. As stated above, the Watershed Management Action Plan (EDAW, 2007a) ranks the park as "highest priority" for restoration throughout the creek. In the center of the WPCNP Phase III is a former (closed by the Central Valley Regional Water Quality Control Board [CVRWQCB]) sewage aeration pond site that would be used as the restoration Project staging area to stage and borrow native fill materials. This staging area is located within a bend in the channel created by the historic aeration ponds. This staging area has remained isolated from the flow channel, but is proposed to become a portion of the Putah Creek channel, by straightening out the bend. The existing artificial channel bend would be filled and planted with native riparian vegetation.

To minimize Project impacts on the naturalized berm, the largest trees were left in place, and the other native trees and shrubs in the construction area were relocated where feasible into the final realignment configuration of the channel. Approximately 80 non-native and native trees and shrubs have been removed, and an additional 37 trees will be removed to facilitate grading. A minimum of 600 native trees and 200 native shrubs will be planted after construction activities are complete. Approximately 27,600 cy of fill material would be used to re-contour the floodplain, including approximately 10,000 cy of clean fill imported from SCWA off-site stockpile at PDD. Approximately 200 cy of spawning gravel would be imported. This work began in 2014, however due to seasonal restrictions for other permits, the project was closed prior to the winter season in 2014. Construction on this site is currently not active, but will reinitiate in spring 2018.

NAWCA 3 (#19027)

The NAWCA 3 (#19027) site of the Project would continue the WPCNP activities, including grading the

existing floodplain to a uniform 1-2 percent slope, starting approximately 18 inches above low-flow water surface elevation. The project takes a simple elegant approach to floodplain restoration. Rather than constructing a complex project with a multitude of wetland features, the project will restore natural form and function to the floodplain and channel, and allow the natural geomorphological processes of scour and deposition to increase both terrestrial and aquatic habitat complexity within the project area as the site matures. The project will have the immediate benefit of reduced water temperatures and an increase in suitable salmon spawning and juvenile rearing habitat. The project will convert 1.27 acres of open water and 1.77 acres of seasonally flooded riparian forest within WOTUS, to 1.25 acres of open water and 2.77 acres of seasonally flooded riparian forest within WOTUS. The loss of 0.02 acre of open water is associated with the narrowing of an over-widened segment of channel for the purpose of reducing water temperature, an ecological benefit to fish such as native salmon and trout. The constructed side channel reduces the loss of open water from channel narrowing, and the channel will increase ecological value of open water by providing suitable salmon spawning and rearing habitat with the addition of 150 CY of gravel. This is a net gain of 1-acre of restored riparian forest and 1,050 feet of spawning and juvenile salmonid rearing habitat. Additionally, 200 native trees will be planted. Plants will be chosen specifically to support a wide range of native fish, birds, insect pollinators, amphibians, and other animals.

ACTIVITES

Floodplain recontouring - Areas throughout the creek that have steep and high banks and transition into a low terrace, rather than a functional floodplain, tend to promote the establishment of upland species, such as valley oak and black walnut (Acer negundo), in addition to non-native species such as tree-of-heaven, eucalyptus, Himalayan blackberries, and giant reed. The steep banks have minimal surface area that is ideal for establishment by native species such as white alder, cottonwood, and willow species.

The project will restore a functional floodplain to the project area. The existing low-flow channel banks will be graded down to approximately 18 inches above low-flow water surface elevation, and the floodplain will be graded back (perpendicular)from the channel at a positive 1-2 percent slope. This lower top-of-bank elevation and gentle floodplain slope will maximize the surface area that is ideal for the natural recruitment of many different native plant species, including high value wetland dependent species.

Impacts to Jurisdictional Waters: Floodplain recontouring will result in temporary impacts to 2.77 acres of existing floodplain area within WOTUS. This activity will add 1.00 acres of new floodplain and 0.19 a new side channel within WOTUS will be constructed to provide habitat diversity and new spawning and juvenile rearing habitat.

*Ecological Benefit*s: Floodplain recontouring promotes natural geological processes, such as scour and deposition, along the channel and floodplain. This activity will lead to an increase in the species diversity and amount of native plants that will be naturally recruited along the banks and floodplain, ultimately increasing the wildlife habitat value of the project area as the site matures.

Channel filling - The existing over-widened channel has high water residence time and a large water surface area that is exposed to solar radiation, both of which promote warm water temperatures.

Impacts to Jurisdictional Waters: This channel filling activity will permanently impact a total of approximately 0.21 acre (580 LF) of existing open water.

Ecological Benefits: Narrowing the over-widened section of channel will immediately promote cooler water temperatures by increasing flow velocity and reducing the surface area of water that is exposed to solar radiation. Water temperatures will also be reduced as nearby vegetation matures and provides shade over a larger percentage of open water than was possible with pre-project conditions.

Constructed Side Channel - A narrow side channel with a maximum width of 14 feet will be excavated within the recontoured floodplain. The side channel will have two segments (0.08 acre/240 LF and 0.11 acre/310 LF) that will connect to a portion of existing channel that is functioning as a backwater. Approximately 150 CY of clean gravel will be placed within the channel (as needed). The gravel size and composition will be suitable for spawning salmon. The design channel will also serve as temporary bypass channel during construction, to facilitate narrowing of the existing channel.

Impacts to Jurisdictional Waters: The design channel will create approximately 0.19 acre (550 LF) of new open water, and will reduce the project's net loss of open water that results from narrowing and filling existing open water.

Ecological Benefits: Creates Salmon Spawning and Rearing Habitat.

Vegetation Removal and Installation - The process of recontouring the floodplain will require the removal of vegetation that has become established more than one foot above and below the floodplain's design elevations. Up to 86 trees, both native and non-native species greater than four inches diameter-at-breast-height, are planned for removal to facilitate floodplain grading. Twenty three of those trees, of which 12 are native and 11 are non-native species, are located within WOTUS. The recontoured floodplain will be revegetated with native grasses, trees, and shrubs. Only the following species that are endemic to Putah Creek will be used for revegetation:

- California sycamore (*Plantanus racemosa*)
- Valley oak (*Quercus lobata)*
- Interior live oak (*Quecus wislizeni*)
- Blue oak (*Quercus douglasi*)
- Box elder (*Acer negundo)*
- Oregon ash (*Fraxinus latifolia*)
- Fremont cottonwood (*Populus fremontii*)
- Goodding's willow (*Salix gooddingii*)
- Red willow (*Salix laevigata*)
- Yellow willow (*Salix lutea*)
- White alder (*Alnus rhombifolia*)
- Arroyo willow (*Salix lasiolepsis*)
- California buckeye (*Aesculus californica*)

- Big leaf maple (*Acer macrophyllum*).
- Mule fat (*Bacharis salicifolia*)
- California wild rose (*Rosa californica*)
- Buttonbush (*Cephalanthus occidentalis*)
- Blue elderberry (*Sambucus Mexicana* [only planted if required for mitigation or covered by safe harbor])
- Western redbud (*Cercis occidentalis*)
- Toyon (*Heteromeles arbutifolia*)
- California coffeeberry (*Frangula californica*)
- California wild grape *(Vitus californica*)
- California blackberry (*Rubus usinus*)
- Brown dogwood (*Cornus glabrata)*

The project's Streambed Alteration Agreement with the California Department of Fish and Wildlife requires that approximately 200 native trees and 24 shrubs be installed and maintained within the recontoured floodplain. In addition, the plantings will be maintained for a minimum of five years, at which point they should achieve a minimum of 80%survivability and 75% coverage.

Ecological Benefits: The project will replace non-native vegetation with native vegetation. The installed native trees and shrubs will increase the wildlife habitat value of the project area as the site matures. The seeded native grasses on the recontoured floodplain will increase wildlife habitat value after the first growing season.

CONSTRUCTION EQUIPMENT
The following construction equipment will be used for project related construction activities:

- Excavators
- Graders
- Dozers
- Scrapers
- Dump Trucks
- Water Trucks

EQUIPMENT ACCESS
The north side of the creek will be accessed through a privately owned agricultural parcel that is adjacent to the creek and is accessible from Highway 128/E. Grant Avenue in Winters, CA. Equipment will use a pre-existing ramp that leads from the top of the creeks embankment to the creeks low- terrace, located outside of WOTUS.
The south side of the creek may be accessed from the following two locations off of Putah Creek Road.

- A preexisting maintenance trail runs through the Winters Putah Creek Nature Park and connects the west end of the proposed project area.

- A temporary equipment access ramp may be installed near the west side of the I-505 bridge. The earthen access ramp will consist of suitable native fill material and will be located outside of WOTUS. The ramp will be removed and the embankment returned to its original condition after construction is complete.

EQUIPMENT STAGING AREA

The site will have one staging area on both the north and south sides of the creek. Equipment will be staged along the creeks embankment, outside of WOTUS.

PROJECT TIMING AND CONSTRUCTION ORDER

Project construction will occur between August and October 2018 for the following reasons:

- The nesting bird season will be completed by August.
- Creek discharge is minimal during this construction period.
- The chance of precipitation is minimal during this construction period.
- Desirable cold water fish have migrated out of the system or have moved upstream of the project area where summer water temperatures are cooler. The project will be completed before the salmon spawning season begins in November.

The order in which the construction task are completed will be determined by the contractor, but the following is the anticipated order in which the construction activities may occur:

- Install a temporary access ramp off of Putah Creek Road, if needed.
- Mobilize equipment and prepare staging areas.
- Remove the minimum amount of vegetation required to facilitate grading.
- Grade the south side of the creek and excavate the design channel.
- Place spawning gravel in the design channel.
- Redirect flow down the design channel and isolate the portion of the existing channel that will be narrowed.
- Perform fish rescue in the isolated channel segment.
- Dewater the isolated channel segment as necessary, and install clean fill.
- Redirect flow down both the main channel and design channel.
- Prepare floodplain for plantings.
- Demobilize equipment, remove staging areas and the temporary access ramp.
- Install vegetation, BMPs, and temporary irrigation.

PROJECT PURPOSE AND OBJECTIVES

The objective of the USACE is to determine whether to issue a Section 408 permit to allow the proposed Project to alter the Federal flood control system along Putah Creek.

The purpose of the proposed Project is to:

- Secure a 408 permit.

- Replace fill area with a design channel and floodplain.
- Connect the South Bank trail system.
- Restore floodplain to functional and natural state.
- Enhance habitat.
- Manage invasive riparian weeds.
- Revegetate Project Area with native species.

ALTERNATIVES

No Action Alternative

Under the No Action Alternative, the USACE would not grant 408 permission and the restoration would not occur.

Requester's Preferred Alternative

Channel and Floodplain Restoration: As described in Section 1.1, SCWA is proposing to restore the floodplain within areas of Putah Creek to a more natural and functional state. The Project would replace the existing over-widened channel, and expand the narrow floodplains, create a side channel for fish spawning habitat, fill and narrow branches of split low-flow channel to prevent erosion, remove and re-contour artificial pond structures with a new design channel appropriate to current hydrology, remove artificial bends in the channel created by pond complexes, complete the connection to the trail system within the City of Winters, enhance and create aquatic and riparian habitat, manage invasive riparian weeds, and revegetate the Project Area with native species. Following construction, vegetation will be maintained through mowing, watering, and weed control until the 1600 permit's success criteria is met. The Project would rehabilitate approximately 47.2 acres and 7,600 of Putah Creek. This includes grading the existing floodplain to a uniform slope above the low-flow water surface elevation. Construction for the entire Project Area is estimated to take approximately 6 months, with approximately 8 weeks of earth disturbing activities. Construction has begun and was completed for WPCNP Phase I & II (#19047). Construction began on WPCNP Phase III (#19047-1), but due to seasonal restrictions for other permits, the project was closed prior to the winter season in 2014. Construction on this site is currently not active, but will reinitiate in spring 2018. Work has not begun on NAWCA 3 (#19027).

Implementation of the requester's preferred alternative would have environmental effects, however those effects would be fully avoided, minimized or mitigated.

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes the environmental resources in the Project Area, as well as any significant effects of the alternatives on those resources. Under the Environmental Assessment (EA) the focus is solely on Project related impacts from the Project on the environment. Where no impact is likely from the proposed

Project the NEPA impact category is not discussed, with the exception of cases where the requester has made an additional environmental commitment.

AIR QUALITY

Environmental Setting

The proposed Project is located in the Sacramento Valley Air Basin (SVAB), which is situated in the northern half of the Central Valley and is bounded on the west by the Coastal Range, on the north and east by the Sierra Nevada Mountains. Within the SVAB, the Project is situated in the Yolo-Solano sub-basin.

The Yolo-Solano Air Quality Management District (YSAQMD) regulates air quality through its permit authority and through its planning and review activities over most types of stationary emission sources. The YSAQMD is responsible for implementing emissions standards and other requirements of federal and State laws.

Air quality monitoring stations are located throughout the counties, which collect data on ozone, carbon monoxide (CO) and particulate matter (PM_{10} and $PM_{2.5}$), nitrogen oxide (NO_X), sulfur dioxide, and lead levels.

Air quality standards are established by both the federal and State governments. State standards, set through the California Air Resources Board (CARB), are generally more stringent than federal standards. The attainment statuses of Yolo and Solano Counties for criteria pollutants under State standards include non-attainment for ozone, and attainment for CO, and for PM_{10} (YSAQMD, 2015).

No Action Alternative

There would be no affect to air quality under the no action alternative. Air quality would remain the same in the short-term and future air quality would continue on its current trend(s).

Requester's Preferred Alternative

Implementation of the requester's preferred alternative would involve the use of heavy equipment and vehicles during construction activities for approximately 98 acres of land for the overall Project. Construction activities for the entire Project would be approximately 6 months and would not involve any permanent stationary emissions of reactive organic gases (ROG), NOx, and PM_{10}. Approximately 8 weeks of ground disturbing activities will occur during the 6 months of construction. The remaining time will be required to remove invasive plant species and plant native species. The overall Project would have no negative impact on existing air quality plans, and has the potential of nominally reducing air emissions from vehicle use by promoting local walking and bike use. There is expected to be regional use of this

park, however, the park would not likely be a sole destination that could promote additional air concerns from increased driving. Potential short-term impacts may occur during site clearing and grading from equipment exhaust emissions and dust. The YSAQMD thresholds for both construction and project related criteria pollutants of concern is 10 tons/year of ROG and NO_X, 80 lbs./day of PM_{10}, and any exceedance of a state ambient air quality standard for Carbon Monoxide (CO) (YSAQMD, 2007). Once construction is completed, no additional Project-related emissions will occur in relation to baseline levels. The Project will not increase baseline conditions of traffic, and therefore, no impact on state ambient air quality standards for CO will occur. Therefore, the only potential for air quality impacts is related to construction. A screening level CalEEMod analysis for the overall Project Area revealed that even if the total Project construction-related emissions occur simultaneously, they are below the YSAQMD thresholds. This analysis took a conservative approach to evaluate air emissions from the construction of the proposed project. The default truck trip values (280) were used for the largest of the sites (#19047 & #19047-1) instead of the estimated 42/trips per day that the project is estimated to use during construction. This conservative analysis was still below the YSAQMD thresholds. The screening level CalEEMod analysis for the Project is detailed in Table 1.

TABLE 1
Construction-Generated Total Emissions Per Year

Sources	ROG (Tons)	NOX (Tons)	PM10 (lbs./day)
YSAQMD Threshold	10 tons/year	10 tons/year	80 lbs./day
WPCNP Phase I and II (#19047)	0.13	1.03	31.2
WPCNP Phase III (#19047-1)	0.13	1.03	11.4
NAWCA 3 (#19027)	0.01	0.13	0.38
TOTAL	**0.27**	**2.19**	**43.0**

Source: BSK, 2015

Approximately 0.27 tons of ROG, 2.19 tons of NOX, and 43.0 lbs./day of PM_{10} would be emitted during construction activities. These levels are below the YSAQMD thresholds. Therefore, impacts to air quality are less than significant as defined by the YSAQMD standards. Vehicle emissions of ozone, ozone precursors, and PM_{10} will not exceed or contribute to local violations of regulatory standards. An additional effect of this project on air quality would result from the minor vehicle traffic associated with the weed and vegetation maintenance following completion of the project. SCWA will maintain the Project Area following construction by mowing, watering, and performing weed control until the 1600 permit success criteria is met. This effort is a *de minimis* secondary effect on air quality.

Mitigation Measures

The following emission control practices would be implemented during construction for the Project Area as required by the City of Winters as best management practices (Winters, 1998):

Mitigation Measure AQ-1:

- To the extent that equipment and technology is available, the contractor shall use California Air Resources Board (CARB) certified catalyst and filtration technologies.

- All construction diesel engines, which have a rating of 50 hp or more, shall meet the Tier 3-4 California Emission Standards for off-road compression-ignition engines, unless otherwise certified by the Air District's Air Quality Construction Mitigation Monitor (AQCMM). In the event that a Tier 3-4 engine is not available, the contractor will work with YSAQMD to determine potential alternate means of compliance. Older engines will only be used if the AQCMM certifies that compliance is not feasible.

- Project sequencing is specifically designed to reduce air impacts from the operation of the heavy equipment. Wait times for dump trucks and idle time shall be minimized to 5 minutes or less.

- All disturbed areas, which are not being actively utilized for construction purposes, shall manage dust emissions using water (3 times per day), vegetative ground cover or other acceptable dust management practices.

- All bare ground will have ground cover replaced as soon as practicable.

- Heavy-duty diesel equipment will be maintained in optimum running condition.

WATERS OF THE U.S.

Environmental Setting

NAWCA 3 (#19027) will fill approximately 0.21 acre of existing open water channel, while excavating 0.19 acre of new open water channel. The Project will increase the area of seasonally flooded riparian area within the OHWM from 1.77 acres to approximately 2.77 acres, a 1.0 acre increase. The project will create seasonally flooded riparian wetlands and open water channel with spawning habitat; however, temporary impacts are anticipated through a variety of construction-related activities (including the placement of soils, equipment staging, etc.). As required by the NWP-27 for both WPCNP Phase I & II (#19047), and WPCNP Phase III (#19047-1) and the California Department of Fish and Wildlife (CDFW) 1600 permits, the project is fully self-mitigating because higher quality wetland habitat and floodplains will be created by Project activities. Please note, that the 404 permit was issued in 2011 for both WPCNP sites (#19047 and 19047-1). Due to seasonal restrictions for other permits, WPCNP Phase III (#19047-1) was delayed and the NWP-27 permit (SPK-2011-00371) will be reverified if the 408 permission is issued. All permit requirements will be implemented to fully mitigate impacts to waters of the U.S. and reduce

impacts to water quality during construction. Additionally, the implementation of the various water quality BMPs and habitat avoidance/compensation, including mitigation measure BR-6 and HWQ-1, would reduce or avoid impacts to a less-than-significant level.

No Action Alternative

Because no construction would occur, there would be no affect to waters of the U.S. under the no action alternative.

Requester's Preferred Alternative

Implementation of the requester's preferred alternative is not expected to result in permanent negative impacts to potential waters of the U.S., as all Project features and impacts are self-mitigated. NAWCA 2 (#19052) does not require a 404 permit.

As stated in a technical memorandum to SCWA, dated August 17, 2015, for both WPCNP Phase I and II (#19047) and WPCNP Phase III (#19047-1) an estimated 14.32 acres of open water was planned for conversion to 18.4 acres of seasonally flooded riparian wetlands, emergent wetlands, and open water channel. This additional acreage of much-higher ecological value features was a Special Condition of the permit. Current Geographic Information System (GIS) spatial analysis of the site identifies that the WPCNP Phase I & II (#19047) and WPCNP Phase III (#19047-1) exceeds those estimated mitigation averages, with 7.3 acres of restored open water (River Area), and 20.0 acres of Floodplain and Riparian Area, for a total of 27.3 acres. The project will also mitigate a temporary loss of 1.8 acres of waters by constructing, enhancing, and restoring a minimum of 2.4 acres of new channel and active floodplain. The permit minimum mitigation requirements have already been exceeded under both conditions.

NAWCA 3 (#19027) will fill approximately 0.21 acre of channel, while excavating 0.19 acre of channel to create seasonally flooded riparian wetlands and open water channel with spawning habitat. However, temporary impacts are anticipated through a variety of construction-related activities (including the placement of soils, equipment staging, etc.). As required by the NWP-27 for both WPCNP Phase I & II (#19047), and WPCNP Phase III (#19047-1) and the California Department of Fish and Wildlife (CDFW) 1600 permits, the project is fully self-mitigating because higher quality wetland habitat and floodplains will be created by Project activities. Please note, that the 404 permit was issued in 2011 for both WPCNP sites (#19047 and 19047-1). Due to seasonal restrictions for other permits, WPCNP Phase III (#19047-1) was delayed and the NWP-27 permit (SPK-2011-00371) was extended. All permit requirements will be implemented to fully mitigate impacts to waters of the U.S. and reduce impacts to water quality during construction. Additionally, the implementation of the various water quality BMPs and habitat avoidance/compensation, including mitigation measure BR-6 and HWQ-1, would reduce or avoid impacts to a less-than-significant level.

Mitigation Measures

Mitigation Measure BR-6:

Mitigation Measure BR-6 is described below.

Mitigation Measure HWQ-1:

Mitigation Measure HWQ-1 is described below.

BIOLOGICAL RESOURCES

Habitats

Environmental Setting

The Project Area is primarily located within the lower terraces of Putah Creek on the border of Yolo and Solano Counties. Land uses surrounding the Project Area include agricultural, open space, and urban (residential) uses. Aquatic habitats within Putah Creek include pools, riffles, and runs within a degraded channel. Putah creek currently has a disproportionate number of pools and virtually no floodplain (EDAW, 2007a). Open space areas include Valley foothill riparian habitat. Urban habitat types include landscape or planted vegetation, as well as developed urban lands with little or no native vegetation types. Species occurring within this habitat type are typically common and adapted to an urban environment. Agricultural lands, mainly walnut orchards, border the project, but are entirely outside of the impact areas.

Sensitive natural communities that occur within the Project Area and surrounding vicinity include Valley foothill riparian forest. This community provides habitat for a range of terrestrial wildlife species, including several species of birds, small mammals, fish, and reptiles.

Riparian habitat within the Project Area, which is largely concentrated along the banks of Putah Creek, may provide rearing and nesting habitat for wildlife (*aquatic* and *terrestrial*), and the creek functions as a movement and dispersal corridor for fish. Terrestrial and avian wildlife may also use the riparian habitat as a movement and dispersal corridor and as foraging and nesting habitat (BSK, 2011).

No Action Alternative

Because there would be no construction there would be no affect to riparian and wetland habitats under the no action alternative.

Requester's Preferred Alternative

Implementation of the requester's preferred alternative has the potential for the riparian habitat along Putah Creek to be subject to impacts associated with tree removal and earth movement during

construction activities. A total of approximately 468 non-native and native trees will be removed during the Project in accordance with the CDFW 1600 permits. Of these 468 non-native and native trees, the 150 trees from the WPCNP Phase I and II (#19047) have been removed, and the floodplain has been seeded with native grasses. Approximately 1,200 native trees and 300 native shrubs have been planted throughout the WPCNP Phase I and II (#19047) Project sites, following construction. WPCNP Phase III (#19047-1) has removed 80 trees, and will plant 600 native trees and 200 native shrubs following construction. NAWCA 3 (#19027) work has not begun, therefore no trees have been removed. These trees provide potential nesting habitat to a variety of birds and raptors, including Swainson Hawk, white-tailed kit, red-tailed hawks, and migratory bird species. Mitigation measures BR-1, 2, 5 and 6 will protect by avoiding or fully mitigating effects on any species displaced by the removal of these trees, and the disturbance of the ground and understory vegetation. Approximately 2,300 native trees will be planted throughout the Project Area to mitigate for tree removal as required by the CDFW 1600 permits. The Project would reduce invasive plants, and promote the growth of native and overhanging vegetation that could provide improved cover, foraging and nesting habitat for migratory birds.

Aquatic habitat for resident species such as western pond turtle, non-native fish (bass, crappie, and carp), and native fish species such hardhead and Sacramento blackfish, has the potential to be affected during in-water work. The habitat may be impacted briefly during construction, but the project intent is to significantly improve the habitat for these native species. This is a temporary impact that will be fully mitigated (BR-1, BR-6, BR-7, HWQ-1). However, the potential impacts could include minor incidental injury or mortality due to in-water project activities, which will be discussed in the next section.

Riparian habitat, including habitat for the Valley elderberry longhorn beetle, has the potential to be affected by Project Activities. Under BO #2014-F-0471-1, seven elderberry plants have been transplanted away from the staging area to other on-site areas.

Impacts to aquatic habitat would be protected during construction with implementation of mitigation measure BR-1, BR-5, best management practices required in the stormwater pollution prevention plan identified in mitigation measure HWQ-1, and the 401 certification (attached). With these measures, impacts to aquatic habitat would be avoided or fully mitigated to a less than significant impact. Impacts to floodplain and riparian habitat would be avoided or fully mitigated to a less than significant impact through implementation of mitigation measures BR-3, 4, and 5, and the CDFW 1600 permit-required tree and shrub mitigation (attached). Additionally, floodplain and riparian habitat would be created by expanding the floodplain through Project activities. However, these negative impacts would be temporary, and riparian habitat avoidance and compensation measures, including mitigation measure BR-1 and BR-6, would be implemented for the proposed Project, which would reduce or avoid riparian and aquatic wildlife habitat impacts to a less-than-significant level.

Special-Status Species

Environmental Setting

Special-status species are those plants and animals that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or other agencies as deserving special consideration. Some of these species receive specific legal protection pursuant to federal or state endangered species legislation. Others lack such legal protection, but have been characterized as "at risk or sensitive" on the basis of adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities, and special districts to meet local conservation objectives.

A list of federally listed special-status plant and animal species that have the potential to occur within, or in the vicinity of the Project Area was compiled based on data in the California Natural Diversity Database CNDDB (CDFW, 2015), CNPS Inventory of Rare and Endangered Plants (CNPS, 2015), and the USFWS List of Federal Endangered and Threatened Species that may be Affected by Projects in the Winters, Allendale, Monticello Dam, and Mt. Vaca Quads (USFWS, 2013) [Table 2]. Conclusions regarding habitat suitability and species occurrence are based on a reconnaissance-level area assessment conducted by BSK or contracted biologists, as well as existing literature and databases described previously (BSK, 2011).

Table 2
Federal Special Status Species List

Scientific Name	Common Name	Federal Status	CA Status*	Effect Determination
Branchinecta lynchi	vernal pool fairy shrimp	Threatened	None	No effect – No suitable habitat present.
Coccyzus americanus occidentalis	Western yellow-billed cuckoo	Threatened	Endangered	May affect, not likely to adversely affect – Discountable/Avoi-ded/beneficial. (See BR-1, -2, -5, -7)
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	Threatened	None	May affect, not likely to adversely affect (19027) - (Appears Discountable)
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	Threatened	None	May affect, likely to adversely affect (19047-1)
Oncorhynchus mykiss	steelhead - California Central Valley DPS	Threatened	None	May affect, not likely to adversely affect – Discountable/Av-oided/beneficial. (See BR- 5)
Oncorhynchus tshawytscha	Chinook Salmon – fall/late fall run	**None**	None	No adverse effect to EFH - Discountable/avoid -ed/beneficial. (See BR- 5)

Source: BSK, 2016, adapted from CNDDB and FWS CHM.

No Action Alternative

Because no construction would occur, there would be No Effect to special status species under the no action alternative. There would be No Effect to federally listed plants and wildlife under the no action

alternative.

Requester's Preferred Alternative

Construction-related activities could directly or indirectly affect active listed plants if present within the Project Area. However, it is unlikely that plant species are likely to occur within the Project Area itself due to the high degree of disturbance associated with surrounding developed land uses, channel mining, invasive plants, and the fact that no special-status plants have been found in repeated prior studies of the area. Implementation of mitigation measure BR-4 would reduce or avoid impacts to rare plant species to a less-than-significant level. The Corps was the lead federal agency for 19047-1 and has completed the required consultations. USFWS was the lead federal agency for 19027 due to their funding commitments and have completed the required consultations for this part of the project. Section 7 consultation under the Endangered Species Act has been completed with USFWS and NMFS (Appendix 1).

Implementation of the requester's preferred alternative could indirectly impact special-status species, such as valley elderberry longhorn beetle (VELB). Elderberry shrubs with stems measuring 1" or more in diameter at ground level represent suitable habitat for the Valley elderberry longhorn beetle (VELB) and occur within the Project Area. The plants have been mapped and assessed under the USFWS Biological Assessments. Under BO #2014-F-0471-1, seven elderberry plants have been transplanted away from the staging area to other on-site areas, due to project related activities. Implementation of the requester's preferred alternative could cause indirect potential impacts to valley elderberry longhorn beetle by dust or root damage to elderberry shrubs with stems containing 1" or more in diameter at ground level. However, implementation of the various VELB avoidance/compensation measures, including mitigation measure BR-3, prior to the construction phase of the proposed Project would minimize or avoid VELB impacts to a less-than-significant level and the effects would be discountable. A determination of May Effect, but not likely to adversely affect has been made for this species.

Riparian habitat associated with Putah Creek may provide suitable nesting habitat for special-status and migratory birds that use aquatic and riparian habitats. The Western yellow-billed cuckoo is a species which could potentially use habitat for foraging or nesting within the project area. This species has limited history of documented occurrences in the project area, and it has a very rapid nesting and hatching cycle, but a longer loafing period.

Construction-related activities could directly affect active nest sites through tree removal or cause indirect impacts such as nest abandonment. Valley oaks and cottonwoods and other large trees that grow within the riparian corridor along Putah Creek provide suitable nesting sites for many raptors and other birds. Construction activity within the vicinity of an active nest site can cause nesting birds to abandon the nest. However, implementation of the various bird species' nesting avoidance measures, including mitigation measures BR-1 and BR-2, prior to the construction phase of the proposed Project would avoid or minimize project impacts to nesting resident, migratory and raptor species to a less-than-significant level. For the Western yellow-billed cuckoo however, project timing does not overlap with the June to

August breeding season (Southwest Learning, 2014. Pp. 2). Therefore, a determination of No Effect – Avoided, has been made for Western yellow-billed cuckoo.

The non-resident listed fish species, Central Valley steelhead, is unlikely to be within the project area during project activities, because they seasonally migrate from tributaries like Putah Creek, to the Sacramento River and out to the Pacific Ocean. Central Valley steelhead enter fresh water from August through April to spawn. The juvenile steelhead will migrate to the ocean in the spring and early summer (NOAA 2014. pp. 49). Additionally, migrating non-resident fish species encounter a downstream fish barrier at the Los Rios Check Dam at the Yolo Bypass Wildlife Area. The flashboards at this dam are removed typically on December 1st and installed on April 1st (YBF 2015, pp. 13). In addition, regulated, attraction pulse flows are timed to bring migrants after that barrier removal. This species could be within the project area only for a very limited timeframe, specifically from December 1st, and will have exited the project area prior to the installation of the flashboards on April 1st. The project's in-water activities are scheduled to not overlap this time period for flood and water quality protection management, as well as anadromous fish avoidance. The work window will avoid or minimize potential impact to this species; therefore, a determination of No Effect- Avoided, has been made for Central Valley steelhead (Table 2).

Mitigation Measures

Mitigation Measure BR-1:

Wildlife and federal special-status species will be protected from site staging and operations areas through the use of fencing, a Worker Environmental Awareness Program (WEAP), and monitoring by a qualified biologist. The Project Area will be inspected daily for the presence of federal special-status species. Should active nest sites be discovered within areas that may be affected by construction activities, SCWA shall ensure that the construction contractor implement the following nest avoidance measures (City of Winters, 2008).

Mitigation Measure BR-2:

If construction occurs during the breeding season (March-September 1), the Project applicant shall conduct pre-construction breeding bird surveys no more than 14 days and no less than 7 days prior to initiating construction. A qualified biologist shall conduct the surveys and the surveys shall be submitted to the SCWA for review. The survey area shall include all potential nesting sites located within 0.8 km (½ mi) of the Project Area. If no active nests are found during the surveys, no further mitigation shall be required except with regard to foraging habitat.

If an active nest used by a migratory bird or raptor is found sufficiently close to the construction area, a qualified biologist shall notify the CDFW/USFWS. No intensive new disturbances (e.g., heavy equipment operation associated with construction, use of cranes or draglines, new rock crushing activities) or other Project related activities which may cause nest abandonment or forced fledging,

should be initiated within 0.4 km (¼ mi) buffer zone of an active nest between March 1- September 1 or until August 15 if a Management Authorization or Biological Opinion is obtained for the Project. If construction or other Project related activities, which may cause nest abandonment or forced fledging, are necessary within the buffer zone, monitoring of the nest site by a qualified biologist should be required. Routine disturbances such as agricultural activities, commuter traffic, and routine facility maintenance activities within 0.4 km (¼ mi) of an active nest should not be prohibited (CDFG, 1994b). Project-related construction activity would not commence within the no-work buffer area until a qualified biologist and CDFW/USFWS confirms that the nest is no longer active.

SCWA will ensure that the construction contractor maintain a setback of 100 feet from all elderberry shrubs to avoid impacts to valley elderberry longhorn beetle. If the 100-foot setback is not feasible, the construction contractor shall implement a number of avoidance measures (developed under the USFWS Biological Opinion).

Mitigation Measure BR-3:

Prior to land disturbance activities, the observed elderberry shrubs shall be identified, mapped, flagged, and be protected by bright temporary fencing for the duration of the Project earthmoving activities. Complete avoidance (i.e., no adverse effects) may be assumed when a 30 m (100 ft.) or wider, buffer is established and maintained around elderberry plants containing stems 2.5 cm (1.0 in) or greater in diameter at ground level. In the event that work must proceed in areas where encroachment on the 30 m (100 ft.) buffer has been approved by the USFWS, a minimum setback of at least 6 m (20ft) from the dripline of each elderberry plant shall be provided. Signs will be erected every 15 m (50 ft.) along the edge of the avoidance area with the following information: "This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." (USFWS, 1999).

Mitigation Measure BR-4:

A pre-construction rare plant survey will be completed to ensure that special-status species are identified and if they do occur, it will be marked and avoided, or otherwise managed, with CDFW/USFWS permission.

Mitigation Measure BR-5*:*

Implementation of the following mitigation measure would reduce the potential impacts related to biological resources and habitats to a less than significant impact. Prior to any grading activities onsite, the Project proponent shall comply with the terms stated in the applicable NWP-27 permit, 401 certification, CDFW 1600 series permit, and BMPs discussed in mitigation measure HWQ-1.

All native fish species will be protected by limiting in-channel work and acquiring proper permits for work done within aquatic habitats (BR-6, BR-7). Additionally, fish shall be protected from Project Area

operations through the use of a WEAP (BR-1). If needed, fish salvage shall be performed under the direct supervision of an approved biologist to avoid incidental take from project activities. Once deemed safe by the biologist, the fish species shall be reintroduced to the channel in a safe location. If dewatering pump are used, they will be equipped with appropriately sized fish screens. In water work will occur during the summer months, when water temperatures are warmer and fish such as salmon and trout will likely not be present in the project area. The potential for indirect impacts will be mitigated for by sediment control activities under the SWPPP (Mitigation Measure HWQ-1). In add

Mitigation Measure BR-6:

Implementation of the following mitigation measure would reduce the potential impacts to a less than significant impact.

Prior to the commencement of grading or construction activities onsite, SCWA shall comply with all of the following:

1.) Obtain and comply with a California Department of Fish & Wildlife, Streambed Alteration Agreement in accordance with Sections 1600-1616 of the California Fish & Game Code, as required.

2.) Obtain and comply with the provisions of a SWPPP permit from the California Regional Water Quality Control Board. Construction cannot be started until the SWPPP is issued.

3.) Establish native grass and accelerate riparian transplanting for cover.

Following the CDFW 1600 SBAA permit, SCWA will implement the following riparian habitat avoidance, minimization and compensation measures.

1) Any tree designated for removal will be preserved if it is determined to support a Swainson's Hawk nest unless that tree is located within the direct path of the relocated channel for Putah Creek.

2) Work shall be timed with the driest time within the channel. If water is present at the time of construction, water shall be diverted around the work area and work shall begin after the site is dry or devoid of flowing water. The time period for completing the work within the flowing or standing water of the watercourses shall be confined to a period of April 15 to the date when boards are pulled at the Los Rios Check Dam (not later than December 15). Work within the dry portion of the stream zone shall cease until all reasonable erosion control measures, have been implemented prior to all storm events. Construction equipment and material shall be removed from the floodplain if inundation is likely. Revegetation, restoration and erosion control work is not confined to this time period.

3) At DFG's discretion, the work period may be extended based on the extent of the work remaining,

on site conditions and reasonably anticipated future conditions. If the Permittee finds more time is needed to complete the authorized activity, the Permittee shall submit a written request for a work period time extension to DFG. The work period extension request shall provide the following information: 1) Describe the extent of work already completed; 2) Provide specific detail of the activities that remain to be completed within the stream zone; and 3) Detail the actual time required to complete each of the remaining activities within the stream zone. The work period extension request should consider the effects of increased stream conditions, rain delays, increased erosion control measures, limited access due to saturated soil conditions and limited growth of erosion control grasses due to cool weather. Photographs of the work completed and the proposed work areas are helpful in assisting DFG in its evaluation. Time extensions are issued at the discretion of DFG. DFG will have ten calendar days to approve the proposed work period extension. DFG reserves the right to require additional measures designed to protect natural resources.

4) Disturbance or removal of vegetation shall not exceed the minimum necessary to complete operations. Except for the trees specifically identified for removal in the Notification, no native trees with a trunk diameter at breast height (DBH) in excess of four (4) inches shall be removed or damaged without prior consultation and approval of a DFG representative. Using hand tools (clippers, chain saw, etc.), trees may be trimmed to the extent necessary to gain access to the work sites. All cleared material/vegetation shall be removed out of the riparian/stream zone.

5) If construction of tree falling activities will occur during the breeding season (February 15 through September 15), a qualified wildlife biologist shall conduct two preconstruction surveys to ensure that no nests of migratory birds will be disturbed during construction. The fist survey can occur as early as February 1, and the second should occur no more than one week prior to the commencement of construction activities. The survey shall include the construction zone, including all staging areas, and a 500-foot radius surrounding the construction zone to determine whether the activities taking place have the potential to disturb or otherwise harm any nesting raptors (birds of prey) or migratory birds.

6) If an active nest is located within the proposed disturbance area, the wildlife biologist shall consult with DFG to establish a suitable buffer zone. If a raptor is located within 250 feet or migratory bird nest is located within the 100-feet of disturbance, and the disturbance must take place during the breeding season, a buffer zone shall be established by the biologist and confirmed by the appropriate agency (DFG and/or USFWS). The buffer area requirements will be 250 feet for any active raptor nest and 100 feet for any migratory bird nest or as defined by the DFG and/or USFWS. A qualified wildlife biologist shall monitor the nest to determine when the young have fledged and submit bi-weekly reports throughout the nesting season. The biological monitor shall have the authority to cease construction if there is any sign of distress to any raptor or migratory bird. Reference to this requirement and the Migratory Bird Treaty Act shall be included in the construction specifications.

7) If construction is to occur during the breeding season (March 1 – September 15), a pre-construction raptor nest survey shall be conducted within 30 days prior to the beginning of construction activities by a qualified biologist in order to identify active nests in the project site vicinity. The results of the survey shall be submitted to CDFG. If no active nests are found during the pre-construction survey, no further mitigation is required.

   If active nests are found within a quarter-mile (1320 feet), an initial temporary nest disturbance buffer shall be established. If project related activities within the temporary nest disturbance buffer are determined to be necessary during the nesting season (approximately March 1 to September 1), then an on-site biologist/monitor experienced with raptor behavior shall be retained by the project proponent to monitor the nest, and shall along with the project proponent, consult with the DFG to determine the best course of action necessary to avoid nest abandonment or take of individuals. Work may be allowed to proceed within the temporary nest disturbance buffer if raptors are not exhibiting agitated behavior such as defensive flights at intruders, getting up from a brooding position, or flying off the nest. The designated on-site biologist/monitor shall be on-site daily while construction related activities are taking place and shall have the authority to stop work if raptors are exhibiting agitated behavior.

   In consultation with the DFG and depending on the behavior of the raptors, over time it may be determined that the on-site biologist/monitor may no longer be necessary due to the raptors' acclimation to construction related activities.

8) Precautions to minimize turbidity/siltation shall be taken into account during project planning and implementation. This may require the placement of silt fencing, coir logs, coir rolls, straw bale dikes, or other siltation barriers so that silt and/or other deleterious materials are not allowed to pass to downstream reaches. Passage of sediment beyond the sediment barrier(s) is prohibited. If any sediment barrier fails to retain sediment, corrective measures shall be taken. The sediment barrier(s) shall be maintained in good operating condition throughout the construction period and the following raining season. Maintenance includes, but is not limited to, removal of accumulated silt and/or replacement of damaged silt fencing, coir logs, coir rolls, and/or straw bale dikes. The Permittee is responsible for the removal of non-biodegradable silt barriers (such as plastic silt fencing) after the disturbed areas have been stabilized with erosion control vegetation (usually after the disturbed areas have been stabilized with erosion control vegetation (usually after the first growing season). Upon DFG determination that turbidity/siltation levels resulting from project related activities constitute a threat to aquatic life, activities associated with the turbidity/siltation shall be halted until effective DFG approved control devices are installed or abatement procedures are initiated. (See also Mitigation Measure HWQ-1)

9) Utilize Best Management Practices (BMPs) to prevent spills and leaks into water bodies. If maintenance or refueling of vehicles or equipment must occur on-site, use a designated area and/or a secondary containment, located away from drainage courses to prevent the runoff of storm water and the runoff of spills. Ensure that all vehicles and equipment are in good working

order (no leaks). Place drip pans or absorbent materials under vehicles and equipment when not in use. Ensure that all construction areas have proper spill clean-up materials (absorbent pads, sealed containers, booms, etc.) to contain the movement of any spilled substances. Any other substances which could be hazardous to aquatic life, resulting from project related activities, shall be prevented from contaminating the soil and/or entering the waters of the state. Any of these materials, placed within or where they may enter a stream or lake by the Applicant or any party working under contract or with the permission of the Permittee, shall be removed immediately. DFG shall be notified immediately by the Permittee of any spills and shall be consulted regarding clean-up procedures.

Mitigation Measure BR-7:

Implementation of the following mitigation measure would reduce the potential impacts related to biological resources and habitats to a less than significant impact. The project is required to comply with BO # 2014-F-0471-1, BO # 81420-2011-I-0801-1, BO # 1-1-03-F-0098, and BO # 2016-I-1829-1.

CULTURAL RESOURCES

Environmental Setting

Cultural resource reports were prepared for the Project Area in 2007, 2015, and 2017. As part of the analysis conducted for the technical report, EDAW and Tremaine completed an archival review of records maintained at the Northwest Information Center (NWIC) of the California Historical Resources Information System at Sonoma State University and pedestrian field surveys. Two structures were eligible for California Register of Historical Resources within WPCNP (#19047 and #19047-1): the Yolo-Solano Bridge and the Southern Pacific Railroad Bridge. However, neither of these two bridges would be affected by Project activities (EDAW, 2007b; p. 13). One historic site was found eligible for the California Register of Historical Resources within NAWCA 3 (#19027): a small domicile.

The NWIC records search identified 16 archaeological sites or isolates within the Putah Creek corridor. Two additional prehistoric period resources were identified during the field survey of the Project Area. Consultation with the State Historic Preservation Office (SHPO) for the Project concurred with this statement (SHPO, 2012). Section 106 and tribal consultations have been completed for the project (Appendix 2).

No Action Alternative

Because no construction would occur, there would be no affect to cultural resources under the no action alternative.

Requester's Preferred Alternative

The proposed Project would not likely cause a significant impact to the eligibility of a historical resource. Coordination with SHPO prior to construction of WPCNP Phase I and II (#19047) determined that the Project would not affect or impact cultural resources (SHPO 2011). Two potential prehistoric resources were identified within the Project Area, and are believed to have been secondarily deposited. These items will either be avoided or relocated outside of the construction area under the direction of a cultural resources specialist, pending coordination with SHPO. Therefore, the proposed Project would result in no impacts or less than significant impacts to historical resource (as defined in §15064.5) with the implementation of mitigation measure CR-1.

The records search of all pertinent survey and data performed at the NWIC did not identify any recorded or new archaeological resources on or near the Project Area. The two prehistoric isolates found during the field survey would be avoided or relocated, under the direction of cultural resources specialties, to a safe location immediately outside of the construction area. There is a chance that construction activities associated with the proposed Project could result in accidentally discovering additional archaeological resources. Implementation of Mitigation Measures CR-1 would ensure that previously unidentified cultural resources (including prehistoric, historic or paleontological subsurface cultural resources) are appropriately identified and protected in the event of an unexpected discovery. Therefore, the impact would be less-than-significant with incorporation of mitigation.

Paleontological resources are the fossilized evidence of past life found in the geologic record. Despite the tremendous volume of sedimentary rock deposits preserved worldwide, preservation of plant or animal remains as fossils is an extremely rare occurrence. Because of the infrequency of fossil preservation, fossils (particularly vertebrate fossils) are typically considered to be nonrenewable resources. Because of their rarity, and the scientific information they can provide, fossils are considered highly significant records of ancient life.

No known paleontological resources or unique geologic features exist within the Project Area; therefore, the proposed Project is not likely to impact, either directly or indirectly, a unique paleontological resource or site, or geological feature. As described above under Item b), if such a resource should be encountered during construction, work would stop until the resource can be evaluated and a determination made of its significance and need for recovery, avoidance, and/or mitigation. With implementation of Mitigation Measures CR-1, the proposed Project would result in a less-than-significant impact on paleontological resources or unique geologic features.

Based upon a records search, no human remains are known to exist within the Project Area. In the unlikely event that human remains are discovered, work within the area will be stopped and the Yolo or Solano County Coroner will be notified immediately. Work will only resume after the investigation and in accordance with any requirements and procedures imposed by the appropriate County Coroner. In the event that the bone most likely represents a Native American interment, the NAHC will be notified so that the most likely descendants can be identified and appropriate treatment can be implemented. Therefore, with the incorporation of Mitigation Measures CR-1, the proposed Project would result in a less-than-

significant impact with respect to disturbing any human remains, including those interred outside of formal cemeteries.

Mitigation Measures

Mitigation Measure CR-1:

Even though the area of ground-disturbance within the Project Area is not expected to contain additional cultural or historic resources, ground-disrupting activities could inadvertently expose and significantly impact previously unrecorded human remains. Should previously undisclosed archaeological resources be found, the following procedures would be applied. Any locally darkened sediments, concentrations of chipped stone especially obsidian and flint, any shaped stone, circular pits in bedrock, and/or concentrations of bone or shell are found, all work in the immediate vicinity of the find(s) shall cease until a qualified archaeologist can be retained to evaluate the find(s) and make recommendations as necessary. If human remains or bones of any type are found, Work shall cease in the area of the find(s) until qualified individuals (County Coroner by law, potentially supported by a qualified archaeologist or forensic anthropologist working with the local Indian community) have determined that the bone is human and archaeological in nature. If the bone is human and archaeological, the Project proponent shall follow the procedures indicated in the California Public Resources Code as they relate to the discovery of human remains. The above noted procedures shall be included within the Project plan and shall be employed during Project construction, thereby incorporated as part of the Project description.

HYDROLOGY AND WATER QUALITY

Environmental Setting

The proposed Project Area is located within and adjacent to the Putah Creek stream channel. Section 303(d) of the federal Clean Water Act (CWA) requires states to identify the waters of the state that do not meet the CWA's national goal of "fishable, swimmable" and to develop total maximum daily loads (TMDLs) for such waters, with oversight of the United States Environmental Protection Agency (USEPA). These waters are commonly referred to as "impaired." A TMDL is a quantifiable assessment of potential water quality issues, contributing sources, and load reductions or control actions needed to restore or protect bodies of water. The Putah Creek watershed is listed on the 303(d) list for mercury and boron (SWRCB, 2012).

<u>No Action Alternative</u>

Because there would be no construction, no hydrology or water quality impacts would occur under the no action alternative.

<u>Requester's Preferred Alternative</u>

Implementation of the requester's preferred alternative at the Project Area was modeled using the USACE's HEC-RAS software to determine the effects of the Project on hydrology (attached). A summary of the modeling is included below for each site.

WPCNP Phases I & II (#19047)

The hydraulic modeling for the WPCNP Phases 1 & 2 project (#19047) shows a decrease in water surface elevation of about 10-ft across the project. This decrease does not have any negative effects on the surrounding areas (i.e., does not cause any bank overtopping) and therefore is of no significant additional flood risk. This work is completed, and the project is an "after-the-fact" application.

WPCNP Phase 3 (#19047-1)

The hydraulic modeling for the WPCNP Phase 3 project (#19047-1) shows a negligible difference in water surface elevation due to the implementation of the project. The project shows that the water surface elevation changes from a decrease of 0.23-ft to an increase of 0.07-ft at various cross-sections. This maximum increase of 0.07-ft does not have any negative effects on the surrounding areas (i.e., does not cause any bank overtopping) and therefore is of no significant additional flood risk. This work is not completed.

NAWCA 3 (#19027)

The hydraulic modeling for the NAWCA 3 project (#19027) shows a decrease in water surface elevation of 0.65-ft to 1.87-ft at different cross-sections due to the implementation of the project. The lowering of the water surface elevation is beneficial to the flood risk of Putah Creek, essentially increasing the flood conveyance capacity of the creek. This work has not begun.

Implementation of the requester's preferred alternative at the Project Area would be less-than significant according to the modeling performed.

Implementation of the requester's preferred alternative at the Project Area has the potential to expose bare soil and potentially generate other water quality pollutants that could be exposed to precipitation and subsequent entrainment in surface runoff to Putah Creek. Construction activities related to the restoration Project will involve soil disturbance, excavation, cutting/filling, and grading activities. These activities could result in increased erosion and sedimentation to Putah Creek and waters downstream, including potentially adversely affecting channel substrate composition. Specific rates of sedimentation are dependent upon the duration, volume, and frequency at which sediments are contributed to the surface water flow. If precautions are not taken to contain impairment, construction could produce impaired stormwater runoff (non-point source pollution), a contributor to the degradation of water quality.

Construction for the entire Project Area is estimated to take approximately 6 months, with approximately 8 weeks of earth disturbing activities. The Project Details for the entire Project are described in section

1.1 of this EA. As stated previously, WPCNP Phase I and II (#19047) were completed in 2011, and WPCNP Phase III (#19047-1) had started, but due to other permit restrictions, was closed late in 2014, and will resume in spring 2018. Following WPCNP Phase III (#19047-1), NAWCA 3 (#19027) would be completed. A variety of design measures (including limiting the size and location of Project staging areas away from the river channel; and, compliance with federal, state, and local regulations regarding the storage, handling, use, and disposal of any hazardous materials) will significantly minimize these water quality impacts for this phase of the Project. However, erosion or inadvertent spills of oil or fuels from construction equipment could still be an impact to Putah Creek. However, with implementation of mitigation measure HWQ-1 prior to construction would ensure that no Project-related water quality impacts would occur. Therefore, the impact would be less-than-significant with incorporation of mitigation.

Mitigation Measures

Mitigation Measure HWQ-1:

SCWA will ensure that the Project contractor complies with the requirements of the General Construction SWPPP permit and 401 Water Quality Certification from the Central Valley Regional Water Quality Control Board (CVRWQCB). As part of the permit, the contractor would be required to prepare and implement a SWPPP into their construction plans, prior to initiating construction activities, identifying BMPs to be used to avoid or minimize any adverse effects before, during, and after construction to surface waters. The following BMPs will be incorporated into the Project as part of the construction specifications:

- Implement erosion control measures, including stream bank and channel stabilization, Project scheduling to avoid peak flows and storm events, preserving existing vegetation, straw mulch, wood mulching, non-vegetated stabilization, and velocity dissipation devices.
- Implement wind erosion control measures including watering all disturbed areas daily to prevent dust from entering the water.
- Implement sediment control measures, such as gravel bag berms, straw bale barriers, and stabilized construction entrance and exit.

NOISE AND VIBRATION

Environmental Setting

Noise is defined as unwanted sound that evokes a subjective reaction to the physical characteristics of a physical phenomenon. Ambient noise generated by traffic along adjacent surface streets within the City of Winters and from I-505 and by adjacent agricultural land uses is present within Project Area. Existing noise levels in the Project Area are in the range of 60 to 70 decibels (dB) day-night sound level (Ldn), with ambient noise generated by surrounding land uses and traffic on adjacent streets.

The City of Winters has established policies and regulations concerning the generation and control of

noise that could adversely affect their citizens and noise-sensitive land uses. These policies and regulations will also be applied to the sections of Project Area that are beyond the City of Winters boundaries. According to the City's General Plan, a noise level of 60 A-weighted decibels (dBA) community noise equivalent level (CNEL) is considered normally acceptable for Outdoor Public Facilities, such as is proposed by the Project (City of Winters, 1992). In addition, the General Plan has established exterior noise level limits of 50 dBA between 7:00 a.m. and 10:00 p.m. for parks and recreation facilities, residential, and rural uses, wherein this noise level is not to be exceeded continuously during any five-minute period. If the noise level varies above and below the limit, the limit shall not be exceeded more than one-time interval in any five-minute period. Exterior noise levels higher than the applicable limit plus 15 dBA are prohibited at all times. The applicable exterior nighttime (10:00 p.m. to 7:00 a.m.) noise performance standard for recreational and residential uses is 45 dBA, while that for rural land uses is 40 dBA (City of Winters, 1992).

The interior noise limit for residential structures is 45 dBA (City of Winters, 1992). The City's Zoning Code contains a provision, which limits noise levels from construction activities to 90 dB, as measured at 50 feet from a single piece of equipment, provided that activities are limited to the hours of 7:00 a.m. to 7:00 p.m. on weekdays. Activities on weekends and holidays are subject to the applicable standards at the receiving land use. The City Code also prohibits vibration levels above the threshold of perception for an individual at or beyond the property boundary of the source if on private property, or at 150 feet from the source if on a public space or public right-of-way (City of Winters, 2001). According to the Federal Transportation Administration (FTA), the normal vibration threshold with respect to human response is 80 vibration decibels [(VdB) referenced to 1 microinch per second (µin/sec) and based on the root mean square (RMS) velocity amplitude] (FTA, 2006). Although restoration activities and equipment may cause a noticeable increase in ambient noise levels near the Project Area and construction staging areas, all Project-related noise increases are considered to be temporary and short-term in nature. Project-related noise would fluctuate, depending on restoration activity, equipment type, and duration of use, distance between noise source and receptor, and presence or absence of barriers (such as mature trees and fences) between noise source and receptor (Table 3). The nearest residences to the Project Area are located approximately 100 feet to the north of the Project Area along the north bank of Putah Creek within WPCNP (#19047 and #19047-1).

No Action Alternative

Because there would be no construction, no impacts to noise would occur under the no action alternative.

Requester's Preferred Alternative

The requester's preferred alternative would generate temporary construction noise and vibration resulting from bridge replacement/restoration activities. Construction activity noise levels at and near the Project Area would fluctuate depending on the particular type, number, and duration of uses of various pieces of construction equipment (see Table 3). The nearest existing noise-sensitive uses is a residential neighborhood, which is located adjacent to the northern site boundary. The majority of the rest of the

area surrounding the Project Area consists of agricultural farmland and orchards.

The Project will result in the generation of short-term noise impacts associated with construction and maintenance. These impacts are discussed below, and mitigation measures are recommended, as necessary, to reduce the degree of potential impacts.

According to the U.S. EPA, the noise levels of primary concern are typically associated with the site preparation phase because of the on-site equipment used for clearing, grading, excavation, and demolition (U.S. EPA, 1971). Depending on the operations conducted, individual equipment noise levels can range from 79 to 91 dBA at 50 feet.

The exact number and type of on-site equipment required for the construction activities is anticipated to include dozers, trucks, loaders, excavators, and graders. The simultaneous operation of such on-site construction equipment could potentially result in worst-case noise levels of approximately 91 dBA at 50 feet from the Project Area, without feasible noise control (e.g., mufflers) in place.

Based on these equipment noise levels and assuming a noise attenuation rate of 6 dBA per doubling of distance from the source to receptor, exterior noise levels at nearby sensitive receptors located at a nominal 100 ft. from the Project construction areas could potentially exceed 85 dBA without noise control. Consequently, the temporary construction noise associated with on-site equipment could potentially expose sensitive receptors to noise levels in excess of the applicable City noise standards, and/or result in a noticeable increase (5 dBA) in ambient noise levels. An indirect effect of this project on noise would be the weed and vegetation maintenance following completion of the project. SCWA will maintain the Project Area following construction by mowing, watering, and performing weed control until the 1600 permit success criteria is met. This effort is *de minimis* and a secondary, short-term effect on noise from the project.

Table 3
Typical Equipment Noise Levels Noise Level in dBA at 50 feet

Type of Equipment	Without Feasible Noise Control	With Feasible Noise Control
Loader	79	75
Dozer or Tractor	80	75
Crane	83	75
Scraper	88	80
Excavator	88	75
Compactor	82	75

Backhoe	85	75
Grader	85	75
Generator	78	75
Truck	91	75

Source: U.S. EPA, 1971. Feasible noise control includes the use of intake mufflers, exhaust mufflers, and engine shrouds in accordance with manufacturers' specifications.

Implementation of the following mitigation measure would reduce potential impacts from construction noise to a less-than-significant level. Implementation of the required mitigation measure would not only avoid noise generation during the noise-sensitive nighttime hours, but also achieve consistency with the noise ordinance construction exemption criteria.

Mitigation Measures

Mitigation Measure NOISE-1:

All construction activities shall be limited to the daytime hours between 7:00 a.m. and 10:00 p.m., and all construction equipment shall be properly fitted with mufflers and maintained in good working order.

The acceptable Outdoor Public Facilities noise level shall not exceed a noise level of 60 A-weighted dBA for normal Project operational activities. If the noise level varies above and below the limit, the limit shall not be exceeded more than one-time interval in any five-minute period. Exterior noise levels higher than the applicable limit plus 15 dBA are prohibited at all times.

Successful implementation of mitigation measure NOISE-1 would reduce noise levels at the nearest existing sensitive receptors (residential site approximately 100 feet to the north at the closest location) to a maximum of 69 dBA. Limitation of construction operations to the less noise-sensitive hours of the day/week would prevent potential sleep disruption, and would be consistent with the provisions of the noise ordinance. Additionally, the City of Winters has been doing direct notification to City residents near the construction area, in addition to the Lower Putah Creek Coordinating Committee notifying nearby residents.

POLICE AND FIRE PROTECTION

Environmental Setting

The following public services are located in the vicinity of the proposed Project Area.

Fire Protection

The City of Winters Fire Department and rural volunteer fire departments provides first response to fires and other emergencies in the Project Area.

Police Protection

Solano and Yolo County Sheriff's Departments, respectively, have authority for police responses outside of the City of Winters. The City Police Department provides first response to criminal and other emergencies in the City's boundaries. Officers investigate crimes, alarms and suspicious incidents and persons, and provide supporting responses to medical and fire incidents. Winters' officers enforce local, state and federal laws as state officers, their police authority includes supporting nearby jurisdictions in the adjacent County lands per existing agreements.

No Action Alternative

Because there would be no construction, no impacts to fire or police services would occur under the no action alternative.

Requester's Preferred Alternative

Implementation of the requester's preferred alternative would have no likely impact on fire or police services. The proposed Project is not currently an access point for emergency vehicles and construction activities will not disrupt or delay response times for emergency responders. Therefore, the proposed Project would have no impact on the response time or service ratio of fire, police, or medical emergency responders. However, the City of Winters has established an additional environmental commitment, Mitigation Measure PUB-1 that applies to this Project (City of Winters, 2008).

Mitigation Measures

Mitigation Measure PUB-1:

Emergency vehicle access, and fire flow, shall be in accordance with requirements of the City of Winters Fire Department.

TRANSPORTATION AND TRAFFIC

Environmental Setting

The proposed Project is bordered to the south by rural Putah Creek Road, and by more urban roadways in the city of Winters to the north. Railroad Avenue/County Road 89 is a minor two-lane highway located to the west of the proposed Project, providing community circulation and connection to regional

roadways in the Project vicinity. I-505 serves as a regional connector in the Project Area.

Vehicle Circulation

The proposed Project does not reroute, change or otherwise modify vehicle traffic patterns or circulation. However, the Project could have minor, non-significant impacts to local roadways from construction associated traffic.

Pedestrian and Bicycle Circulation

The proposed Project contains pedestrian and bicycle routes within WPCNP (#19047 and #19047-1) only. The proposed project would improve circulation around WPCNP (#19047 and #19047-1) through a formal and informal network of opens spaces and trails that provide linkage to the community.

No Action Alternative

Under the No Action alternative, the restoration would not be constructed. The Project Area would continue to allow for pedestrian and bicycle access to the northern side of the Creek on the upper terrace within WPCNP (#19047 and #19047-1). However, there would be limited additional pedestrian or bicycle access at the southern side of WPCNP (#19047 and #19047-1). There are no trails or public access outside of WPCNP.

Requester's Preferred Alternative

Implementation of the requester's preferred alternative restoration Project would not result in significant new or cumulative sources of vehicle traffic. The proposed Project does not involve the construction of residential or commercial land uses that would generate additional, permanent vehicle trips in the City of Winters or region, therefore the proposed Project is consistent with these local levels of service regulations.

Implementation of the proposed Project would result in the completion of a pedestrian and bicycle access network to the limits of the WPCNP (#19047 and #19047-1). Construction vehicles would access the site via existing roads. Primary access to the site would be gained via Putah Creek road.

Bicycles and pedestrians would be benefitted by the completion of the Project as described earlier, but there would be a period of approximately 4 weeks, where access through the construction site would be restricted temporarily. Due to the short duration of these temporary impacts and the availability of other routes, temporary impacts related to construction do not qualify as a significant impact.

Construction workers (estimated at 5 to 10) associated with the proposed Project are assumed to come from the existing labor pool of residents in Winters and Solano County (and nearby communities) and

would not generate a large number of vehicle trips (5 to 10) that would degrade peak hour roadway/intersection level of service standards. Additionally, once restoration activities are complete, Project-related vehicle traffic would cease; returning nearby roadway peak hour traffic volumes to pre-Project conditions.

Project-related traffic would include a number of equipment/material deliveries (by heavy trucks) to the Project Area, which may result in minor, temporary roadway access conflicts Putah Creek Road during construction. WPCNP Phase I and II (#19047) had approximately 2,000 cy of spawning gravel imported to the site, but no material exported from the site. WPCNP Phase III (#19047-1) will have approximately 10,000 cy of soil imported from SCWA stockpile at PDD and 200 cy of spawning gravel imported. No material will be exported from WPCNP Phase III (#19047-1). NAWCA 3 (#19027) will have approximately 23,600 cy of clean fill imported to the site from SCWA's stockpile at PDD and 200 cy of spawning gravel imported and will not have material exported. The temporary traffic impacts related to the import of material and construction equipment to the Project Area are anticipated to be minor. Approximately 42 truck trips per day will occur for approximately 6 weeks of the construction period. Implementation of the proposed mitigation will further ensure that any potential roadway/access issues are reduced through adherence to a series of traffic control measures that would be outlined in a traffic control plan. An additional effect of this project on transportation and traffic would be the weed and vegetation maintenance following completion of the project. SCWA will maintain the Project Area following construction by mowing and performing weed control until the 1600 permit success criteria is met. This effort is *de minimis* and a secondary, short-term effect on transportation and traffic as the effort does not exceed baseline levels.

Mitigation Measures

SCWA will ensure that the Project contractor develop and implement a Traffic Control Plan, as needed, which would be reviewed and approved by the City of Winters prior to construction. This plan could include the following additional environmental commitments:

- Do not permit construction vehicles to block any roadways or private driveways.
- Designate specific parking areas for worker's personal vehicles.
- Provide access for emergency vehicles at all times.
- Obey all speed limits, traffic laws, and transportation regulations during construction. If speed limits are not posted, construction vehicles would not exceed 15 miles per hour on unpaved levee roads.
- Use signs and flagmen, as needed, to alert motorists, bicyclists, and pedestrians to avoid conflict with construction vehicles or equipment.
- Construction employee parking would be restricted to the designated staging areas.
- No road closures are anticipated; however, in the event that road closures are necessary, local agencies and affected organizations would be notified prior to construction.
- Closure of park trails, construction sites, and public access areas for construction use would be

clearly fenced and delineated with appropriate closure signage.

VISUAL RESOURCES

Environmental Setting

The proposed Project is located along the boundary of Yolo and Solano County and does not contain an identified scenic vista, and the Project Area is substantially below the line of sight from the surrounding area (City of Winters, 1998). The area surrounding the Project Area has not been designated as a scenic resources corridor or contain eligible state scenic highways (City of Winters 1998).

No Action Alternative

Under the No Action alternative, the restoration would not be constructed and therefore, no potential impacts to visual resources could occur.

Requester's Preferred Alternative

Implementation of the requester's preferred alternative restoration Project would restore the area to a more natural state. The proposed Project will have a more meandering form and will not have the large open graded areas. The large open graded areas will be restored to a natural floodplain. There may be short-term visual impacts with the removal of dense invasive weeds and opening up of the floodplain, but these would be temporary, non-significant impacts consistent with natural stream channels. Additionally, construction equipment and a small amount of materials will be present within the Project Area during construction activities. These are temporary and non-significant impacts to visual resources and will be removed following the completion of construction activities. The proposed Project does not contain any protected visual resources within the Project Area or surrounding area, and therefore there is no potential impact to visual resources.

CUMULATIVE EFFECTS

These projects are intended to improve impacts from the PDD, the former waste water treatment plant, and the overall impacts in invasive plants. This project is designed to reverse the prior historic activity effects. A cumulative impact refers to the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

A review of the Yolo County current projects list (http://www.yolocounty.org/community-services/planning-public-works/planning-division/current-projects (viewed June 11, 2015) indicated no

County projects that may have impacts overlapping or in addition to those of the proposed Project. A review of Solano County active projects indicated no County projects that may have impacts overlapping or in addition to those of the proposed Project.

In March 2015 the Solano County Board of Supervisors approved funding for the following future projects in the Project area, to be conducted in 2015:

- The 2015 paving project, which will provide paved shoulder improvements on Winters Road from Allendale Road to Wolfskill Road, and on Midway Road from Timm Road to the Vacaville city limit. The improvement work to Midway Road is included in the English Hills Transportation Impact Fee. This project could impact the upper terrace on the south side of Putah Creek.
- Supervisors also authorized the director of Resource Management to solicit up to $400,000 in federal funding for the Stevenson Road Bridge design. The Stevenson Road Bridge project is approximately 5 miles downstream of the Project. Significant structural design work is anticipated to rehabilitate the existing deficient structure, according to the staff report and could result in impacts to the bed or banks of Putah Creek.

The University of California, Davis (UC Davis) has a large number of "current projects" listed on its website, however many of these are old and have already been constructed (http://sustainability.ucdavis.edu/progress/commitment/environmental_review/current_projects.html, accessed June 11, 2015). The only relevant past, present, or future UC Davis project near the Project area is:

- The UC Davis Large Solar Power Plant (LSPP) project which is planned for up to 70 acres and would help the campus meet demand for electricity and achieve goals for reducing greenhouse gas (GHG) emissions. The site is along just north of Putah Creek Levee Road, the north levee of Putah Creek, approximately ½-mile east of Old Davis Road on land used for agricultural production. The project was completed in November 2015.

The City of Winters is currently implementing the following projects:

- Railroad Ave over Dry Slough 0.37 miles north of County Road 33, bridge replacement. The work generally consists of, but not limited to, the following: clearing, grubbing, temporary detour, bridge removal, bridge and roadway construction, temporary detour removal, signing and striping. This project is nearly complete and has impacts to the bed and banks of a tributary of Putah Creek.
- The Winters Road Bridge Replacement project, a joint effort between Solano County and the City of Winters, involves the replacement of a 420-foot-long, three-span, earth-filled concrete arch bridge that was constructed in 1907, and is eligible for inclusion in the National Register of Historic Places. The replacement structure consists of a 453-foot-long, three-span cast-in-place reinforced concrete box girder superstructure simulated arched spans. Construction began in 2013 and is nearly complete, and has impacts to the bed and banks of Putah Creek.

In 2011, the City of Winters completed the Winters Putah Creek Park Restoration Project Phase 1. The Phase 1 Project realigned 1,200 feet of stream channel, filled 3 acres of open water (previous gravel extraction site), added 1,200 lineal feet of north bank floodplains, graded 1,000 feet of existing floodplain on the south bank, constructed 2,400 feet of ten foot wide meandering trail for bicyclists and pedestrians (approximately 1,200 feet on both banks, constructed additional footpaths, restored a deep hole below the former percolation dam, reused boulder riprap for rock lined pool for fishing and swimming.

In 2011, the City of Winters completed the Winters Putah Creek Park Restoration Project Phase 2. The Phase 2 Project restored 1,350 linear feet of stream channel to natural channel form, created and revegetated three acres (1,350 linear feet) of new floodplains in what was previously open water, graded three acres of existing floodplains to functional elevations, removed three acres of eucalyptus trees and reused logs on site as revetments, created 2,700 linear feet of meandering longitudinal trails on north and south banks, constructed additional footpaths, and controlled priority invasive weeds: Arundo, Himalayan Blackberry, Tree-of-Heaven and domestic almond.

Both sites received supplemental native plantings in 2012 and 2013 due to the devastating drought experienced state-wide.

The proposed California Department of Fish and Wildlife Restoration Plan Project for the Yolo Basin Wildlife Area, at the terminal end of Putah Creek, would route a new stream channel through irrigated pasture, row crop or fallow ground within the YBWA. This proposed project is located approximately 18 miles downstream of the analyzed project. The new channel would bypass the last 2.3 miles of stream channel (a constructed irrigation canal) through which Putah Creek currently flows. The channel would be designed in a manner that will create a series of shallow, seasonal wetlands that would provide high quality rearing habitat. The Restoration Plan also would include a new water-control structure to divert water into the new channel alignment while also allowing continuation of the existing water supply operation along Lower Putah Creek. The project has impacts to the bed and banks of Putah Creek. This project has a late 2017 schedule date.

In 2011, the Solano County Water Agency completed the NAWCA 2 Floodplain Restoration project in Putah Creek, approximately 1.3 miles upstream of the Project. The NAWCA 2 project is approximately 51 acres, and included 6,500 linear feet of Lower Putah Creek's south bank and 1,500 linear feet of McCune Creek. This project created functional floodplain be sloping the channel banks back 100-150 feet a 2-10 percent grade. Approximately 168 native and non-native trees were removed to facilitate grading, and approximately 175,000 cubic yards (cy) of on-site material was graded. No in-water work occurred during Project activities. After construction, the floodplain was seeded with native grasses. After construction, approximately 1,200 native trees and 300 shrubs will be planted throughout the NAWCA 2 site, approximately 16-18 feet apart and in rows approximately 16-20 feet apart. A low-pressure drip system irrigates the new plantings. Plantings are being maintained for a 5-year period after planting, and need to meet a 75% success criterion.

Each resource topic analyzed in this EA includes an analysis of the cumulative impacts and identifies mitigation measures:

Air Quality – Per the Yolo-Solano Air Quality Management District (YSAQMD) CEQA Handbook for Assessing and Mitigating Air Quality Impacts, any proposed project that would individually have a significant air quality impact (exceed YSAQMD CEQA Significance Thresholds) would also be considered to have a significant cumulative impact (YSAQMD, 2007). All air quality impacts would be less than significant for the proposed Project through the implementation of AQ-1; therefore, the proposed project would have a less-than-significant contribution to cumulative impacts.

Biological Resources – As is described in detail in the proposed restoration Project, after mitigation, significant effects on biological resources within the Project Area or the vicinity are reduced to below significant. Impacts to special-status species, to migratory birds; to riparian, aquatic, and wetland habitat; and to water quality for fish within the Project Area would be either less than significant or mitigated to that level. These potential cumulative impacts would be reduced below significance through the implementation of Mitigation Measures BR-1 through BR-7, and HWQ-1.

Noise and Vibration – Potential project-related noise impacts would not result in any potentially significant cumulative impacts. Construction-related noise impacts are short-term and would cease upon completion of construction. No long-term noise would be generated as a result of the Project, which would result in the restoration of Putah Creek, and no concurrent major construction projects have been identified in the vicinity of Putah Creek of the Project. All noise impacts would be less than significant for the proposed Project through the implementation of NOISE-1, therefore, the Project would not contribute to cumulative noise impacts.

Cultural Resources – Cultural resources in the Project Area and surrounding region generally consist of early Native American habitation and resource processing sites, and buildings and structures associated with late 19th and early 20th century agricultural and transportation activities. Particularly from the latter half of the 20th century to the present, prehistoric sites and historic-era buildings and structures have been destroyed, disturbed, and modified. Research and surveys conducted for the Project indicates that the Project Area contains two potential prehistoric cultural resources, and undiscovered cultural resources might also be present in the Project Area. The cultural resources mitigation measures CR-1, discussed above would reduce impacts on prehistoric and historic-era resources and human interments to less-than-significant levels. Implementing these mitigation measures also would ensure that Project-related activities would not incrementally contribute to any significant cumulative impacts on important cultural resources in the Project area. Consequently, the proposed Project would not incrementally contribute to a significant cumulative effect on cultural resources.

Transportation and Traffic – As described in detail in Transportation/Traffic, the proposed Project would have no significant impact on transportation and traffic, but to ensure effective circulation a Traffic Control Plan would be implemented. In order for the Project to contribute to a significant cumulative

impact on transportation and traffic, it would have to create an impact that would combine with other projects to create that significant effect. Other cumulative projects may overlap Project traffic generation for short periods, but the overlap is very unlikely to significantly affect local or regional traffic conditions. Circulation measures identified in this analysis would further limit the Project's contribution to these temporary traffic effects; therefore, the proposed Project would have a less than cumulatively considerable impact on transportation and traffic.

RELATED LAWS AND POLICIES

a. **Section 7 of Endangered Species Act (ESA):** USACE initiated Section 7 consultation with the US Fish and Wildlife Service for the proposed Project and Biological Opinions (BO) have been secured. (# 19047 and # 19047-1 – BO # 81420-2011-I-0801-1, August 9, 2011), (# 19047-1, BO # 2014-

F-0471-1, August 6, 2014). BO # 81420-2011-I-0801-1, dated August 9, 2011 was originally written for all three (3) phases of WPCNP. Due to scheduling and budget, the WPCNP project was phased and Phase I & II occurred simultaneously as 408 Permit # 19047. Prior to WPCNP Phase III initiation, BO # 2014-F-0471-1, dated August 6, 2014 was prepared specifically for Phase III of WPCNP (# 19047-1). USACE reinitiated consultation under BO # 2014-F-0471-1 in April 2017, for effects to the western yellow-billed cuckoo (cuckoo). USACE received a revised BO # 2014-F-0471-R001 concurring with the determination that the project is not likely to adversely affect the cuckoo. USACE consulted with NMFS in February 2017, that the project is not likely to adversely affect Central Valley steelhead or critical habitat. USACE received a letter of concurrence #WRC-2017-6746 dated April 25, 2017, from NMFS. Work has been completed for Phase I & II of BO # 81420-2011-I-0801-1 (WPCNP Phase I & II, # 19047). Work has begun on WPCNP Phase III (# 19047-1) under BO # 2014-F-0471-1, but is currently inactive and is expected to resume in spring 2018.

The USFWS was acting as the lead federal agency and consulted with NMFS and USFWS on behalf of the USACE for NAWCA 3 (# 19027). The USFWS received a letter from USFWS dated December 15, 2016, concurring with the determination of may affect, not likely to adversely affect. USFWS received a letter from NMFS dated January 13, 2017, concurring with the determination of not likely to adversely affect Central Valley steelhead and there would be no adverse effects to EFH (Appendix 1). No work has begun under BO# 2016-I-1829-1 on NAWCA 3 (# 19027).

b. **Magnuson-Stevens Act - Essential Fish Habitat:** Adverse effects to Essential Fish Habitat (EFH) would not result from the proposed action. For 19047-1 the USACE received a letter #WRC-2017-6746 dated April 25, 2017, from NMFS concurring with the determination of no adverse effects to EFH. The USFWS was acting as the lead federal agency and consulted with NMFS and USFWS on behalf of the USACE for NAWCA 3 (# 19027). The USFWS received a letter from NMFS dated January 13, 2017, concurring with the determination of no adverse effects to EFH (Appendix 1).

c. **Section 401 of the Clean Water Act:** The Project has obtained 401 Certifications from the Regional Water Quality Control Board. (WDID# 5A48CR00105, September 13, 2011), (WDID# 5A48CR00105A1, August 14, 2014), (WDID# 5A48CR00128, July 27, 2015)

d. **Section 404 of the Clean Water Act:** WPCNP Phase I & II (#19047) was issued a Section 404 NWP-27 permit [SPK-2011-00371], September 12, 2011. WPCNP Phase III (# 19047-1) [SPK-2011-00371] was originally issued on September 12, 2011, and re-verified on August 12, 2014), but the work was not completed. The Section 404 permit for WPCNP Phase III (# 19047-1) has expired and will be re-verified under the March 2017, Nationwide permits if the Section 408 permission is approved. The Section 404 permit application for NAWCA 3 (# 19027) [SPK-2015-00307] has been submitted and will be issued if the Section 408 permission is approved.

e. **Fish and Wildlife Coordination Act (FWCA):** The proposed restoration work involves impounding, diverting, deepening, controlling, or modifying a stream or other body of water. USACE requested consultation under the FWCA with the USFWS and CDFW. USACE received letters from USFWS dated April 17, 2018 (Appendix 3). CDFW responded by email stating they have no further comment on the projects.

f. **Section 106 of the National Historic Preservation Act and Tribal Consultation:** For 19047-1 USACE received a letter from the SHPO (COE_2017_1215_002) dated March 30, 2018, concurring with the determination that no historic properties affected for this undertaking. USACE also sent letters to the appropriate Indian tribes and received one response from the Yocha Dehe tribe requesting a site visit in a letter dated January 23, 2018. A site visit was held on January 25, 2018 with the Yocha Dehe tribe and USACE. No other responses were received from other Indian tribes (Appendix 2).

For 19027 the USACE received a letter (COE_2015_1109_002) from the SHPO dated December 14, 2015, concurring with the finding of no adverse effect to historic properties (Appendix 2). USACE also sent letters to the appropriate Indian tribes and received one response from the Yocha Dehe tribe stating they were unaware of any cultural resources near the project site. No other responses were received from other Indian tribes (Appendix 2).

g. **Coastal Zone Management (CZM):** The Project is outside of the CZM area.

h. **Presidential Executive Orders:**

(1) EO 11988, Floodplain Management: Executive Order 11988 requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of flood plains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. The activity does not place buildings, residences or other structures within the floodplain. The Project design also does not significantly raise 100-year flood elevations.

(2) EO 12898, Environmental Justice: In accordance with Title III of the Civil Right Act of 1964 and Executive Order 12898, it has been determined that the Project would not directly or through contractual or other arrangements, use criteria, methods, or practices that discriminate on the basis of race, color, or national origin nor would it have a disproportionate effect on minority or low-income communities.

(3) EO 13112, Invasive Species: According to Executive Order 13112 and other pertinent statutes projects must prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause. The Project specifically removes or otherwise treats invasive species, and replants exclusively with native species.

(4) EO 13212 and 13302, Energy Supply and Availability: The action would not increase the production, transmission, or conservation of energy, or strengthen pipeline safety. The regional power and gas lines bisect the project area; however, the project will not have any effect on these features.

i. Significant Issues of Overriding National Importance: None.

COMPENSATION MITIGATION

The Project is self-mitigating and does not need any additional compensatory mitigation under the USACE 404 permits acquired for the Project. WPCNP Phase I & II, and Phase III (#19047 and 19047-1) were originally combined under 404 Permit SPK-2011-00371. WPCNP Phase I & II (#19047) was completed, but due to scheduling and budget, WPCNP Phase III (# 19047-1) was delayed. Prior to initiation of WPCNP Phase III (#19047-1), the 404 Permit SPK-2011-00371 was extended for WPCNP Phase III (#19047-1). WPCNP Phase III work began, however, due to seasonal restrictions for other permits, WPCNP Phase III (# 19047-1) was closed prior to the winter season in 2014. WPCNP Phase III (#19047-1) is currently not active, but will reinitiate in summer 2018. A 404 Permit for NAWCA 3 (#19027) has been submitted and is currently under review. No additional compensatory mitigation is required for the 408 permission.

CONCLUSIONS

This EA evaluated the environmental effects of the proposed Project on the usefulness of the Federal Project and whether it is injurious to the public. Results of this EA and coordination with the appropriate resource agencies determined that the Project would not have significant affects. Based on this evaluation, the projected Project meets the definition of a FONSI as described in 40 CFR 1508.13. A FONSI may be prepared when an action would not have a significant effect on the human environment and for which an environmental impact statement would not be prepared. Therefore, a draft FONSI has been prepared and accompanies this EA.

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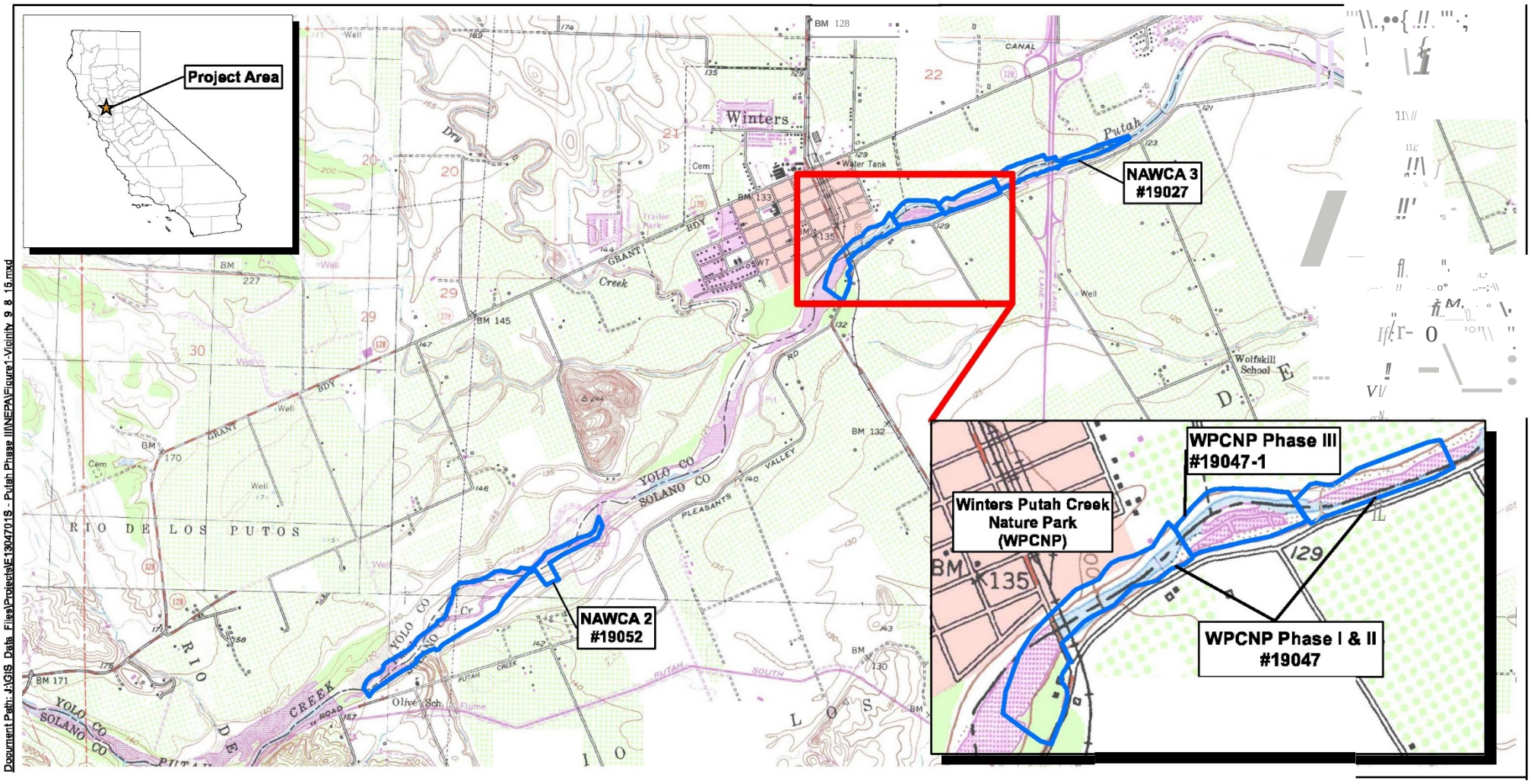

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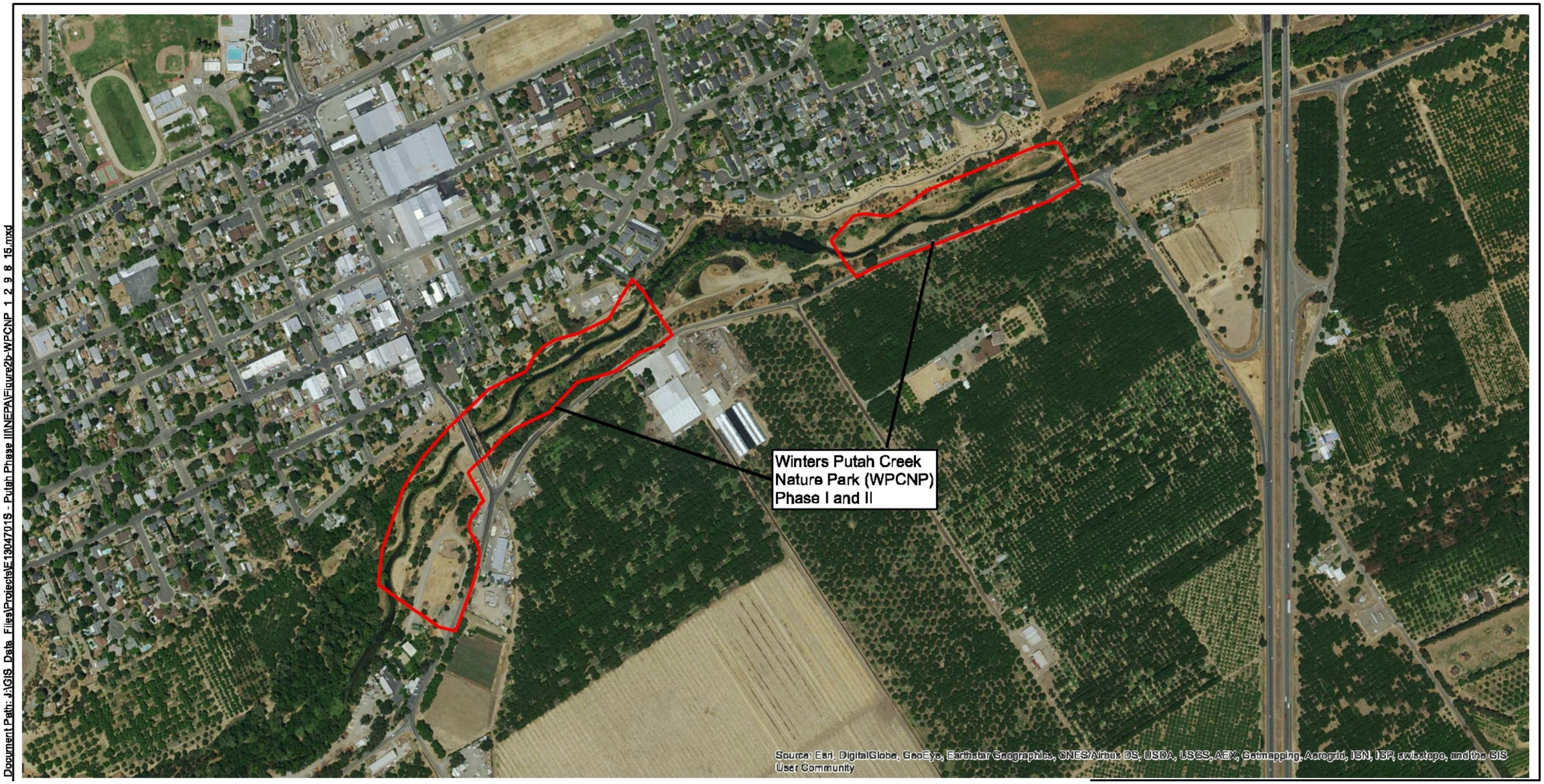

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Putah Creek Channel Restoration
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Putah Creek Channel Restoration
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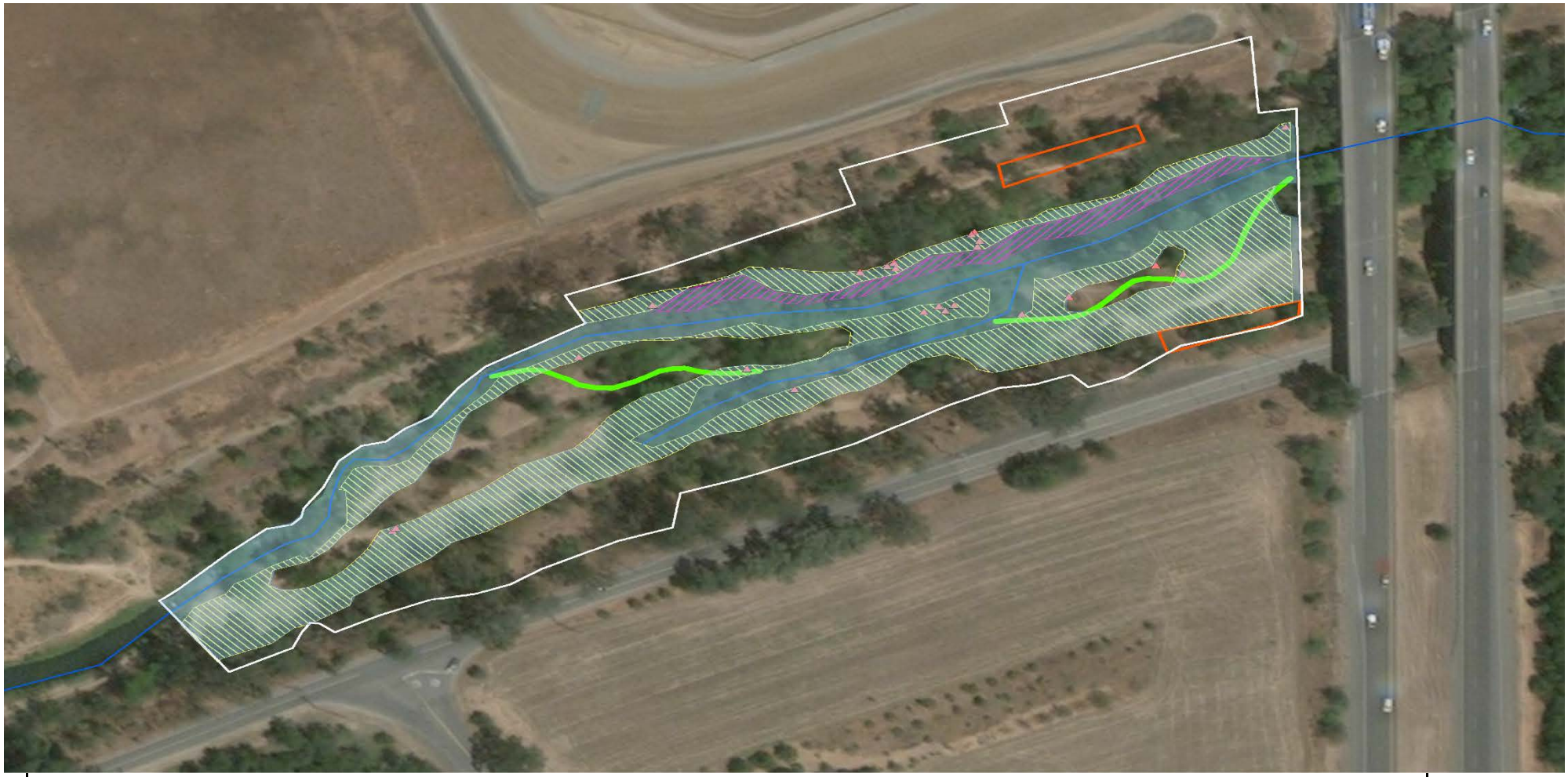

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BSK Associates
Engineers, Laboratories

Putah Creek Channel Restoration
Winters. California

Figure 2d
NAWCA 3
408 Permission 19027

Appendix 1 – Section 7 Consultation

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In reply refer to:
81420-2011-I-0801-1

Dr. Kathleen A. Dadey
Attn: Mark A. Fuglar
Chief, Delta Branch
U.S. Army Corps of Engineers
650 Capitol Mall, Suite 5-200
Sacramento, California 95814

Subject: Informal Endangered Species Consultation on the Proposed Winters Putah Creek Nature Park Channel Realignment Project, Yolo County, California (Corps # SPK-2011-00371)

Dear Dr. Dadey:

This letter is in response to the U.S. Army Corps of Engineers (Corps) August 9, 2011 letter requesting initiation of informal consultation with the U.S. Fish and Wildlife Service (Service) for the proposed Winters Putah Creek Nature Park Channel Realignment Project (proposed project) in Yolo County, California. Your request was received by the Service on August 15, 2011. You requested our concurrence that the proposed project is not likely to adversely affect the federally-listed as threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) (beetle). The applicants for the proposed project are the Solano County Water Agency and the City of Winters (applicants). Critical habitat has been designated for the beetle; however, the proposed project is not located within designated critical habitat for these species; therefore, none will be affected. This response is in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act).

The findings and recommendations in this informal consultation are based on: (1) your August 9, 2011 initiation letter and the enclosed *Biological Assessment for the Proposed Winters Putah Creek Nature Park Channel Realignment Project in Yolo County, California*; and (2) other information available to the Service.

Project Description

The proposed project will take place along a small stretch of Putah Creek, from approximately 500 feet west of the railroad bridge to approximately 500 feet east of the Interstate 505 crossing, within the City of Winters, Yolo County California. The project is located within portions of

Section 21 and 22, Township 8 North, Range 1 West, Mount Diablo Base Meridian; from approximately Latitude 38°31'71.33"N Longitude 121°58'8.52"W to 38°31'30.80"N 121°57'13.05"W on the Winters quadrangle topographic map.

The proposed project will rehabilitate a 2.0 mile stretch of Putah Creek from an incised and over widened channel into a self-maintaining natural channel form. The proposed project will reduce the current channel width from 60-150 feet to its hydrologically appropriate width (approximately 27-30 feet) and restore 9.8 acres of seasonally inundated flood plains. This multiphase project is intended to begin in the fall of 2011, and take an estimated 2 years until completion.

Putah Creek's current condition within the City of Winters Putah Creek Nature Park, of slow moving water and lack of shade, results in warm water temperatures and low dissolved oxygen. The proposed restoration will improve the riparian corridor and stream water quality through rehabilitation of the channel and floodplain, providing a foundation of self-sustaining fish and wildlife habitat. The proposed project will restore form and function in and along Putah Creek restoring floodplains and beaches to a functional elevation on both banks, maintaining low water temperatures and competent form to mobilize gravel substrate, eliminating invasive weeds, and planting native vegetation.

The intent of the proposed project is to systematically improve the quality and extent of the seasonally flooded riparian forest through the reductions of artificially widened channels that lack floodplains. The project is covered under the Corps Nationwide Permit 27 as a habitat restoration project with a net increase of 2.05 acres of seasonally flooded wetlands; therefore, no mitigation is required. Approximately 27.5 acres (waters and bank) will be temporarily disturbed by project activities. The proposed project will convert 7.95 acres of open water to 10 acres of open water and wetlands.

The over widened lower floodplain terrace will be narrowed and the mined channel made more shallow through mass grading of the floodplain in multi-phases. Grading will be accomplished with heavy equipment through a series of balanced cut (104,734 cubic yards) and fill (60,956 cubic yards) operations, using onsite native soils including the surplus overbank material deposited in the Arundo (*Arundo donax*) and Himalayan blackberry (*Rubes discolor*) thickets to provide the local channel fill needs within the ordinary high water mark. Earthmoving equipment will include; bull dozers, excavators, backhoes, and scrapers. Three existing locations, ramps used for the historic gravel mining and the closed rehabilitated waste water treatment ponds, can be used by the contractor to access the channel, and small staging areas are already available at each of those locations.

Avoidance and minimization was used extensively in project design. Excavated materials will be used onsite rather than end-hauling the excavated material from the reach. A culvert and/or lined bypass will be used to divert Putah Creek flows during construction to ensure no sediment enters the watercourse and disturbance is minimized. A Storm Water Pollution Prevention Plan (SWPPP) has been prepared for the project site and will be implemented prior to the commencement of construction. The SWPPP is designed for erosion and sediment control using

Best Management Practices (BMPs) for construction site activities (i.e., installation of silt fences and basins on slopes are used as a means to prevent sediment and pollutants from reaching waters).

The project intentionally avoided upper terrace impacts, where elderberry shrubs (*Sambucus* spp.) naturally predominate. However, some elderberry shrubs have established on the artificial terraces created by the historic mining roads and within the closed historic Winters percolation ponds. There were six elderberry shrubs, the sole host plant for the beetle, identified within 100 feet of construction activities during pre-project surveys in 2010. All of these shrubs occur in riparian systems but did not contain any exit holes. Avoidance fencing will be erected to protect these shrubs during construction, and no project work will occur within 20 feet of the dripline of these six shrubs. The project was designed to avoid elderberry shrubs. The access and equipment haul routes were relocated to avoid elderberry shrubs and grading was eliminated for several areas near shrubs. In an effort to minimize potential impacts, these plants will have the same protective fencing and signage. No direct impacts are anticipated with project activities given that these six shrubs have naturalized along these roads and have survived frequent traffic. Implementation of the following measures would avoid or minimize impacts on the beetle that may occur in elderberry shrubs within 100 feet of the proposed project. The proposed project will maintain a 20 foot buffer around all elderberry shrubs.

Due to the environmentally sensitive nature of stream restoration projects, the project will have both and independent construction manager onsite to ensure environmental compliance, as well as biological monitors to enforce the City of Winters Mitigation and Monitoring Plan and Worker Environmental Awareness Plan. The project was modified to minimize effects by using the minimum number of ingress points and staging areas necessary to complete the project. Vehicle traffic on existing access roads will avoid elderberry shrubs. By promoting fast-growing native species, the riparian restoration work will improve the current visual condition within two to three years. Project sequencing is specifically designed to reduce air impacts from the operation of the heavy equipment. Wait times for dump trucks and idle time shall be minimized to 5 minutes or less. All disturbed areas, which are not being actively utilized for construction will be covered with straw or equivalent to minimize stormwater runoff on any graded areas.

Proposed Conservation Measures

- Before any ground-disturbing activity, the applicants will ensure that a temporary metal chain-link or plastic mesh-type construction fence (Tensor Polygrid or equivalent), a minimum of 1.2 meters (4 feet) tall, is installed at least 6.1 meters (20 feet) from the driplines of all six elderberry shrubs adjacent to the study area. The fencing will be strung tightly on posts set at a maximum interval of 3.0 meters (10 feet). The fencing will be installed in a way that prevents equipment from enlarging the work area beyond the delineated area. The fencing will be checked and maintained weekly until all construction is completed. This buffer zone will be marked by signs stating, "This is habitat of the valley elderberry longhorn beetle, a threatened species, and it must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." Signs will be placed at

intervals of 15.2 meters (50 feet) and must be readable at a distance of 6.1 meters (20 feet). No construction activity, including grading, will be allowed until this condition is satisfied.

- Before any work occurs in the project area, including grading, a Service-approved wildlife biologist will conduct mandatory contractor/worker environmental awareness training for construction personnel. The training will be provided to all construction personnel to brief them on the need to avoid impacts on biological resources and the penalties for not complying with biological mitigation requirements. If new construction personnel are added to the project, the contractor's superintendent will ensure they receive the mandatory training before starting work. An environmental awareness handout that describes and illustrates sensitive resources (i.e., nesting birds, elderberry shrubs) that will be avoided during project construction, and that identifies all relevant permit conditions, will be provided to each person.

- The applicants will ensure that dust control measures are implemented for all ground-disturbing activities in the project area. These measures may include applying water to graded and disturbed areas that are unvegetated. To avoid attracting Argentine ants (*Linepithema humile*), water will not be sprayed within the driplines of elderberry shrubs at any time.

- No insecticides, herbicides, fertilizers, or other chemicals that may affect elderberry shrubs or the beetle will be used within 20 feet of any elderberry shrubs. Herbicides will be used to treat a stand of invasive weeds approximately 100 feet from the elderberry shrubs.

Based on the conservation measures listed above, and applicant's proposal to avoid direct impacts to all six elderberry shrubs, the Service concurs with your determination that the project, as proposed, is not likely to adversely affect the beetle.

No other listed species have been documented in the project area. Unless new information reveals effects of the proposed project that may affect listed species in a manner or to an extent not considered in this consultation, or a new species is listed or critical habitat is designated that may be affected by the proposed project, no further action pursuant to the Act is necessary for this project.

If you have questions regarding our response, please contact Michelle Tovar, Senior Fish and Wildlife Biologist (Michelle_Tovar@fws.gov) or myself, Chief, Sacramento Valley Division (Kellie_Berry@fws.gov), of my office at (916) 414-6645.

Sincerely,

Kellie Berry
Chief, Sacramento Valley Division

cc:
Mr. Richard Marovich, Solano County Water Agency, Vacaville, California
Mr. Erik Ringleberg, BSK Associates, Rancho Cordova, California

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W-2605
Sacramento, California 95825-1846

In Reply Refer to:
08ESMF00-
2014-F-0471-1

AUG 06 2014

Dr. Kathleen A. Dadey
Chief, California South Branch
Regulatory Division
U.S. Army Corps of Engineers
1325 J Street, Room 1350
Sacramento, California 95814-2922

AUG - 8 2014

Subject: Consultation on the Proposed Winters Putah Creek Nature Park Restoration Project, Yolo County, California (Corps File Number SPK-2011-00371)

Dear Dr. Dadey:

This letter is in response to the U.S. Army Corps of Engineers' (Corps), June 25, 2014, request for initiation of consultation with the U.S. Fish and Wildlife Service (Service) on the proposed Winters Putah Creek Nature Park Restoration Project (proposed project), in Yolo County, California. Your request, which included the March 20, 2014, letter from BSK Associates and accompanying June 13, 2011, *Draft Biological Assessment, Winters Putah Creek Nature Park Channel Realignment, Solano County, California* (biological assessment), was received by the Service on June 30, 2014. On July 25, 2014, the Service requested additional information in order for consultation to be initiated. The additional information was received in our office on August 1, 2014. The biological assessment presents an evaluation of the proposed project's effects on species federally-listed under the Endangered Species Act of 1973, as amended (16 U.S.C. §1531 *et seq.*) (Act).

The federal action we are consulting on is the proposed restoration of a 2-mile stretch of Putah Creek from an incised and over-widened channel into a self-maintaining natural channel form. The proposed project will also restore approximately 9.8 acres of seasonally inundated floodplain. This response is provided under the authority of the Act, and in accordance with the implementing regulations pertaining to interagency cooperation (50 CFR 402).

Pursuant to 50 CFR §402.12(j), you submitted the biological assessment for our review and requested our concurrence with the findings presented therein, while also concurrently initiating formal consultation pursuant to 50 CFR §402.14(c). Based on the findings presented in the biological assessment, your consultation letter concludes that the proposed project may affect, and is likely to adversely affect the federally-listed as threatened valley elderberry longhorn beetle

(*Desmocerus californicus dimorphus*) (beetle). You requested that the proposed project be appended to the *Programmatic Formal Consultation Permitting Projects with Relatively Small Effects on the Valley Elderberry Longhorn Beetle within the Jurisdiction of the Sacramento Field Office, California* (beetle programmatic). The proposed project is not within designated or proposed critical habitat for any federally-listed species.

In considering your request, we based our evaluation of your findings on the following: (1) your June 25, 2014, letter requesting consultation; (2) the March 20, 2014, letter from BSK Associates; (3) the July 16, 2014, *Elderberry Planting and Relocation Technical Memorandum, Winters Putah Creek Nature Park Channel Realignment and Restoration Project*, prepared by BSK Associates; (4) the June 13, 2011, *Draft Biological Assessment, Winters Putah Creek Nature Park Channel Realignment, Solano County, California*, prepared by BSK Associates (biological assessment); and (5) other information available to the Service.

We concur with your findings that the proposed project may affect, and is likely to adversely affect the beetle. We also find that your written request and the accompanying biological assessment fulfills the requirements for initiation of formal consultation. We have determined that it is appropriate to append the proposed project to the beetle programmatic for effects to the beetle. Therefore, this document is an agreement by the Service to append the proposed project to the beetle programmatic.

Consultation History

June 30, 2014	The Service received the June 25, 2014, letter from the Corps requesting consultation, which included the March 20, 2014, letter from BSK Associates and the biological assessment.
July 25, 2014	The Service sent a letter to the Corps requesting clarification on whether the Corps was requesting formal or informal consultation with the Service.
August 1, 2014	The Service received the Corps' July 30, 2014, letter with a response to the July 25, 2014, letter and also requested formal consultation.

BIOLOGICAL OPINION

Description of the Proposed Action

This proposed project will convert former gravel extraction pits and a closed wastewater treatment plant into a restored stream channel and floodplain. A 9.8 acre project site will be restored to native riparian habitat as a result of the proposed project. The current channel configuration curves in an arc sharply to the north, creating the opportunity for higher velocity water to undercut the north bank. This is proposed to be filled and planted with native riparian vegetation. This channel alignment will require the relocation of seven elderberry bushes (*Sambucus* sp.), the host plant for the beetle. The elderberry shrubs will be transplanted from the middle of the proposed channel realignment area to the upper terraces of the southern bank of the proposed channel realignment area. Relocation of these seven bushes, the planting of additional elderberry shrubs, removal of invasive species, and the planting of additional native plant species will improve the habitat for riparian and aquatic species in the project area. As a component of reestablishing native riparian

cover, an irrigation system will be installed, operated, and maintained for a minimum of three years. Weed management, irrigation, and other maintenance would continue for a minimum of three years.

Once established, native plants will be expected to eventually out-compete non-native plants, limiting the potential for non-native plants to invade the site and reducing long-term maintenance efforts.

The biological assessment proposes avoidance and minimization measures to avoid effects to elderberry shrubs (pages 9-10 of the biological assessment). These measures include: (1) mandatory environmental awareness training for construction personnel; (2) implementing dust control measures; (3) transplanting the seven elderberry shrubs onsite, which will adhere to the *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (Guidelines) (Service 1999); and, (4) planting elderberry seedlings and associated native plants within the restoration site, as described in the Guidelines. The avoidance and minimization measures proposed by the Solano County Water Agency are considered part of the proposed action evaluated by the Service in this biological opinion.

Action Area

The action area is defined in 50 CFR §402.02 as, "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action." For the proposed project, the Service considers the action area to include the entire 9.8 acre site, including the 7.4-acre restoration site footprint, as well as areas used for access and staging. The action area also includes all areas up to 30 feet from these areas in which dust deposition could exceed existing deposition rates and up to 500 feet from the construction footprint in which noise from construction activities is expected to exceed ambient levels.

Evaluation under the Programmatic Consultation

The Service has determined that it is appropriate to append the proposed Winters Putah Creek Nature Park Restoration Project to the beetle programmatic. This letter is an agreement by the Service to append the proposed project to the beetle programmatic for effects to the beetle and represents the Service's biological opinion on the effects of the proposed project.

Analytical Framework for the Jeopardy Analysis

In accordance with policy and regulation, the jeopardy analysis in the beetle programmatic relied on four components: (1) the *Status of the Species*, which evaluated the beetle's range-wide condition, the factors responsible for that condition, and its survival and recovery needs; (2) the *Environmental Baseline*, which evaluated the condition of the beetle in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the beetle; (3) the *Effects of the Action*, which determined the direct and indirect effects of federal actions and the effects of any interrelated or interdependent activities on the beetle; and (4) the *Cumulative Effects*, which evaluated the effects of future, non-federal activities in the action area on the beetle.

In accordance with policy and regulation, the jeopardy determination in the beetle programmatic was made by evaluating the effects of federal actions in the context of the beetle's current status,

taking into account any cumulative effects, to determine if implementation of the actions is likely to cause an appreciable reduction in the likelihood of recovery of the beetle in the wild.

The jeopardy analysis in the beetle programmatic placed an emphasis on consideration of the range-wide survival and recovery needs of the beetle and the role of the action area in the survival and recovery of the beetle as the context for evaluating the significance of the effects of federal actions, taken together with cumulative effects, for purposes of making the jeopardy determination.

Status of the Species

The status of the beetle is described in the beetle programmatic for the time the document was signed. For the most recent comprehensive assessment of the range-wide status of the beetle, please refer to the *Valley Elderberry Longhorn Beetle (Desmocerus californicus dimorphus) 5-Year Review: Summary and Evaluation* (Service 2006). Since this review was published, the beetle has been proposed for delisting through the publication of the *Removal of the Valley Elderberry Longhorn Beetle From the Federal List of Endangered and Threatened Wildlife; Proposed Rule* (Service 2012).

Environmental Baseline

The majority of lands along Putah Creek are agricultural lands in private ownership. The status of the beetle and its habitat on most of these private lands is unknown (Service 2006). The beetle is now known from at least three locations along Putah Creek (California Natural Diversity Database [CNDDB] occurrences 3, 12, and 131) (CNDDB 2014). Suitable habitat for the beetle (i.e., elderberry shrubs) occurs throughout Putah Creek.

The seven elderberry shrubs in the action area represent an immeasurably small proportion of shrubs throughout the full range of the beetle. No exit holes were observed in the elderberry shrubs within the action area; however, the beetle is difficult to detect, so it is conceivable that beetles may have been present at the time of surveys and not detected. The closest known occurrence of the beetle in the CNDDB is approximately 1.2 aerial miles to the west, along Putah Creek, west of the City of Winters (occurrence number 131) (CNDDB 2014).

Effects of the Proposed Action

The seven elderberry shrubs will be transplanted within the 7.8-acre restoration site. The shrubs will be transplanted as described in the Guidelines, which will maximize their chances for survival. It is possible that some shrubs will not survive the transplanting process. If some of the shrubs do not survive the transplanting process, it is possible that any beetle larvae occupying the shrubs will still be able to exit the shrub as adults and successfully breed with other beetles. The project proponent has proposed to plant additional elderberry shrubs for the beetle that will be protected and managed as native riparian habitat. The Service believes that this will more than adequately compensate for the loss of any elderberry shrubs that do not survive the transplanting process.

The project will aid in the recovery of the beetle by accomplishing the following:

1. Planting elderberry shrubs will provide new habitat for the beetle as well as connect remnant patches of riparian habitat and increase landscape connectivity for valley elderberry longhorn beetles.

2. Allowing for the passive establishment of elderberry shrubs within newly created and remnant riparian corridors.

3. Removing non-native, invasive plant species such as Himalayan blackberry (*Rubus armeniacus*), tree of heaven (*Ailanthus altissima*), and arundo (*Arundo donax*). These plant species may out-compete elderberry shrubs.

Cumulative Effects

Cumulative effects include the effects of future state, tribal, county, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. The Service is not aware of any future actions reasonably certain to occur in the action area that could result in cumulative effects.

Conclusion

After reviewing the current status of the beetle, the environmental baseline in the beetle programmatic, the effects of the proposed project, the cumulative effects, and the proposed avoidance and minimization measures, it is the Service's biological opinion that the Winters Putah Creek Nature Park Restoration Project, as proposed, is not likely to jeopardize the continued existence of the beetle. The Service reached this conclusion because the proposed project fits within the parameters of the level of take anticipated in the beetle programmatic and the project-related effects to the species, when added to the environmental baseline and analyzed in consideration of the lack of cumulative effects, will not rise to the level of precluding recovery of the species or reducing the likelihood of survival of the species. Although there is the possibility that a few individual elderberry shrubs might not survive the transplanting process, the effects to the beetle will be small and discrete, relative to the range of the species. The proposed project will contribute to the long-term preservation and management of beetle habitat along Putah Creek.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service regulations at 50 CFR 17.3 as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the same regulations as an act which actually kills or injures wildlife. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the Corps so that they become binding conditions of any grant or permit issued to contractors, as appropriate, for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to assume and implement the terms and conditions or (2) fails to require contractors to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the grant or permit, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Corps must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement. [50 CFR §402.14(i)(3)]

Amount or Extent of Take

The incidental take of the beetle anticipated for this project will result from the transplanting of the seven elderberry shrubs with 27 stems one inch or greater in diameter at ground level. The life stage affected by this action will be the beetle larvae living within the stems of the elderberry shrubs. The life cycle of the beetle takes one or two years to complete, during which it spends most of its life in the larval stage. Due to the fact that it is not possible to know how many beetle larvae are in the stems of any elderberry shrub, the Service cannot quantify the total number of beetles that we anticipate will be taken as a result of the proposed action. In instances in which the total number of individuals anticipated to be taken cannot be determined, the Service may use the amount of habitat impacted as a surrogate; since the take of individuals anticipated will result from the destruction of the elderberry shrubs, the quantification of suitable habitat serves as a direct surrogate for the beetles that will be lost. Therefore, the Service anticipates take incidental to this project as the seven elderberry shrubs with 27 stems one inch or greater in diameter at ground level that could potentially be destroyed.

Effect of the Take

The Service has determined that this level of anticipated take is not likely to result in jeopardy to the valley elderberry longhorn beetle.

REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the proposed Winters Putah Creek Nature Park Restoration Project, Yolo County, California. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been retained or is authorized by law and: (a) if the amount or extent of taking specified in the incidental take statement is exceeded; (b) if new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (c) if the identified action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in the biological opinion; or (d) if a new species is listed or critical habitat designated that may be affected by the identified action.

If you have questions regarding the proposed Winters Putah Creek Nature Park Restoration Project, Yolo County, California, please contact Rick Kuyper, Senior Fish and Wildlife Biologist, or Kellie Berry, Chief, Sacramento Valley Division at (916) 414-6600.

Sincerely,

Kenneth D. Sanchez
Assistant Field Supervisor

cc:
Mr. Rich Marovich, Solano County Water Agency, Vacaville, California
Mr. Erik Ringleberg, BSK Associates, Rancho Cordova, California

LITERATURE CITED

California Natural Diversity Database (CNDDB). 2014. Biogeographic Data Branch, Department of Fish and Wildlife. Sacramento, California. Accessed 20 June 2014.

U.S. Fish and Wildlife Service (Service). 1999. Conservation Guidelines for the Valley Elderberry Longhorn Beetle. Sacramento Fish and Wildlife Office, Sacramento, California. 15 pp.

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_____. 2012. Removal of the Valley Elderberry Longhorn Beetle From the Federal List of Endangered and Threatened Wildlife; Proposed Rule. Federal Register 77:60238-60276. October 2, 2012.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W-2605
Sacramento, California 95825-1846

In Reply Refer to:
08ESMF00-
2014-F-0471-R001

MAY 23 2017

Mr. Ryan T. Larson
Chief, Flood Protection and Navigation Section
U.S. Army Corps of Engineers, Sacramento District
1325 J Street
Sacramento, California 95814

Subject: Reinitiation of Formal Consultation on the Winters Putah Creek Nature Park Channel Realignment Project, Solano County, California

Dear Mr. Larson:

This is in response to your April 25, 2017, request to reinitiate consultation with the U.S. Fish and Wildlife Service (Service) on the Winters Putah Creek Nature Park Channel Realignment Project (proposed project) in Solano County, California. We received your request in our office on April 27, 2017. The proposed project biological opinion (08ESMF00-2014-F-0471-1) was completed on August 6, 2014. The U.S. Army Corps of Engineers (Corps) has requested to reinitiate consultation in order to analyze effects to the federally listed as threatened western yellow-billed cuckoo (*Coccyzus americanus*). This biological opinion is issued under the authority of section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act).

This biological opinion is based on: (1) your April 25, 2017, biological assessment requesting reinitiation; (2) electronic mail sent from the Corps to the Service; and (3) other information available to the Service.

To provide ease of reading, language changed within a paragraph from the original biological opinion will be underlined. Therefore, the Winters Putah Creek Nature Park Channel Realignment Project biological opinion is now amended as follows:

Page 2: Add the following paragraph just before **Consultation History**:

Western Yellow-Billed Cuckoo

After reviewing all the available information, we concur with your determination that the proposed project is not likely to adversely affect the cuckoo. The proposed project reached the 'may affect' level due to the fact that the proposed project occurs within the known range of the cuckoo and riparian habitat is present in the action area. The cuckoo is currently known to breed along the Sacramento River, roughly between Colusa and Red Bluff (Service 2013), over 45 miles from the proposed project location. Cuckoos require large blocks of cottonwood/willow riparian habitat for breeding, covering 50 acres or more, with a minimum width of 100 meters, which is not represented in the proposed project area. Recent observations of this species in Putah Creek include a call heard in September 2012 (eBird.org, 2017) and a sighting in August 2013 (CNDDB, 2017; eBird 2017).

Both observations were over 8 miles away. The Solano County Water Agency is proposing to do the work in late summer/early fall, a period when cuckoos are beginning to migrate out of California or have migrated out of California. Due to the distance from known breeding localities, the limited acreage of existing riparian habitat within the proposed project area, and the timing of construction, the Service believes that any potential adverse effects to the cuckoo from the proposed project are extremely unlikely to occur, and are therefore discountable for purposes of this consultation. The proposed project, in conjunction with additional restoration along Putah Creek, is expected to benefit the cuckoo, providing cover and forage during migration and perhaps creating enough contiguous habitat to ultimately support breeding.

Page 2: Add the following under **Consultation History:**

April 25, 2017. The Corps reinitiated section 7 consultation to include an analysis for western yellow-billed cuckoo.

Page 48: Add the following to the **LITERATURE CITED**:

eBird. 2017. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available: http://www.ebird.org. (Accessed: August 10, 2016).

U.S. Fish and Wildlife Service (Service). 2013. Proposed Threatened Status for the Western Distinct Population Segment of the Yellow-billed Cuckoo (Coccyzus americanus); Proposed Rule. Federal Register 78: 61622-61666. October 3, 2013.

The remaining portions of the August 6, 2014, biological opinion remain the same. This concludes formal consultation with the Corps on the Winters Putah Creek Nature Park Channel Realignment Project. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the proposed action may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in this opinion; or (4) a new species or critical habitat is designated that may be affected by the proposed action.

If you have any questions regarding this biological opinion on the Winters Putah Creek Nature Park Channel Realignment Project, please contact Jennifer Hobbs (Jennifer_hobbs@fws.gov), Senior Fish and Wildlife Biologist at (916) 414-6541.

Sincerely,

Doug Weinrich

for Jennifer M. Norris
Field Supervisor

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
650 Capitol Mall, Suite 5-100
Sacramento, California 95814-4700

APR 25 2017

Refer to NMFS No: *WCR-2017-6746*

Ryan T. Larson
Chief, Flood Protection and Navigation Section
Department of the Army
United States Army Corps of Engineers
Sacramento District
1325 J Street
Sacramento, California 95814-2922

Re: Endangered Species Act Section 7(a)(2) Concurrence Letter and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response and Fish and Wildlife Coordination Act Recommendations for the Winters Putah Creek Nature Park Channel Realignment (19047-1)

Dear Mr. Larson:

On February 28, 2017, NOAA's National Marine Fisheries Service (NMFS) received your request for a written concurrence that the Winters Putah Creek Nature Park Channel Realignment proposed by the Solano County Water Agency is not likely to adversely affect (NLAA) species listed as threatened or endangered or critical habitats designated under the Endangered Species Act (ESA). This response to your request was prepared by NMFS pursuant to section 7(a)(2) of the ESA, implementing regulations at 50 CFR 402, and agency guidance for preparation of letters of concurrence.

NMFS also reviewed the proposed action for potential effects on Pacific Coast Salmon essential fish habitat (EFH) designated under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including conservation measures and any determination you made regarding the potential effects of the action. This review was conducted pursuant to section 305(b) of the MSA, implementing regulations at 50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultations. Fall-run/Late Fall-run Chinook salmon have the potential to be present in the Action Area and are managed under the Pacific Coast Salmon Fisheries Management Program (FMP). The following habitat areas of particular concern (HAPCs), as designated under this FMP, are present in the Action Area: (1) complex channels and floodplain habitat, (2) spawning habitat, (3) thermal refugia. In this case, NMFS concluded the action would not adversely affect EFH. This is based on the following evaluation of project effects to the ESA-listed species and their habitat. Thus, consultation under the MSA is not required for this action.

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). This concurrence letter will be available through NMFS' Public Consultation Tracking System at https://pcts.nmfs.noaa.gov. A complete record of this consultation is on file at the California Central Valley Office (CCVO) of NMFS.

Proposed Action and Action Area

The Winters Putah Creek Nature Park Channel Realignment (proposed project) is located in Lower Putah Creek, adjacent to the City of Winters, California and just west of Interstate 505. The proposed project will occur in cooperation between the following: Solano County Water Agency (project design, grant recipient and permitting), Lower Putah Creek Coordinating Committee (project planning), and the City of Winters (landowner). The purpose of the proposed project is to improve fish and wildlife habitat within the project area by improving the form and function of the creek's floodplain and low-flow channels. The primary actions of the project include: grading for the purpose of increasing the floodplain area that is suitable for the natural recruitment and growth of high value native plants for the benefit of wildlife, such as migratory birds; narrowing a wide segment of the low-flow channel to reduce water temperatures for the benefit of native aquatic life, such as fall-run Chinook salmon and rainbow trout; installing 200 cubic yards of clean spawning gravel for rainbow trout and fall-run Chinook salmon; and modifying an existing 15 inch culvert that drains runoff from Putah Creek Road and adjacent agricultural fields to decrease erosion of the south side embankment. These activities are described in greater detail below:

Floodplain recontouring (grading) - The floodplain or terraces adjacent to the flowing channel will be graded down to approximately 1.5 feet above the low-flow water surface elevation. This lowered floodplain elevation and gentle slope will maximize the surface area that is ideal for the natural establishment and growth of many different wetland dependent native plant species. The graded floodplain is designed to slope down towards the channel at a 1-2% slope, which will help to direct fish towards the channel as flood waters recede from the floodplain and prevent fish stranding.

Design channel – The existing low-flow channel within the project area will be completely filled and replaced by a design channel that is shallower and narrower than the existing channel. Up to 12,000 cubic yards of suitable fill material will be imported to fill the existing channel. The design channel be excavated from the recontoured floodplain and will be 1,050 feet long and 28 feet wide. Approximately 200 cubic yards of clean gravel suitable for spawning salmonids will be placed within the channel at designated riffle locations.

Vegetation removal and installation - Removal of up to 37 native and nonnative trees with a four inch or greater diameter at-breast-height is required to facilitate grading within the project area. Most of the existing native trees that are growing within one foot of the project's design elevation will not require removal. All invasive vegetation within the graded area will be removed. The recontoured floodplain will be revegetated with native grasses, trees, and shrubs that are endemic to Putah Creek. Native trees greater than four inches diameter at-breast-height that are slated for removal will be replaced at a 4:1 ratio with a combination of native trees

and/or appropriate understory and lower canopy plantings. Non-native trees greater than four inches in diameter will be replaced at a 1:1 ratio. The number of native shrub species to be planted will equal 25% of the number of native trees to be planted (excluding oaks). Oaks trees (trees of the genus *Quercus*) removed will be replaced at 6:1 replacement ratio.

All plants will be monitored and maintained as necessary for five years. Plantings will be monitored to ensure they have a minimum of 70% cover after three years, and 80% survival and 75% cover at the end of 5 years. Remediation will occur if these survival and cover goals are not met.

Culvert Outlet Modification – The outlet of an existing 15 inch culvert that drains runoff from Putah Creek Road and adjacent agricultural fields will be modified to cease erosion of the south side embankment. The current culvert terminates high on the bank with no energy dissipation features, leading to significant bank erosion. The project will trench and extend this culvert down the embankment and run it underneath a haul road that runs along the toe of the embankment. The culvert will daylight into a dissipation pool on the other side of the haul road, and then an exfiltration trench will extend from the pool to the design channel. In order to prevent bank erosion, approximately 300 square feet of rock slope protection (RSP) will be installed in the dissipation pool, 70 square feet of RSP in the exfiltration trench, and 70 square feet of RSP on the side of the bank where the trench terminates into the design channel.

Construction will start in August or September and is expected to be complete within 35 days. Heavy equipment (graders, excavators, water trucks, dump trucks, dozers, and scrapers) will be needed to recontour portions of the existing floodplain, fill or narrow segments of the existing low-flow channels, and excavate the design channel. The site will be accessed from the south side via an existing ramp that connects to Putah Creek Road. A staging area will be located on the south side of the project, adjacent to the base of the access ramp.

The Action Area encompasses all areas that will be directly or indirectly affected by construction. This includes the bed and banks of Putah Creek that will be restored (approximately 1,200 lf) and 500 lf downstream of the project footprint where water quality impacts may occur due to construction activities. There are no interrelated or interdependent activities present that would affect listed fish species.

Action Agency's Effects Determination

The United States Army Corps of Engineers (USACE) has concluded that the action is not likely to adversely affect listed species or critical habitat for the following reasons:

- In-water construction activities will begin during August or September and be completed within 35 days. California Central Valley steelhead are not expected to be present during this time period due to high water temperatures.
- Avoidance and minimization efforts, including the implementation of a Storm Water Pollution Prevention Plan, will protect water quality and avoid indirect impacts such as increased sedimentation or pollution in steelhead habitat. Water quality will be monitored during in-water work, and no equipment will operate within flowing water.

- If dewatering is necessary, all dewatering structures will be removed at the conclusion of the project. Fish and turtles will be removed from the area prior to it being dewatered. Only warm water fish species that are not under NMFS protective jurisdiction are expected to be found at the site during dewatering. If USACE determines listed fish will be present during dewatering, USACE will contact NMFS, as reinitiation may be required. If pumps are necessary for dewatering, they will be screened according to NMFS's fish screen criteria.
- The project will only remove the minimum amount of vegetation needed to complete the project, and removed vegetation will be fully replaced. Areas that are temporarily impacted during construction will be restored to baseline conditions following construction.

Status of the Species and Critical Habitat in the Action Area

The best available information indicates that the following Federally listed species may potentially occur in the proposed Action Area. Designated critical habitat does not occur in the proposed Action Area.

Table 1. ESA listing history

Species	Scientific Name	Original Final Listing Status	Current Final Listing Status	Critical Habitat Present in Proposed Action Area
California Central Valley steelhead DPS	*Oncorhynchus mykiss*	3/19/1988 63 CFR 13347 Threatened	1/5/2006 71 CFR 834 Threatened	Does not occur

There is a potential for Central Valley steelhead to occur within the Action Area during construction of the project, although this is highly unlikely due to elevated water temperatures during the construction period. Historically, steelhead were reportedly found infrequently and in small numbers within the creek. The last 25 years of fish monitoring in Putah Creek, conducted by the University of California, has not confirmed the presence of steelhead. The resident form of *O. mykiss* (rainbow trout) are known to occur in Putah Creek, although they are mostly found outside of the Action Area in the upper reach of the creek just below Putah Diversion Dam and the City of Winters, where water temperatures are lowest.

Consultation History

- On February 28, 2017, NMFS received a Biological Assessment (BA) and informal consultation initiation request letter from USACE.
- On April 14, 2017, NMFS requested additional information from the applicant.
- On April 17, 2017, the applicant submitted the requested additional information to NMFS.
- On April 17, 2017, NMFS initiated informal consultation.

ENDANGERED SPECIES ACT

Effects of the Action

Under the ESA, "effects of the action" means the direct and indirect effects of an action on the listed species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action (50 CFR 402.02). The applicable standard to find that a proposed action is not likely to adversely affect listed species or critical habitat is that all of the effects of the action are expected to be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species or critical habitat. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur.

The effects of the proposed action could include:

Injury or Mortality from Construction-Related Activities

One potential effect to listed fish from construction activities is the possibility of being crushed by construction-related equipment, construction personnel, or otherwise disturbed by the construction. Central Valley steelhead could potentially be present in the project area, although their definitive presence in Putah Creek has not been confirmed for several decades and they are assumed rare or absent from the Action Area. Furthermore, the proposed project takes place in late summer when temperatures in the Action Area exceed those suitable for steelhead, and thus steelhead will likely not be present. Therefore, the potential for adverse effects to Central Valley steelhead due to construction-related activities is discountable because they are highly unlikely to be present.

Only non-listed warm water fish species are expected to be present during dewatering. If dewatering is necessary, these fish will be removed prior to dewatering of the site. If pumps are necessary for dewatering, they will be screened according to NMFS's fish screen criteria. All dewatering structures will be removed at the conclusion of the project.

Impacts to Habitat

The clearing or destruction of riparian habitat for the recontouring of the floodplain and the creation of the design channel can harm listed fish by reducing the quality of their habitat. Vegetation removal may be included as part of the action, as needed, for equipment access. In order to ensure that aquatic habitat will not adversely affect listed fish species, the action agency has employed avoidance and minimization efforts, including revegetating areas impacted by equipment access and staging, clearly delineating project construction limits to prevent disturbance outside of the project area, and utilizing existing ingress and egress routes. Clearing disturbance outside of the project area, and utilizing existing ingress and egress routes. Clearing vegetation to facilitate construction activities will be confined to the minimal area necessary.

Grading and recontouring of the existing floodplain, upland terrace, and high banks is expected to promote natural establishment and growth of native plants species, particularly the non-dominant high value species that are currently challenged by the project area's elevated

floodplain and terraces. Invasive weeds will be removed and native vegetation will be installed throughout the recontoured floodplain. Although the removal of up to 37 native and nonnative trees with a four inch or greater diameter at-breast-height is required to facilitate grading within the project area, the area will be completely revegetated with native trees and scrubs in the ratios described above in the *Project Action and Action Area* section. Plantings will be monitored to ensure they have a minimum of 70% cover after three years, and 80% survival and 75% cover at the end of 5 years. Remediation will occur if these survival and cover goals are not met.

Similarly, the installation of rock slope protection may harm listed fish by decreasing the amount of riparian habitat. However, amount of bank to be covered by RSP is very small compared to the size of the area to be restored by the project and the amount of available habitat in Putah Creek. Only 70 square feet of RSP will be installed on the banks of the design channel.

The potential for adverse effects to Central Valley steelhead due to destruction of aquatic habitat is insignificant, because the action agency is employing avoidance and mitigation measures, which are expected to minimize the amount of riparian habitat that must be removed. The project is expected to result in better quality habitat with fewer nonnative species, a more functional floodplain, and more suitable water temperatures.

Impacts to Water Quality

The proposed project also has the potential to impact water quality in a manner that harms listed fish present in the Action Area through increases in turbidity and sedimentation caused regrading, and the spill of hazardous chemicals or other deleterious materials utilized by construction equipment. Project related chemical spills could potentially affect listed fish species by causing physiological stress, reducing biodiversity, interfering with fish passage, or causing direct mortality. Increased sedimentation and turbidity associated with construction has the potential to negatively impact fishes temporarily through reduced availability of food and reduced feeding efficiency. However, construction activities will follow best management practices (BMPs) for maintaining water quality in the Action Area, including the implementation of a Storm Water Pollution Prevention Plan and the usage of biodegradable hydraulic oil for all equipment used over water. Water quality will be monitored during in-water work, and all work areas will be isolated from flowing water so that no equipment is operated in-water. Upon completion of construction, temporarily disturbed sections will be revegetated with native species and restored to their original condition.

Due to the current presumed absence of steelhead from Putah Creek and the unsuitable habitat conditions present during the construction window (high temperatures), Central Valley steelhead are not expect to be present during the time of construction. Impacts to water quality are expected to be temporary in nature, and the site will quickly return to baseline conditions. Therefore the potential for adverse effects to Central Valley steelhead due to water quality impacts is discountable.

Conclusion

Based on this analysis, NMFS concurs with USACE that the proposed action is not likely to adversely affect the listed species and designated critical habitats.

Reinitiation of Consultation

Reinitiation of consultation is required and shall be requested by USACE or by NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by law and (1) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (2) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this concurrence letter; or if (3) a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR 402.16). This concludes the ESA portion of this consultation.

Conservation Recommendations

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of threatened and endangered species. Conservation recommendations are discretionary agency activities intended to minimize or avoid adverse effects of a proposed project on listed species or critical habitat, to help implement recovery plans, or to develop information. USACE also has the same responsibilities, and informal consultation offers action agencies an opportunity to address their conservation responsibilities under section 7(a)(1). In order to fulfill the requirements of section 7(a)(1), NMFS recommends the following conservation measures:

(1) USACE should recommend that the project applicant install interpretive signs near the restoration site to educate visitors to Putah Creek about salmonids present in the area and provide information on how visitors can avoid disturbing spawning fish.

Please direct questions regarding this letter to Tancy Moore at the WCR CCVO of NMFS at (916)930-3605 or via email at tancy.moore@noaa.gov.

Sincerely,

for Barry A. Thom
Regional Administrator

cc: California Central Valley Office
Division Chron File: 151422-WCR2017-SA00327

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W-2605
Sacramento, California 95825-1846

In Reply Refer to:
08ESMF00-
2016-I-1829-1

DEC 15 2016

Memorandum

To: Michael Dunphy, Coordinator, Central Valley Joint Venture, Pacific Southwest Region, U.S. Fish and Wildlife Service, Sacramento, California

From: Kellie J. Berry, Chief, Sacramento Valley Division, Sacramento Fish and Wildlife Office, U.S. Fish and Wildlife Service, Sacramento, California

Subject: Informal Consultation on the Proposed NAWCA 3 Lower Putah Creek Restoration Project, Solano and Yolo Counties, California

This memorandum is in response to the Central Valley Joint Venture's (CVJV), December 7, 2016, request for initiation of informal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed NAWCA 3 Lower Putah Creek Restoration Project (proposed project), in Solano and Yolo Counties, California. Your request was received by the Service on December 7, 2016. At issue are the proposed project's effects on the federally-listed as threatened western distinct population segment (DPS) of the yellow-billed cuckoo (*Coccyzus americanus*) (cuckoo) and valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) (beetle). This response is provided under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act) and in accordance with the implementing regulations pertaining to interagency cooperation (50 CFR §402).

The federal action we are consulting on is the issuance of a North American Wetlands Conservation Act (NAWCA) grant by the CVJV to the Solano County Water Agency (applicant) for activities associated with improvements to the form and function of Putah Creek in order to improve fish and wildlife habitat. The applicant is also pursuing a Department of the Army permit for the proposed project from the U.S. Army Corps of Engineers (Corps). In a letter dated October 18, 2016, the Corps designated the CVJV as the lead federal agency for purposes of this consultation. Pursuant to 50 CFR §402.12(j), you submitted a biological assessment and requested concurrence with the findings presented therein. These findings conclude that the proposed project may affect, but is not likely to adversely affect the cuckoo or the beetle. The proposed project is not within designated or proposed critical habitat for any federally-listed species.

In considering your request, we based our evaluation of your findings on the following: 1) your December 7, 2016, memorandum requesting initiation of informal consultation and the enclosed October 19, 2016, *North American Wetlands Conservation Act 3 – Lower Putah Creek Floodplain Restoration Project Biological Assessment* (biological assessment), prepared by the applicant; 2) email correspondence and meetings between representatives of the Service, the CVJV, the applicant, and the Corps; and 3) additional information available to the Service.

The proposed project is located on lower Putah Creek, adjacent to Interstate 505 (I-505) and the city of Winters, and spans the boundary of Yolo and Solano Counties. Proposed project activities include:

- Floodplain recontouring: Grading will occur throughout the proposed project area where the existing floodplain is more than 2 feet above the surface of the creek. The floodplain terraces will be graded down to approximately 1.5 feet above the low-flow water surface elevation and graded back from the channel at a 1-2% slope. Approximately 6.64 acres of existing riparian forest will be graded, including 178 trees with a 4-inch or greater diameter at breast height. Ninety-four of the trees to be removed are non-native species. All invasive plant species within the grading area will be removed;

- Channel filling: A segment of the existing creek channel will be narrowed to promote cooler water temperatures, including 0.12 acre of complete fill, 0.21 acre of narrowing, and conversion of 0.18 acre to backwater habitat;

- Design channel: A narrow side channel will be excavated within the recontoured floodplain. The channel will serve as a temporary bypass during work within the low-flow channel of the creek. Approximately 150 cubic yards of clean gravel will be placed in the channel; and

- Vegetation installation: The recontoured floodplain will be revegetated with native grasses, trees, and shrubs endemic to Putah Creek. Approximately 500 native trees and 70 shrubs will be planted and maintained for a minimum of 5 years to achieve a minimum 80% survival and 75% coverage.

Construction will require the use of heavy equipment, including graders, excavators, water trucks, dump trucks, bulldozers, and scrapers. Equipment will be staged along the embankments of the creek, outside of the floodplain. The north side of the creek will be accessed using an existing ramp accessible from an adjacent agricultural parcel. A temporary access ramp will be installed near the west side of the I-505 bridge in order to access the south side of the creek. The ramp will be removed and the embankment will be returned to its original condition after construction is complete. Construction will begin in August or September and is expected to be completed within 45 days.

The applicant has proposed the following conservation measures in order to avoid adverse effects to the cuckoo and the beetle:

- The project will only remove the minimum amount of vegetation needed to complete the project;

- The project construction limits will be clearly marked to prevent disturbance outside of the project area;

- Orange fencing and appropriate signage will be installed 20 feet from the dripline of all elderberry plants located within 100 feet of the project area. No work will occur within the protected 20-foot buffer area;

- The contractor will be required to implement dust abatement measures, including watering of disturbed soil areas and covering inactive storage piles;

- A biological monitor will be onsite daily during construction; and

- All workers will complete a project-specific environmental awareness training before starting work.

Yellow-billed Cuckoo

After reviewing all the available information we concur with your determination that the proposed project is not likely to adversely affect the cuckoo. The proposed project reached the 'may affect' level, and the subsequent requirement for a biological assessment, due to the fact that the proposed project occurs within the known range of the cuckoo and riparian habitat is present in the action area. The cuckoo is currently known to breed along the Sacramento River, roughly between Colusa and Red Bluff (Service 2013), over 45 miles from the proposed project location. Cuckoos require large blocks of riparian habitat for breeding, covering 50 acres or more with a minimum width of 100 meters, which is not represented within the proposed project area. There are two known observations of the cuckoo farther downstream along Putah Creek, in September 2012 and August 2013 (eBird 2016), likely representing individuals only migrating through. Due to the distance from the known breeding range of the cuckoo along the Sacramento River and the limited acreage of existing riparian habitat within the proposed project area, the Service believes that any potential adverse effects to the cuckoo from the proposed project are extremely unlikely to occur, and are therefore discountable for purposes of this consultation. The proposed project, in conjunction with additional restoration along Putah Creek, is expected to benefit the cuckoo, providing cover and forage during migration and perhaps enough contiguous habitat to ultimately support breeding.

Valley Elderberry Longhorn Beetle

We also concur with your determination that the proposed project is not likely to adversely affect the beetle. The proposed project reached the 'may affect' level, and the subsequent requirement for a biological assessment, due to the fact that the proposed project occurs within the known range of the beetle, elderberry plants are present in the action area, and beetles may be present in the action area. Due to the conservation measures proposed by the applicant, which involve avoidance of any elderberry plants by a minimum of 20 feet, the Service believes that any potential adverse effects to the beetle from the proposed project are unlikely to occur, and are therefore discountable for purposes of this consultation. In addition, due to the proposed conservation measures, particularly in regards to dust control, the Service believes that any potential indirect adverse effects to the elderberry host plants of the beetle are unlikely to result in take of the beetle itself, and are therefore insignificant for purposes of this consultation.

This concludes the Service's review of the proposed NAWCA 3 Lower Putah Creek Restoration Project. No further action pursuant to the Act is necessary unless new information reveals effects of the proposed action that may affect listed species in a manner or to an extent not considered; the action is subsequently modified in a manner that causes an effect to federally-listed species or critical habitat that was not considered in this determination; or a new species or critical habitat is designated that may be affected by the proposed action.

If you have any questions regarding the proposed NAWCA 3 Lower Putah Creek Restoration Project, please contact Lily Douglas, Fish and Wildlife Biologist (lily_douglas@fws.gov), or myself (kellie_berry@fws.gov) at the letterhead address, (916) 414-6631, or by e-mail.

cc:
William Guthrie, U.S. Army Corps of Engineers, Sacramento, CA

LITERATURE CITED

eBird. 2016. eBird: An online database of bird distribution and abundance. eBird, Ithaca, New York. Available: http://www.ebird.org. Accessed 13 December 2016.

U.S. Fish and Wildlife Service (Service). 2013. Proposed Threatened Status for the Western Distinct Population Segment of the Yellow-billed Cuckoo (*Coccyzus americanus*); Proposed Rule. Federal Register 78: 61622-61666. October 3, 2013.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
650 Capitol Mall, Suite 5-100
Sacramento, California 95814-4700

JAN 13 2017

Refer to NMFS No: WCR-2017-6220

Michael Dunphy
Coordinator, Central Valley Joint Venture
United States Fish and Wildlife Service
Pacific Southwest Region
2800 Cottage Way, Suite W-1916
Sacramento, CA 98825

Re: Endangered Species Act Section 7(a)(2) Concurrence Letter and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response and Fish and Wildlife Coordination Act Recommendations for the Lower Putah Creek Floodplain Restoration Project

Dear Mr. Dunphy:

On December 14, 2016 NOAA's National Marine Fisheries Service (NMFS) received your request for a written concurrence that the Lower Putah Creek Floodplain Restoration Project proposed by the Solano County Water Agency is not likely to adversely affect (NLAA) species listed as threatened or endangered or critical habitats designated under the Endangered Species Act (ESA). This response to your request was prepared by NMFS pursuant to section 7(a)(2) of the ESA, implementing regulations at 50 CFR 402, and agency guidance for preparation of letters of concurrence.

NMFS also reviewed the proposed action for potential effects on Pacific Coast Salmon essential fish habitat (EFH) designated under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including conservation measures and any determination you made regarding the potential effects of the action. This review was conducted pursuant to section 305(b) of the MSA, implementing regulations at 50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultations. Fall-run/Late Fall-run Chinook salmon have the potential to be present in the Action Area and are managed under the Pacific Coast Salmon Fisheries Management Program (FMP). The following habitat areas of particular concern (HAPCs), as designated under this FMP, are present in the Action Area: (1) complex channels and floodplain habitat, (2) spawning habitat, (3) thermal refugia. In this case, NMFS concluded the action would not adversely affect EFH. This is based on the following evaluation of project effects to the ESA-listed species and their habitat. Thus, consultation under the MSA is not required for this action.

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). This concurrence letter will be available through NMFS' Public Consultation Tracking System at https://pcts.nmfs.noaa.gov. A complete record of this consultation is on file at the California Central Valley Office (CCVO) of NMFS.

Proposed Action and Action Area

The Lower Putah Creek Floodplain Restoration Project (proposed project) is located in Lower Putah Creek, adjacent to Interstate 505 and the City of Winters, California. The proposed project will occur in cooperation between the following: Solano County Water Agency (project design and permitting), Solano County (landowner), City of Winters (landowner), and California Waterfowl (awarded grant funding). The purpose of the proposed project is to improve fish and wildlife habitat within the project area by improving the form and function of the creek's floodplain and low-flow channels. The primary action of the project is grading for the purpose increasing the floodplain area that is suitable for the natural recruitment and growth of high value native plants for the benefit of wildlife, such as migratory birds; and narrowing a wide segment of the low-flow channel to reduce water temperatures for the benefit native aquatic life, such as chinook salmon and rainbow trout. These activities are described in greater detail below:

Floodplain recontouring (grading) - Grading will occur throughout the project area where the existing floodplain adjacent to the flowing channel is more than two feet above water surface elevation, and where the upland terrace is located between the flowing channel and active floodplain. The floodplain or terraces adjacent to the flowing channel will be graded down to approximately 1.5 feet above the low-flow water surface elevation, and graded back (perpendicular) from the channel at a positive 1-2 percent slope. This lowered floodplain elevation and gentle slope will maximize the surface area that is ideal for the natural establishment and growth of many different wetland dependent native plant species. A total of 1.92 acres of upland riparian forest will be converted to seasonally flooded riparian forest. The graded floodplain is designed to slope down towards the channel at a 1-2% slope, which should help to direct fish towards the channel as flood waters recede from the floodplain and prevent fish stranding. No depressions (i.e., wetlands) will be created on the floodplain that could strand fish.

Channel filling - A segment of low-channel will be narrowed to promote cooler water temperatures by increasing water velocity and reducing the surface area of water that is exposed to solar radiation. The portion of channel that is filled will be converted to floodplain that will promote the natural establishment and growth of native plants. This activity will narrow an over-widened 0.21 acre, 580 linear foot (lf) section of the low-flow channel, and completely fill a 0.12 acre (165 lf) segment of low-flow channel. This activity will convert 0.18 acre (263 lf) of the southern fork of the low-flow channel to backwater habitat. Work areas within the active channel will be isolated from flowing water and dewatered if necessary.

Design channel - A narrow side channel with a maximum width of 14 feet will be excavated within the recontoured floodplain. The side channel will have two segments, 0.08 acre (240 lf) and 0.11 acre (310 lf), that will connect to a portion of existing channel that is currently functioning as a backwater. This activity will convert 0.17 acre (260 lf) of the backwater to flowing channel. Approximately 150 cubic of clean gravel will be placed within the channel. The gravel size and composition will be suitable for spawning salmon. The design channel will also serve as temporary bypass channel during construction to facilitate narrowing of the existing low-flow channel.

Vegetation removal and installation - Removal of up to 178 trees with a four inch or greater diameter at-breast-height is required to facilitate grading within the project area. Ninety-four (94) of the trees that are scheduled for removal are non-native species, such as eucalyptus and black walnut. Most of the existing native trees that are growing within one foot of the project's design elevation will not require removal. All invasive vegetation within the grading area will be removed. The recontoured floodplain will be revegetated with native grasses, trees, and shrubs that are endemic to Putah Creek. Approximately 500 native trees and 70 shrubs be installed and maintained within the recontoured floodplain.

Construction will start in August or September and is expected to be complete within 45 days. Heavy equipment (graders, excavators, water trucks, dump trucks, dozers, and scrapers) will be needed to recontour portions of the existing floodplain, fill or narrow segments of the existing low-flow channels, and excavate the design channel. The north side of the creek will be accessed through a privately owned agricultural parcel that is adjacent to the creek and is accessible from Highway 128/E. Grant Avenue in Winters, CA. Equipment will use a pre-existing ramp that leads from the top of the creeks embankment to the creeks terrace. The south side of the creek may be accessed from the following two locations off of Putah Creek Road: (1) a preexisting maintenance trail runs through the Winters Putah Creek Nature Park and connects the west end of the proposed project area; (2) a temporary equipment access ramp consisting of suitable native fill material may be installed near the west side of the I-505 bridge. The ramp will be removed and the embankment returned to its original condition after construction is complete. The construction site will have one staging area on both the north and south sides of the creek, both of which will be located on the banks well outside of flowing water.

The Action Area encompasses all areas that will be directly or indirectly affected by construction. This includes the bed and banks of Putah Creek that will be restored (approximately 2,500 lf) and 500 lf downstream of the project footprint where water quality impacts may occur due to construction activities. There are no interrelated or interdependent activities present that would affect listed fish species.

Action Agency's Effects Determination

The United States Fish and Wildlife Service has concluded that the action is not likely to adversely affect listed species or critical habitat for the following reasons:

- In-water construction activities are anticipated to take place during August or September when California Central Valley steelhead are not expected to be present due to high summer water temperatures.
- Avoidance and minimization efforts to protect water quality would be implemented and would avoid indirect impacts such as increased sedimentation or pollution in steelhead habitat, including the implementation of a Storm Water Pollution Prevention Plan. Water quality will be monitored during in-water work, and no equipment will operate within flowing water.
- If dewatering is necessary, all dewatering structures would be removed at the conclusion of the project. Fish and turtles will be removed from the area prior to it being dewatered. If USFWS determines listed fish will be present during dewatering, USFWS will contact NMFS, as reinitiation may be required. If pumps are necessary for dewatering, they will be screened according to NMFS's fish screen criteria.
- The project will only remove the minimum amount of vegetation needed to complete the project, and removed vegetation will be fully replaced. Areas that are temporarily impacted during construction would be restored to baseline conditions following construction.

Status of the Species and Critical Habitat in the Action Area

The best available information indicates that the following Federally listed species may potentially occur in the proposed Action Area. Designated critical habitat does not occur in the proposed Action Area.

Table 1. ESA listing history

Species	Scientific Name	Original Final Listing Status	Current Final Listing Status	Critical Habitat Present in Proposed Action Area
California Central Valley steelhead DPS	*Oncorhynchus mykiss*	3/19/1988 63 CFR 13347 Threatened	1/5/2006 71 CFR 834 Threatened	Does not occur

There is a potential for Central Valley steelhead to occur within the Action Area during construction of the project, although this is highly unlikely. Historically, steelhead were reportedly found infrequently and in small numbers within the creek. The last 25 years of fish monitoring in Putah Creek, conducted by the University of California, has not confirmed the presence of steelhead. The resident form of *O. mykiss* (rainbow trout) are known to occur in Putah Creek, although they are mostly found outside of the action area in the upper reach of the creek between the Putah Diversion Dam and the City of Winters, where water temperatures are lowest.

Consultation History

- On September 12, 2016, the Army Corps of Engineers, the Federal action agency, contacted NMFS to discuss the proposed project.

- On October 11, 2016, the Army Corps of Engineers designated USFWS as the Federal action agency.
- On December 14, 2016, NMFS received a Biological Assessment (BA) and informal consultation initiation request letter from USFWS
- On December 30, 2016, NMFS requested additional information from the applicant.
- On January 3, 2017, USFWS submitted the requested additional information to NMFS.
- On January 3, 2017, NMFS initiated informal consultation.

ENDANGERED SPECIES ACT

Effects of the Action

Under the ESA, "effects of the action" means the direct and indirect effects of an action on the listed species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action (50 CFR 402.02). The applicable standard to find that a proposed action is not likely to adversely affect listed species or critical habitat is that all of the effects of the action are expected to be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species or critical habitat. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur.

The effects of the proposed action are reasonably likely to include:

Injury or Mortality from Construction-Related Activities

One potential effect to listed fish from construction activities is the possibility of being crushed by construction-related equipment, construction personnel, or otherwise disturbed by the construction. Central Valley steelhead could potentially be present in the project area, although their definitive presence in Putah Creek has not been confirmed for several decades and are assumed rare or absent from the action area. Furthermore, the work window of the proposed action (August 1 through September 30) takes place when temperatures in the action area exceed those suitable for steelhead, and thus steelhead will likely not be present. Therefore, the potential for adverse effects to Central Valley steelhead due to construction-related activities between August 1 and September 30 is discountable because they are highly unlikely to be present.

Only non-listed warm water fish species are expected to be present during dewatering. If dewatering is necessary, these fish will be removed prior to dewatering of the site. If pumps are necessary for dewatering, they will be screened according to NMFS's fish screen criteria. All dewatering structures will be removed at the conclusion of the project.

Impacts to Habitat

The clearing or destruction of riparian habitat for the recontouring of the floodplain and creation of the design channel can also harm listed fish. Vegetation removal may be included as part of the action, as needed, for equipment access. In order to ensure that aquatic habitat will not

adversely affect listed fish species, the action agency has employed avoidance and minimization efforts, including revegetating areas impacted by equipment access and staging, and using existing ingress and egress routes when possible. Clearing vegetation to facilitate construction activities will be confined to the minimal area necessary.

Grading and recontouring of the existing floodplain and upland terrace is expected to promote natural establishment and growth of all native plants species, particularly the non-dominant high value species that are currently challenged by the project area's elevated floodplain and terraces. Invasive weeds will be removed and native vegetation will be installed throughout the recontoured floodplain. Although the removal of 178 trees (four inch or greater diameter-at-breast height) is required to facilitate grading, more than half of these trees are non-native species, and the project will plant 500 native trees and 70 shrubs within the recontoured floodplain. These plantings will be maintained for a minimum of five years, at which point they should achieve a minimum of 80% survivability and 75% coverage. Remediation will occur if the plantings do not meet the survivability and coverage requirements at the end of the five year period.

The potential for adverse effects to Central Valley steelhead due to destruction of aquatic habitat is insignificant, because action agency is employing avoidance and mitigation measures, which are expected to minimize the amount of riparian habitat that must be removed and result in an increase in native trees, shrubs, and grasses.

Impacts to Water Quality

The proposed project also has the potential impact water quality in a manner that harms listed fish present in the Action Area through increases in turbidity and sedimentation caused regrading, and the spill of hazardous chemicals or other deleterious materials utilized by construction equipment. Project related chemical spills could potentially affect listed fish species by causing physiological stress, reducing biodiversity, interfering with fish passage, or causing direct mortality. Increased sedimentation and turbidity associated with construction has the potential to negatively impact fishes temporarily through reduced availability of food and reduced feeding efficiency. However, construction activities will follow best management practices (BMPs) for maintaining water quality in the Action Area, including the implementation of a Storm Water Pollution Prevention Plan. Water quality will be monitored during in-water work, and all work areas will be isolated from flowing water so that no equipment is operated in-water. Upon completion of construction, temporarily disturbed sections will be revegetated with native species and restored to their original condition.

Due to the current presumed absence of steelhead from Putah Creek and the unsuitable habitat conditions present during the construction window (high temperatures), Central Valley steelhead are not expect to be present during the time of construction. Impacts to water quality are expected to be temporary in nature, and the site will quickly return to baseline conditions. Therefore the potential for adverse effects to Central Valley steelhead due to water quality impacts is discountable.

Conclusion

Based on this analysis, NMFS concurs with USFWS that the proposed action is not likely to adversely affect the listed species and designated critical habitats.

Reinitiation of Consultation

Reinitiation of consultation is required and shall be requested by USFWS or by NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by law and (1) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (2) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this concurrence letter; or if (3) a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR 402.16). This concludes the ESA portion of this consultation.

Conservation Recommendations

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of threatened and endangered species. Conservation recommendations are discretionary agency activities intended to minimize or avoid adverse effects of a proposed project on listed species or critical habitat, to help implement recovery plans, or to develop information. USFWS also has the same responsibilities, and informal consultation offers action agencies an opportunity to address their conservation responsibilities under section 7(a)(1). In order to fulfill the requirements of section 7(a)(1), NMFS recommends the following conservation measures:

(1) USFWS should recommend that the project applicant install interpretive signs near the restoration site to educate visitors to Putah Creek about salmonids present in the area and provide information on how visitors can avoid disturbing spawning fish.

Please direct questions regarding this letter to Tancy Moore at the WCR CCVO of NMFS at (916)930-3605 or via email at tancy.moore@noaa.gov.

Sincerely,

Barry A. Thom
Regional Administrator

cc: California Central Valley Office
Division Chron File: 151422-WCR2017-SA00302

Appendix 2 – Section 106 and Tribal Consultation

State of California • Natural Resources Agency Edmund G. Brown Jr., *Governor*

DEPARTMENT OF PARKS AND RECREATION Lisa Ann L. Mangat, *Director*
OFFICE OF HISTORIC PRESERVATION

Julianne Polanco, State Historic Preservation Officer
1725 23rd Street, Suite 100, Sacramento, CA 95816-7100
Telephone: (916) 445-7000 FAX: (916) 445-7053
calshpo.ohp@parks.ca.gov www.ohp.parks.ca.gov

March 30, 2018 In reply refer to: COE_2017_1215_002

Mark T Ziminske
Chief, Environmental Resources Branch
U.S. Army Corps of Engineers
Sacramento District
1325 J Street
Sacramento, CA 95814-2922

Re: Section 106 Consultation for the Central Valley Flood Protection Board Permit No. 19047-1 for the Phase 3 Floodplain Restoration Project along Lower Putah Creek in Solano County, California.

Dear Mr. Ziminske:

The California State Historic Preservation Officer (SHPO) received your letter on March 2, 2017 continuing consultation for the proposed Phase 3 floodplain restoration project along lower Putah Creek in Solano County, California. The Army Corps of Engineers (COE) is consulting with me pursuant to the 36 CFR Part 800 (as amended 8-05-04), the regulations implementing Section 106 of the National Historic Preservation Act. Along with your consultation letter, you provided the following documents:

- Letter Report titled *Re: Winters Putah Creek Nature Park Channel Realignment Phase 3 Archaeological Survey* (Tremaine & Associates June 23, 2017)

The COE is proposing to issue a permit for the proposed undertaking's activities that fall under Section 404 of the Clean Water Act to the Central Valley Flood Protection Board (CVFPB) (Applicant). The CVFPB is proposing to issue a permit to allow the Solano County Water Agency to carry out Phase 3 of a floodplain restoration project along Lower Putah Creek. The proposed project is located approximately 1,040 feet east of the Winters Railroad Bridge in Solano County. The COE has previously consulted with SHPO regarding the Area of Potential Effects (APE) for this undertaking, which includes the entire 7-acre project site.

Historic property identification efforts for the undertaking included a records search and pedestrian survey of the APE in June 2017. The records search did not identify any cultural resources within the APE or a 1/4-mile radius and the survey identified two prehistoric isolates within the APE. The isolates include a single boulder with a shallow mortar cup and a stone anvil with percussion scars. The anvil appears to have washed down to this location from further up the creek. The boulder was placed in the APE recently during an adjacent weir construction project. Neither isolate is eligible for listing on the National Register of Historic Places (NRHP). The Applicant's consultant evaluated the likelihood of encountering cultural resources during

construction as low due to the large amount of previous ground disturbance that has occurred within the APE.

The Applicant's consultant contacted the Native American Heritage Commission (NAHC) requesting a Sacred Lands File Search (SLF) and a Native American contacts list for the project locating in June 2017. The SLF Search was negative and a contacts list was provided. The COE sent consultation packages to the Native American contacts listed in December 2017 and received one response from the Yoche Dehe. The Yoche Dehe requested to conduct cultural sensitivity training, have tribal monitors present during ground disturbance, and for the boulder isolate to be moved out of the way of construction. The COE forwarded these comments to the Applicant, and no further comments have been received.

The COE has requested concurrence with their finding of *no historic properties affected* for this undertaking. After reviewing the submitted documentation, SHPO has the following comments:

- Pursuant to 36 CFR 800.4(d)(1), I do not object to the COE's finding of *no historic properties affected.* It is recommended that the COE and the Applicant work closely with the Yoche Dehe to address their concerns about this undertaking.
- Please be advised that under certain circumstances, such as unanticipated discovery or a change in project description, the COE may have additional future responsibilities for this undertaking under 36 CFR Part 800.

If you have any questions, please contact Archaeologist Jessica Tudor of my staff at (916) 445-7016 or jessica.tudor@parks.ca.gov.

Sincerely,

Julianne Polanco
State Historic Preservation Officer

State of California • Natural Resources Agency
Edmund G. Brown Jr., *Governor*

DEPARTMENT OF PARKS AND RECREATION
OFFICE OF HISTORIC PRESERVATION
Lisa Ann L. Mangat, *Director*

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calshpo.ohp@parks.ca.gov www.ohp.parks.ca.gov

January 9, 2018

In reply refer to: COE_2017_1215_002

Mark T Ziminske
Chief, Environmental Resources Branch
U.S. Army Corps of Engineers
Sacramento District
1325 J Street
Sacramento, CA 95814-2922

Re: Section 106 Consultation for the Central Valley Flood Protection Board Permit No. 19047-1 for the Phase 3 Floodplain Restoration Project along Lower Putah Creek in Solano County, California.

Dear Mr. Ziminske:

The California State Historic Preservation Officer (SHPO) received your letter on December 15, 2017 initiating consultation for the proposed Phase 3 floodplain restoration project along lower Putah Creek in Solano County, California. The Army Corps of Engineers (COE) is consulting with me pursuant to the 36 CFR Part 800 (as amended 8-05-04), the regulations implementing Section 106 of the National Historic Preservation Act. Along with your consultation letter, you provided the following documents:

- Letter Report titled *Re: Winters Putah Creek Nature Park Channel Realignment Phase 3 Archaeological Survey* (Tremaine & Associates June 23, 2017)

The COE is proposing to issue a permit for the proposed undertaking's activities that fall under Section 404 of the Clean Water Act to the Central Valley Flood Protection Board (CVFPB) (Applicant). The CVFPB is proposing to issue a permit to allow the Solano County Water Agency to carry out Phase 3 of a floodplain restoration project along Lower Putah Creek. The proposed project is located approximately 1,040 feet east of the Winters Railroad Bridge in Solano County. The COE has defined the Area of Potential Effects (APE) as the 7-acre project site. The maximum depth of ground disturbance for the undertaking is 11 feet below the ground surface.

Historic property identification efforts for the undertaking included a records search and pedestrian survey of the APE in June 2017. The records search did not identify any cultural resources within the APE or a 1/4-mile radius and the survey identified two prehistoric isolates within the APE. The isolates include a single boulder with a shallow mortar cup and a stone anvil with percussion scars. The boulder was placed in the APE recently during an adjacent weir construction project. Neither isolate is eligible for listing on the National Register of Historic Places (NRHP). The Applicant's consultant evaluated the likelihood of encountering cultural resources during construction as low due to the previous ground disturbance that has occurred within the APE.

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JAN 2 3 2018

The Applicant's consultant contacted the Native American Heritage Commission (NAHC) requesting a Sacred Lands File Search (SLF) and a Native American contacts list for the project locating in June 2017. The SLF Search was negative and a contacts list was provided. The COE sent consultation packages to the Native American contacts listed in December 2017 and plans to seek SHPO comments on their finding of effect for the undertaking once they have concluded Native American consultation efforts.

The COE has requested comments on their APE delineation and historic property inventory results. After reviewing the submitted documentation, SHPO has the following comments:

- Pursuant to 36 CFR 800.4(a)(1) the COE appears to have appropriately determined the scope of identification efforts for the proposed project and has documented the APE as defined in 36 CFR 800.16(d).
- Pursuant to 36 CFR 800.4(b), the COE appears to have appropriately identified historic properties within the APE for this undertaking.

If you have any questions, please contact Archaeologist Jessica Tudor of my staff at (916) 445-7016 or jessica.tudor@parks.ca.gov.

Sincerely,

Julianne Polanco
State Historic Preservation Officer

JAN 2 3 2018

YOCHA DEHE
CULTURAL RESOURCES

January 10, 2018

U.S. Army Corps of Engineers
Attn: Hope Schear, Env'tl. Resources
1325 J Street
Sacramento, CA 95814-2922

RE: Winters Putah Creek Nature Park Channel Realignment Project

Dear Mrs. Schear:

Thank you for your project notification letter dated, December 12, 2017, regarding cultural information on or near the proposed Winters Putah Creek Nature Park Channel Realignment Project, Winters, Yolo County. We appreciate your effort to contact us and wish to respond.

The Cultural Resources Department has reviewed the project and concluded that it is within the aboriginal territories of the Yocha Dehe Wintun Nation. Therefore, we have a cultural interest and authority in the proposed project area.

Based on the information provided, the Tribe has concerns that the project could impact undiscovered archaeological deposits. Please send us the cultural resource study for this project. Additionally, Yocha Dehe Wintun Nation requests a site visit to the project area to evaluate our cultural concerns.

Please contact the following individual to coordinate a date and time for the site visit.

Laverne Bill, Cultural Resources Department Manager
Yocha Dehe Wintun Nation
Office: (530) 723-3891
Email: lbill@yochadehe-nsn.gov

Please refer to identification number YD – 12192017-01 in any correspondence concerning this project.

Thank you for providing us with this notice and the opportunity to comment.

Sincerely,

James Kinter
Tribal Secretary
Tribal Historic Preservation Officer

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

Environmental Resources Branch

MAR 0 2 2018

Charlie Wright
Chairperson
Cortina Indian Rancheria of Wintun Indians
P.O. Box 1630
Williams, CA 95987

Dear: Mr. Wright

The U.S. Army Corps of Engineers, Sacramento District (Corps) is writing you to continue consultation on the inventory and determination of effect for the issuance of Central Valley Flood Protection Board (CVFPB) Permit No. 19047-1. The applicant has requested permission from the Corps under Section 14 of the Rivers and Harbors Act of 1899 (33 U.S.C. § 408) to alter a Federally-authorized flood control project (Project). The project also requires issuance of a 404 permit under the Clean Water Act of 1977 (33 U.S.C. § 1344). Both permissions are Federal undertakings, which requires compliance with Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108).

The applicant is proposing to begin Phase 3 of a floodplain restoration project along Lower Putah Creek. The project would realign eleven hundred feet of channel, grade four acres of high terrace to functional floodplains, reconcile channel dimensions to current flows, eliminate invasive weeds, and plant native vegetation. Previously, the Corps consulted on the Area of Potential Effects (APE) and the results of a cultural resources inventory in a letter dated December 12, 2017.

The applicant enlisted the services of Tremaine and Associates (Tremaine) to conduct a cultural resources identification study. A records search was conducted on June 06, 2017, at the Northwest Information Center, with a quarter-mile search radius around the APE. No cultural resources were identified within the APE. On June 16, 2017, a pedestrian survey was conducted by Tremaine. The APE was surveyed in transects parallel to the creek. Two prehistoric isolates were found within the APE. These were determined not in situ. Please see pages 5 and 6 of the enclosed report for a detailed description and explanation for the isolates.

The Native American Heritage Commission responded with negative results for the Sacred Land File Search in a letter dated June 12, 2017. Consultation packages dated December 12, 2017, were sent to Native American tribes interested in the project area.

Based on our review of the provided documentation and results of our tribal consultation the Corps makes the determination of *no historic properties affected* (36 CFR § 800.5 [d][1]) for this undertaking.

At this time we are requesting your comments on our finding of effect. Please provide any comments or questions to Attn: Mrs. Hope Schear, U.S. Army Corps of Engineers, Sacramento District, CESPK-PD-RC, at the above address, within 30 days. Please refer to Permit No. 19047-1 in any correspondence concerning this project. Mrs. Schear can also be reached at (916) 557-7426 or email at Hope.C.Schear@USACE.Army.Mil.

Sincerely,

Mark T. Ziminske
Chief, Environmental Resources Branch

Enclosure

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

Environmental Resources Branch

MAR 0 3 2018

Leland Kinter
Chairperson
Yocha Dehe Wintun Nation
P.O. Box 18
Brooks, CA 95606

Dear: Mr. Kinter

The U.S. Army Corps of Engineers, Sacramento District (Corps) is writing you to continue consultation on the inventory and determination of effect for the issuance of Central Valley Flood Protection Board (CVFPB) Permit No. 19047-1. The applicant has requested permission from the Corps under Section 14 of the Rivers and Harbors Act of 1899 (33 U.S.C. § 408) to alter a Federally-authorized flood control project (Project). The project also requires issuance of a 404 permit under the Clean Water Act of 1977 (33 U.S.C. § 1344). Both permissions are Federal undertakings, which requires compliance with Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108).

The applicant is proposing to begin Phase 3 of a floodplain restoration project along Lower Putah Creek. The project would realign eleven hundred feet of channel, grade four acres of high terrace to functional floodplains, reconcile channel dimensions to current flows, eliminate invasive weeds, and plant native vegetation. Previously, the Corps consulted on the Area of Potential Effects (APE) and the results of a cultural resources inventory in a letter dated December 12, 2017.

The applicant enlisted the services of Tremaine and Associates (Tremaine) to conduct a cultural resources identification study. A records search was conducted on June 06, 2017, at the Northwest Information Center, with a quarter-mile search radius around the APE. No cultural resources were identified within the APE. On June 16, 2017, a pedestrian survey was conducted by Tremaine. The APE was surveyed in transects parallel to the creek. Two prehistoric isolates were found within the APE. These were determined not in situ. Please see pages 5 and 6 of the enclosed report for a detailed description and explanation for the isolates.

The Native American Heritage Commission responded with negative results for the Sacred Land File Search in a letter dated June 12, 2017. Consultation packages dated December 12, 2017, were sent to Native American tribes interested in the project area.

Based on our review of the provided documentation and results of our tribal consultation the Corps makes the determination of *no historic properties affected* (36 CFR § 800.5 [d][1]) for this undertaking.

A copy of this letter will be furnished with enclosures to Mr. James Kinter, Tribal Historic Preservation Officer.

At this time we are requesting your comments on our finding of effect. Please provide any comments or questions to Attn: Mrs. Hope Schear, U.S. Army Corps of Engineers, Sacramento District, CESPK-PD-RC, at the above address, within 30 days. Please refer to Permit No. 19047-1 in any correspondence concerning this project. Mrs. Schear can also be reached at (916) 557-7426 or email at Hope.C.Schear@USACE.Army.Mil.

Sincerely,

Mark T. Ziminske
Chief, Environmental Resources Branch

Enclosure

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov

December 14, 2015 In reply refer to: COE_2015_1109_002

Marc A. Fugler
Senior Project Manager, California South Branch
Regulatory Division
U.S. Army Corps of Engineers
Sacramento District
1325 J Street
Sacramento, CA 95814-2922

Re: Section 106 Consultation for the NAWCA 3-Lower Putah Creek Floodplain Restoration Project in the city of Winters, Solano County, California (SPK-2015-00307)

Dear Mr. Fugler:

Thank you for your letter received November 9, 2015, requesting my review and comment with regard to the proposed NAWCA 3-Lower Putah Creek Floodplain Restoration Project in Solano County, California. The Army Corps of Engineers (COE) is consulting with me Pursuant to 36 CFR Part 800 (as amended 8-05-04) regulations implementing Section 106 of the National Historic Preservation Act. Along with your consultation letter, you also provided the following documents:

- *Cultural Resources Inventory Report for the NAWCA Lower Putah Creek Floodplain Restoration Project Solano & Yolo Counties, California* (Tremaine & Associates 2015)

The COE would issue a permit for the proposed undertaking's activities that fall under Section 404 of the Clean Water Act and will allow the Solano County Water Agency (Applicant) perform floodplain restoration activities within the north and south branches of a split low-flow channel of Putah Creek in Winters, Solano County, California. The COE has defined the Area of Potential Effects (APE) as the permit area that encompasses 14 acres, extending 2,840 feet in length along Lower Putah Creek and varying in width from 130 to 370 feet. The maximum depth of disturbance is expected to be 12 feet below the current grade.

Historic property identification efforts for this undertaking included a records search, a pedestrian survey of the APE, and Native American consultation. The records search was completed in January, 2015 and did not identify any previously recorded sites within the APE. A survey of the entire APE was completed in January, 2015. No prehistoric materials were identified during the survey; however, two historic-era sites were recorded. The site recorded as PC-1 consists of the remnants of a collapsed domicile dating from the 1920's to 1940's and associated domestic refuse. The site recorded as PC-2 is a refuse burning site containing various historic-era and modern refuse. The COE has determined that PC-2 is not eligible for listing on the National Register of Historic Places (NRHP) under any criteria. The COE has indicated that site PC-1 cannot be evaluated for eligibility without conducting subsurface testing at the site. However, the COE has also indicated that no ground disturbing activities are planned in the location of the site. Therefore, the COE has proposed to treat the site as eligible for the purposes of this undertaking. The applicant contacted the Native American Heritage Commission (NAHC) in January, 2015 and sent consultation letters to the Native American contacts listed by the NAHC in their response letter on March, 8, 2015. To date, the applicant has received no responses. The COE contacted the NAHC in September, 2015 and sent out consultation letters to the contacts listed by the NAHC in October, 2015. The COE received one response from the Yoche Dehe Wintun Nation (YDWN) indicating that they are unaware of any known cultural resources in the APE and that a tribal monitor was not needed. They requested to be notified if any cultural materials were identified.

The COE is requesting my concurrence on their determination that the site recorded as PC-2 is not eligible for listing on the NRHP , and their proposal to treat the site recorded as PC-1 as eligible for listing on the NRHP under Criterion D for the purposes of this undertaking. Finally, the COE is requesting my concurrence on their finding of *no adverse effect* for this undertaking. After reviewing the submitted materials, I have the following comments:

- Pursuant to 36 CFR 800.4(c)(2), **I concur that the site recorded as PC-2 is not eligible** for listing on the NRHP. However, I recommend that the DPR 523 forms for this site, and site PC-1 be submitted and filed with the appropriate Information Center, along with a copy of this letter and that the COE request that the sites be assigned a trinomial and primary number in order to maintain accurate records of this consultation.
- I do not object to the COE's proposal to treat the site recorded as PC-1 as eligible for listing on the NRHP under Criterion D for the purposes of this undertaking alone.
- Pursuant to 36 CFR 800.5(b), **I concur** that a finding of ***no adverse effect*** is appropriate for this undertaking, on the condition that the avoidance measures be put into place in order to ensure that site PC-1 will not be disturbed by any of the activities associated with the undertaking.

Please be advised that under certain circumstances, such as unanticipated discovery or a change in project description, the COE may have additional future responsibilities for this undertaking under 36 CFR Park 800. If you have any questions, please contact Jessica Tudor of my staff at (916) 445-7016 or jessica.tudor@parks.ca.gov.

Sincerely,

A

Julianne Polanco
State Historic Preservation Officer

YOCHA DEHE
CULTURAL RESOURCES

October 8th, 2015

Marc Fugler
U.S. Army Corps of Engineers
1325 J Street
Sacramento, CA 95814

RE: NAWCA 3 – Lower Putah Creek Floodplain Restoration Project

Dear Mr. Fugler:

Thank you for your project notification letter dated September 15, 2015 regarding cultural information on or near the proposed NAWCA 3 – Lower Putah Creek Floodplain Restoration Project, Solano County, CA. We appreciate your effort to contact us and wish to respond.

The Cultural Resources Department has reviewed the project and concluded that it is within the aboriginal territories of the Yocha Dehe Wintun Nation. Therefore, we have a cultural interest and authority in the proposed project area.

Based on the information provided, Yocha Dehe Wintun Nation is not aware of any known cultural resources near this project site and a Cultural Monitor is not needed. However, if any new information or cultural items are found, please contact the following individual:

Mr. Anthony Flores
Cultural Monitor Supervisor
Yocha Dehe Wintun Nation
Office: (530) 796-3400, Email: aflores@yochadehe-nsn.gov

Please refer to identification number YD – 03162015-01 in correspondences concerning this project.

Thank you for providing us the opportunity to comment.

Sincerely,

James Kinter
Tribal Secretary
Tribal Historic Preservation Officer

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

September 15, 2015

Regulatory Division (SPK-2015-00307)

Honorable Chairperson Charlie Wright
Cortina Band of Indians
P.O. Box 1630
Williams, CA 95987

Chairperson Wright:

The U.S. Army Corps of Engineers regulates certain activities in waters of the United States under Section 10 of the Rivers and Harbors and Section 404 of the Clean Water Act. Before a permit can be issued, we must evaluate the effects of the activity on the environment and ensure it is not contrary to the public interest. As part of the evaluation process, we coordinate and consult with potentially affected Tribal Nations.

We are requesting your review and comments for the proposed NAWCA 3 - Lower Putah Creek Floodplain Restoration project. The permit applicant, the Solano County Water Agency, is seeking authorization from our office to conduct a floodplain restoration project along portions of lower Putah Creek. The approximately 14-acre project site is located on Putah Creek, Latitude 38.5257°, Longitude -121.9527°, Winters, Solano County, California. We have enclosed a map to show the location of the project.

Project Description

Floodplain restoration activities will involve grading of the existing floodplain to a uniform1-2 percent slope, starting from approximately 18 inches above low flow water surface elevation; filling the north and south branches of the split low-flow channel; creating a design channel with rock vanes and spawning gravels; controlling invasive plants; and installing native plants. Other construction related tasks required to complete this project include: reconditioning an abandoned ramp providing access to the floodplain from Putah Creek Road; removing existing vegetation that cannot be incorporated into the project; isolating and dewatering the split channel branches before filling; hauling approximately 22,000 cubic yards of suitable fill from an off-site location; obtaining approximately 2,400 cubic yards of fill from unstable portions of the north creek bank; grading portions of the north bank; and relocating the existing rock cross-vane.

We are currently reviewing an application for this project.

Cultural Resources Inventory

For the permit application, the applicant conducted a cultural resource inventory, which identified 2 historic period cultural resource sites located within the project area.

- PC-1: The ruins of a small domicile dating to the 1920s-1940s. The structure is roughly 20 feet long by 10 feet wide. Remnants of the collapsed plaster and chicken wire walls are evident along three of its sides. The southernmost side is partially dug into the hillside. Historic artifact scatter was found immediately around the structure, including a gas stove burner grill, bottles, mason jar fragments, brown duraglass fragments, ceramic fragments of tea cups, saucers, and bowls, tin cans, white porcelain cold cream jar, a leather shoe sole with tacks, along with miscellaneous metal items. These remains range in date from circa 1910s to the 1950s.

- PC-2: a periodic historic and modern trash-burning site with two loci. Artifacts and objects date from about the 1940s to the present-day. The eastern locus contained rusty cans of various sizes, a metal tray with enamel surface, a small medicine bottle with screw top, wire fencing mesh, a metal bucket, a 5-gallon oil can, thick brown glass, a 1947 license plate, several clear glass jars, bed springs, a coiled wire, and a drinking glass. The trees growing along this bench have been scorched from burning episodes. The western locus contained a greater variety of materials with a greater quantity of modern items: a pile of brick rubble, concrete rubble, burned lumber, tires, a car bumper, a crank shaft, a couple of rolls of wire fencing, seat springs, and an assortment of cans, jars, ceramics and glass fragments.

We would appreciate your review and any comments you have on this project, including potential impacts to any unidentified Native American Sacred Sites, Traditional Cultural Properties, or other cultural resources that you may be aware of within the project area. If you have any concerns about this proposed project and/or potential impacts on cultural resources, please provide us with your feedback by October 14, 2015.

U.S. Army Corps of Engineers Tribal Policy Principles

The United States has a unique legal and political relationship with Indian tribal governments. To learn more about the Corps Tribal Policy Principles of Tribal Sovereignty, Trust Responsibility, Government-to-Government Relations, Pre-Decisional and Honest Consultation, Self Reliance, Capacity Building and Growth and the protection of Natural and Cultural Resources, please reference the following link: *http://www.usace.army.mil/Missions/CivilWorks/TribalNations.aspx*.

We appreciate your input in this matter. Please refer to identification number SPK-2015-00307 in any correspondence concerning this project. If you have any questions,

please contact Noah Fulmer at Regulatory Division, U.S. Army Corps of Engineers, Sacramento District,1325 J Street, Sacramento, California 95814, by email at *Noah.J.Fulmer@usace.army.mil*, or telephone at 916-557-7094. For more information regarding our program, please visit our website at *www.spk.usace.army.mil/Missions/Regulatory.aspx*.

Sincerely,

Marc Fugler
Senior Project Manager
California South Branch
Regulatory Division

Enclosure

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

September 15, 2015

Regulatory Division (SPK-2015-00307)

Honorable Chairperson Leland Kinter
Yocha Dehe Wintun Nation
P.O. Box 18
Brooks, CA 95606

Chairperson Kinter:

The U.S. Army Corps of Engineers regulates certain activities in waters of the United States under Section 10 of the Rivers and Harbors and Section 404 of the Clean Water Act. Before a permit can be issued, we must evaluate the effects of the activity on the environment and ensure it is not contrary to the public interest. As part of the evaluation process, we coordinate and consult with potentially affected Tribal Nations.

We are requesting your review and comments for the proposed NAWCA 3- Lower Putah Creek Floodplain Restoration project. The permit applicant, the Solano County Water Agency, is seeking authorization from our office to conduct a floodplain restoration project along portions of lower Putah Creek. The approximately 14-acre project site is located on Putah Creek, Latitude 38.5257°, Longitude -121.9527°, Winters, Solano County, California. We have enclosed a map to show the location of the project.

Project Description

Floodplain restoration activities will involve grading of the existing floodplain to a uniform1-2 percent slope, starting from approximately 18 inches above low flow water surface elevation; filling the north and south branches of the split low-flow channel; creating a design channel with rock vanes and spawning gravels; controlling invasive plants; and installing native plants. Other construction related tasks required to complete this project include: reconditioning an abandoned ramp providing access to the floodplain from Putah Creek Road; removing existing vegetation that cannot be incorporated into the project; isolating and dewatering the split channel branches before filling; hauling approximately 22,000 cubic yards of suitable fill from an off-site location; obtaining approximately 2,400 cubic yards of fill from unstable portions of the north creek bank; grading portions of the north bank; and relocating the existing rock cross-vane.

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We appreciate your input in this matter. Please refer to identification number SPK-2015-00307 in any correspondence concerning this project. If you have any questions, please contact Noah Fulmer at Regulatory Division, U.S. Army Corps of Engineers, Sacramento District,1325 J Street, Sacramento, California 95814, by email at *Noah.J.Fulmer@usace.army.mil*, or telephone at 916-557-7094. For more information regarding our program, please visit our website at *www.spk.usace.army.mil/Missions/Regulatory.aspx.*

Sincerely,

Marc Fugler
Senior Project Manager
California South Branch
Regulatory Division

Enclosure

cc: (w/o encl)
Cynthia Clarke, Native Cultural Renewal Committee, P.O. Box 18, Brooks, CA 95606

Appendix 3 – Fish and Wildlife Coordination Act Consultations

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W-2605
Sacramento, California 95825-1846

In Reply Refer to:
08ESMF00-2018-
CPA-0011-1

APR 17 2018

Ryan Larson
Chief, Flood Protection and Navigation Section
U.S. Army Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

Subject: Putah Creek Channel Restoration Project Fish and Wildlife Coordination Act Consultation, Yolo County, California

Dear Mr. Larson:

This letter is in response to the U.S. Army Corps of Engineers (Corps) March 28, 2018, request for consultation under Section 2(a) of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.). The U.S. Fish and Wildlife Service (Service) is providing comments to the Corps and their applicant for the Putah Creek Channel Restoration Project (proposed project), Yolo County, California. The Corps is granting Section 408 permissions to the Central Valley Flood Protection Board for Solano County Water Agency's (SCWA) proposed project.

Project Description

SCWA is proposing to convert former gravel extraction berms and pits, and a closed wastewater treatment plant into a river parkway. The project will realign the channel, re-contour the floodplain to allow more frequent floodplain activation, add spawning gravel and restore riparian habitat. This is the third phase of a project that has already completed phases 1 and 2.

Service Recommendations

The Service is supportive of a restoration project along Putah Creek. The project will allow natural geological processes within the channel, which is beneficial to the native riparian species in the Sacramento Valley. Removal of non-native vegetation and the addition of native vegetation provides benefits to wildlife species. The vegetation planting will be maintained for 5 years after installation. The Service completed section 7 consultation under the Endangered Species Act on the proposed project on August 6, 2014 and May 23, 2017. As the project is beneficial, the Service only has the following recommendation to add to the project:

1. Minimize project impacts by reseeding all disturbed areas, including staging areas, at the completion of construction with native forbs and grasses. Reseeding should be conducted just prior to the rainy season to enhance germination and plant establishment. The reseeding mix should include species used by and beneficial for native pollinators.

Thank you for the opportunity to review and provide comments on this project. If you have any questions about our letter please contact Jennifer Hobbs at (916) 414-6541 or jennifer_hobbs@fws.gov or myself at (916)414-6563.

Sincerely,

Doug Weinrich

Doug Weinrich
Assistant Field Supervisor

Appendix 4 – Public Comments and Responses

July 2016, Public Notice

Comments Letters

Winters Putah Creek Nature Park Channel Realignment Project

Phase 3 (ID 19047-1)

Jeff TenPas
Winters Friends of Putah Creek
24 East Main St
Winters, CA 95694

August 9, 2016

By email to: Brian.J.Luke @usace.army.mil

Attn: Brian Luke, Natural Resources Specialist
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1460
Sacramento, California 95814-2922

Re: Comments on Identification Number 19047-1, Putah Creek Restoration Project-Upper Reach Program

To US Army Corps of Engineers:

Please consider these comments on the Section 408 permit under review for the Winters Putah Creek Nature Park Channel Realignment Project Phase 3 (ID 19047-1)). These comments are submitted on behalf of Winters Friends of Putah Creek and Jeff TenPas. Commenters request that the Corps deny the permit because the project is injurious to the public interest and for lack of environmental compliance.

1. Purpose and Need: No Need to "Recontour the Floodplain to a Functional Elevation." The basic premise of the Project proponent is that the floodplain is not functional, implying that the elevation is too high. This premise is faulty in Phase 3 as it was in Phases 1 and 2. In fact the floodplain in Phase 3 despite its highly disturbed state is functional. Much of it flooded this year, yet a part of the bank remained dry, providing diversity and refuge in the floodplain. For all the claims of a non-functional floodplain, there has never been any data or analysis presented to show how the floodplain is "non-functional". The proponents should prepare a flood analysis comparing a pre-project and post-project section and showing at what flow the new and old would be flooded. We could then see the effect and value of the project on flood occurrence and duration. So much money and stream disturbance and floodplain leveling is justified by this claim, without any supporting analysis.

   Moreover, the project design drawings show floodplain that is flat, featureless, filled with unsuitable fill, and compacted. Based on the evidence of Phases 1 and 2, the constructed floodplain would fail to grow a healthy riparian forest, not provide habitat, and would not transmit groundwater. It would be non-functioning.

Figure 1: As built floodplain in Phase 1

2. Replacement of an Artificial Channel with a Natural Channel, or Replacement of a Natural Channel with an Artificial Channel? The Proposed Action (as stated in the Public Notice) proposes the Project will replace an "artificial channel". In comment, we submit the attached file (Attachment 1) showing the past 60 year history of the stream as it evolved after the construction of Monticello Dam. Aerial photos show that under the post-dam flood and flow regime, the floodplain and channel evolved, the floodplain stabilized, a floodplain riparian forest grew, and the channel and banks stabilized and developed in equilibrium with the new conditions. Phase 3 has in fact a natural channel that will be replaced with an artificial channel. Why?

3. The Floodplain Needs Restoration, the Channel Does Not. Quite obviously the floodplain in Phase 3 has been used and abused and needs restoration. It should be noted that the Phase 3 floodplain supported decent forest and floodplain habitat before Phases 1 and 2 began and used Phase 3 as a staging area. Phase 3 always could have used improvement, but the proponents disparagement of the area as "abandoned sewage ponds" is not a fair description of its condition 40 years on from the abandonment. You can see it in the aerial photos of Attachment A.

4. A Spoils Disposal Project in Fact. We recommend that the review team view this project critically as a project to "dispose of spoils in waters of the United States". In fact, the Solano

County Water has literally disposed of excess spoils from construction of the South Putah Canal in Phases 1 and 2 of this project – in the amount of greater than 70,000 cubic yards. The fill was not good sandy material suitable for growing a riparian forest and supporting riparian groundwater conditions. Instead it was old, geologically old, highly weathered material from the Putah Creek fan, containing much clay, a far cry from fresh floodplain deposits. The fill material is a barrier to water and detrimental to floodplain groundwater movement and groundwater recharge. In Phases 1 and 2 the material has proved itself unsuitable soil for supporting a riparian forest. The same material is specified in plans and the contract as fill for Phase 3.

5. Benefits and Detriments and Injurious to the Public Interest Determination. There are minimal benefits and many detriments to the Project. You will find more comment on the detrimental impacts in the attachments to this comment letter.

The Benefits and Detriments

Project Work	Benefits	Detriment
Stream channel – old channel filled, new channel made narrower and deep pools eliminated	Small uncalculated decrease in stream temperature	Loss of deep pools Loss of cooler water refuge in bottom of deep pools Loss of the existing island Loss of the existing riffle, larger than any in Phase 1 or 2 Loss of channel habitat diversity Loss of downed trees in-channel
Stream channel moved across floodplain	None	Loss of views to the stream for people Loss of wildlife views for people on creekside trail
Banks – new, built at 2:1 slope, constructed of compacted fill	None	Loss of undercut bank habitat Loss of variation in bank form Loss of vegetated shallows Loss of existing beaver dens Loss of high banks suitable for future beaver dens
Hyporheos – wiped clean, replaced with veneer of gravel on a compacted stream bed, loss of structure and form like buried gravel bars	None	Loss of nutrient processing Loss of mixing and cooling groundwater Loss of biota Loss of groundwater connection

Project Work	Benefits	Detriment
Floodplains, new floodplains built of fill, compacted, sloped 1 -2% to the stream	None	Some remaining mature trees cut Loss of floodplain topographic complexity Lower soil productivity due to • Soils compacted • Fill with lower soil nutrient status • Fill with lower soil organic matter • Loss of groundwater supply Loss of floodplain permeability and hydrologic function
In-stream Wildlife Habitat – altered stream is narrower and without deep pools	More narrow faster stream habitat – may possibly benefit some native fish over other native fish	Loss of slow deep pool for turtles, beaver, nesting waterfowl, great blue heron Loss of long wide riffle - good prospect for increased salmonid spawning habitat Potential loss of mussels
Floodplain Habitat	None	Loss of cottonwood riparian forest habitat Loss of bird habitat Loss of mammal habitat Loss of turtle nesting habitat Loss of shade for people
Economic	Gain for SCWA – free disposal of fill Gain for committee members on City of Winters Putah Creek Committee who get contracts Gain for other subcontractors	Taxpayers pay for expensive project - $1.2 million for 1200 feet of stream alteration Less funding available for better projects
Groundwater – smaller channel, compacted banks, clayey fill – all reduce groundwater recharge	More water is left to serve SCWA customers	Groundwater recharge is reduced for: • City of Winters • Local wells

6. <u>What More Can We Say?</u> The Project proponents propose a plan using heavy equipment to wipe the floodplain, banks, and channel clean of all their previous complexity, then construct a new channel to "perfect dimensions", and do some rudimentary revegetation. Then they have faith that the stream will do geomorphic miracles with this "perfect" channel and floodplain and the whole will soon grow into a perfect state. We don't share that blind faith.

   We have seen the 5 year results in Phases 1 and 2. Outside of a 4 foot wide green line along the bank, conditions are poor, or very poor. Soil testing shows the imported and compacted fill is extremely hard when dry and has low permeability. The riparian forest is not coming back. We

know the soil conditions and riparian groundwater hydrology are drastically impaired and will not recover in our lifetime.

Now we grant that the floodplain in Phase 3 area looks bad. But underneath the surface, the stream banks and a part of the floodplain still retain their hydrologic function and suitable soils. This floodplain can be restored, if we go forward with a light touch and mind the soil and water and plant relations.

7. Environmental Compliance. The Public Notice identifies Environmental Compliance as a primary Evaluation Factors. We do not know what if any environmental assessment has been done. We can hardly comment on its adequacy. If NEPA is done, or drafted, we request opportunity to review and comment. If NEPA is being planned, we request that the scope of the NEPA include the potential impacts we raise here and in attachments. We request to be advised of opportunities for public involvement in the NEPA process.

   What we can say about the environmental compliance is based on past experience with this and related SCWA projects. In the final analysis, this project should be considered together with its predecessor projects on Putah Creek by SCWA - Phases 1 and 2 of Putah Creek Realignment in Winters, the Dry Creek project, the Yolo Housing Project, the NAWCA 2 project, and projects on Kilkenny and Hasbrook private lands, and any others. Taken together, these projects have used heavy equipment and fill on a significant extent of Putah Creek already.

   There are multiple ways to go about stream restoration, yet is seems the SCWA projects use the most aggressive and invasive methods - clearing large swaths of floodplain, bringing in massive amounts of fill, trafficking on and compacting near 100% of the floodplain in project areas, and moving stream channels. Whether or not one prefers this course of action to another approach, we all recognize that this level of disturbance comes with a high level of risk. This high level of risk should be addressed with a commensurately high level of scientific study, inventory, assessment, and environmental analysis.

   But environmental analysis is what is lacking. Phases 1 and 2 were implemented based on the cursory CEQA done for a Master Plan, the CEQA document did not begin to disclose the clearing and filling to be done and in fact denied there would be significant clearing and filling. The Initial Study and Mitigated Negative Declaration did not disclose or assess the long list of impacts we have raised here and in previous comments on a proposed programmatic EIR for more work on the creek. The CEQA Mitigated Negative Declaration for the Master Plan promised project-specific CEQA when projects came up for implementation, but the SCWA reneged on that promise. It is time now for good in-depth CEQA and NEPA.

8. Consideration of Unauthorized and Immediately Adjacent Alterations in Phases 1 and 2. The Solano County Water Agency has done projects immediately upstream and downstream of the proposed Project ; these were called Phase 1 and 2 of realignment in Winters Putah Creek Nature Park. To the best of our knowledge these projects did not have Section 408 permits from the USACE. We wonder how the violation and permitting of these projects will be handled and we request to be informed. In any case, the NEPA compliance for this project should consider the previous projects and their cumulative impacts. There were detrimental impacts of the Phase 1 and 2 projects, and some of these impacts will be cumulative with Phase 3 impacts, the

cumulative effects include loss of riparian floodplain forest, loss of vegetated shallows, loss of pond turtle habitat, loss of beaver habitat, and loss of groundwater recharge.

9. Request for Reconsideration of Section 404 permit for the Project. The USACE has issued the Project a Section 404 Nationwide Permit 27 which should be cancelled. The USACE policy provides that a Section 404 permit should follow after a Section 408 permit per the guidance in EC-1165-2-216. Second, the project will result in fill and reduction of open waters of the US, and loss of open waters is an action beyond the scope of NWP 27. We request to be informed of the future course of action on a Section 404 permit for this project.

10. Request for access to files and additional time to comment. Although the Winters Friends of Putah Creek have been in contact with the USACE multiple times on this project, the Notice of this Project did not come to us directly and came to our notice late. The Notice also does not give public access to supporting documents. Under the circumstances, our review and depth of review was limited. We are submitting comments now, but request additional time for comment, and request public access to the NEPA analysis and the supporting file.

11. Attachments Are Additional Comments. Please consider the attached files as additional comment.

    a. Attachment 1: Aerial photos and ground photos of Phase 3 channel and floodplain evolution and development, post-Monticello dam and post-sewage treatment use. Continues with a photos of implementation of Phases 1 and 2, depicting the scale and intensity of disturbance, loss of channel, banks, and floodplain complexity.

    b. Attachment 2: Letter dated October 6, 2015 to Central Valley Flood Protection Board. The letter contains extensive comments on the potential negative environmental impacts of the Phase 3 Project. These comments should be considered as comments to the USACE on this 408 permit application. The impacts identified and comments:
        i. Unhealthy unproductive riparian forest will be a product of floodplain fill and compaction and the soil conditions and soil permeability resulting from the project.
        ii. Impacts to wildlife that occupy Phase 3
        iii. Loss of open waters and wetlands
        iv. Loss of recreation and aesthetic enjoyment to people of Winters
        v. Deficiency of CEQA (and NEPA)analysis
        vi. Scoping comments for CEQA/NEPA

    c. Attachment 3: Letter dated December 8, 2015 to the Central Valley Flood Protection Board. This letter contains comments on the Phase 3 project and its impacts, in particular on the low permeability of the proposed fill for Phase 3, and the negative

effects that fill and compaction would have on the environment and groundwater recharge. These comments apply as well to the Section 408 permit.

i. Comments and analysis of cumulative effect of Phase 3 and other projects on groundwater recharge and groundwater supply

d. Attachment 4: Letter May 23, 2016 to the USACE. A letter with comments on Phase 3 and in particular the affects the project would have on people and their aesthetic enjoyment of the creek and wildlife. A project alternative is proposed. These comments apply as well to the Section 408 permit.
   i. A project alternative is proposed
   ii. Loss of recreation and aesthetic value to people who currently enjoy Phase 3

e. Attachment 5: June 24, 2016. Letter of 60 day notice under the Clean Water Act to multiple parties. The letter includes comments on Phase 3 and bringing in of dirty fill, use of unsuitable fill, filling that occurred without 408 permit, applicants failure to meet mitigation requirements in Phases 1 and 2, and impossibility of meeting wetland mitigation requirements for Phase 3. These comments apply as well to the Section 408 permit.
   i. Loss of wetlands
   ii. Dirty fill already emplaced in Phase 3
   iii. Use of unsuitable material for fill based on its texture and permeability
   iv. Proponents history of violation of Section 408

f. Attachment 6: May 20, 2016 comment letter to the Central Valley RWQCB on a draft programmatic Water Quality Certification for a proposed project to cover 24 miles of Putah Creek. The comments on negative impacts apply to Phase 3 as well, and these are impacts that should be considered in NEPA analysis for Phase 3.
   i. Unsuitability of the fill
   ii. Irreversible loss of riparian cottonwood forest
   iii. Potential loss of mussel beds
   iv. Impacts to other wildlife
   v. Loss of vegetated shallows, which do currently exist in Phase 3
   vi. Loss of groundwater recharge
   vii. Loss of recreation and water contact recreation

g. Attachment 7: June 11, 2015 comment letter to the Solano County Water Agency on an Initial Study and Mitigated Negative Declaration for the NAWCA 3 project about 2000 feet downstream of the Phase 3 project. The project is similar in all respects to Phase 3 and we include them as comments on Phase 3.
   i. Impairment of riparian habitat due to unsuitable fill and compaction
   ii. Cumulative loss of riparian forest
   iii. Cumulative loss of recreation and opportunity for water contact recreation
   iv. Impairment to aesthetic enjoyment of a more natural environment
   v. Impairment to wildlife habitat

Conclusion.

This project springs from a faulty premise – that the existing floodplain is "non-functional", a premise that is never examined. The project implementation plan springs from the next faulty premise – that all that is required to have a healthy "natural" stream and riparian ecosystem is to have a stream channel of "right" dimensions, and then the stream will take care of itself. The projects past and present have assumed that no amount of disturbance is too much, that there is no need for concern or intentional design of physical conditions or habitat requirements, and that geomorphic processes will make everything come out right and in a short time.

Unfortunately this is not the case. The stream and riparian ecosystems are incredibly complex and organized and diverse. A model that assumes that only stream dimensions are important is a far too simple a model to base a project on. This model leads to projects where mussel beds are obliterated unknowingly, turtle habitat disappears, cottonwood forest dies, youth lose the enjoyment of a swimming hole, and generally habitat diversity and sustainability suffers.

If there is one single defining element of a riparian forest ecosystem, it is the connection of the floodplain to surface and groundwater. This project and prior projects completely overlooked that element and then went awry by emplacing impermeable material in the stream bank and floodplain. Any future work on the stream channel, banks, or the floodplain needs to be screened for its effect on this surface and groundwater connection.

There are lessons learned to take away from Phases 1 and 2 about fill and compaction and floodplain permeability and groundwater movement. These lessons should be documented and disseminated to improve the science and practice of stream restoration.

It is time also for an open dialogue about Phase 3 that advances the science of restoration and considers new approaches and leads to a good new plan. The Winters Friends of Putah Creek are in favor of continuing stream and watershed restoration work and wish to see this work go forward in Phase 3 too. We see the absolute need to solve the problems in Phases 1 and 2.

Sincerely,

/Jeff TenPas/

Jeff TenPas, Winters Friends of Putah Creek

Putah Creek Restoration Gone Awry

From a Natural Channel to an Artificial Channel

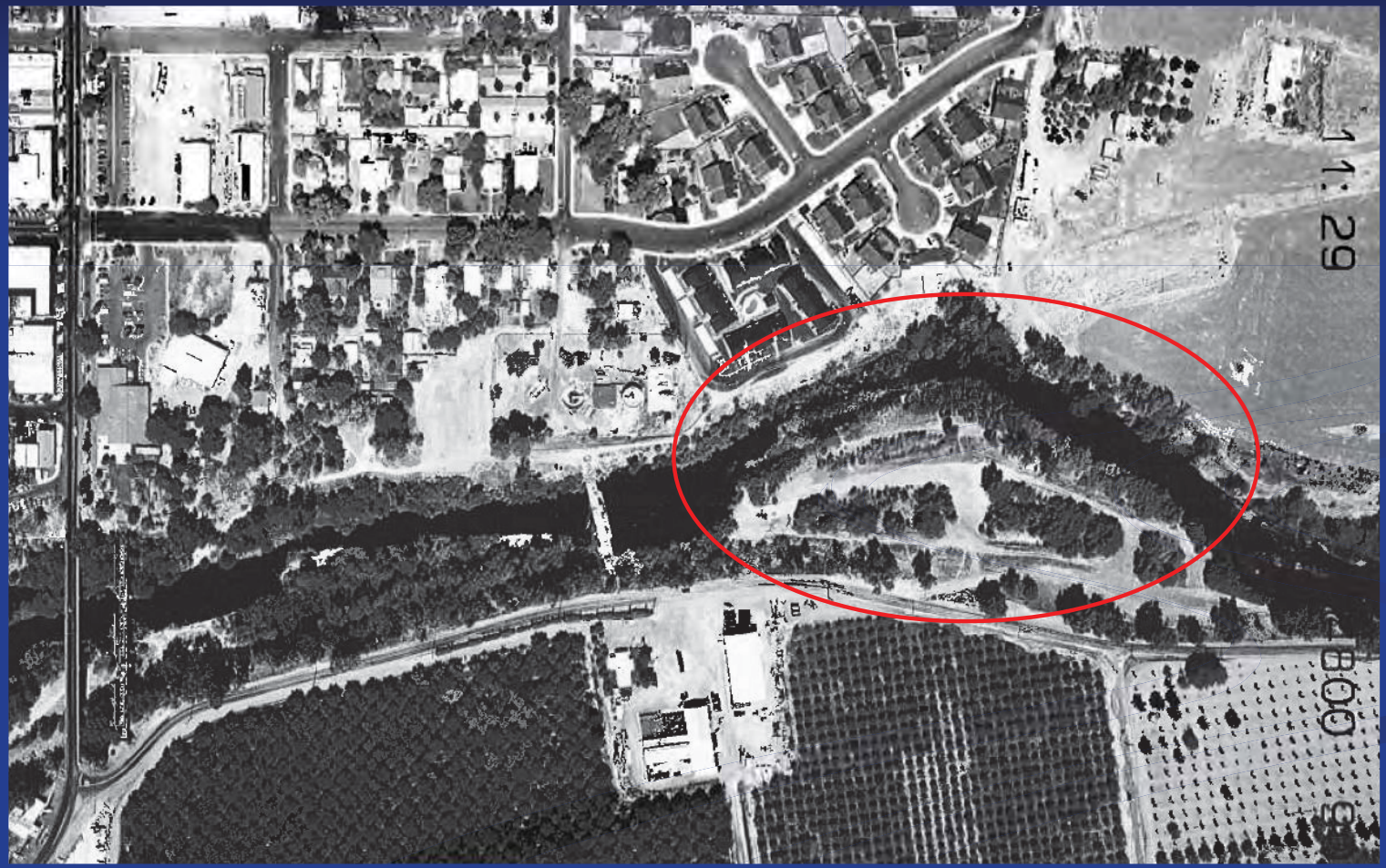
AFTER THE DAM – NATURAL EVOLUTION OF THE CHANNEL AND FLOODPLAIN

1952

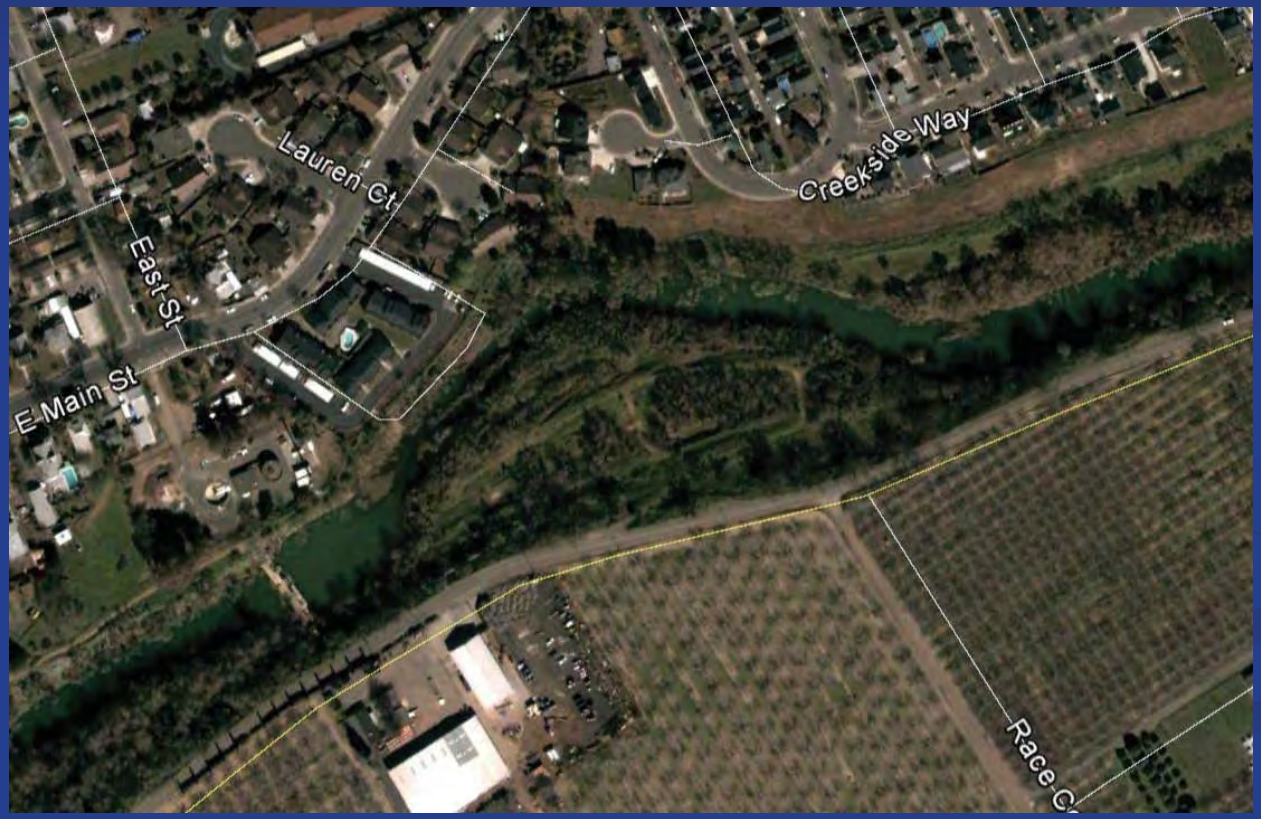
1962

1970

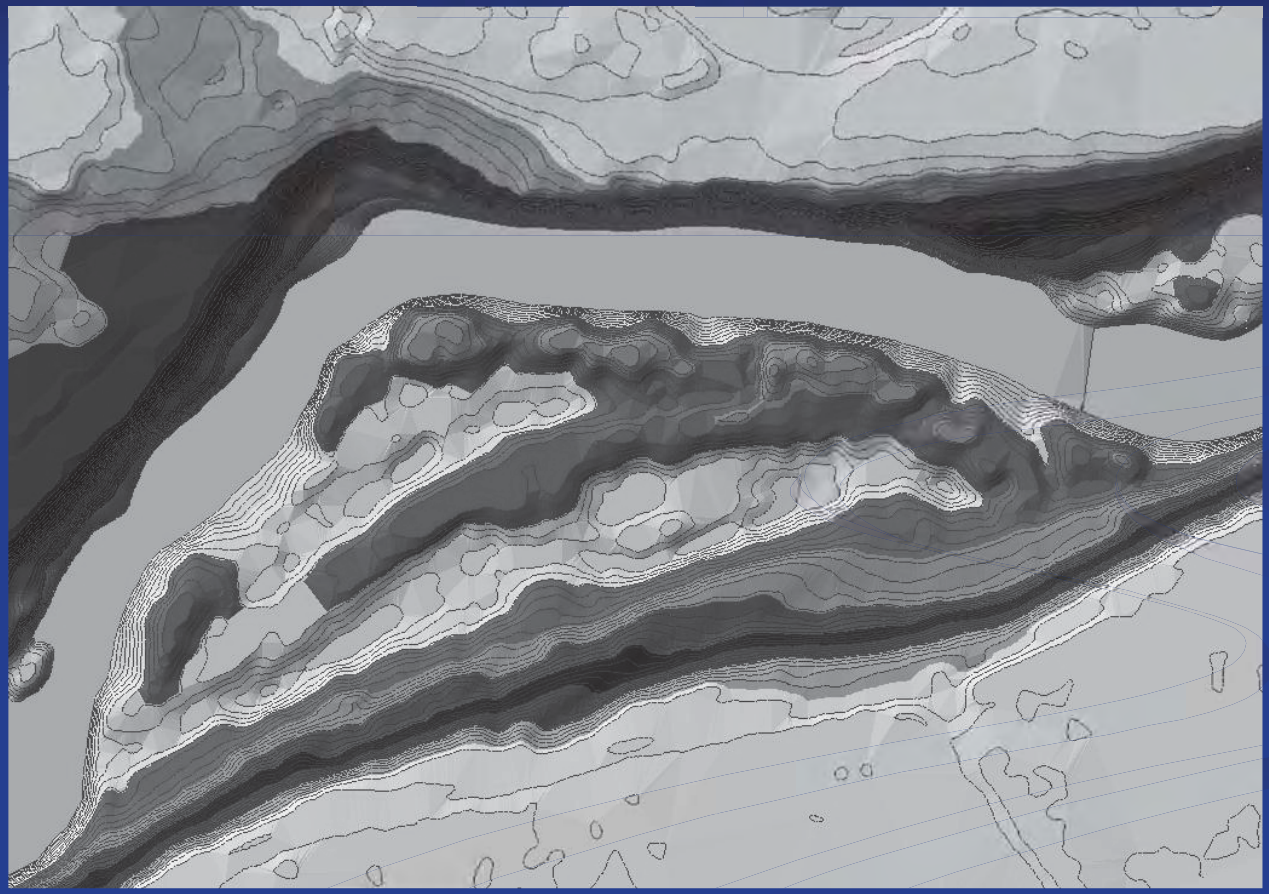
1990



2003

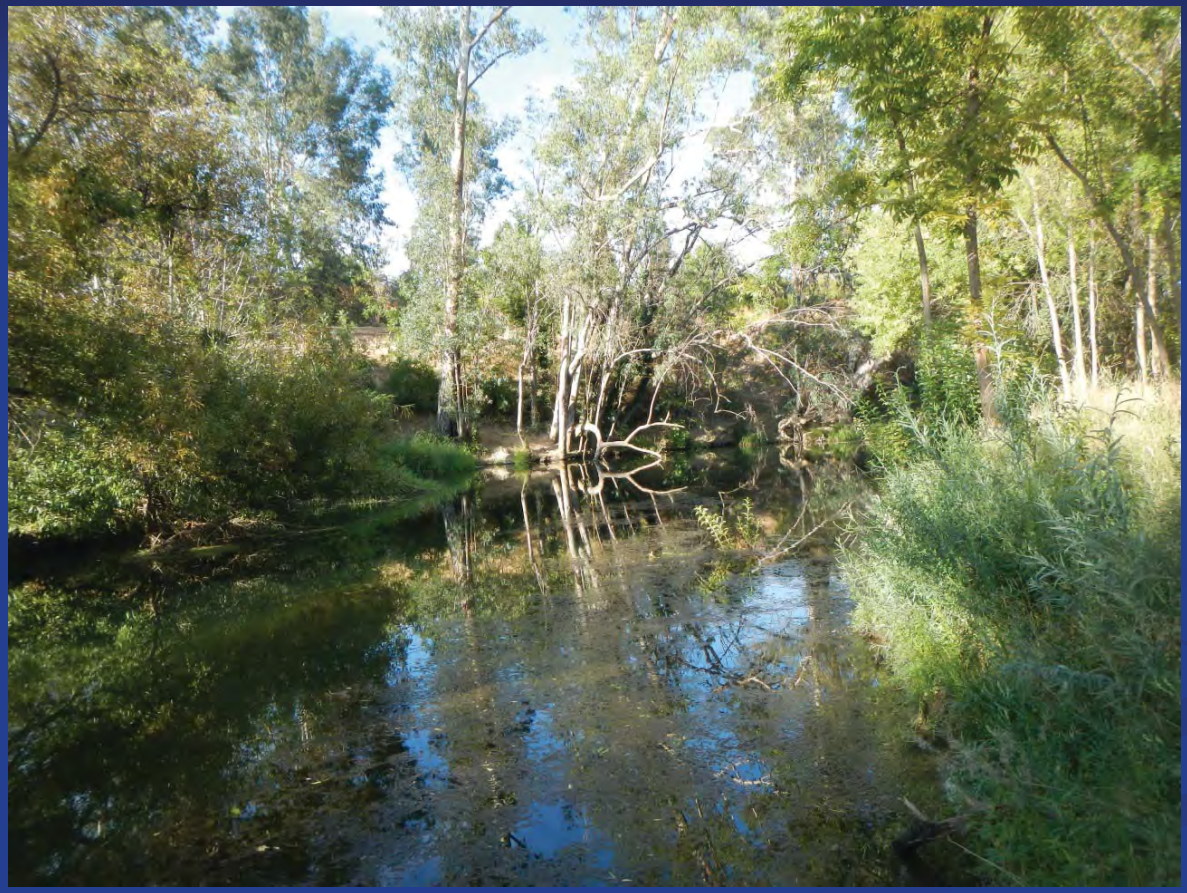


Phase 3 – 2008 – before Project



PHASE 3 STREAM - 2016

PHASE 3 STREAM – 2016



Channel Realignment

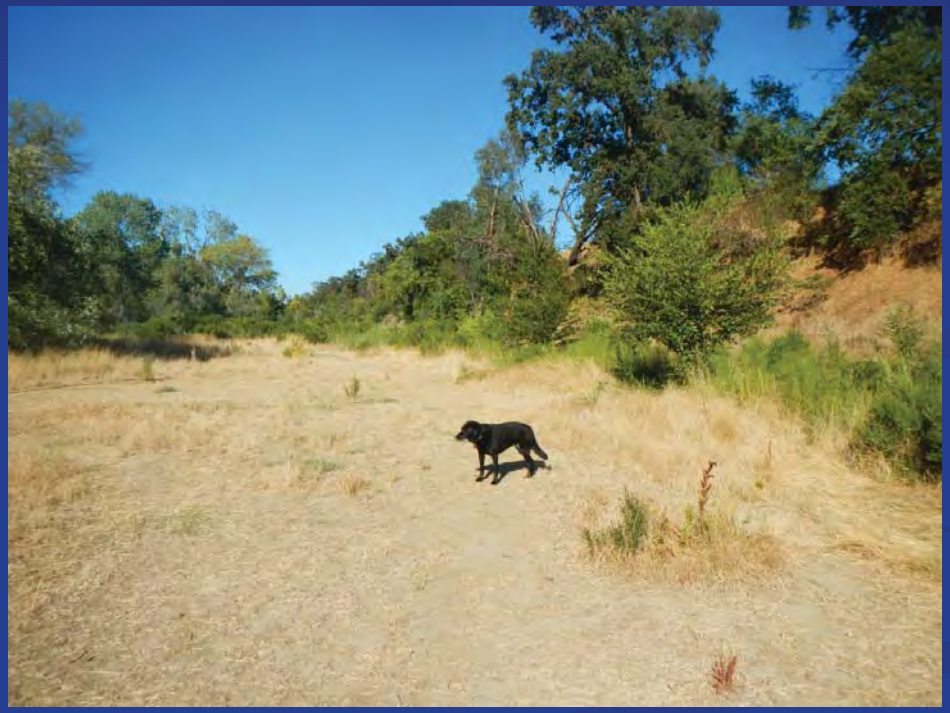
BUILDING AN ARTIFICIAL STREAM – PHASE 1 AND 2


740
CAT


CAT

Design Channel

5 Years Post-Project
Floodplain "Desert" Replaces Open Water



Winters Friends of Putah Creek
Jeff TenPas, 24 East Main St, Winters, CA 95694
530-795-3617, jtenpas@lycos.com
October 6, 2015

VIA ELECTRONIC MAIL
Leslie.Gallagher@water.ca.gov

Leslie Gallagher
Acting Executive Officer and Chief Counsel
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, California 95821

Re: CEQA Non-Compliance and Negative Environmental Impacts of Phase 3 – Putah Creek Floodplain Restoration Project

Dear Ms. Gallagher:

My name is Jeff TenPas. I am a resident of Winters, having lived here near Putah Creek in Winters for 19 years, and for most of that time having walked the dog along the creek almost daily. During this time I have been actively working to restore the creek, and privileged to able to observe the creek for many years, and to have the professional and scientific background to understand what I see. I have a Masters in Soil Science from UC-Davis and related education in hydrology and ecology. I have worked for the US Forest Service for over 16 years and managed the watershed improvement program for the region for the last 9 years.

There are two main points to my comments on this proposed project. First, if the project were to be implemented as planned, it would have significant long term negative impacts on the environment. Secondly, this project and its impacts have not been given CEQA review, the project is not CEQA-compliant. On those grounds, the Solano County Water Agency's application for an encroachment permit should be denied. The project can then be redesigned, be given the appropriate and required environmental review, and significant environmental impacts can be avoided.

The Projects significant environmental impacts are foreseeable and must be avoided. Four of the most significant impacts would be these:

- The constructed floodplain would not and could not support a healthy riparian forest,

- The project would take the most diverse, most occupied, and most valuable instream wildlife habitat in Winters,
- The project will not provide replacement for the loss of open waters and wetlands, and
- There will be loss of enjoyment of view of the creek and wildlife to the people of Winters

I give the following as the expert opinion of a soil scientist and watershed restoration practitioner.

Adverse Environmental Impact – Unhealthy Unproductive Riparian Forest

Based on my knowledge and expertise, I give the expert opinion that there will be failure of the floodplain riparian forest if Phase 3 goes forward as planned. By failure, I mean that trees and other vegetation growing in the floodplain will be stressed, stunted, and/or die. A flourishing and healthy riparian forest will not grow. I say this because of the existing failure of the riparian forest in Phase 1 and Phase 2 of the project, because as a scientist I recognize the soil conditions that are causing the failure, and because the same design flaws causing failure in Phases 1 and 2 are repeated in the design and project specifications for Phase 3.

Phases 1 and 2 were completed four years ago. They included massive cut and fill operations that covered almost 100% of the project areas. They concluded with tree and shrub planting, planting of forbs, and seeding of grasses. Irrigation was supplied to the trees for the first season. By now four years later you would expect the planted trees to be well established and thriving. Instead the planted trees are stunted, distressed, or dead. There are large areas invaded by weeds and areas of barren ground. There are a handful of mature cottonwoods and willows remaining from the original forest that are also distressed, dying, or dead. Even the project proponents recognize the problems with Phases 1 and 2. They have hired a soil scientist and contractor to begin experimental treatments, and have contacted your agency for permission to do pilot tests in the floodplain.

Some have questioned if the vegetation failure is drought related, but it is not. The floodplain vegetation up and downstream continues to do well. As discussed below, the water supply of floodplain vegetation is not dependent on rainfall but depends on water from the stream.

One other condition in Phases 1 and 2 is very notable. Trees and vegetation are flourishing in a narrow three foot band of green along the stream bank, but not across the rest of the floodplain.

This failure of the riparian forest is due to soil conditions and explainable by soil science. In short, the problem is the use of unsuitable fill, around 50,000 cubic yards so far. I have examined the imported material. The fill is clayey, it was spoils from digging the Putah South Canal. This fill was placed in lifts, and compacted with a sheepsfoot roller. Clayey soil compacted like this is typically used for lining canal bottoms and landfills in order to make them impervious to water movement. These conditions are unsuitable for growing trees.

Riparian forest trees are different from upland trees, riparian forest trees such as cottonwood, willow, ash and alder require more water than the amount falling as rain. These trees get the additional water they need from the stream. Stream water infiltrates the stream bank, through the floodplain soils, across the floodplain, and to trees a hundred feet away, and from additional water infiltration during floods.

The soil conditions of the constructed floodplain do not permit water to move from the stream to the trees across the floodplain, nor to infiltrate rapidly during floods. First, the fill is too clayey. The native floodplain soil, a sandy loam, has a saturated hydraulic conductivity of an estimated 10 μms^{-1} (Figure 1). A clay loam, like the imported fill, has a saturated hydraulic conductivity of an estimated 1 μms^{-1}. Second, the fill was intentionally compacted to a high degree according to specifications in the construction contract. Compaction closes pores in the soil, especially the larger pores. The largest pores are most important to water movement because according to Poiseuille's Law water moves in pores at a rate proportional to the pore radius raised to the 4^{th} power. After the compaction, the clay loam has a saturated hydraulic conductivity of an estimated 0.1 μms^{-1} or $1/100^{th}$ the water conductivity of the natural floodplain.

The result is that the constructed floodplain has soil conditions such that water from the stream only supports good riparian vegetation in a three or four feet band along the stream bank rather than all the way across the floodplain. The project proponent, recognizing the failure of the floodplain in Phases 1 and 2, has begun to recognize this is a soil problem and has started experiments to mitigate the problem, yet the proponent persists with the same faulty design plans for Phase 3.

There are additional soil properties and ways that the fill and compaction are affecting the vegetation. The fill is low in organic matter and therefore lower in nutrients. The water holding capacity is lower because of low organic matter and compaction. Because of compaction, the soil strength and resistance to root penetration are increased, and tree roots grow less and have access to less soil volume and less water.

The plans for Phase 3 call for the same fill and compaction as in Phases 1 and 2. The compaction standard is specified in the construction contract, and fill from the same source is specified in the contract. The contract includes a requirement for subsoiling the floodplain during finish grading to a depth of 24 inches, which can mitigate for the compaction, but only partially because it cannot alter texture. In any case, the two foot depth of subsoiling will not reach the normal water level, and therefore will not relieve the impediment to water movement from the stream to the floodplain. The project proponents contention that the fill is suitable because it is from alluvium ignores the fact that thousands and tens of thousands of years have passed since that alluvium was deposited and that time is a primary factor in soil formation. The outcome of current Phase 3 plans would be a floodplain with a distressed and failed riparian forest.

Adverse Environmental Impact - Take of Most Diverse and Most Occupied Instream Wildlife Habitat in Winters

As a local resident who walks daily along the creek, and an environmental scientist, I am in a position to know where wildlife is present along the stream. I know for a fact that the Phase 3 project site supports by far the most abundant and diverse wildlife population to be found along the creek in Winters.

- This reach is the home to a family of six or seven beaver with multiple dens in the bank. I have never seen these beaver outside this reach
- This spring three pair of geese and a pair of mallards raised young in this reach – I saw no nesting geese or ducks using other reaches
- This is the only reach where I have seen western pond turtles
- A pair of hawks nested on this reach for at least the second year in a row
- Great blue heron I see here ten times to every one time elsewhere
- There are two night heron that frequent the creek here, and are seen in this reach the vast majority of the times seen
- Kingfisher spend more time here than elsewhere
- Both mink and otter frequent this reach

If this reach is realigned per the Phase 3 design, there no longer be a part of the stream in Winters that has the channel and bank attributes that are supporting this wildlife population. The reach has the only large deep slow water pool, the only island, the only downed floating trees, and the only high stream banks in the mile long segment that includes Phases 1, 2, and 3.

Adverse Environmental Impact - Loss of Open Waters and Wetlands

It is a fact as shown by the Project's Grading Plans that the project will eliminate open water by narrowing the channel and will fill an existing off channel pond, and that the Project grading will not replace the loss. Previous disturbance of this site during Phase 1 and 2 has already eliminated other wetland features. The Phase 3 design plans show floodplains that slope continuously up from the stream bank at 1% slope without exception. These floodplains will drain rapidly by overland flow to the stream, these floodplains will provide no wetland habitat. Refer to 'Typical Channel Cross Section on Sheet 2 of Grading Plans' for a drawing of the floodplain. The grading plans include no depressions in the floodplain that will function as wetlands. This loss of wetlands diminishes the habitat value of the Project, it violates wetland preservation law, and it further reduces water infiltration and supply to the floodplain vegetation. The contract includes this specification for finish grading, emphasizing drainage not wetlands:

> e. Float to achieve uniform surface drainage from the bank toward the flow channel without ruts, potholes or low areas that trap water.

Adverse Environmental Impact - Loss of Enjoyment to People of Winters

As a daily walker and observer of people using the creek, it is clear to me that it is fact that the majority of people using the Nature Park keep to the paved trail on the north bank – less than 10% take the paths down to the creek and floodplain. Given this pattern of use, the majority of users enjoy close up views of the creek only where the paved trail dips within 10 feet of the creek in Phase 3. This stretch alone gets people near the stream and near the wildlife using the stream and riparian floodplain. By moving the channel as proposed in Phase 3, most walkers will lose this connection and enjoyment. Phase 3 includes a "north ramp" leading from the trail to the floodplain (not to the creek), but most people do not use the other ramps currently available and there is no reason to believe they would use this one. In addition, this is the only direct access to views of the creek and wildlife for those in wheelchairs or otherwise limited in mobility – the new "north ramp" is not ADA accessible (Rich Marovich, personal communication).

CEQA Inadequacy

A Board permit requires CEQA compliance. The Board may deny a permit application for non-compliance, or the Board may prepare an environmental impact report (EIR) or initial study and negative declaration.

For a review of the CEQA inadequacy, I refer you to the attached letter of June 24 from Donald Mooney representing the Winters Friends of Putah Creek to Thomas Pate, Solano County Water Agency. The letter describes the complete inadequacy of the CEQA compliance. This letter was previously copied to Andrea Buckley of the Board's staff on July 1, 2015.

In Mr. Mooney's letter, the point is made that the 2008 CEQA does not cover project specific work and the CEQA Response to Comments plainly affirmed that the Master Plan did not include and the IS/MND did not assess the impacts of the large quantities of imported fill or significant tree clearing. The point is also made that even if the IS/MND for the Putah Creek Nature Park covered this project when it was completed in 2008, there are now new circumstances and new information on project impacts that must now be considered.

Fill and CEQA

In 2008 in written comments on the Master Plan and IS/MND I raised a concern over earth-moving and plainly asked how much fill would be brought in for the project. The project proponents flatly affirmed that the entire project would involve "minor material moving within the floodplain". That may have been the plan in 2008. Now in 2015 this Project alone calls for importing 10,000 cubic yards of fill, and there has very clearly been no disclosure or assessment of impacts (Sheet 3 of Grading Plans).

Written Comment on IS/MND in 2008 from Jeff TenPas:

> The project description and information in the draft Winters Putah Creek Nature Park Master Plan and supporting documents are inadequate to assess the impacts of the project. For example the documents give no estimate on the amount of earth-moving or the construction traffic that the project may entail. How many days or weeks of construction traffic, noise, and dust will be created? How many truckloads of fill will be needed for the project?

Written Response to Comment – Response 1:

> The various proposed restoration activities involve minor material moving within the floodplain and intermittent heavy equipment use.

Tree Clearing and CEQA

In 2008 in written comments on the Master Plan and IS/MND I raised a concern about the clearing of mature native riparian forest for the Nature Park plan. The project proponents flatly affirmed that for the entire project "short reaches with willow or sapling cover may be disturbed as part of the bank recontouring and these will be replanted immediately". That may have been the plan in 2008. Now in 2015 this Project calls for retention of just eleven trees in the whole 11 acre footprint of the project, and removal of 80 trees over 4 inch DBH (per Updated Project Description). Greater than 50% of the site has been entirely cleared already. The eleven trees to remain would cover a few percent of the area of the Project and would be a fraction of the original 2008 riparian forest (Figure 2). All of the trees in the grading footprint per Sheet 2 of Grading Plans are native barring a few eucalyptus at the northern edge where the project plans are not disclose . There has very clearly been no disclosure or assessment of the clearing of mature native riparian forest on any wildlife species. As a person walking along the creek on a hot day, the effect of a lack of shade on humans is clearly evident.

Written Response to Comment – Response 7:

> A native riparian forest is the goal of part of the project and there is no plan to significantly impact that or any other established reach with this project. As described in the WPCNP IS/MND short reaches with willow or minor sapling cover may be disturbed as part of the bank recontouring and these will be replanted immediately.

City of Winters Consideration of CEQA Compliance

The project proponent has asserted to Board staff (Chris Lee to Ilene Wellman-Barbree, email June 18, 2015l) that the City of Winters reviewed and affirmed CEQA compliance of the Project. The City did not. The only attention given to this Project by the City Council in the last year was in a City Council meeting on April 21, 2015. At that meeting, Phase 3 was on the agenda as a discussion item only (not an action

item). The agendized discussion was only to give citizens opportunity to voice their concerns on the project. The City has never reviewed or acted on the question of CEQA compliance for this Project.

The Winters Friends of Putah Creek believe that the project proponents must keep the promise given in 2008 of supplemental project-specific CEQA, that importing fill and clearing trees are clearly inconsistent with the 2008 IS/MND, and that the new circumstances and new information require new CEQA. Clearly CEQA review should include soil testing for texture and nutrient content, and testing and comparison of the hydraulic conductivity of compacted fill and native floodplain soils.

Scoping for Additional CEQA

If the Board were to do CEQA to cover this project, then these potential impacts should be included in the scope of review:

1. Impacts on floodplain ecology of the imported fill and compaction of it
2. Impacts and cumulative impacts of clearing 30 acres of riparian forest and failure to revegetate
3. Impacts on western pond turtle of eliminating occupied habitat and the last suitable habitat in the Winters reach of Putah Creek
4. Impacts on wetlands and waters of the United States
5. Impacts on peoples and especially ADA access to the views of creek and wildlife if the channel is moved

I am available to discuss this project further with your staff and look forward to a good outcome for Putah Creek.

Respectfully yours,

Jeff TenPas

Winters Friends of Putah Creek

Figure 1. Guide for Estimating Saturated Hydraulic Conductivity (K_{sat}) from Soil Properties. (U.S. Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. Available online. Accessed 09/18/2015.)

Follow the arrow to see the impact of change in soil texture and compaction on hydraulic conductivitity.

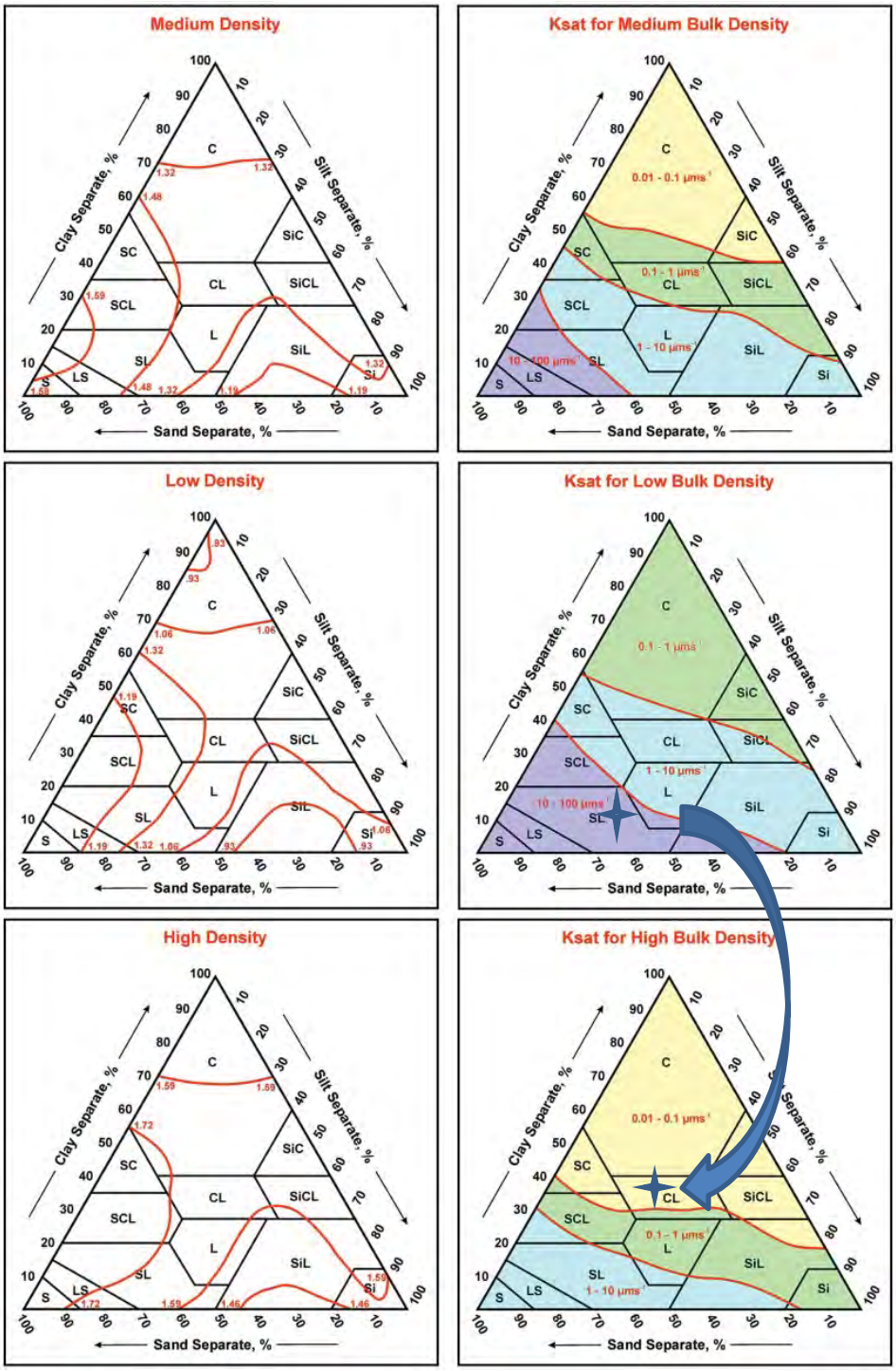


Figure 2 – Phase 3 area 2009

Jeff TenPas
24 East Main St.
Winters, CA 95694

Central Valley Flood Protection Board (by email to Ilene Wellman-Barbree)

Re: Phase 3 Putah Creek Channel Realignment Project in Winters

To All Parties Concerned:

There is a very significant potential negative effect to add to the environmental effects of the proposed Phase 3 Channel Realignment Project - the effect on groundwater recharge. This will be a highly significant negative effect if it affects Winters municipal water supply.

Given the short time before a decision is made by the Central Valley Flood Protection Board, I have done a rapid analysis of this. This is not a full and complete analysis, and I am not a groundwater expert. However, I am a professional soil scientist and expert on soil and water movement through soil, and the soil or fill used in project will be a critical limiting factor in groundwater recharge. With the available data and time, I have made a reasonable, factual, and scientific analysis of potential effects.

We know that a low permeability clayey fill material is being imported and used in the project. In addition, a high level of compaction is specified for the imported fill as well as the native floodplain soils. The specifications for fill and compaction are in a signed contract. Please note that these same specifications would satisfy the requirements for creating an impermeable liner to a landfill or a canal. The existing contract makes it certain what the result will be. And there is plain evidence in Phases 1 and 2 of the impacts, including test wells in the floodplain that are dry, and trees dead or dying due to the failure of water movement from the stream to the floodplain.

It is impossible that the proposed project will not affect groundwater recharge. An impermeable barrier is being created between the stream and groundwater. I've prepared an initial estimate of the effect. It is based on Solano County Water Agency data on water loss (to groundwater and evapotranspiration) from the stream for the months of May to Oct in the Diversion Dam to I-505 stream reach.

According to SCWA data, there is an average loss of 14.5 cubic feet per second (cfs) in the 4.2 mile reach from the Diversion Dam to I-505. Allowing a conservative one cfs for evapotranspiration, there is an average rate of recharge to groundwater of 3.2 cfs/mile of stream, and 3.2 cfs in the mile reach of the project in Winters. If the project is constructed as designed, the streambanks will be impermeable, and groundwater recharge will be cutoff. The cumulative effect in six months will be a reduction in groundwater recharge of 1155 acre feet.

The effect may not be 100%. But the estimate only takes into account the May to October period. The total effect may increase after taking into account that there will be additional effects on recharge from November to April, and a potentially large diminishment of recharge during flood events. At diminishment in recharge of just 1155 acre feet, the reduction in groundwater recharge is about 1.5 times the total estimated annual residential water use in Winters. Or it is sufficient water to irrigate hundreds of acres of land.

December 8, 2015

Jeff TenPas
24 East Main St.
Winters, CA 95694

Winters municipal water supply comes from groundwater. And the adjacent agricultural producers depend on groundwater. I cannot escape the conclusion that the project may significantly reduce groundwater recharge, permanently, beyond our lifetimes, and that ultimately it may affect the municipal water supply to the City of Winters and the adjacent ranches.

Yours truly,

Jeff TenPas

CC: Winters Friends of Putah Creek, Don Mooney
Attached: Attachment Dec 8 2015 Calculations for Diminution of Groundwater

Solano County Water Agency

Lower Putah Creek Riparian Water Availability Forecast: May 1, 2015

(Projected water availability in the absence of Monticello Dam)

Reach No. 1: Putah Diversion Dam to Hwy. 505 Bridge

Average Monthly Gain(-) or Loss(+) in Cubic Feet Per Second (cfs)

(projected Average gain or loss in the reach)

Percent Exceedance	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*
5%	NA	10	13	16	15	17	14
10%	NA	10	13	16	15	17	15
15%	NA	10	13	16	15	17	15
20%	NA	10	14	16	15	17	15
25%	NA	10	14	16	15	17	15
30%	NA	10	14	16	15	17	15
35%	NA	10	14	16	15	17	15
40%	NA	10	14	16	15	17	15
45%	NA	10	14	16	15	17	15
50%	NA	10	14	16	15	17	15
55%	NA	10	14	16	15	17	15
60%	NA	10	14	16	15	17	15
65%	NA	10	14	16	15	17	15
70%	NA	10	14	16	15	17	15
75%	NA	10	14	16	15	17	15
80%	NA	10	14	16	15	17	15
85%	NA	10	14	16	15	17	15
90%	NA	10	14	16	15	17	15
95%	NA	10	14	16	15	17	15
100%	NA	10	14	16	15	17	15

Attachment Dec 8 2015 Calculations for Diminution of Groundwater

Average Loss from Diversion Dam to I-505, May to Oc	14.5
Evapotranspiration	1
Groundwater recharge	13.5
Miles between Diversion Dam and I-505	4.2
CFS/mile	3.2

RECHARGE DIMINUTION IN WINTERS	
Miles of project in Winters	1
Recharge diminution in Winters	3.2 cfs
Time in a day, seconds	86400
CF/day	276480
Acre ft/day in Winters	6.347107
Acre ft/ 6 months in Winters	1155.174

Water Use in Winters	
Gallons/ day / household	360
Residences	2000
Daily water use	720000
Annual water use in gallons	262800000
Annual water use in cubic feet	35040000
Annual water use in acre feet	804.407713

Winters Friends of Putah Creek
200 Madrone Court
Winters, CA 95694

May 23, 2016

Mr. William Guthrie
Senior Project Manager
Department of the Army, Corps of Engineers
1325 J Street
Sacramento, CA 95814-2922

Re: Winters Putah Creek Park Channel Realignment 3 – Ref 0540-R54125-0

Dear Mr. William Guthrie:

I am writing on behalf of those whose names are listed at the end of this letter as members of the Winters Friends of Putah Creek. Phase 3 of the River Parkways grant for Winters Putah Creek Nature Park calls for relocating a 0.25 mile length of Putah Creek 300 feet to the south and narrowing the channel. This section of creek hosts an abundance of wildlife, including beaver, otter, mink, pond turtles, egrets, herons, ducks, geese, and kingfishers that is rare in the previously restored creek sections.

We treasure this last, unaltered segment of the Putah Creek channel adjacent to the Winters Putah Creek Nature Park and are greatly concerned about the proposed plan to be implemented under the Phase 3 River Parkways grant. The existing oasis of biological diversity will be eliminated by the current plan.

We are also concerned that a healthy riparian forest is not re-growing in Phases 1 and 2 because the soil has been thoroughly compacted (as dictated in the contracts), and the filled and compacted creek bed and floodplain are impeding percolation and groundwater recharge. The same thing would happen if Phase 3 went forward given the current design.

With record numbers of salmon already spawning both above and below this section this year it is clearly not an impediment to Chinook and other salmonids. According to the USDA Natural Resources Conservation Service, “Good trout stream habitat is complex, consisting of an array of riffles and pools, submerged wood, boulders, undercut banks, and aquatic vegetation.”[1] Phases 1 & 2 are devoid of complexity and lack the large pools, fallen logs, islands, high undercut banks and habitat complexity of the Phase 3 unimproved section.

[1] https://www.fws.gov/northeast/wssnfh/pdfs/RAINBOW1.pdf

If the planned Phase 3 modifications are carried out, there will be a profound loss of wildlife habitat and of the unique opportunity for the people here to view animals living in their natural surroundings. Where else can beaver and otter be routinely observed from the safety of a fenced, paved nature trail that meets ADA standards?

Our group of local scientists and environmental advocates has collaborated to develop an alternative plan (see attached) for restoring this section of creek. Funds that would otherwise be spent on the costly plan to relocate the channel could and should be spent on clearing out invasive species, cleaning up and planting the former location of the sewage ponds, adding gravel for salmon spawning, and mitigating soil compaction. Attached are some photos of the narrowed and unaltered creek sections, and of the wildlife that would be affected.

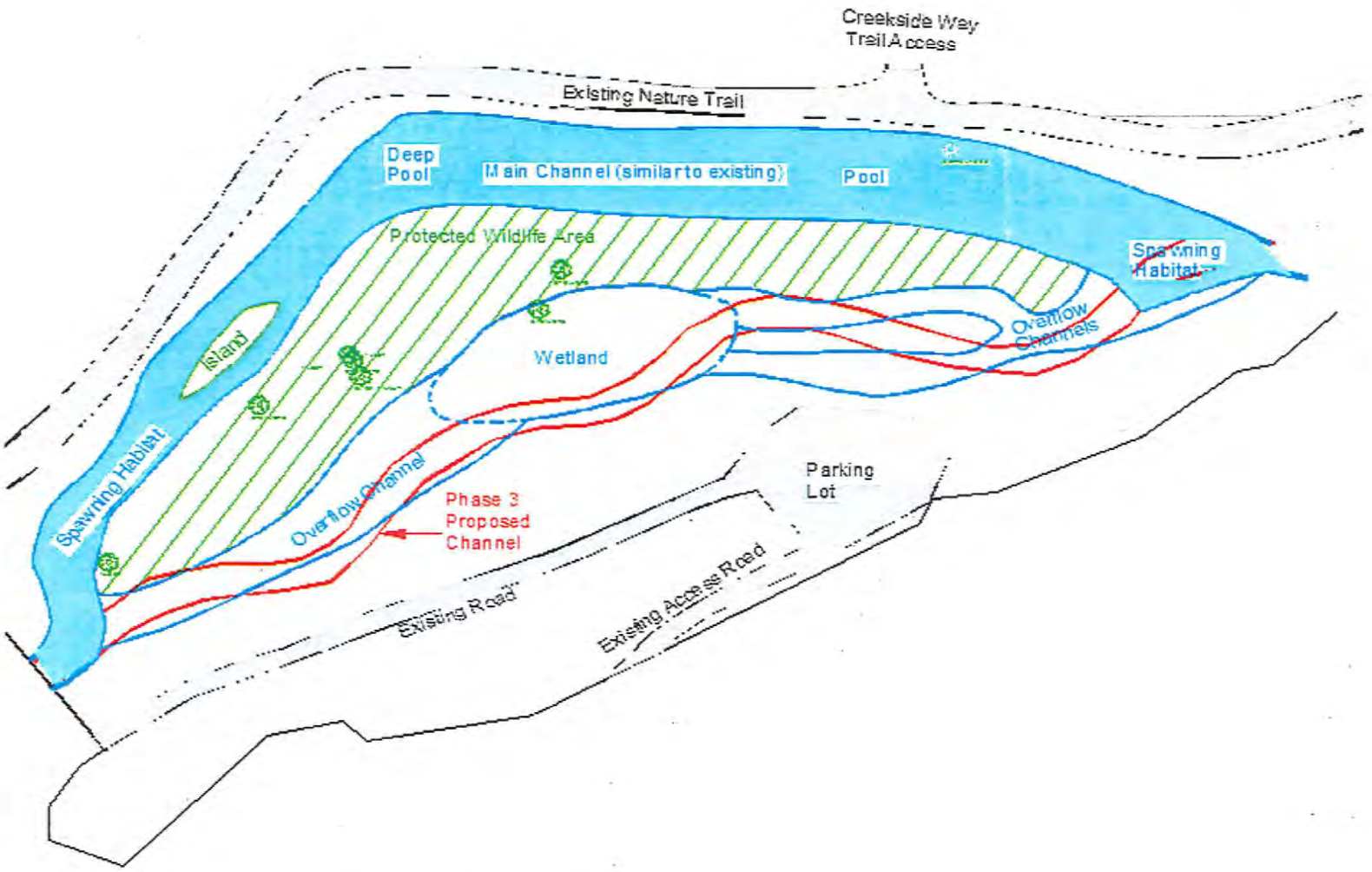
Supporting this alternative plan would be a win-win for those who enjoy the creek, its animal residents, and the granting agency. We trust that the agencies involved will see that this is a great opportunity to achieve the goals of the grant program in a way that the Winters community would enthusiastically support.

Sincerely,

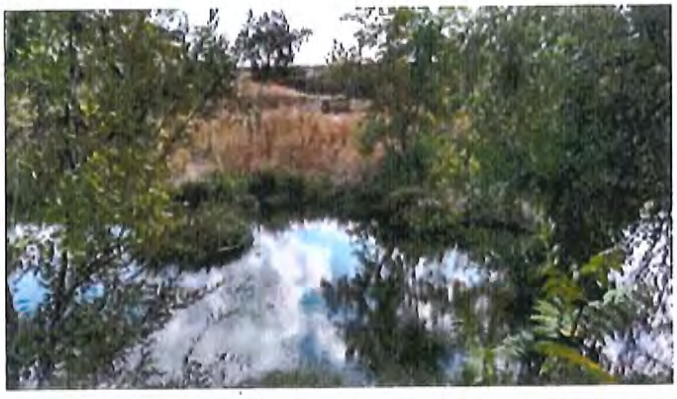
David Springer
Committee Chair, Winters Friends of Putah Creek

David Springer	Winters, CA	Linda Hirst	Winters, CA
Alison Eldridge	Winters, CA	Nolan Curran	Winters, CA
Carol Brydolf	Winters, CA	Sally Brown	Winters, CA
Debbie Hemenway	Winters, CA	Stephanie Myers	Winters, CA
Debra DeAngelo	Winters, CA	Yolanda Platt	Winters, CA
Eric Doud	Winters, CA	Alan Pryor	Davis, CA
Garry Douglas	Winters, CA	Barbara King	Davis, CA
Jan Schubert	Winters, CA	Bessie Oakley	Davis, CA
Jeff TenPas	Winters, CA	Glen Holstein	Davis, CA
LaRae Shaw-Meadows	Winters, CA	Pam Nieberg	Davis, CA

ALTERNATIVE PLAN



Overlay of engineering plan showing what could be accomplished in Phase 3. The planned narrowed and relocated channel, outlined in red, appears unimaginative and sterile by comparison to what exists now and what could be done to improve this area.



These show the short sections of the creek that will be narrowed and moved to the far side of the channel under Phase 3 work. These sections serve as habitat for beaver, otter, turtles, and a variety of birds. The photos were taken from the paved nature trail. After relocation and rechanneling, the creek will be nearly out of sight from this point, which serves as a superb wildlife viewing area and great value to the community.

Close proximity of narrowed section of creek to Putah Creek Road. The Phase 3 realignment will also bring the creek close to the south levee.

Stagnant pond (see arrow) created to obtain fill for Phase 2 realignment. Phase 3 funds should be used to fill it and plant vegetation.

Contractually, soils are required to be compacted, which has inhibited the growth of many of the native plants that have been planted by volunteers. Efforts to amend soils are laudable but unlikely to solve the problem of deep soil compaction.

Invasive plants, including Arundo, Tree of Heaven, Himalayan Blackberry, and Eucalyptus have taken over sections of the creek that were realigned under Phases 1 &2. Phase 3 funding should be used to complete the vegetation improvements that were supposed to have been implemented under those grants.

One of the inhabitants of the unimproved section of creek is a rare "piebald" beaver. Approximately six beaver occupy this stretch of creek, feeding mostly on native water plants.

A black-crowned night heron is one of the many birds that are more commonly seen in the unimproved section of creek that will be narrowed under Phase 3. Others include green heron, wood ducks, hooded mergansers, kingfisher, and snowy egret as well as pond turtles.

LAW OFFICE OF DONALD B. MOONEY
129 C Street, Suite 2
Davis, CA 95616
530-758-2377
dbmooney@dcn.org

June 24, 2016

VIA CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Roland Sanford
General Manager
Solano County Water Agency
810 Vaca Valley Parkway #203
Vacaville, CA 95688

Colonel David G. Ray, District Commander
Sacramento District
U. S. Army Corps of Engineers,
1325 J Street
Sacramento, CA 95814-2922

Gina McCarthy, Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Thomas Howard, Executive Director
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-0100

Jared Blumenfeld, Regional Administrator
US EPA, Pacific Southwest, Region 9
75 Hawthorne Street
San Francisco, CA 94105

Pamela C. Creedon, Executive Officer
Central Valley Regional Water
Quality Control Board
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670-6114

Re: 60 Day Notice of Intent: Winters Putah Creek Nature Park Channel Realignment (SPK-2011-00371)

To Whom It May Concern:

On behalf of the Winters Friends of Putah Creek ("WFPC") and other interested parties, I am writing to provide notice of WFPC's intent to sue the Solano County Water Agency for its violation of section 404 of the Clean Water Act, 33 U.S.C. § 1311. This letter is provided pursuant to the 60-day notice requirement of the citizen suit provision of the Clean Water Act, 33 U.S.C. § 1365. The reasons for this notice are set out in greater detail below.

At the March meeting of the Lower Putah Creek Coordinating Committee, SCWA announced that it intended to proceed with Phase 3 of the Winters Putah Creek Nature Park Channel Realignment (Project). Continuing the Project, particularly Phase 3 will result in irreparable harm to the environment and violates the Clean Water Act (CWA), 33 U.S.C., § 1311.

I. VIOLATIONS OF THE FEDEAL CLEAN WATER ACT

A. SCWA FAILED TO MEET THE WETLAND MITIGATION REQUIREMENTS IN PHASES 1 AND 2

Phases 1 and 2 of this Project allowed for the filling of 14.32 acres of waters of the United States, subject to a mitigation requirement for creation of 18.4 acres of riparian wetlands, emergent wetlands and open water. (See Permit SPK-2011-00371, Special Condition 1 (September 12, 2011). In implementing Phase 1 and 2, SCWA failed to create the new wetlands. The floodplains, where the wetlands could have been created, were instead constructed as a planar surface sloping at 1 to 2 percent to the channel, draining water away rapidly, holding no water, and supporting no wetlands. Thus, there are no areas in Phase 1 and 2 that meet the wetland definition for wetland hydrology, soils, and plants.

B. WETLAND MITIGATION WILL UNAVOIDABLY BE UNMET IN PHASE 3

Phase 3 is designed to fill 1.8 acres of waters of the United States. The permit, however, requires that Phase 3 mitigate for the loss by the creation of 2.4 acres of new channel and active floodplain. (Permit SPK-2011-00371 (August 12, 2014).) The Project design does not include 2.4 acres of new channel or floodplain. As designed, Phase 3 fails to meet the mandatory mitigation requirements.

C. DIRTY FILL USED IN PHASE 3

SCWA placed dirty fill in the Phase 3 Project area during February and March 2016. Jeff TenPas for the WFPC notified the Army Corps of Engineers of the unlawful fill in the Phase 3 Project area. (Attachment A: Email dated February 15, 2016 from Jeff Tenpas to William H. Gutherie, with photos attached; and Attachment B: Email dated March 30, 2016, from Jeff TenPas to Carol Scianna and William H. Guthrie with photos attached.) Although the permit for Phase 3 requires the use of "only clean and nontoxic fill material", SCWA and its contractors used fill material that contains debris in the form of shreds of black plastic.

D. VIOLATION OF CONDITIONS FOR NATIONWIDE PERMIT NUMBER 27

Nationwide Permit (NWP) 27 is restricted from allowing the conversion of open channel stream habitat to another aquatic habitat type. In Phases 1 and 2, SCWA reduced the open channel area by 14.32 acres. Under NWP 27, the only allowable mitigation was in the form of at least 14.32 acres of open channel. In direct contravention of the terms of NWP 27, SCWA's Section 404 permit (SPK-2011-00371, Sept 12, 2011) allowed mitigation to be in the form of "seasonally flooded riparian wetlands, emergent wetlands, and open water channel". In Phase 3, there is a proposed loss of 1.8 acres of waters of the United States, which is the result of narrowing the stream channel, and the permit allowed mitigation to be in the form of "new channel or active floodplain." (Permit SPK-2011-00371 (August 12, 2014).) Again, NWP 27 allows only for direct replacement of open channel with open channel.

E. VIOLATION OF NATIONWIDE PERMIT GENERAL CONDITION 6 - SUITABLE MATERIAL.

General Condition 6 requires that "no activity may use unsuitable material" as fill. In contradiction to General Condition 6, SWCA and its contractor used fill in Phases 1 and 2 (and proposed in Phase 3) that was a heavy clayey material, low in nutrients, and organic matter. The fill is too high in clay, too compacted, and has such low permeability that it does not allow water to move through it. Material of this texture is not normally found in a floodplain soil, and it is not suitable material for floodplain fill. Because the fill was used to narrow the channel, it essentially lines the channel, and cuts off the stream from the floodplain and the groundwater. Three highly detrimental effects result for the use of this bad fill: 1) water flow from the stream to the riparian forest has been cut off, as evidenced by the mature trees on the floodplain that are dying for lack of water; 2) the hyporheic zone, the ecosystem zone where stream and groundwater meet, has been eliminated along with the ecosystem services and aquatic life that occupy that zone; and 3) the movement of water from the stream and into groundwater has been impaired, probably severely. Using this material results in a failure to maintain a "critical characteristic" of the streambed, stream banks, and floodplain of the fill site. (See 40 C.F.R. §230.5(f).

F. FILL IN VIOLATION OF 33 U.S.C. SECTION 408.

Fill has been placed in Phase 3 without the authorization required by 33 U.S.C. section 408. This violation of section 408 has been documented and reported to the Army Corps on at least two occasions. (See Attachments A and B.)

II. RELIEF SOUGHT

Pursuant to Section 309(d) of the Clean Water Act, 33 U.S.C. § 1319(d), and the Adjustment of Civil Monetary Penalties for Inflation, 40 C.F.R. §19.4, each separate violation of the Clean Water Act subjects the violator to a penalty for all violations occurring during the period commencing five years prior to the date upon which WFPC serve their notice of intent to file suit. These provisions of law authorize civil penalties of up to $32,500 per day per violation for all Clean Water Act violations.

In addition to civil penalties, WFPC will seek injunctive relief preventing further violations of the Clean Water Act, 33 U.S.C. §1365(a) and (d), declaratory relief, and such other relief as permitted by law. Lastly, the CWA, 33 U.S.C. § 1365(d), permits prevailing parties to recover costs, including attorney's fees and expert's fees associated with this enforcement action.

III. PARTY GIVING NOTICE

Winters Friends of Putah Creek
c/o Donald B. Mooney
Law Office of Donald B. Mooney
129 C Street, Suite 2
Davis, CA 95616

IV. CONCLUSION

Upon expiration of the 60-day notice period, WFPC intend to file a citizen suit under the Clean Water Act for the above-referenced violations, and for any similar violations that occur after the date of this notice letter.

During the 60-day notice period, however, WFPC are willing to discuss effective remedies for the violations noted in this letter, and actions that might be taken to ensure future compliance with the Clean Water Act. Moreover, the 60-day notice period would be the appropriate time for SCWA to inform WFPC and the Army Corps of Enginers of any steps they have already taken to remedy the violations discussed in this notice. If any party named in this 60-day notice wishes to pursue such discussions in the absence of litigation, it is suggested that such party initiate those discussions immediately. If good faith negotiations are not occurring, at the close of the 60-day notice period WFPC will move forward expeditiously with litigation.

Counsel representing WFPC in this matter is listed below. Please direct all communications to WFPC at:

Donald B. Mooney
Law Office of Donald B. Mooney
129 C Street, Suite 2
Davis, CA 95616
530-758-2377
530-304-2424
dbmooney@dcn.org

Sincerely,

Donald B. Mooney
Attorney for Winters
Friends of Putah Creek

Attachments

cc: Jeff TenPas

ATTACHMENT A

ATTACHMENT A

Subject: Fill occurring, Friday Feb 12, 2016, on Putah Creek, Phase 3
Date: Monday, February 15, 2016 at 8:32 PM
From: Jeff TenPas <jtenpas@lycos.com>
To: "William.H Guthrie" <William.H.Guthrie@usacoe.army.mil>, "Marc.A Fugler" <Marc.A.Fugler@usace.army.mil>, "Wellman-Barbree, Ilene@DWR" <Ilene.Wellman-Barbree@water.ca.gov>
Cc: Donald Mooney <dbmooney@dcn.org>

To: USACE and CVFPB

Re: Fill occurring in Winters - presumably without 408 permit, or CVFPB permit

Hello All, on Wednesday or Thursday last week I saw a lot of fill was being brought into the Putah Creek Realignment Project - Phase 3 - in the area currently under consideration for a 408 permit and CVFPB permit. There were dump truck loads of soil stacked row upon row across a large area.

I checked into this on Friday to see what was happening. Most of the fill had already been leveled across a half acre or more, there were about 15 piles remaining (photo 2496) covering what I estimate was less than 10% of the original area of fill piles. Another concerned person sent me a photo of a dump truck unloading (photo "dumping")

I went to see Disney Construction, the firm currently completing construction of the bridge, and talked to Charles Mason (707 315-1638, cmason@disneyconstruction.com) to find out what was happening. It appeared to me and Charles confirmed that Disney was unloading the fill there. I asked if Disney had permission, and Charles said they had permission from Rich Marovich and Solano County Water Agency to put the fill there. I called the City as the property owner, left a message, and got a message back from Carol Scianna confirming that the City was aware, and had been advised by Rich that the permits were in place to allow this.

I advised Charles Mason for Disney Construction that the permits were to the best of my knowledge not in place to allow this. This was late Friday afternoon, so I called the USACE and left a message.

I would have to estimate over 500 cubic yards of fill, and maybe 1000 to 2000 or more. Disney Construction should know how much.

The fill appears to be in violation of USACE and CVFPB permit requirements. Since this fill has probably not been sampled and tested, it may be just as unsuitable for use in the floodplain as the earlier fill.

On another subject. Downstream in the NAWCA 3 project area, a dozen or more large eucalyptus trees have been cut in the floodplain. The cutting has greatly reduced the overstory and the stream shading in this reach. The trees. The trees were cut in rounds, and the rounds and limbs and tops remain piled in the floodplain.

List of photos:

2496 - Mounds of fill remaining on Friday

2502 - Depth of fill

2504 - Filling wetlands, mounds in background

2507 - Already filled area in the foreground, mounds of fill in background

2522 - Excavator working on Friday

Dumping - Photo from Wednesday showing one dump load

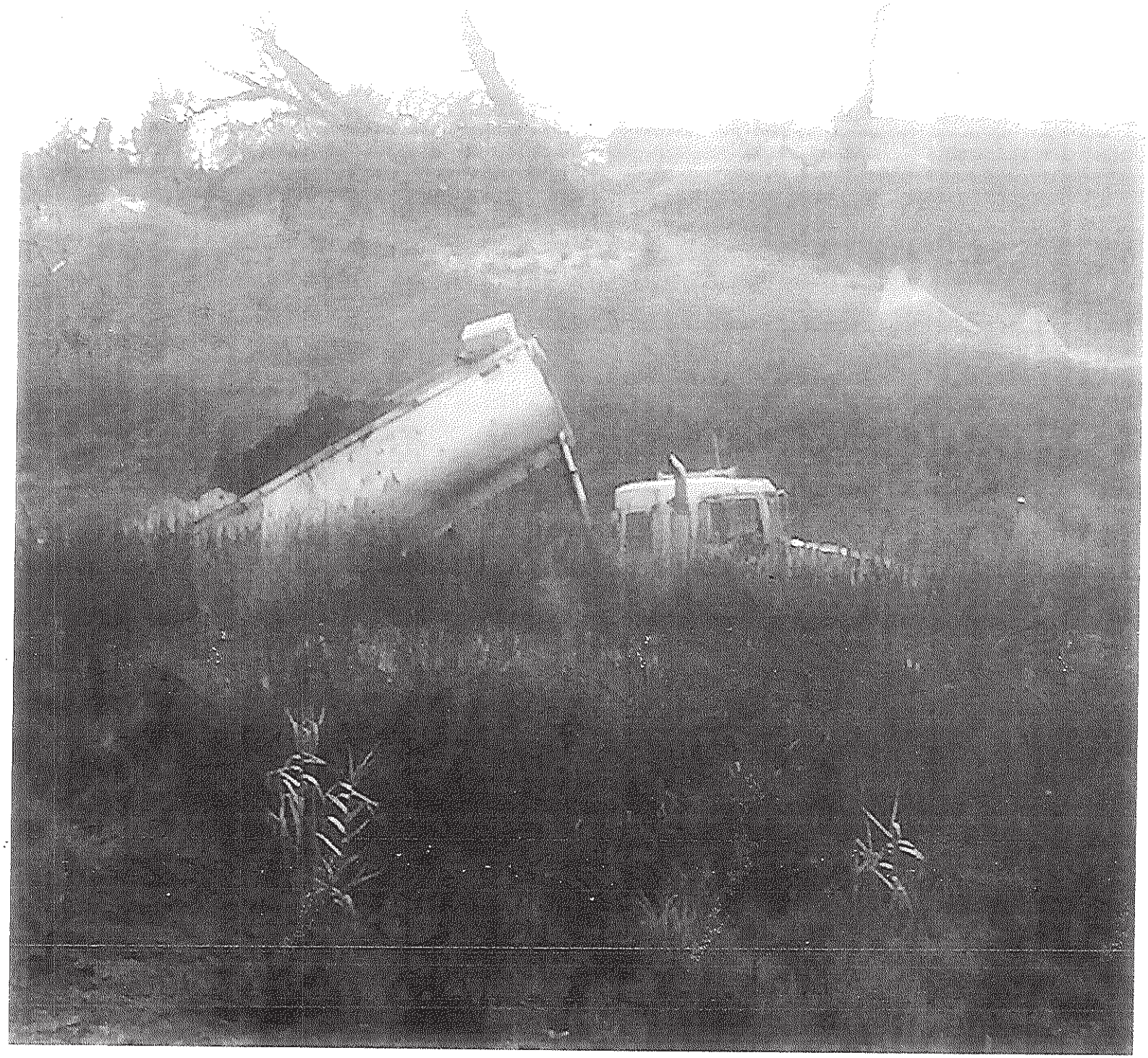
--

Please call or email if I can answer any questions, using work number from 7-4.

Sincerely yours,

Jeff TenPas
24 East Main St
Winters, CA 95694

530 795-3617 home, 707 562-8955 work




VOLVO

ATTACHMENT B

ATTACHMENT B

Subject: Fill currently going in Phase 3
Date: Wednesday, March 30, 2016 at 1:40 PM
From: Jeff TenPas <jtenpas@lycos.com>
To: Carol Scianna <cosmozz@sbcglobal.net>, <William.H.Guthrie@usace.army.mil>, "Wellman-Barbree, Ilene@DWR" <Ilene.Wellman-Barbree@water.ca.gov>

Hello All, there is new fill going on in Phase 3, and to the best of my knowledge there are no permits from the CVFPB or COE 408 for this. This is similar to the filling that went on last month.

I am wondering what is the story here.

Carol, does the City approve of this?

Is this legal? Where was the fill from? Was the fill tested? Is the fill suitable for the floodplain, sandy and not clayey?

Was the site surveyed for western pond turtle and nests and nesting birds before starting work?

It seems as if filling will be done before permits are in place, presuming that CEQA and NEPA issues and wetland mitigation issues are resolved. If this and last months fill is unsuitable, will it be removed?

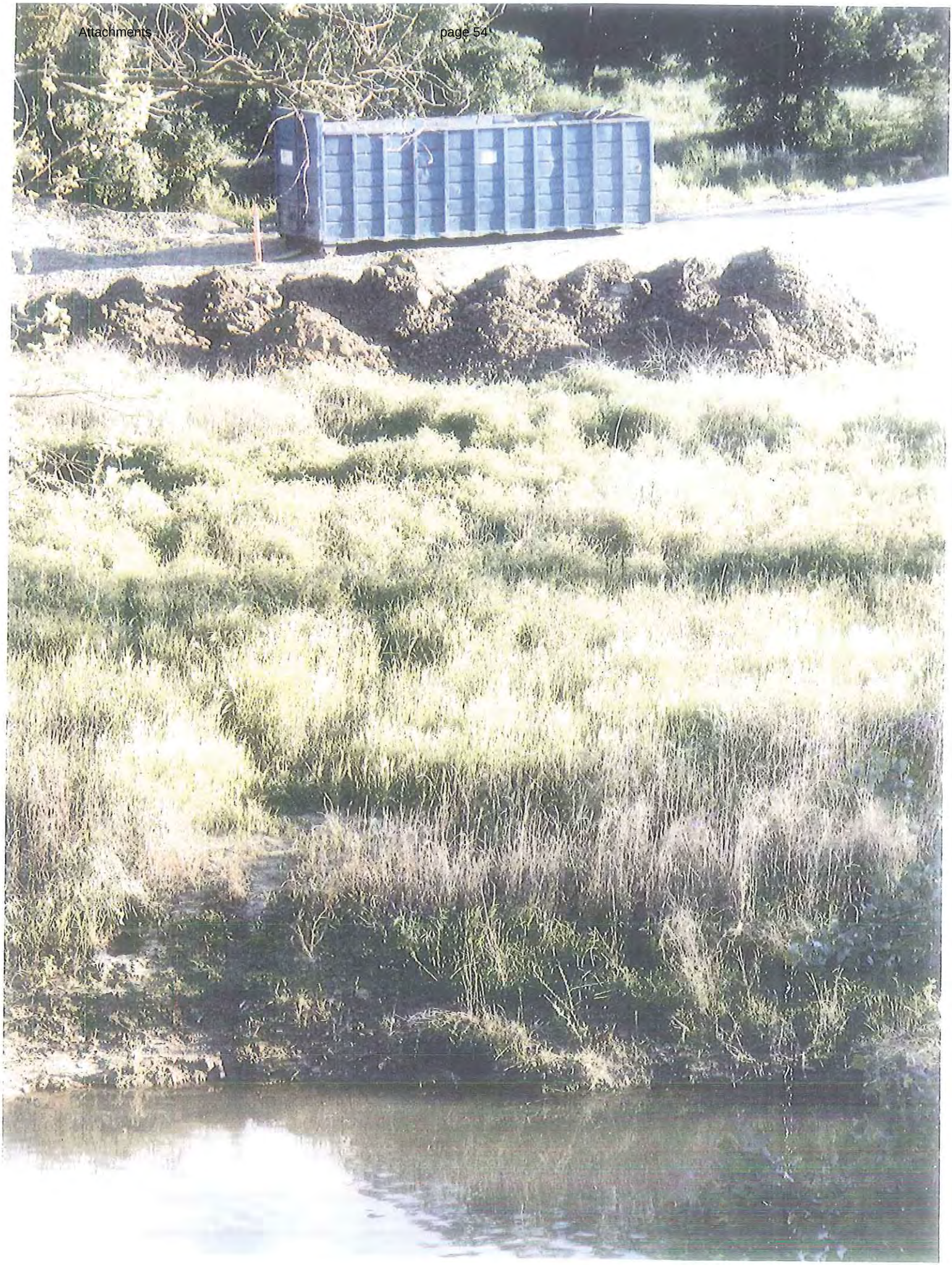
See photos attached:

1. New fill

2. Last months fill. The photo shows that fill had trash and debris in it, just the surface layer is showing.

--

Winters Friends of Putah Creek
Jeff TenPas, Chair
24 East Main St
Winters, CA 95694



Jeff TenPas
24 East Main St
Winters, CA 95694

May 20, 2016

By email to: CentralValleySacramento@waterboards.ca.gov.

Attn: Stephanie Tadlock, Environmental Scientist
401 Water Quality Certification Unit
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670

Re: Comments on 5A48CR00145, Putah Creek Restoration Project-Upper Reach Program

To the Central Valley Water Quality Control Board:

Please accept these comments on the Clean Water Act ("CWA") 401 certification for 5A48CR00145, Putah Creek Restoration Project-Upper Reach Program). These comments are submitted on behalf of Winters Friends of Putah Creek and Jeff TenPas. Commenters request that the Water Board deny the 401 certification for Solano County Water Agency's Putah Creek Restoration Project-Upper Reach Program.

Our overriding concern is that the project will harm existing beneficial uses and water quality of Putah Creek. Our comments will show how the project fails to consider or avoid potential affects.

To put the proposed project in context, compare the past disturbance of Putah Creek and what is now proposed. We know that in its past Putah Creek has experienced some disturbance, especially gravel mining. The project proponent bases the need for the project on this disturbance, but does not show its extent.

Now the SCWA proposes channel modification work along 24.2 miles of Putah Creek with channel modification in 16 of 17 stream segments. The application proposes a maximum of over nine million cubic yards of fill. Channel modification imposes extreme disturbance on the channel and floodplain. The proposed project will exceed all previous disturbance of the creek and floodplain.

The DEIR does not paint a clear picture of the proposed project, the tree-cutting, clearing and grading, filling and earthmoving, and work with heavy equipment. But we can anticipate what project construction work would proceed like previous work in Winters Putah Creek Nature Park where the SCWA did a channel modification project. The work in Winters began with clearing a mile of floodplain of over 90% of the trees and other vegetation, then bulldozers cleared stumps, and earthmovers scraped the floodplain flat. Next the stream was dried up and rerouted through a pipe. Then earthmovers pounded over almost ever inch of the floodplain, going round and round and back and

forth spreading fill, compacting the ground. In the end the floodplain was transformed to a flat hard compacted impervious plain with a few standing cottonwood trees.

We are dismayed by this approach with its uncontrolled use of heavy equipment and drastic disturbance. Some use of heavy equipment may sometimes be needed. But earthmovers and bulldozers are blunt and crude tools to use in a creek and floodplain and can never reproduce the complexity of undercut stream banks, complex channel form, and complex floodplain topography. Earthmoving equipment can only build a grossly simplified floodplain and channel while severely compacting the project area. To spread this treatment over miles of stream is hard to conceive.

How much disturbance will come from the proposed project? How many miles of stream will be disturbed, what percent disturbed, how many trees cut down, how many acres of riparian forest cleared? Based on the application, it appears 640 acres will be cleared and graded and filled or otherwise disturbed.

Following are specific comments with citations to the CWA, state and regional water quality standards, and the Section 404(b)(1) Guidelines for the CWA:

1. Section 404(b)(1) Guidelines for the Clean Water Act provide guidance as to the steps to be taken to maintain beneficial uses during fill of the waters of Putah Creek. The overarching principle of the Guidelines is that the applicant must show the project will not have adverse impacts. According to the Guidelines “dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact” and “destruction of special aquatic sites, such as filling operations in wetlands, is considered to be among the most severe environmental impacts (Section 230.1 (c) and (d). The application fails in ways listed in the following comments to show the project will not have adverse impacts.

2. The project will use unsuitable fill in violation of Section 230.5 (f) and (h), Section 230.11 (a), and Section 230.20. These sections of the Guidelines require that the proposed fill should be suitable to the proposed fill site. A critical characteristic of floodplains is the permeability of the soils and channel substrate. A vast amount of imported fill is proposed in this project. The SCWA proposes to use spoils of the South Putah Canal project, the same source that was used for prior work in Putah Creek with detrimental results. The spoils are clayey and placement with heavy machinery compacts this material to a nearly impermeable state. The use of these spoils for the Winters project resulted in a drastic lowering of permeability of the channel bed and banks and the floodplain, a drastic reduction in groundwater movement, and effectively sealed the floodplain off from the stream, and sealed the stream off from the groundwater. The clay loam fill has permeability that is an order of magnitude lower than native floodplain soils. Heavy compaction reduces permeability by another order of magnitude. Any fill must be matched to the critical characteristics of the project sites (230.11 (a)). The application must be revised to include an assessment of the critical permeability and texture and density characteristics of the floodplain soils and channel bed and banks and a plan to preserve the critical characteristics.

3. If the proposed project is allowed to proceed with imported clayey fill and earthmoving equipment running all over acres of floodplain, it will irreversibly alter the floodplain habitat. We have seen in Winters what this manner of project produces, where parts of the floodplain were permanently converted from healthy riparian forest habitat to poor unproductive floodplain without topsoil and without groundwater, where the remnant of cottonwood trees left are dead and dying. Given that the same source of fill and same manner of heavy equipment work are proposed, the same outcome is expected. A loss of good riparian forest habitat is expected, and practically speaking it would be an irreversible effect. What funder would pay to undo it? And what agency would work on restoring the "restored" floodplain?

   This irreversible commitment of resources requires analysis according to CEQA and NEPA, and that analysis is missing. CEQA and NEPA are not being complied with. State CEQA Guidelines (14 California Code of Regulations [CCR] 15126.2[c]) and NEPA (40 Code of Federal Regulations [CFR] 1502.16) require analysis of significant irreversible and irretrievable effects. CEQA requires evaluation of irretrievable resources to ensure that their use is justified. NEPA requires an explanation of which environmental impacts are irreversible or would result in an irretrievable commitment of resources.

4. Section 230.11 (b) of the Guidelines requires that consideration shall be given to project effects on the hydrologic regime, including the hydrology of the floodplain and groundwater. The DEIR does not consider the effects of channel narrowing, clayey fill, and compaction from equipment traffic. These factors are all certain to reduce streambank and bed and floodplain permeability and groundwater movement and recharge.

5. Subpart D of the Guidelines requires that potential impacts on biological characteristics of the aquatic system must be considered. Mussels are particularly at risk from any in-channel work, and effects on mussels were not considered at all. Mussels are in general decline across California, and channel filling and realigning projects will surely kill any that are present. Given the scale of the project, it is possible that the project could destroy all or a large percentage of native mussels in Putah Creek. Mussels should be considered in the application and DEIR (Section 230.31).

6. Other wildlife must be considered (Section 230.32) and have not been. The DEIR study did not include surveys for wildlife, their habitat, or distribution. The project plan does not include a strategy to avoid impacts except to say there will be pre-project surveys and avoidance. It is too late to plan and mitigate or avoid impacts when the project is already planned and contracted. The scale of the project and intensity of disturbance of channel realignment risks cumulative effects. The proponent must assess effects of the project on the habitat of beaver, otter, western pond turtle, migratory water fowl, and song birds, consider what the project affects might be, and include plans to avoid or minimize disturbance and assess how the alternatives might lower disturbance. This is required before issuance of a permit.

7. Inadequacy of Wetland Delineation. The draft wetland delineation attached with the application is based on a mere 40 transects for a 24.2 mile segment of Putah Creek, or one transect every 3200 feet. It is hardly surprising that the delineation identified only 0.4 acres of wetlands above the stream high water mark, but this is not a likely event. A project that includes so much channel realignment, such extreme site disturbance, and such a commitment of natural and financial resources, must have a thorough wetland delineation commensurate with the level of disturbance.

8. Subpart E of the Guidelines requires assessment of potential Impacts on special aquatic sites. Special aquatic sites must be considered in projects affecting waters of the United States (Section 230.41, 230.43, and 230.45). This includes wetlands, pool and riffle complexes, and vegetated shallows. The DEIR fails to identify and map these sites, and thus cannot avoid or plan for avoidance or mitigation. The cursory wetland delineation is wholly inadequate.

9. Project effects on municipal and private water supplies (Section 230.50). Groundwater recharge will be affected by filling gravel pits, narrowing channels, reducing the wetted channel boundary, and by importing low permeability fill, and compacting the floodplain soils by construction activities. Filling the gravel pits alone will make a dramatic reduction in groundwater recharge. The City of Winters depends entirely upon groundwater for its water supply. The impact of the project on groundwater must be analyzed and disclosed.

10. The DEIR and application for certification should include a map of the past disturbances that are the purported basis for the project. The DEIR should disclose the location of past disturbance and their size and location relative to the proposed work sites.

11. Effects on recreational use and aesthetics are required to be considered and are not assessed and disclosed (Sec 230.52, Sec 230.53). The SCWA currently plans a Phase 3 realignment project in Winters that will affect recreational use in Winters by moving the stream channel. The current location of the channel affords walkers the closest and best views of the creek and great views of wildlife. Moving the channel will move it out of sight of people walking on a popular trail. This will deprive walkers of the existing views of the creek and wildlife.

12. Effects on water contact recreation need to be considered in order to maintain this beneficial use (Sec 230.52). There are swimming holes on Putah Creek that should be identified, mapped, and avoided in order to maintain this beneficial use. There is one such site in the City of Winters a few hundred feet upstream of I-505. Impacts on swimming holes should be avoided, and if adversely affected should be mitigated by construction of a compensatory swimming hole.

13. Testing Fill Materials (Sec 230.61). The application does not disclose information on the physical testing of the fill materials as needed based on Sec 230.61. Testing of the fill materials is needed in order to assess the project effects on permeability of the project area and the project's potential effects on groundwater movement. Fill should be tested for texture, for compaction,

and for permeability after compaction.

14. Actions to Minimize Adverse Effects (Part 230, Subpart H). Subpart H provides for taking actions to minimize adverse effects of projects in accordance with 230.10 (d). The applicant has not identified actions to minimize adverse effects, nor even taken the prerequisite step of adequately assessing potential adverse effects . Using clayey fill has potential adverse effects on the hyporheic zone, groundwater supply to the floodplain, groundwater recharge to a municipal water supply: these effects can be minimized by choice of a more suitable fill material. Effects on floodplain and channel permeability and groundwater movement can be avoided by limiting the use of large machines, by running machines on mats to avoid compaction, and by mitigation with actions to decompact the fills. Effects on special aquatic sites can be minimized by surveying to identify the sites and avoiding or mitigating. Effects on groundwater recharge can be avoided by changing fill, maintaining wetted area, adding wetlands. Effects on aesthetics and recreation can be avoided by keeping the creek in its current location in Phase 3 in Winters.

15. Failure to maintain and support beneficial uses of Putah Creek. The DEIR and the Programmatic 401 Water Quality Certification Application - Putah Creek Restoration Project – Upper Reach Program, Solano and Yolo Counties, California do not demonstrate that the project will support existing beneficial uses. State policy for water quality includes the policy contained in State Water Board Resolution No. 68-16 (Statement of Policy with Respect to Maintaining High Quality of Waters in California). This policy requires that wherever the existing quality of surface or ground waters is better than the objectives established for those waters in a basin plan, the existing quality will be maintained. Beneficial uses for Putah Creek are defined in the Basin Plan for the Sacramento River Basin. The beneficial uses to be maintained in Putah Creek include municipal water supply, agricultural supply, water contact recreation, non-contact water recreation, warm freshwater habitat, warm spawning, reproduction, and early development habitat, and wildlife habitat. The proposed project fails to maintain these existing beneficial uses.

16. The application is incomplete (23 CCR § 3856). The application does not include a complete project description. The application does not contain a description of steps taken to avoid, minimize, or compensate for loss of or significant adverse impacts to beneficial uses of waters of the state. The application does not include a description of the adverse impacts of other projects by the applicant in the last five years, including the adverse impacts of the projects in Winters on the riparian forest, groundwater recharge, wetlands, water contact recreation, and wildlife.

The Winters Friends of Putah Creek request to be informed of future correspondence and additions to the application file and decisions on the application. If ever the application is resubmitted or completed, we request to be given notice and opportunity to comment on the complete application.

Yours truly,

Jeff TenPas
Winters Friends of Putah Creek
24 East Main Street
Winters, CA 95694

To: Solano County Water Agency, 810 Valley Parkway, Suite 203, Vacaville, CA 95688

From: Jeff TenPas, 24 East Main St, Winters, CA 95694

Re: Comments on Initial Study and Mitigated Negative Declaration, NAWCA 3 – Lower Putah Creek Floodplain Restoration

I am a resident of Winters, live in close proximity to the creek, and spend time walking along the creek almost daily. I am also an environmental scientist with training in soils, hydrology, wetland and riparian ecology, stream ecology, and restoration ecology (MS-Soil Science, UC-Davis). I have worked for the US Forest Service as a leader in its watershed restoration program for the last nine years.

Following are comments submitted for the NAWCA 3 project.

1. I note that the SCWA has inexplicably scheduled the adoption of the Negative Declaration for its Consent Calendar for the agency's board meeting on June 11, 2015, the same day as the deadline for public comment. The SCWA Board cannot meet its duty under CEQA to consider public comment and respond to public comment without time for consideration comments, response to comments, and discussion(CEQA Guidelines 15002(j)).

   15002 (j) Public Involvement. Under CEQA, an agency must solicit and respond to comments from the public and other agencies concerned with the project. (See: Sections 15073, 15086, 15087, and 15088.)

2. Soils Impact and Biological Resources -Riparian Habitat. The project will have the effect of degrading the soil and permanently suppressing and interfering with the natural growth of riparian vegetation. The project proposes the import of 21,200 cubic yards of fill (Figure 2 -Area of Potential Effects Map). Figure 2 tabulates the project impacts in terms of area disturbed, cut material produced, fill material needed, and net import material. The proposed import material is spoils from the Putah South Canal (Initial Study, Draft Cultural Resources Report, and pers comm. Rich Marovich, at Winters Putah Creek Committee Meeting, May 2015). Tree, shrub, and plant growth will be stunted if this fill is used.

   The earlier phases of this project used the same fill. As a soil scientist and expert on the subject, I have examined this soil material. It is clayey, highly weathered, low in nutrients, and has very low permeability. It is very poor medium for riparian plant growth. The inhibitory effect of this fill on riparian plant growth and riparian ecosystem health is clear to see in the earlier phases. There are large areas where trees planted over two years ago are no taller than when planted and desiccated in summer, the ground cover is dried grass and invasive weeds. This should not be so in a floodplain, but is so because of the soil, because of low water storage and permeability and negligible nutrient supply, an unnatural situation for riparian forest. This effect will last indefinitely, leaving an unhealthy forest, stressed trees, and significantly lower cover and riparian habitat value for riparian and aquatic species – including habitat value that

currently exists for special status species, Swainson's hawk, valley elderberry longhorn beetle, and northwestern pond turtle. The will also be aesthetic impacts from the loss of habitat health and resilience. These impacts are significant because they affect so many people and will exist essentially to perpetuity.

There is no reasonable mitigation for this. The alternative is to bring in a more suitable topsoil material with a balance of silt, sands, and clays so as to mimic the riparian soils that naturally exist there now. The only other mitigation for using this spoil material would be to mix it extensively with additional silt and sand and organic matter so that the mix would constitute a suitable riparian soil. Volumetrically, the spoils would need to be less than half the total mix.

3. Biological Impact - Riparian Habitat. According to the MND and attachments, this project will cut 214 riparian trees, and the trees are almost exclusively native hardwoods. This will severely reduce cover, wildlife habitat, and stream shading. The importation of unsuitable fill will forever retard the reestablishment and recovery of the forest. This is significant for wildlife and for aesthetic reasons.

4. Recreation Impact – Loss of Swimming Hole. The proposed project will have the effect of destroying the sole remaining swimming hole in the creek in Winters – completely depriving the public and especially the youth of Winters of the pleasure of a swimming hole. The existing swimming hole is a deep wide spot in the channel along the north bank about midway between the upstream end of the project and the I 505 overpass, and the "Project Channel Work Map shows this segment of the stream is to be filled and bypassed with a new channel. The swimming hole has the depth and width and slow current to be swimming hole and an overhanging eucalyptus tree for a rope swing. The proposed new and altered channel does not include a new swimming hole.

   The impact is significant. There is large youth and disadvantaged youth population in Winters that can and does use the swimming hole. The disadvantaged youth especially may not have the municipal pool as an alternative. And in any case an artificial pool is no substitute for a natural swimming hole. Based on personal observation from almost daily walks, the swimming hole is often used by ten to twenty youth per day on many summer days so there may be almost a thousand recreational user days a year, and with a little improvement the swimming hole has the potential to increase to several thousand user days a year. This is no small contribution to the recreation opportunity, and especially water contact recreation. Without the swimming hole the youth of Winters will be deprived of their best opportunity for swimming in the creek, contact with nature, and a prime and scarce opportunity for healthy outdoor recreation. Would this not be a significant impact to you if you were young and it was a hot summer day?

   In order to mitigate this impact, the project if it goes forward should provide a new and even better swimming hole. It would not be complete with a mature tree for a rope swing, so would need to be designed next to a good tree or two.

5. Aesthetics Impact - The project will ruin the aesthetics of the floodplain. A natural floodplain has a heterogenous assemblage of geomorphic components including natural levees, undercut banks, flood overflow channels, and back swamps. These different niches support a variety of trees, shrubs, grasses and forbs, insects, birds, and mammals. The different habitats and flora and fauna provide variety and interest for people exploring the environment.

   The proposed project proposes to cut a mature native riparian forest, bring in fill, compact it with heavy equipment, and build an artificial flat floodplain. The plan is to "grade the existing floodplain to a uniform 1-2 percent slope, starting from approximately 18 inches above the low-flow water surface elevation." The homogeneity of such a floodplain is so unnatural it defies any concept of restoration ecology and working to a reference condition.

   The loss of variety in all aspects of the environment is a great loss, a significant loss, to humans. It will take longer than several lifetimes for natural geomorphic processes to reproduce the natural floodplain features that the project will obliterate.

   This could be mitigated by applying restoration ecology or simply taking a much lighter approach and maintaining the existing variety in the riparian environment.

6. Biological Resources Impact - The project will degrade the habitat for wildlife and sensitive species. I repeat from the comment above that a natural floodplain has a heterogenous assemblage of geomorphic components including natural levees, undercut banks, flood overflow channels, and back swamps. These different niches support a variety of trees, shrubs, grasses and forbs, insects, birds, and mammals. Some of the plants and animals that may be affected are special status species including Chinook salmon and northwestern pond turtle.

   Natural floodplain habitat provides a variety of opportunities for shelter and refugia for salmon or turtle during flood events. Loss of the refugia risks the loss of individuals of these sensitive species, as well as for other non-sensitive species. The overall homogenization of the riparian habitat risks losing part of the natural assemblage of flora and fauna and the resilience of the habitat to disturbance.

   This effect can be mitigated by taking a very light hand in floodplain alteration, or by restoring any loss of habitat diversity.

Alan Pryor
2736 Brentwood Pl.
Davis CA 95618

August 9, 2016

Brian Luke, Natural Resources Specialist
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1460
Sacramento, California 95814-2922

Sent via email: Brian.J.Luke @usace.army.mil

Re: Comments on for Putah Creek Restoration Project-Upper Reach Program - Number 19047-1

Mr. Luke:

These comments pertain to the proposed Putah Creek Restoration Project-Upper Reach Program – Phase III by the applicant Solano County Water Agency (SCWA).

This proposed project will include restoration activity for rechannelization using massive amounts of imported and aged dredged soils that are inappropriate for use as riparian soil. It will also extensively use very large earth-moving equipment to to reconfigure the creek channel and compact the new floodplain in the same manner as recently done in the Phases I and II in the Winters Putah Creek Parkway Project. This has resulted in extensive waterways and floodplain habitat degradation which has not been mitigated nor is it expected to be mitigated in any reasonable time-frame due to the nature of the degradation as more fully discussed below.

I have both general and specific concerns about the Phase III project based on the lack of adequate disclosures and the paucity of detailed information about the project.

My general concern is that a full EIR has never completed for the project that adequately meets disclosure standards imposed by NEPA/CEQA. Instead the entire Winters Putah Creek Parkway project has been planned under a non-project specific Master Plan:

1) <u>Unjustified Use of a Master Plan vs a Project Specific EIR</u>

Firstly, I do not believe the standard for the use of a Project Master Plan (in lieu of an EIR) has been met under NEPA/CEQA in this instance. The Master Plan clearly stated that additional studies and disclosures would be provided for the projects envisioned under the Master Plan consistent with NEPA/CEQA. These additional studies and disclosures must include a more exhaustive consideration of cumulative effects, alternatives, and project-wide mitigation measures to properly account for the greater variability in site considerations over the range of individual projects considered in the Master Plan. Unfortunately, rather than meeting this higher

bar, the current project continues the pattern of insufficient disclosures and considerations followed for Phases I and II.

More specifically, many of the specific features and practices proposed in the current Phase III project have already been recently unsuccessfully implemented in the ongoing industrial scale restoration project undertaken by the SCWA for channel realignment in Phases I and II by the Solano County Water Agency as more fully discussed below.

Although, applicant is acutely aware of these problems, applicant has not disclosed in the current application that the results of these recent efforts in the Winters project have been demonstrably poor with respect the successful re-vegetation of the newly developed floodplain in the Winters project as a result of the rechannelization of the creek. For instance, thousands of new native plantings at the Winters project have died or are stunted or in the process of dying despite repeated replantings and this information is not disclosed in the current application.

Further, applicant is directly aware that these past failures are caused by the specific type and compaction of the alien imported dredged soil used as fill in the Winters project Phases I and II. Unfortunately, the current application for Phase III does not adequately disclose these shortcomings nor are alternatives or mitigations discussed as is required under NEPA/CEQA. Nor is there any discussion or quantitative analysis in the current Phase III application that discusses why these failures have occurred and how they be prevented in the Phase III project. This is inconsistent with the requirements under NEPA/CEQA.

The Winters project failures and shortcomings have been publicly explained by Dr. Peter Moyle (a project consultant) who stated that these restoration activities are experimental in nature and have not been implemented before except in the failed Phases I and II. The experimental nature of these proposed activities in the Phase III of the project has not been adequately discussed in the application which otherwise functionally proposes to use the same rechannelization methodology with the same soils and compaction techniques that have previously used in the failed revegetation in Phases I and II. This lack of disclosure and proposed mitigation is inconsistent with the requirements under NEPA/CEQA.

More specifically, the existing Phases I and II rechannelization project shortcomings have heightened community concerns about the viability and advisability of the projects proposed in the current Phase III application which proposes to use many of the same failed techniques and methods as used in the earlier phases of the Winters project. These specific concerns not addressed in the Phase III application before the ACOE as more fully discussed below:

2) <u>Insufficient evidence has been provided demonstrating that the new proposed projects will not adversely impact existing plant and animal species</u>

There are literally dozens of plant and animal species that could be adversely affected by the type of radical industrial-scale transformation of the creek and new floodplain as have been demonstrably shown to have occurred in Phases I and II of the Winters Putah Creek Parkway

realignment project. Unfortunately, there has been no quantitative pre-and post-project assessment of the populations of almost all affected species ranging from mussels to insects to fish to song and migratory birds to numerous mammals including mink, otters, and beavers in the Phase III project making such assessments impossible to estimate in the rechannelization sub-sections.

Indeed, the only conclusive assessments that can be made about the project impacts on habitat in the Winters project have shown the re-vegetation efforts on the newly constructed floodplain have miserably failed. Unfortunately, these failures and the attendant adverse environmental impacts are not reported in the project application and, by NEPA/CEQA standards, the application should be rejected on this basis alone.

Further, as discussed above, many other plant and animal impacts have NOT been adequately identified nor has proper mitigation been completely and adequately proposed to minimize such impacts as required under NEPA/CEQA. As a result, substantial harm may be imposed on the plant and animal communities in the proposed project areas to their detriment. Under NEPA/CEQA, a careful inventory of all such potentially affected species must be taken and potential adverse effects must be identified with proposed mitigations for each affected species. In this absence, this application should be rejected for insufficient information under NEPA/CEQA standards.

Additionally not discussed are the number of trees and plants that are expected to be removed and the number of animals that are expected to be killed due to habitat destruction including special species of interest such as mussels and the Western Pond Turtle.

3) Insufficient evidence has been presented demonstrating that the project will not adversely impact existing Putah Creek water quality

Applicant has claimed in the past that water quality will be improved with cooler temperatures prevailing by eliminating pools of water where, it is claimed, the direct sunlight and slow moving water allows temperatures to rise to unacceptable levels. Unfortunately, there has been insufficient evidence to support this claim. In contrast, other stream temperature measurements have been taken upstream and downstream of some preexisting stream pools by other parties that show, contrary to applicant's claims, that there is very little temperature differential in the water passing through these pools and less than that observed in the reconfigured open stream bed itself. This is likely due to the shading over existing pools by the riparian canopy and the depths of the pools allowing temperature buffering.

Additionally, the larger surface area size of the pools allows for extensive nighttime evaporative cooling and black body radiation cooling in those pools. In contrast, the water in the reconfigured channel is directly exposed to the sunlight because the riparian canopy has been destroyed thus allowing increased sunlight to strike the exposed water on a per square ft of surface area basis. This can result in increased rather than decreased water temperature rises compared to preexisting conditions.

Compliance with NEPA/CEQA requires that an extensive survey of temperatures along the length of the proposed project must be taken, analyzed based on upstream flow and volume characteristics, and fully reported in the application. Additionally, quantitative projections of newly resultant temperatures post-project must be made with substantiation as to the methodology employed consistent with information already obtained at the Winters Putah Creek Parkway Project Phases I and II and other disturbed and undisturbed areas of the creek. In the absence of disclosure of this information, this application should be rejected due to the absence of sufficient information as otherwise required by NEPA/CEQA.

4) Insufficient evidence has been provided demonstrating that the project will not adversely impact existing ground water quantity and quality

Putah Creek is an undeniably important source for groundwater regeneration along the entire length of the stream and particularly where gravel pools have formed allowing for extensive infiltration into underground aquifers through the porous soils. By contrast, newly configured stream beds have had such water percolation almost eliminated because of the extensive hard pan created by the alien clayish, and heavily-compacted dredging spoils. There has been no analysis by the project proponents of the impacts on groundwater by the proposed project and this application cannot be properly approved until this information is provided and fully analyzed by experts.

Because this soil will be heavily compacted and virtually impermeable as evidenced by the floodplain fill used in the Winters project Phases I and II, this would have a qualitatively enormous but quantitatively unspecified adverse impact of the percolation of water through the fill to the original stream bed (adversely affecting existing riparian growth) and below to underground aquifers. However, there is absolutely no assessment in the application by a qualified engineer of these potential adverse impacts.

Further, the applicant does not provide any details as to the nature of the soil, its chemical and mineral composition, or its hydrologic characteristics such as water permeability and moisture retention once the fill is compacted. This lack of specificity is not consistent with NEPA/CEQA demands for proper certification and this application thus cannot be properly approved based on the lack of this sufficient information alone.

5) Insufficient evidence has been provided demonstrating that the project will not adversely impact other existing human beneficial uses

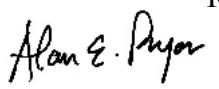
There has been no discussion or quantitative information provided identifying other human beneficial uses of the proposed project particularly including swimming, fishing, and rafting or canoeing. In the absence of such identification and proposed mitigations, the project's impact on such beneficial uses by humans cannot be evaluated and this application cannot be properly approved until such information is provided.

As an example, a recent email was sent out by the Putah Creek Council extolling the opportunities for summer recreation on Putah Creek (see below). All of the pictures of the creek in this newsletter show broad expanses of the creek such as pools or wide and deep slow moving sections of the creek. The activities proposed in the application indicate that these broad expanses and slow moving sections of the creek will not be possible after the channel realignment process. This would clearly adversely affect these beneficial human activities on Putah Creek in the future which adverse impacts have not been properly analyzed in the application nor mitigations proposed such that approval in this absence would be unlawful.

In summary, this application is long on suggested or claimed qualitative benefits that the applicant proposes will be realized by this project but short on substantiation and documentation of mitigations and any quantitative proof is completely missing. Indeed, comparison with the damage wrought in the Winters Putah Creek Parkway project Phases I and II suggests the proposed benefits will not be realized for decades, if ever, and the applicant has not otherwise provided any quantitative information to the contrary. As such, this application cannot be lawfully approved under NEPA/CEQA law in its current form

Please inform me of future correspondence and resubmissions or additions to this file and decisions rendered on the application. Thank you in advance of this courtesy.

Respectfully submitted,



Alan Pryor
ozone21@att.net
916-996-4811 (cell)

Putah Creek Council

Excerpts and Photos from July – August, 2016 Putah Creek Council Newsletter

..."It is summertime on Putah Creek and folks are out ***floating, boating,* (*emphasis added*)** hiking and ***swimming* (*emphasis added*)** along public sections of the creek like the Inter-Dam Reach (IDR), Lake Solano, Winters Putah Creek Nature Park, UC Davis' Putah Creek Riparian Reserve, and the City of Davis' South Fork Preserve.

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July 31, 2016

Brian Luke
Natural Resources Specialist
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1460 Sacramento, California 95814-2922
Brian.J.Luke @usace.army.mil

Subj: Identification Number 19047-1

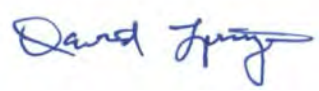
Dear Mr. Luke:

Thank you for the opportunity to reply to your public notice. I previously copied Marc Fugler and William Guthrie in your office on a letter I provided to SCWA regarding the proposed work, but will respond to you regarding this latest notice to directly and concisely address the areas of concern.

- The proposed channel modifications have no impact on flood control, and modifications to the SRFCP should not be justified on those grounds.
- The section of the channel in question cannot be classified as “natural” because of the two upstream dams and regulated flows, and no “rehabilitation” short of removal of the dams will make it so.
- The proposed rechanneling should not be referred to as “restoration”, since it will remove more habitat than it will replace.
- The existing elevation of the flood plane is entirely functional as has been demonstrated during previous high flows, and is well below the top of levees. As shown by bores drilled by SCWA in prior phases, compaction of soils used to create a flood plain have significantly impeded percolation and ground water recharge, as well as vegetation growth.
- The two prior phases of River Parkways grants have not been successful at removing or controlling invasive vegetation, including Eucalyptus, Arundo, Tree of Heaven, Himalayan Blackberry, Star Thistle, and Milk Thistle. It will require decades for planted trees to reach the height of existing native trees that are planned to be removed. To their great credit, the Putah Creek Council has led volunteer efforts to enhance the compacted soils and plant natives in those reaches.
- There is ample spawning gravel both upstream and downstream, as evidenced by the successful salmon spawning last winter.
- The proposed construction will be injurious to the public interest by eliminating existing beaver habitat and moving the creek approximately 100’ away from the existing protected public viewing area. Educators have used this area for school field trips. Beaver activity can be observed nearly every day, and otters, mink, herons, and migratory birds have also been observed.
- If the pending protected species status for the Western Pond Turtle is approved, the proposed work would likely violate NEPA. Pond turtles have been captured and classified by a local wildlife biologist and have been seen laying eggs in this area.

As a member of the citizen-based Winters Friends of Putah Creek, former chair of the City of Winters Putah Creek Committee, and creek restoration volunteer, I would appreciate your adding my contact information to your mailing list so I may receive future announcements directly. It was only through the diligence of one of the WFPC members that I was made aware of this public notice; I did not see it posted in the Winters Express.

Sincerely,



David Springer
200 Madrone Ct.
Winters, CA 95616

From:	Glen Holstein
To:	Luke, Brian J SPK
Subject:	[EXTERNAL] Comments on Winters Putah Creek Project !D 19047-1
Date:	Friday, August 5, 2016 5:52:06 PM
Attachments:	Comments on Putah Creek PEIR.doc

Dear Mr. Luke,

These comments on the Winters Putah Creek Nature Park project ID 19047-1 are submitted per the request of USACE. This project does not come close to fulfilling its claims. It doesn't "rehibilitate" and it doesn't "restore". Planting native riparian vegetation in earlier phases of the project has utterly failed for over five years because the project is used as a dumping ground for the Solano County Water District's dredge spoils, material on which native riparian vegetation can't grow. Such disposal may actually be the project's unstated primary purpose. This project does not protect and utilize important resources. It diminishes them significantly. Its detriments so far out way any potential benefits that a citizen's group in Winters harmed by previous phases of the project has indicated intent to litigate, if necessary, to stop the harm earlier phases of the project have already caused their community. Recently comments were solicited on a Programmatic EIR regarding a proposal by Solano County Water District to expand their dredge spoil dumping and riparian vegetation removal far beyond Winters along Putah Creek. Detailed comments on that PEIR are attached because they are very relevant to Winters Project 19047-1.

Yours sincerely,

Glen Holstein, PhD

Botanist

California Native Plant Society Sacramento Valley Chapter

COMMENTS ON PUTAH CREEK PROGRAMATIC ENVIRONMENTAL IMPACT REPORT (PEIR)

Submitted by: Glen Holstein, PhD
Consulting Landscape Ecologist
29 years professional experience in wetland and riparian restoration and conservation biology.
Phone: (530) 758-6787
holstein@cal.net

1. Page ES-2: In paragraph 1 habitat is called “degraded” without evidence.

2. P. ES-2: In Paragraph 1 “natural” is used without definition.

3. P. ES-2: Paragraph regarding enhanced wildlife viewing calls for “enhance habitat for “delta native fishes and wildlife” but the Project is mostly not in the Delta and consequently its native wildlife are dismisssed.

4. P. ES-5, Paragraph 1: The Project has already caused “long term impacts to geology and soils” by replacing native soil and substrate with with exotic fill.

5. P. ES-5, Paragraph 2: There is no good evidence that there will be no long term impact to biological values, and these have already occurred at Winters, where riparian habitat has disappeared because the Project replaced native riparian soils with exotic fill.

6. P: ES-5, Paragraph 3: Long term impacts on green house gas emissions have already occurred at Winters, where the Project essentially permanently destroyed riparian forests that rapidly absorb CO2.

7. P. ES-6, Paragraph 3: Aesthetics have already suffered long term impacts at Winters, where the Project has essentially permanently eliminated riparian habitat.

8. P. ES-6: Recreation has already suffered a long term adverse impact at Winters because the Project turned a popular riparian recreation area into a barren desert-like area that has not changed in 5+years.

9. P. ES-8, Paragraph 2: Negative impacts of the Project at Winters would multiply and accumulate if it were extended downstream.

10. P. ES-8, Paragraph 4: The No Project Alternative is not adequately described because it erroneously asserts the present creek is “degraded” with no adequate evidence.

11. P. ES-10, Paragraph 5: The environmentally superior alternative is No Project because of evident environmental degradation already caused by the Project at Winters.

12. P. ES-23. 3.4.9: Monitoring of what was formerly riparian habitat at Winters for 5+ years after the Project’s implementation there clearly indicates it has already failed, a very significant impact.

13. P. ES-31. 3.9.1: Contrary to the claim there will be less than significant impact to views, negative impacts to aesthetics have continued for 5+ years at Winters.

14. P. ES 31. 3.10.1: There is already a very significant impact on recreation from the Project at Winters that has existed for 5+ years.

15. P. 2.8: Figure 2.3 Does not accurately portray what the Project has done at Winters. To do that the pictures should be reversed to reflect the Project's replacement of trees there with weeds.

16. P. 2.11: The PEIR Explicitly states that 10,000 cubic yards/year of the same exotic fill causing riparian restoration failure at Winters is planned to be extended downstream by the Project, which would extend the same problems evident at Winters downstream as well.

17. P. 2.21: Planting native vegetation for the Project at Winters has failed completely for 5+ years. There is no mention or discussion of this in the PEIR and no indication of plans to remedy this failure.

18. P. 2.25: The PEIR says existing native vegetation will be protected by the Project. That was not done at Winters, where it was destroyed and not replaced. The PEIR does not acknowledge this happened and consequently provides no assurance it will not happen again and again.

19. P. 2.26,27: With regard to construction access, following Project construction at Winters the site was not re-vegetated by native species and remains barren after 5+ years, which is not acknowledged and discussed in the PEIR.

20. P. 2.27: The above also is true of construction staging areas.

21. P. 2.31,32: There is no stated guarantee that vegetation management and habitat enhancement will be successful, especially since they weren't at Winters, and there are no stated consequences if they aren't successful.

22. P. 2.34,36: Project goals for fishes only concern salmonids and "delta fishes", but since the Project isn't in the Delta, non-salmonid native fishes are ignored.

23. P. 1.36: Promises of maintaining wildlife habitat and maintenance and enhancement of native riparian vegetation were not kept at Winters, but that isn't acknowledged here. Consequently there is no evidence goals stated here will be met and no consequences provided if they're not.

24. P. 3.1-12: The "Winters Putah Creek Nature Park" reach is where the Project's methodology was implemented. There is no acknowledgment in the PEIR that the Project's goals have not been achieved there after 5+ years and may never be.

25. P. 3.1-20: The Project as implemented in Winters is in violation of Yolo County General Plan Action CO-427: Protect the habitat value and biological function of riparian areas. Avoid activities that remove or degrade these habitats. The Project at Winters significantly destroyed the habitat value and biological function of riparian areas and removed and degraded these habitats.

26. P. 3.1-21: The Project as implemented in Winters is in violation of Yolo County County Code Section 8-3.104 because it altered stream channels that help accommodate and channel flood waters and did filling and grading which may increase flood damage.

27. P. 3.1-22: At Winters the project proceeded without without a Flood Hazard Development Permit in violation of Yolo County Code Section 8-3.302.

28. P. 3.1-24: Significance criteria from CEQA Guidelines: Criterion # 2 refers to substantially increasing the rate of surface runoff. A Project goal is increasing the runoff rate (=stream flow rate). Whether this will result in flooding can't be known until the drought ends.

29. P. 3.1-28,29: An erosion control best management practice (bmp) is preserving existing non-invasive and native vegetation. The Project did not do this at Winters and consequently is unlikely to do it if implemented in other parts of Putah Creek.

30. P. 3.1-31: The PEIR asserts but does not satisfactorily prove the Project will not increase flood hazard. Elevations in the stream channel are not the only factors since elevation changes across the whole floodplain, which are not quantified here, are likely to be significant.

31. P. 3.1-34: Completion of the Project at Winters is acknowledged here even though its Phase 3 was not permitted and consequently was completed illegally. This record of ignoring environmental law is not acknowledged explicitly in the PEIR and calls into question all of its assumptions including impacts on flooding.

32. P. 3.2-8: The 3rd Paragraph claims discussion of 404 Permits and USACE is in the PEIR's Section 3.1, but it isn't. Since a major proposed activity of the PEIR is depositing fill in Putah Creek, this needs a thorough discussion, but that is not present.

33. P. 3.2-13:: Solano County General Plan Policy S.P. 72 calls for preserving riparian vegetation along county waterways. Since the Project did not do this in the Winters reach, it is unlikely to be done elsewhere on the creek.

34. P. 3.2-16: The water temperature section doesn't address water temperature rise caused by reduction in shade after riparian vegetation is removed, a well-known phenomenon. Such vegetation was permanently removed by the Project in the Winters reach and consequently is likely to be removed in other reaches.

35. P. 3.2-17: The 3rd Paragraph is incoherent and meaningless but seems to claim without clear evidence that the Project would reduce bioavailable mercury. Nowhere is this quantified in the PEIR and the problem is repeated in the subsequent discussion of other reaches.

36. P. 3.3: This "Geology and Soils, and Mineral Resources" section of the PEIR includes a plethora of material irrelevant to the Project but nothing about what is relevant: the use of exotic fill on which riparian vegetation needed to replace the native vegetation destroyed by the Project in the Winters reach is unable to grow. This factor, critical for the Project's success in achieving its goals, is ignored in the PEIR.

37. P. 3.3-31: In Paragraph 3 dredge and fill, which has already caused Project failure when deposited in the Winters reach, is mentioned but with a referral back to Section 3.2 for discussion, but that discussion is not present in 3.2. That is a critical PEIR failure because handling of fill will determine the Project's success or failure.

38. P. 3.4-3: The 1st Paragraph doesn't mention that removal of shading riparian vegetation in the Winters reach by the Project is a factor in increasing water temperature.

39. Figures 3.4-1 and 34.4-2: These maps are useless because they don't identify species occurrences, the relevant information.

40. P. 3.4-12: Contrary to Paragraph 1, habitat in the Project area is suitable for northern harrier and western red bat.

41. P. 3.4-12: Contrary to Paragraph 4, Modesto song sparrow is present throughout the Project area, not just downstream of I-80.

42. P. 3.4-14: The Project will reduce habitat for western pond turtles by increasing stream velocity and reducing depth.

43. P. 3.4-15: Contrary to Paragraph 2, the Project area currently provides suitable habitat (still or slow moving water with emergent and overhanging vegetation) for California red-legged frogs. The Project would eleiminate or greatly reduce such habitat. Putah Creek is within the historic range of this species despite its current extirpation so it would be a good candidate for restoration there.

44. Biological Resources Section: It does not evaluate the potential presence of ringtails despite the presence of suitable habitat along Putah Creek.

45. P. 3.4-15: With regard to Paragraph 3, the Project has also caused water temperatures to increase at Winters by removing shading riparian vegetation.

46. P. 3.4-16: The Paragraph regarding steelhead is contradictory since if they are in freshwater from August to April why could they only be in the Project area from December 1 to April? That needs explaining.

47. P. 3.4-18, 21: The fish section does not discuss the peer-reviewed finding of Peter Moyle and Michael Marchetti that native fish were most abundant and diverse in the Project area at Winters before the Project.

48. P. 3.4-30: Project removal of riparian vegetation at the Winters reach violated Policy CO-2.3 of the Yolo County General Plan.

49. P. 3.4-31: It also violated Policy CO-2.9 of the Yolo County General Plan.

50. P. 3.4-31: The Project at Winters also violated Yolo County General Plan Policy CO-2.25 by decreasing rather than increasing vegetation shading streams.

51. P. 3.4-32: The Project at Winters also violated Yolo County General Plan Policy CO-2.34 by reducing rather than enhancing the habitat value of the wildlife migration corridor along Putah Creek, Policy CO-2.37 by doing the Project in a riparian zone without required permits, and Policy CO-2.38 by destroying breeding ponds for beaver and other native wildlife.

52. P. 3.4-33: The Project reaches significance criteria because at Winters it has already had a substantial adverse impact on a riparian habitat. It has also had a substantial adverse impact effect on federally protected wetlands as defined by Section 404 of the Clean Water Act by their filling and direct removal. Additionally it has interfered substantially with movement of native resident wildlife like beaver, their migratory corridors, and their nursery sites. It has also substatially adversely modified habitat factors like deep slow-moving water necessary for western pond turtle, a California Department of Fish and Wildlife Species of Special Concern, and is in conflict with numerous Yolo County General Plan Policies protecting Biological Resources.

53. P. 3.4-34: The Project at Winters did not "promote the growth of native wetland and riparian plants", it destroyed them and has been unable to replace them for 5+ years.

54. P. 3.4-35: The PEIR contradicts itself regarding western pond turtle since in other sections it says it will decrease water depth and flow velocity, for example on P. 3.4-14, which is the opposite of the deep slow-moving aquatic conditions they species needs. The Project's proposed mitigation measures for this species are temporary but its adverse impact would be permanent.

55. P. 3.4-36,37: The Project completed in Winters destroyed elderberries and was unable to move or replace them because it replaced the normal riparian soil they require with fill toxic to them and other riparian plants. Since the PEIR plans to continue using the same fill unsuitable for riparian vegetation, its valley elderberry long-horned beetle (VELB) mitigation measure is unworkable based on how the Project was implemented at Winters.

56. P. 3.4-38,39: The PEIR claims it will improve nesting bird habitat by favoring native riparian vegetation, but as implemented at Winters its methods, which the PEIR proposes to continue, have significantly reduced native riparian vegetation. Consequently its temporary mitigation measure is insignificant relative to its demonstrated permanent destruction of nesting bird habitat. A bird issue the PEIR doesn't address is the importance of the creek's riparian vegetation for the neotropical migrant birds that utilize it each spring and fall. The Project's demonstrated permanent demonstration of riparian vegetation if continued downstream could significantly negatively impact neotropical migrant birds.

57. P. 3.4-39: The Project has already demonstrated through the removal of large native trees and snags at Winters that it may negatively impact special status bats. Extending the same methods downstream as is proposed in the DEIR will increase the likelihood of impacting special status bats.

58. P. 3.4-41, 42. Contrary to the PEIR, the Project as implemented at Winters has already demonstrated it has decreased rather than increased riparian vegetation. Extending the same methods

downstream as the PEIR proposes would continue to decrease, not increase, riparian vegetation. Consequently the PEIR's statements about impacts on riparian vegetation here are entirely erroneous. They are explicity "based on field observations of the Putah Creek Streamkeeper", but unfortunately I know from personal experience that assertions by the present Putah Creek Streamkeeper are not credible. He is not academically qualified to do such a complex and important job as "keeping" and "restoring" Putah Creek, but that would be less important if he did his job well and behaved honestly and honorably in dealing with the community and its many stakeholders that live on and near Putah Creek. He has not done that. Instead he has habitually made false statements about Putah Creek and his activities there. Two examples particularly relevant to the PEIR are:

1. "Temporary" loss of riparian trees and shrubs does not last 5-10 years as he claims; it lasts two years at the most. If it lasts more than 5 years as it has at Winters, it is likely to last forever, which can be demonstrated by 30+ year old projects in our region that promised riparian restoration but have similarly failed.

2. The absurd statement that his activities at Winters affected less acreage than natural disturbance. Anyone who has been there knows this is false like so many other claims by the Streamkeeper.

The Streamkeeper has demonstrated through his activities and statements that he is an unqualified and unreliable source. Consequently a PEIR based on his assertions is similarly untrustworthy including its claim here of less than significant impact on riparian habitat. Performance statdards suggested in the riparian habitat mitigation measure have already demonstratably not been met at Winters, but the PEIR proposes extending the same failed methods to the rest of Putah Creek.

59. P. 3.4-42,43,44. The PEIR claims to improve fish habitat but does not address the peer-reviewed finding by Peter Moyle and Michael Marchetti that the supposedly degraded reach of Putah Creek before the Project had the highest diversity of native fish of anywhere below the creek's major dams. The Project has presumably already destroyed the conditions causing this diversity, but the Moyle-Marchetti study provides a quatitative baseline that should be repeated before it can be assumed the Project helps native fish, which consist of more than just one run of salmon.

60. P. 3.4-44. The PEIR promises less than significant impact on wetland habitats by balancing loss of wetlands one place with creation of better ones elsewhere, but at Winters there has only been net loss of wetlands that were filled. Based on the PEIR's unreliable claims discussed above, its promises of new wetland creation are questionable at best.

61. P. 3.4-44,45. Instead of restoring and enhancing habitat for native wildlife, it was apparently permanently destroyed by the Project at Winters. Mitigation calls for monitoring during Project construction. If that was actually done during Project construction at Winters, evidence for such monitoring should be provided.

62. P. 3.4-58,59. The Winters Nature Park section of the Biological Resources chapter of the PEIR discusses the Project in this reach as if it is still to be done along with appropriate mitigation measures, but as stated elsewhere in the PEIR, the Project there is essentially complete and any mitigation measures, if actually applied, were unsuccessful. Consequently its significant negative impact on riparian habitat, wetlands, special status species, and wildlife species movement is plain to even casual observers and may also extend to fish habitat.

63. P. 3.9-6. Figure 3.9-8 demonstrates that riparian habitat is absent 5+ years after the Winters "restoration" that is the model for this PEIR's Project. Its failure to fulfill its promises is evident in this photo showing a barren plain where a green riparian forest with interpersed wetlands was once present before the Project. Unfortunately there is no comparable pre-Project photo of the same area in this PEIR to illustrate what was destroyed even though they are potentially available from stakeholders. The closest approach in the main part of the PEIR is Figure 3.9-5.

64. P. 3.9-9. The claim in the first paragraph that the Project will result in a "naturalistic creek channel with riparian vegetation" is disproved by the PEIR's Figure 3.9-8.

65. P. 3.9-15. Contrary to the construction impact to views claim presented here, these are not temporary but have lasted for 5+ years as demonstrated by Figure 3.9-8. Consequently the change from "dense vegetation to more barren areas" has become essentially permanent.

66. P. 3.9-16. The section on "long term impacts on views" mischaracterizes pools destroyed by the Project at the Winters reach and its riparian vegetation as "weedy". Neither characterization is accurate. As described abovr, Figure 3.9-8 shows the post-Project creek at Winters with its barren lack of riparian vegetation. The claim the Project was only "recently completed" there is only accurate if 5+ years is recent.

67. P. 3.10-4. The Winters Nature Park reach of the PEIR's recreation section fails to state that the detailed plan for the Project includes filling and destroying "the large pool at the eastern edge of the park" used for recreation as were other similar pools already filled by the Project.

68. P. 3.10-9. The last paragraph's claim that removing pools used for recreation would not impact it significantly is not adequately explained.

69. P. 3.12-5. No "separated bicycle lane" is evident at Stevenson Bridge.

70. P. 3.12-23. That fill to replace native riparian soil will be derived from a "quarry or borrow pit" is mentioned here in the transportation/traffic chapter but not in the soiils/geology chapter where it would be most appropriate.

71. P. 4.2. As discussed above, the Project as planned does not meet its own Objective 5 and possibly other objectives as well.

72. P. 4.4. The last paragraph mischaracterizes Putah Creek as "degraded" when it is not, and implicitly acknowledges this Project is really about funding.

73. P. 4.7. As is evident in Paragraph 5, Alternative 1 would better address the Project's Objective 5 than the Project, which has already reduced riparian habitat at Winters and will reduce much more if implemented as presently planned. That's the real degradation, not that of the existing creek, which the PEIR mischaracterizes. Consequently Alternative 1 is the Preferred Alternative for protecting Putah Creek's great environmental values.

74. P. 5.6,7. Contrary to the last paragraph here, the Project would have a significant long term impact on soils and geology by replacing native riparian soil with exotic fill incapable of supporting riparian habitat as has already been demonstrated at Winters.

75. P. 5.7. The mitigation measures for impacts on biological resources are grossly inadequate because they are typically short term and only operable during construction. As already implemented at Winters, however, the Project demonstrates that it causes long term unmitagatable degradation of biological resources.

76. P. 5.8. Impacts of the Project are significant and unmitagatable since at Winters it has already permanently converted what was once a beautiful landscape of green forest and blue water to a brown desert-like area of permanently bare soil as illustrated in the PEIR's Figure 3.9-8.

77. P. 5.9. Impacts to pools that the PEIR elsewhere acknowledges are used for recreation would be permanent and unmitagatable since the Project would remove them.

78. P. 5.11. Once again the PEIR asserts that its Project will cause "degraded creek habitat to become more ecologically productive" but never provides actual evidence it can do that. The evidence it has already provided at Winters clearly suggests it will do exactly the opposite.

79. P. C.7. Here it is acknowledged that the Project including planting native vegetation was done at Winters in 2011. These plantings overwhelmingly failed and died because of unsuitable growing conditions on the sterile exotic fill the Project substituted for productive native riparian soil. The barren result after 5+ years is illustrated by the PEIR's Figure 3.9-8. How the floodplain looked at Winters before the Project is illustrated by the upper photo on Page 8 of the Stillwater Sciences report attached to the PEIR.

End of comments.

February 2017, Public Notice

Comment Letters

Winters Putah Creek Nature Park Channel Realignment Project

Phase 3 (ID 19047-1)

Jeff TenPas
Winters Friends of Putah Creek
24 East Main St.
Winters, CA 95694

March 8, 2017

By email to: Brian.J.Luke @usace.army.mil

Attn: Brian Luke, Natural Resources Specialist
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1460
Sacramento, California 95814-2922

Re: Winters Putah Creek Nature Park Channel Realignment and Restoration Project (WPCNP Phase 3), 19047-1

To US Army Corps of Engineers:

My name is Jeff TenPas. I am a resident of Winters, and have lived with Putah Creek 100 yards out my back door for over 20 years. I've walked my dogs along the creek daily, and observed the creek under all conditions, pre-project and post-project, at low flows and in flood. I have the professional and scientific background to understand what I see. I have a Masters in Soil Science from UC-Davis, also education, qualifications, and experience as a hydrologist in federal civil service, and education and experience in wetland, stream, and restoration ecology. I have over 18 years' experience working for the US Forest Service as soil scientist, hydrologist, and as leader of the region's watershed restoration program. And for the past 20 years I have been active in restoration work on Putah Creek.

The following comments are submitted in my name and on behalf of the Winters Friends of Putah Creek. We are committed to the restoration of Putah Creek, including Phase 3, and including remedial work to restore the project areas called Phases 1 and 2 of Winters Putah Creek Nature Park Realignment Project. We support the obvious need for restoration in Phase 3, but there are alternatives with less risk, less foreseeable detriments, and lower cost.

We oppose the current plans for Phase 3 because of the environmental impacts of the project on people, on wildlife, on groundwater recharge, and on stream and floodplain habitat and function. Our comments will show the project should be denied on the grounds that: 1) it is Injurious to the Public Interest, and 2) failure of Environmental Compliance with the Clean Water Act, National Environmental Policy Act, and Rivers and Harbors Act.

We direct your attention particularly to Comment 2 pertaining to the effects of the project on groundwater recharge. Flow data is showing a decline in groundwater recharge in the project area correlated to the implementation of Phase 1 and 2 project implementation. We strongly object to giving

retroactive approval to Phases 1 and 2 without first investigating and taking remedial action to cure groundwater recharge impacts. We also strongly object to allowing Phase 3 to increase the cumulative effect on so vital a resource as the municipal water supply to the City of Winters and surrounding agricultural lands.

We also direct your attention to our previous comments on the impact of Phase 3 on wildlife and public wildlife viewing. The close connection between a paved trail and the stream in Phase 3 adds so much to the community's connection to nature and wildlife. It is inconceivable that there is some need for moving the creek that would override that benefit.

We submitted previous comments on this project in August 2016 that we resubmit by reference. We submit the following additional comments.

Supplement to Previous Comments dated August 9, 2016 from Jeff TenPas (Winters Friends of Putah Creek) on Project Number 19047-1

1. Lack of Purpose and Need: No Need to "Recontour the Floodplain to a Functional Elevation." The Feb. 6, 2017 Public Notice for the project describes a project that will fill the existing stream channel, grade or recontour the banks and floodplains, and excavate a new narrower, shallower design channel. The stated need for bank and floodplain recontouring is to provide elevations that are ideal for natural recruitment of native upland and wetland plants. The stated need for a new channel is to promote cooler water temperatures to improve habitat for native rainbow trout and Chinook salmon.

   The bank and floodplain design for Phase 3 is identical to Phases 1 and 2 with 1.5 foot high banks, a floodplain filled and recontoured to a 1 to 2 percent slope toward the channel, and use of imported fill. The construction drawings show that the channel will be similar to Phases 1 and 2 and stream banks will be graded at 1:2 slope.

   There is a bit of logic to the idea that lowering banks will create a wetland area at the stream margin. In practice, this has not happened in Phases 1 and 2. The design does not function as intended and does not create the desired condition of a channel, bank, and floodplain that will function like a naturally created system.

   a. Lack of Purpose and Need to Modify Stream Temperatures. Where, or when, or why is there a need to modify stream temperature? Young of year salmon out-migrate from Putah Creek before stream temperatures rise too high in spring. Fish monitoring shows that fall-run chinook salmon out-migration reaches a peak in late March when stream temperatures in Putah Creek are at levels suitable for salmon (Small, KT et al, 2004). Small reports that temperatures in the creek reached levels too high for survival in mid-May, long after out-migration, and also reported there is a refuge of low temperatures below the diversion dam where salmon could survive the summer. And on the other hand native non-salmonid fish are suited to the year round existing conditions in the creek

upstream of Pedrick Road. Fish monitoring shows that native fish are already overwhelmingly predominant in Putah Creek upstream of Pedrick Road (Normandeau, 2015).

> "The results also show that, despite three consecutive and worsening water years (WY2012 below normal; WY2013 dry; WY2014 critical) and the lack of extended periods of high flow, native fish continue to dominate the 13.2 miles of the lower basin between the Putah Diversion Dam and the 1 KM site near Davis (Table 4; Figures 3 and 4). ……. In fact, only two non-native fish were captured in the upper 3.0 miles of the study area and native fish made up 96.5 percent of the total catch at the seven study sites located in the upper 12.7 miles of the study area upstream of the Pedrick Road sites (Figure 4). (Normandeau, 2015)

If the stream alteration effort is intended to favor trout, then we need to know why trout should be favored over other native fish. The fact is that trout already occupy the interdam reach. Where and when is there is need for cooler stream temperatures, and for what species? Should stream conditions be altered to promote trout over other native fish? Is it worth $5 million per project mile to promote trout over other native fish?

b. Lack of Need to Move the Stream. Even given a need for temperature modification, there is no need of moving the stream bed. Stream width and depth and shading could be altered in place without the drastic and extreme disturbance of the bed, banks, floodplain, vegetation, wildlife, groundwater processes, and without loss of public recreation and wildlife viewing benefits.

c. Lack of Need for Floodplain Modification for Wetland Plant Habitat. Phase 3 is similar in design to Phases 1 and 2. If there is a need for wetlands, then the proposed project will not fill the need. Previous phases did more to reduce wetland plant habitat than increase it by filling any existing wetland depressions. The designs for all phases have planar floodplains sloping at 1 or 2%, draining to the stream as fast as flood waters recede. The artificial floodplains lack floodplain depressions and topographic complexity such as overflow channels and oxbows that the floodplain had before "restoration". The artificial floodplains in Phases 1 and 2 have compacted soils and lack groundwater connection to the floodplain, and Phase 3 follows the same design specifications.

   The proposition that the low banks will support wetlands is disproven in Phases 1 and 2.

Figure 1. Floodplain in Phase 2, four years post-project. The green edge to the right side of the photo is a three foot strip of bankside vegetation. Attempted revegetation of floodplain in the center has failed. (USACE, Sept 22, 2015, Site visit photo #6324)

d. Lack of Need to Move Stream to Create Wetland. In fact in its existing condition, Phase 3 has a body of open water with a wetland margin. This area could easily be graded into wetlands with light equipment, using suitable fill, and without drastic disturbance of groundwater connections. This open water area has a good existing groundwater connection to the stream that would support perennial wetlands. The current open water body has a constant water surface elevation throughout the summer and when it is filled by floods the impounded water rapidly recedes to the normal elevation. This demonstrates the current healthy groundwater conditions (Jeff TenPas, personal observation).

e. No Need of Project for the Sake of a North Bank Trail. The Project proponents also proposed a need to fill and move the stream in order to create a north bank floodplain so that a continuous trail can run along the north bank. In fact there is an existing paved trail higher on the north bank that a floodplain trail can connect to.

2. Changes in Groundwater Recharge on Putah Creek Evidenced by Stream Gage Data. A most critical detriment of Phases 1 and 2 and the proposed Phase 3 is the detrimental impact on groundwater supply to the floodplain forest and on groundwater recharge. We present data and analysis below to show the effects of Phases 1 and 2 on groundwater recharge.

   Our August 2016 comments on this Project raised the issue (included in Attachment 3) that this Project could reduce on groundwater recharge. That Attachment 3 was a copy of a letter sent December 8, 2015 to the Central Valley Flood Protection Board on that issue. At that point the project plan showed that the wetted perimeter of the stream would be reduced, finer textured fill was proposed, and fill would be compacted per

contract specifications, and placed with large earthmoving machinery. Based on those facts and the science and physics of groundwater movement, I estimated that Phases 1 and 2 might have reduced groundwater recharge in the Phase 1 and 2 project area by 3.2 cfs, and that the Phase 3 project would add to the cumulative effect.

Now there is flow data and statistical analysis to show that there has been a statistically significant reduction in groundwater recharge between the diversion dam and I-505 stream gage. Solano County Water Agency (SCWA) provided hourly flow data for releases upstream of the projects (releases from the diversion dam) and flows downstream of the project (gaged at I-505) from Jan 1, 2010 (pre-projects) to Dec. 21, 2016 (post-project of Phases 1 and 2). The accuracy and reliability of the data is high, and rating curves are regularly maintained within 5% of actual (Jay Cuetara, SCWA, personal communication to Jeff TenPas, March 3, 2017).

Water losses (approximating groundwater recharge) for the month of August for years 2010 to 2016 were calculated for the reach between the diversion dam and I-505. Pre-project years are 2010 to 2011, and post-project years are 2012 to 2016, these were coded as 0 and 1 for statistical analysis. Flows for August were used because riparian diversions are not allowed this late in the summer. Data were filtered to compensate for changes in water releases at the diversion dam and the time lag in the response at I-505. The data filtering removed the 24 hours of flow data following a flow release change. Evapotranspiration,cause for some water loss, would be relatively constant between years and was not factored out. The data file is attached (August_StataData).

The data were analyzed in Stata with linear regression. Groundwater recharge (water loss) was the dependent variable. Independent variables were year (pre and post project years coded as 0 and 1 respectively) and flow release (cfs) at the diversion dam headworks. The statistical results are displayed in Table 1. Flow release was highly significant as one might expect; higher flows result in higher wetted area, greater head, and more groundwater recharge. The pre:post project variable was also highly significant at the 0.001 level, showing a that there was a significant correlation between implementation of Phase 1 and 2 projects and a decrease in groundwater recharge. The coefficient for the pre:post treatment variable was -3.1, indicating a 3.1 cfs reduction in groundwater recharge after the Phase 1 and 2 projects were completed in October 2011. The 3.1 cfs change in groundwater recharge indicated by the statistical analysis is remarkably close to the 3.2 cfs reduction in groundwater recharge that was posited in the December 2015 letter to the CVFPB. The flow data, the analysis based on soil physics and water movement, and the vegetation indicators all align to show that the past and proposed projects are having a critical negative impact on groundwater recharge and floodplain groundwater supply.

A 3.1 cfs reduction corresponds to an annual reduction in groundwater recharge of 2244 acre feet. This is several times the demand for domestic water supply in Winters, and enough water to irrigate 770 acres of almonds. There is no reasonable expectation that

floodplains and stream banks will be recover naturally in any less than geologic time or thousands of years. Priced at $1000 per acre foot of water, a reduction of 2244 acre feet in the annual groundwater water supply is worth over $2 million per year.

Table 1. Linear regression statistics

```
. regress Hdwk_I505Loss Pre_Post    Hdwk_cfs
```

Source	SS	df	MS	Number of obs	=	4,075
				F(2, 4072)	=	883.63
Model	12273.1023	2	6136.55115	Prob > F	=	0.0000
Residual	28278.85	4,072	6.94470776	R-squared	=	0.3027
				Adj R-squared	=	0.3023
Total	40551.9523	4,074	9.953842	Root MSE	=	2.6353

Hdwk_I505L~s	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Pre_Post	-3.067412	.1103795	-27.79	0.000	-3.283816	-2.851008
Hdwk_cfs	-.1008958	.0096646	-10.44	0.000	-.1198436	-.0819479
_cons	18.31789	.3452473	53.06	0.000	17.64102	18.99476

.

3. Unsuitability of Floodplains and Stream Banks Constructed with Large Machines . The essential feature or element supporting a floodplain forest is the unseen groundwater movement from the stream to the floodplain. This is what supports riparian cottonwoods and other vegetation that could not grow in the local environment were it not for the water subsidy from the stream. Constructing floodplains with large machines is virtually guaranteed to obstruct groundwater movement with compacted banks and floodplain soils.

   A natural floodplain has layers and bodies of sediment, some with high porosity that allow groundwater movement, some with low porosity and minimal groundwater permeability. Streams sort and lay down these layers during floods with the power of flowing water. The sorting of sediment into layers and bodies of contrasting textures increases the capacity for groundwater movement many times above the capacity of an unsorted profile. Equal parts of sand and clay mixed together yield a sandy clay mix with the very low permeability of the clay, and none of the permeability of sand. The same clay and sand material sorted into a clay layer and a sand layer will have a very high permeability sand layer to transmit water.

   A floodplain constructed with large machines from unsorted fill does not begin to duplicate the layering and sorting of the stream, and does not provide the preferential flow paths of a natural floodplain or provide equal groundwater permeability. Large machines mix floodplain sediments all together into one compacted and low permeability body. Large machines cannot duplicate the low pressure deposition of sediments by flowing water, instead machines compact fill into a dense, compacted, low porosity material with low permeability to groundwater movement.

Where floodplains and groundwater recharge depend upon a healthy groundwater connection to streams, as in Mediterranean riparian areas, heavy traffic and alteration should be kept to a minimum.

4. <u>Failure of Revegetation Efforts in Phases 1 and 2.</u> There is a normal delay between project implementation and vegetative recovery. However, recovery should not be so limited after 5 ½ years as it is for Phases 1 and 2. And plantings should not be failing repetitively as seen in Phases 1 and 2. The failure of revegetation in Phases 1 and 2 is a logical outcome of obstruction of groundwater supply to the floodplain. Compare these Google Earth photos. Note how plantings die out.

Phase 2 – 2009 – Preproject

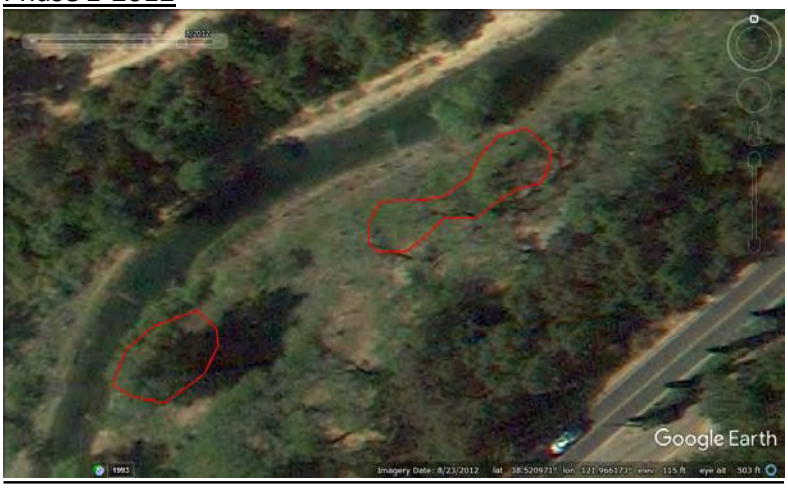
<u>Phase 2 - 2012</u>

Phase 2 – 2014

Phase 2 – 2016

5. Death of Cottonwoods and Willows in Phases 1 and 2. Mature cottonwoods allowed to remain in Phase 1 are also dead and dying – another indication that groundwater movement is blocked.
   Phase 1- Preproject

Phase 1-2012



Phase 1 – 2016- Cottonwoods Dead

6. Freshwater Mussels Unprotected. During Phases 1 and 2 of stream alteration in Winters, there was no survey for mussel presence and the projects may have wiped out mussel beds. The current project may also effect mussels which are an imperiled group of organisms worldwide (Howard, 2010). Native mussels are reported in Putah Creek by several sources. Jones and Stokes Associates (JSA, 1992) reports that during 1989, and 1990 to 1991 much of the stream reach between Stevenson Bridge and the Yolo Bypass dried up and "thousands of fish, crayfish, and freshwater clams could be seen along the dry creekbed." Howard (2010) resurveyed historical sites on Putah Creek where freshwater mussels *Anodonta* and *Gonidea* were previously found. At three Putah Creek sites no mussels were found during resurvey. Phases 1 and 2 in the Winters Putah Creek Park have already altered 0.8 miles of stream bed, and mussels if they are present in this last 0.2 mile should be protected.

7. Invalid Section 404 permit. The project current has a Section 404 permit which expires on March 16, 2017. The project is outside the scope of this nationwide permit because the project fills and reduces the area of "open waters" (BSK, Aug 17, 2015). The BSK memo states that there were 14.32 acres of open water pre-project and that there will be 7.3 acres of open water post-project. Filling and loss of open waters is not within the scope of a NWP 27, nor is it within the scope of the NEPA for the NWP. In addition, the project has not complied with the special condition of the NWP (SPK-2011-00371) requiring wetland mitigation acres for open water acres. Streamside areas which were supposed to be wetland might better be classified as highly disturbed dessicated and unvegetated floodplain than as wetland. The permit should not be extended or renewed.

8. Comments on Section 401 Water Quality Certification, May 20, 2016 (TenPas, J, 2016). Attached are comments made to the Central Valley Regional Water Quality Board on May 20, 2016. These comments are included in their entirety and applied to Phase 3 and its permits as well. To summarize the comments:

    a. Phase 3 violates Sec 404(b)(1) Guidelines which provide that fill should not be discharged "unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact"

    b. Use of unsuitable fill violates Section 230.5 (f) and (h), Section 230.11 (a), and Section 230.20 of the Guidelines which require that the proposed fill should be suitable to the proposed fill site. A critical characteristic of floodplains is the permeability of the soils and channel substrate. The SCWA has signed a contract that proposes to use spoils of the South Putah Canal project, the same source that was used for prior work in Putah Creek with detrimental results. The spoils are clayey and placement with heavy machinery compacts this material to a nearly impermeable state.

    c. The proposed project would use imported clayey fill and earthmoving equipment running all over acres of floodplain, irreversibly altering the floodplain habitat. We have seen in Phases 1 and 2 that this manner of project permanently converts a healthy riparian forest habitat to poor unproductive floodplain where the remnant of cottonwood trees left are dead and dying. Irreversible commitment of resources requires analysis according to CEQA and NEPA, and that analysis is missing. CEQA and NEPA are not being complied with. State CEQA Guidelines (14 California Code of Regulations [CCR] 15126.2[c]) and NEPA (40 Code of Federal Regulations [CFR] 1502.16) require analysis of significant irreversible and irretrievable effects. CEQA requires evaluation of irretrievable resources to ensure that their use is justified. NEPA requires an explanation of which environmental impacts are irreversible or would result in an irretrievable commitment of resources.

d. Section 230.11 (b) of the Guidelines requires that consideration shall be given to project effects on the hydrologic regime, including the hydrology of the floodplain and groundwater. The project does not consider the effects of channel narrowing, clayey fill, and compaction from equipment traffic. These factors are all certain to reduce streambank and bed and floodplain permeability and groundwater movement and recharge.

e. Subpart D of the Guidelines requires that potential impacts on biological characteristics of the aquatic system must be considered. Mussels are particularly at risk from any in-channel work, and effects on mussels were not considered at all. Mussels are in general decline across California, and channel filling and realigning projects will surely kill any that are present. Given the cumulative effect of Phases 1, 2, and 3, all of native mussels in Putah Creek in Winters would be killed. Mussels should be considered (Section 230.31).

f. Other wildlife must be considered (Section 230.32) and have not been. The proponent must assess effects of the project on the habitat of beaver, otter, western pond turtle, migratory water fowl, and song birds, consider what the project affects might be, and include plans to avoid or minimize disturbance and assess how the alternatives might lower disturbance. This is required before issuance of a permit.

g. Inadequacy of Wetland Delineation. The wetland delineation for the project should include the existing island and vegetated shallows currently existing.

h. Subpart E of the Guidelines requires assessment of potential Impacts on special aquatic sites. Special aquatic sites must be considered in projects affecting waters of the United States (Section 230.41, 230.43, and 230.45). This includes wetlands, pool and riffle complexes, and vegetated shallows. The project fails to avoid or plan for avoidance or mitigation.

i. Project effects on municipal and private water supplies (Section 230.50). Groundwater recharge will be reduced by narrowing the channel, reducing the wetted channel boundary, and by importing low permeability fill, and compacting the floodplain soils by construction activities. The City of Winters depends entirely upon groundwater for its water supply. The impact of the project on groundwater must be analyzed and disclosed.

j. Effects on recreational use and aesthetics are required to be considered and are not assessed and disclosed (Sec 230.52, Sec 230.53). The Phase 3 realignment project in Winters will affect recreational use in Winters by moving the stream channel. The current location of the channel affords walkers the closest and best views of the creek and great views of wildlife. Moving the channel will move it out of sight of people

walking on a popular trail. This will deprive walkers of the existing views of the creek and wildlife.

k. Effects on water contact recreation need to be considered in order to maintain this beneficial use (Sec 230.52). There is a deep pool in Phase 3 suitable for swimming if access is improved.

l. Testing Fill Materials (Sec 230.61). The application does not disclose information on the physical testing of the fill materials as needed based on Sec 230.61. Testing of the fill materials is needed in order to assess the project effects on permeability of the project area and the project's potential effects on groundwater movement. Fill should be tested for texture, for compaction, and for permeability after compaction.

m. Actions to Minimize Adverse Effects (Part 230, Subpart H). Subpart H provides for taking actions to minimize adverse effects of projects in accordance with 230.10 (d). The applicant has not identified actions to minimize adverse effects, nor even taken the prerequisite step of adequately assessing potential adverse effects. Using clayey fill has potential adverse effects on the hyporheic zone, groundwater supply to the floodplain, groundwater recharge to a municipal water supply: these effects can be minimized by choice of a more suitable fill material. Effects on floodplain and channel permeability and groundwater movement can be avoided by limiting the use of large machines, by running machines on mats to avoid compaction, and by mitigation with actions to decompact the fills. Effects on special aquatic sites can be minimized by surveying to identify the sites and avoiding or mitigating. Effects on groundwater recharge can be avoided by changing fill, maintaining wetted area, adding wetlands. Effects on aesthetics and recreation can be avoided by keeping the creek in its current location in Phase 3 in Winters.

n. Failure to maintain and support beneficial uses of Putah Creek. The Project record does not provide evidence that the project will continue to support existing beneficial uses. State policy for water quality includes the policy contained in State Water Board Resolution No. 68-16 (Statement of Policy with Respect to Maintaining High Quality of Waters in California). This policy requires that wherever the existing quality of surface or ground waters is better than the objectives established for those waters in a basin plan, the existing quality will be maintained. Beneficial uses for Putah Creek are defined in the Basin Plan for the Sacramento River Basin. The beneficial uses to be maintained in Putah Creek include municipal water supply, agricultural supply, water contact recreation, non-contact water recreation, warm freshwater habitat, warm spawning, reproduction, and early development habitat, and wildlife habitat. The proposed project fails to maintain these existing beneficial uses.

o. The application is incomplete (23 CCR § 3856). The application does not contain a description of steps taken to avoid, minimize, or compensate for loss of or significant

adverse impacts to beneficial uses of waters of the state. The application does not include a description of the adverse impacts of other projects by the applicant in the last five years, including the adverse impacts of the projects in Winters on the riparian forest, groundwater recharge, wetlands, water contact recreation, and wildlife.

9. Injurious to the Public Interest Determination. The benefits of the Project are not commensurate with the risks and foreseeable detriments. The project does not fill the purpose and need and provide the benefits intended (Comment 1) and the Project has multiple risks and critical and foreseeable detriments such as obstruction of groundwater (Comment 2).

10. Environmental Compliance. Environmental analysis of the Project has not been commensurate with the scale and potential effects. The CEQA analysis was performed on a Master Plan, conceptual in nature, and not of a project-specific plan that disclosed the scale and intensity of disturbance. The NEPA to the best of our knowledge is only the generic NEPA done for a Section 404 nationwide permit.

Thank you for your consideration of our comments. We continue to support holistic stream restoration work. For us this has been a learning experience, and a bringing together of observations of the natural world with more hard physical science.

We support efforts to investigate and cure the problems in Phases 1 and 2, but strongly oppose approving any after-the-fact permits for those Phases until there is a plan for remediation of habitat losses and groundwater effects. We oppose the current plans and permitting of Phase 3 and the foreseeable detrimental effects and cumulative effects on wildlife, habitat, recreation and aesthetics, and groundwater recharge.

Sincerely,

Jeff TenPas

Winters Friends of Putah Creek

Attachments:

August_StataData.xls. 2010 to 2016 flow data for Putah Creek, diversion dam to I-505.

BSK, Aug 17, 2015. Tech memo: conversion of open water to floodplain.

Howard, Jeanette, 2010. Sensitive freshwater mussel surveys in the Pacific Southwest Region: assessment of conservation status

Jones and Stokes Associates, 1992. Final hydraulic, hydrologic, vegetation, and fisheries analysis for the U.S.Fish and Wildlife Service Putah Creek Resource Management Plan

Normandeau, 2015. Memorandum, February 4, 2015, Results of October 2014 lower Putah Creek fish surveys

Small, K.T., et al, 2004. Chinook salmon in Putah Creek, spring, 2004. Report to Lower Putah Creek Coordinating Committee

TenPas, J, 2016. Comments to Central Valley WQCB, May 20, 2016, Comments on 5A48CR00145, Putah Creek Restoration Project-Upper Reach Program

USACE, 2011, 2014. Authorization letter, Project (SPK-2011-00371), September 12, 2011, and Authorization letter, Project (SPK-2011-00371), August 12, 2014

Alan Pryor
2736 Brentwood Pl.
Davis CA 95618

March 8, 2017

Attn: Brian Luke, Natural Resources Specialist
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1460
Sacramento, California 95814-2922

Sent via email: brian.j.luke @usace.army.mil

Re: Comments on Winters Putah Creek Nature Park Channel Realignment and Restoration Project (WPCNP Phase 3), 19047-1 and Putah Creek Channel Restoration (NAWCA 3), 19027

Mr. Luke:

These comments pertain to the pending applications (the "Project Applications" or "Applications") for both the Winters Putah Creek Phase 3 project and the NACWA3 (the "Projects") by the Solano County Water Agency (the "Project Applicant").

As also further discussed below, the Project Applications makes theoretical claims about the proposed environmental and habitat improvements of the Projects which have not been substantiated by the Applicant in similar work done earlier in Phases 1 and 2 of the Winters Putah Creek Parkway project. Indeed, there is much evidence to suggest that such claims of benefits for the current Projects are unproven, at best, if not patently false and the Applicant has withheld this information from their Project Application.

1) <u>The proposed Projects will make the same environmental mistakes as have been seen in Applicant's previous Putah Creek projects</u>

The Project Applications discloses that the proposed Projects will include rechannelization of Putah Creek using massive amounts of unsuitable imported soils and extensive use of very large earth-moving equipment to to reconfigure the creek channel and compact the new floodplain in essentially the same manner as was recently done in Phases 1 and 2 of Winters Putah Creek Parkway Project. This has resulted in extensive plant and animal habitat degradation which has not been mitigated nor is it expected to be mitigated in any reasonable time-frame due to the nature of the degradation as more fully discussed below.

More specifically, many of the Project's programmatic features and practices proposed in the current Project Applications have already been recently unsuccessfully implemented in the previous industrial scale restoration project undertaken by the Applicant for channel realignment at the Winters Putah Creek Parkway Phases 1 & 2 project.

Although, Applicant is acutely aware of these problems, Applicant has not disclosed in their current Project Application that the results of these recent failed efforts in the Winters project have been demonstrably poor. For instance, with respect to the unsuccessful re-vegetation of the newly developed floodplain in the Winters Phase 1 and 2 projects, thousands of new native plantings have died or are stunted or in the process of dying despite repeated replanting attempts. Applicant is directly aware that the revegetative failures are caused by the specific type and compaction of the imported dredged soil used as fill in the earlier projects yet they propose to use the same type of fill and method of compaction in the current proposed Projects. This information, including any quantitative comparative soil and impact analysis necessary to substantiate the claims of public interest benefits, is not disclosed in the current Project Applications.

As further discussed below, there has been dramatic reductions in the fish counts in the reconstructed Phase 1 and 2 portions of the creek compared to immediately upstream and downstream portions of the Creek. Applicant is aware of these reductions because the counts were taken under contract to Applicant and the results have been submitted yearly to the Applicant. This information is not disclosed in the Project Applications. Rather, only vague and general claims of improved fish habitat have been made which do not indicate future public interest benefit in light of the previous failures in Phases 1 and 2 to increase native fish counts.

Because of the Applicant's complete and total failure to disclose ant of these earlier real-world shortcomings in their Project Applications, there is not any discussion or quantitative analysis in the Project Applications that explores why these failures have occurred and how they be prevented in the projects through alternative strategies or mitigations to minimize the future environmental damage.

The Phase 1 & 2 project failures and shortcomings can be explained by Dr. Peter Moyle (a project consultant) who has publicly stated that these restoration activities are”experimental” in nature and have not been sucessfully implemented before. In as much as those specific and defined problems that have arisen in the almost identical earlier Phase I and 2 projects have not been resolved, the proposed activities in the current Projects under review must also still be considered “experimental” with anticipated results that cannot be accurately projected. This information has not been adequately disclosed in the Project Application by the Applicant. Instead, the Project Application functionally proposes to use the same rechannelization methodology with the same soils and compaction techniques that have previously used in the failed Phases 1 & 2 but otherwise inconsistently states the results will be improved habitat.

The uncertain outcome of the proposed Projects with the potential for additional environmental damage clearly cannot be construed to be in the public interest in any shape form or fashion.

2) <u>Insufficient specification of pre-existing problems in the Putah Creek floodplain has been given</u>.

The Project Application merely references the fact that human disturbances of the creek have occurred in the past but does not quantitatively identify or provide any peer-reviewed references of what what the specific “natural form and function” of the Creek should be that they propose to achieve. Instead, the entire proposal is coached in vague and undefined terms of expected environmental improvements or enhancements but there is not ANY quantitative justification of how these unsubstantiated changes are expected to beneficially improve the Creek. For instance, as later discussed the Project Application claims that rechanneization will result in cooler stream temperatures but has not demonstrated these results in real life in Phases 1 and 2 nor has a quantitative theoretical basis for such cooler temperatures been establsihed. Instead, Applicant relies of broad general statements that such temperature drops will occur and that such drops will benefit the creek and,. by inference, the public interest

3) <u>Insufficient evidence has been provided demonstrating that the new proposed projects will not adversely impact existing plant and animal species</u>

There are literally dozens of plant and animal species that could be adversely affected by the type of radical, industrial-scale transformation of the creek and new floodplain that has, in fact, been demonstrably shown to have occurred in the earlier Phases 1 & 2 of the Winters Putah Creek Parkway realignment project. Unfortunately, there has been no quantitative pre-and post-project assessment of the populations for almost all of the affected species ranging from mussels to insects to song and migratory birds to numerous mammals including mink, otters, and beavers in the Winters project. Thus, based on the obvious dearth of reported data, it is impossible for a reasonable detrmination to be made of the likely success or effectiveness of such rechanneleization activities on further portions of Putah Creek such that no determination of public benefit or interest can be made for the Project Application.

Indeed, the only conclusive assessments that can be made about the previous project's impacts on habitat in the Winters project have shown the re-vegetation efforts on the newly constructed floodplain have miserably failed and there has been a marked reduction in the native fish population is Creek areas affected by the previous channel reconstruction in Phases 1 & 2. Unfortunately, these failures and the attendant adverse environmental impacts are also not reported in the Project Application which should result in application rejection and permit denial on this basis alone.

As an example, for about the past 20 years, a consulting company (Normandeau Associates) has been counting fish at pre-selected locations along the entire length of Putah Creek under contract to the Project Applicant (see Appendix A attached a s pdf to this communication for partial reporting of these results). These studies have conclusively shown a severe and marked reduction in native fish populations of the reconstructed portions of the Creek compared to immediate upstream and downstream portions of the Creek and that such declines appear to be more pronounced in the most recent years.

Further, as discussed above, many other animal and plant impacts have NOT been adequately identified nor has proper mitigation been completely and adequately proposed to minimize such

impacts. As a result, substantial harm may be imposed on the plant and animal communities in the proposed project areas to the obvious detriment of the public interest. A careful inventory of all such potentially affected species must be taken and potential adverse effects must be identified with proposed mitigations for each affected species. In this absence also, this Application should be rejected and the permit denied for insufficient information under Federal standards.

Additionally not discussed are the number of trees and plants that are expected to be removed and the number of animals that are expected to be killed due to habitat destruction including special species of interest such as mussels and the Western Pond Turtle.

4) <u>Insufficient evidence has been presented demonstrating that the project will not adversely impact existing Putah Creek water quality</u>

Applicant has claimed in the past that water quality will be improved with cooler temperatures prevailing by eliminating pools of water where, it is claimed, the direct sunlight and slow moving water allows temperatures to rise to unacceptable levels. Unfortunately, there has been insufficient pre- and post-construction measurements or quantitative theoretical calculations or other evidence to support this claim. In contrast, come stream temperature measurements have been taken indicate, contrary to Project Applicant's claims, that there is very little temperature differential in the water passing through these pools and less than that observed in the reconfigured open stream bed itself. This is likely due to the shading over existing pools by the riparian canopy and the depths of the pools allowing temperature buffering. Additionally, the larger surface area size of the pools allows for extensive evaporative cooling and nighttime convective and black body radiation cooling in those pools. In contrast, the water in the reconfigured channel is directly exposed to the sunlight because the riparian canopy has been destroyed thus allowing increased sunlight to strike the water on a proportional per square ft of surface area basis. This can result in increased rather than decreased water temperature rises compared to preexisting conditions. Applicant has failed to disclose this information in the Project Applications.

At minimum, an extensive survey of temperatures along the length of the proposed Project and the recent reconstructed segments of the Creek must be taken and analyzed based on upstream flow and volume characteristics. Additionally, quantitative projections of newly resultant temperatures post-project must be made with substantiation as to the methodology employed consistent with information already obtained at the Winters Putah Creek Parkway Project and other disturbed and undisturbed areas of the creek. In the absence of disclosure of this information, this Project Application should be rejected due to the absence of sufficient information as otherwise required.

5) <u>Insufficient evidence has been provided demonstrating that the project will not adversely impact existing ground water quantity and quality</u>

Putah Creek is an undeniably important source for groundwater regeneration along the entire length of the stream and particularly where gravel pools have formed allowing for extensive infiltration into underground aquifers through the porous soils. By contrast, newly configured stream beds have had such water percolation almost eliminated because of the extensive hard pan created by the alien clayish, and heavily-compacted dredging spoils. There has been no analysis by the Project Applicants of the impacts on groundwater by the proposed Project and this Project Application should be denied until this information is provided and fully analyzed by experts.

Further, the applicant does not provide any details as to the nature of the soil to be imported for the Project, its chemical and mineral composition, or its hydrologic characteristics such as water permeability and moisture retention once the fill is compacted. This lack of specificity is not consistent with demands for proper disclosure and this Project Application should be denied based on the lack of this sufficient information alone.

6) <u>Insufficient evidence has been provided demonstrating that the project will not adversely impact other existing human beneficial uses</u>

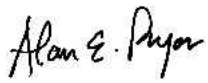
There has been no discussion or quantitative information provided identifying other human beneficial uses of the proposed project particularly including swimming, fishing, and rafting or canoeing. In the absence of such identification and proposed mitigations, the project's impact on such beneficial uses by humans cannot be evaluated and this Project Application should be denied based on the lack of this demonstrated pubic interest..

As an example, a recent email was sent out by the Putah Creek Council extolling the opportunities for summer recreation on Putah Creek (see below). All of the pictures of the creek in this newsletter show broad expanses of the creek such as pools or wide and deep slow moving sections of the creek. The activities proposed in the Project Application indicate that these broad expanses and slow moving sections of the creek will not be possible after the channel realignment process. This would clearly adversely affect these beneficial human activities on Putah Creek in the future which adverse impacts have not been properly analyzed in the Project Application nor mitigations proposed such that permit issuance in this absence would be unlawful.

In summary, this Project Applications are is long on suggested or claimed qualitative benefits that the Applicant proposes will be realized by this project but short on substantiation and documentation of mitigations and any quantitative proof is completely missing. Indeed, comparison with the damage wrought in the Winters Putah Creek Parkway project suggests the proposed benefits will not be realized for decades, if ever, and the Applicant has not otherwise provided any quantitative information of public benefit to the contrary. As such, this Project Application's permit cannot be lawfully issued.

Please inform me of future correspondence and resubmissions or additions to this file and decisions rendered on the Applications. Thank you in advance of this courtesy.

Respectfully submitted,



Alan Pryor
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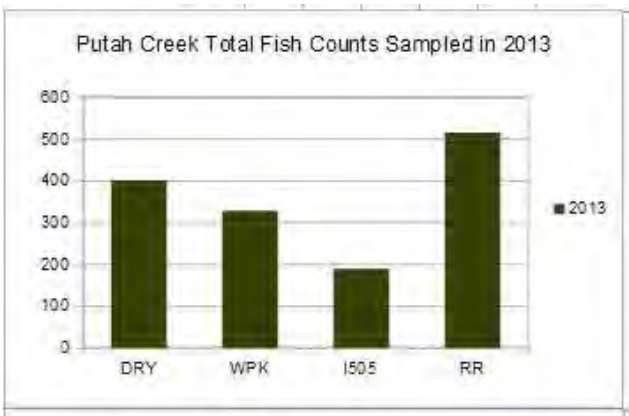
916-996-4811 (cell)

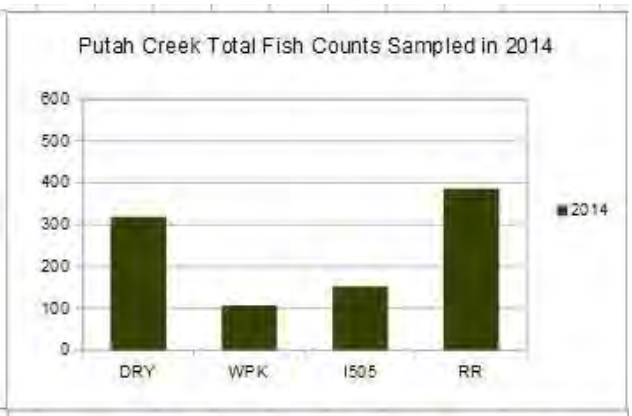
Appendix A – Results of October 2013-October 2016 Lower Putah Creek Fish Surveys. Normandeau Environmental Consultants.

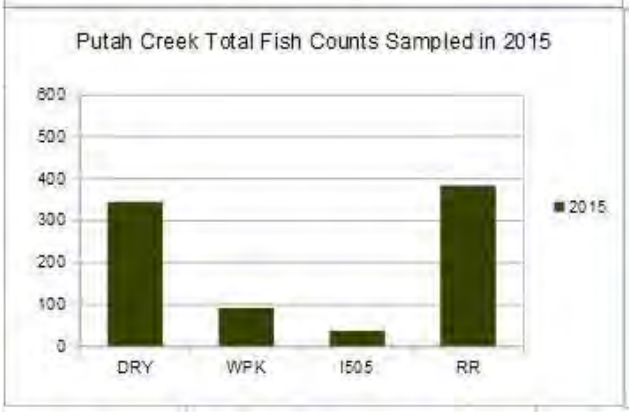
Putah Creek Fish Counts

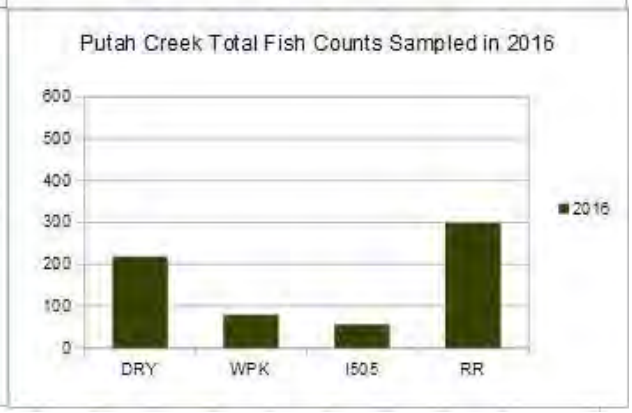
	DRY				WPK				1505				RR				Total
Native Fish	2013	2014	2015	2016	2013	2014	2015	2016	2013	2014	2015	2016	2013	2014	2015	2016	
Sacramento Pikeminnow	56	74	74	42	21	2	16	5	14	10	4	4	258	248	218	29	1075
Sacramento Sucker	196	105	134	65	92	10	17	8	83	36	11	3	52	25	42	97	976
Rainbow Trout	19	24	28	12	8	9	11	2	4	5	8	5	1	2	1	1	140
Threespine Stickleback	1	3		1	49	2	1		19	3	1						80
Prickly Sculpin	14	15	10		49	31	7	9	19	2	3	3	136	32	16	2	348
Riffle Sculpin	13	17	22	14	73	53	35	45				7		6	2		287
Tule Perch	103	80	75	85	37		5	11	51	91	7	30	56	67	104	152	954
Pacific Lamprey		1															1
Exotic Fish																	
Red Shiner																	0
Goldfish																	0
Common Carp																	0
Golden Shiner																	0
Black Bullhead																	0
White Catfish																	0
Inland Silverside														1			1
Western Mosquitofish																	0
Bluegill																	0
Redear Sunfish																	0
Warmouth																	0
Green Sunfish										6	2		2				10
Unid'd Sunfish																	0
Smallmouth Bass														1	1		2
Spotted Bass																3	3
Largemouth Bass			2								1	5	10	4	1	15	38
Striped Bass																	0
Bigscale Logperch																	0
	DRY				WPK				1505				RR				Total
	2013	2014	2015	2016	2013	2014	2015	2016	2013	2014	2015	2016	2013	2014	2015	2016	
Total # Individuals	402	319	345	219	329	107	92	80	190	153	37	57	515	386	385	299	3915
# Native Fish	402	319	343	219	329	107	92	80	190	147	34	52	503	380	383	281	3861
# Exotic Fish	0	0	2	0	0	0	0	0	0	6	3	5	12	6	2	18	54

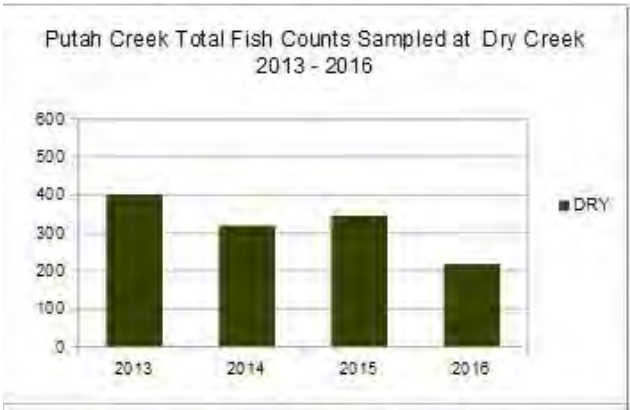
	2013				2014				2015				2016			
	DRY	WPK	1505	RR	DRY	WPK	1505	RR	DRY	WPK	1505	RR	DRY	WPK	1505	RR
Total # Individuals	402	329	190	515	319	107	153	386	345	92	37	385	219	80	57	299
# Native Fish	402	329	190	503	319	107	147	380	343	92	34	383	219	80	52	281
# Exotic Fish	0	0	0	12	0	0	6	6	2	0	3	2	0	0	5	18

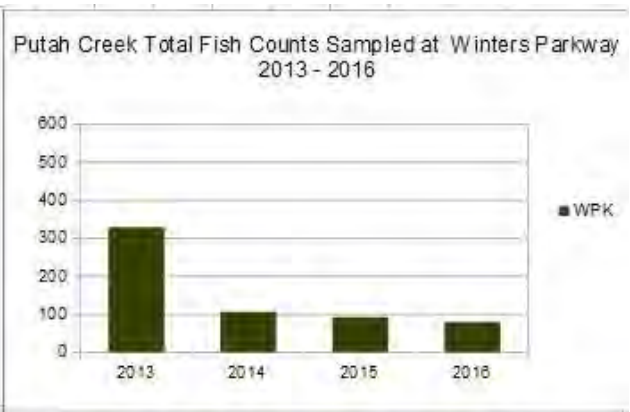

Putah Creek Total Fish Counts Sampled in 2013
600
500
400
300
200
100
0
DRY
WPK
I505
RR
2013

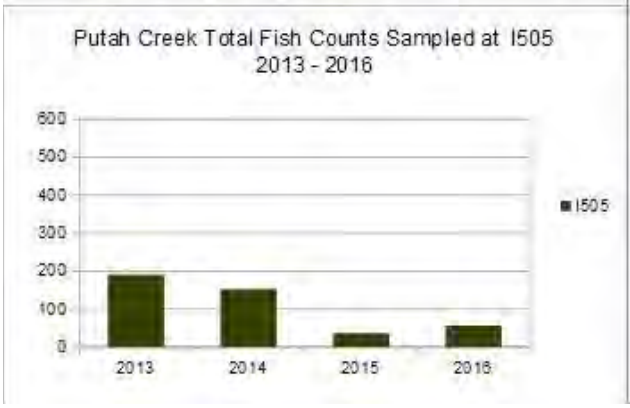

Putah Creek Total Fish Counts Sampled in 2014
600
500
400
300
200
100
0
DRY
WPK
I505
RR
2014

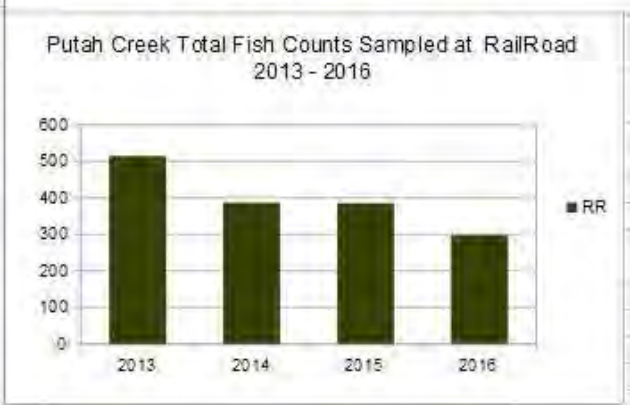

Putah Creek Total Fish Counts Sampled in 2015
600
500
400
300
200
100
0
DRY
WPK
I505
RR
2015


Putah Creek Total Fish Counts Sampled in 2016
600
500
400
300
200
100
0
DRY
WPK
I505
RR
2016


Putah Creek Total Fish Counts Sampled at Dry Creek
2013 - 2016
600
500
400
300
200
100
0
2013
2014
2015
2016
DRY


Putah Creek Total Fish Counts Sampled at Winters Parkway
2013 - 2016
600
500
400
300
200
100
0
2013
2014
2015
2016
WPK


Putah Creek Total Fish Counts Sampled at I505
2013 - 2016
600
500
400
300
200
100
0
2013
2014
2015
2016
I505


Putah Creek Total Fish Counts Sampled at RailRoad
2013 - 2016
600
500
400
300
200
100
0
2013
2014
2015
2016
RR

Appendix B – Excerts from Recent Putah Creek Council promotional Mailing

Putah Creek Council

Excerpts and Photos from July - August, 2016 Putah Creek Council Newsletter

…"It is summertime on Putah Creek and folks are out ***floating, boating,*** **(*emphasis added*)** hiking and ***swimming*** **(*emphasis added*)** along public sections of the creek like the Inter-Dam Reach (IDR), Lake Solano, Winters Putah Creek Nature Park, UC Davis' Putah Creek Riparian Reserve, and the City of Davis' South Fork Preserve.

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The Freshwater Trust®
Changing the course of conservation.

1717 I Street Suite A
Sacramento, CA 95811
916-668-7345
www.thefreshwatertrust.org

February 17, 2017

Brian Luke, Natural Resources Specialist
US Army Corps of Engineers, Sacramento District 1325 J
Street, Room 1460
Sacramento, California 95814-2922

RE; 408 Modification for the Winters Putah Creek Nature Park Channel Realignment and Restoration Project (WPCNP Phase 3), 19047-1

Email: Brian.J.Luke@usace.army.mil

The Freshwater Trust actively works to preserve and restore freshwater ecosystems in communities throughout the Pacific Northwest and California. Our work—which includes restoring riparian forests, improving instream habitats to support fish, and managing flow leasing programs—demonstrates a commitment to supporting environmental as well as economic resilience. We implement data-driven solutions that prioritize restoration and conservation actions to increase overall watershed health.

We are providing comment on this project because we understand it to be a project of compelling regional importance to the Sacramento watershed, and in particular to the Western Sacramento Valley triburaties.

This project is the final phase of a decade's long collaboration between the City of Winters, Solano County Water Agency, the Lower Putah Creek Coordinating Committee, and numerous other civil and conservation interests. Through the efforts of this collaboration, the City of Winters' Putah Creek Nature Park has transitioned from some of the lowest ecological value in the watershed to some of the highest.

This transformation resulted from the improvement of flow from the removal of the percolation dam, to the narrowing of the gravel mining pits, both of which improved local temperatures and dissolved oxygen. The projects have increased the riparian zone from a narrow band of invasive species to a complex, native functional ecosystem. It has also become a means by which the local community can finally access its natural areas, much in the same way that the American River parkway has transformed Sacramento County. Finally, it is one of the few areas on the West side of the Sacramento Valley that allows public access to a river in an urbanized area.

From a 408 perspective, the projects have consistently improved flow conditions and created a more laminar, and wider area for flood attenuation, including floodplain recharge areas. These improvements were analyzed in depth by Dr. Eric Larsen of UC Davis, the regional expert in fluvial geomorphology and a contributor to the Hydrologic Engineering Center's modeling refinements. It is our understanding that the project is either beneficial or neutral to the elements that constitute the usefulness of the authorized project, and that it has a compelling positive influence for the public interest.

Thank you for your consideration,

Erik Ringelberg
California Director

1520 East Covell Blvd
Suite 5, PMB #331
Davis CA 95616
cyarnes@putahcreektrout.org
530-304-1364

March 7, 2017

Brian Luke
Natural Resources Specialist
US Army Corps of Engineers
Sacramento District 1325 J Street, Room 1460
Sacramento, California 95814-2922

Brian Luke:

On behalf of the Board of Directors of Putah Creek Trout, I write to you our support of the 408 permit application for 19047-1 WPCNP Phase 3. Phases 1 and 2 have significantly extended riparian and aquatic habitat for native species in Putah Creek and improved habitat continuity. Long-term monitoring by the UC Davis Museum of Fish and Wildlife has shown riparian bird and mammal species previously confined to upstream habitats near the Coast Range have expanded their ranges further downstream, deep into the Valley floor. Native aquatic fish and invertebrate species once restricted to several miles west of Winters, just below Lake Solano, may now be found as far east as Davis. The habitat restoration under Phases 1 and 2, combined with the implementation of a natural flow regime, has dramatically increased native fall-run Chinook salmon (*Oncorhynchus tshawytscha*) populations within Putah Creek, and the National Oceanic and Atmospheric Administration has specifically targeted Putah Creek as quality habitat for threatened Central Valley steelhead (*O. mykiss*). The science-based restoration activities on Putah Creek have been demonstrated to be a resounding success by the academic and governmental communities that monitor these resources, but also with the public, where these activities have received numerous accolades.

Under Phase 3, further channel re-alignment will improve aquatic habitat and reduce water temperatures in an area widely-occupied by non-native riparian and aquatic plants. Native plant species , critical to the riparian bird populations that are in decline across California , will be used to further replace the invasive, non-native terrestrial species. Further, additional public access will be created on both the north and south shore of Putah Creek in the Winters Putah Creek Nature Park. Increased fish populations have also resulted in increasing numbers of fisherman within the Winters Putah Creek Nature Park, while birding has become more popular along the riparian corridor, both of which are positives for the local economy. Failure to pursue this work represents a significant opportunity cost, will maintain a stronghold for non-native species within Putah Creek, and will directly result in the disjunction of habitat continuity within the Putah Creek riparian corridor.

The future of California's wildlife is entwined with the people of California. While we manage our resources to meet the needs of our communities, we must do so in a way that supports and restores the

native wildlife communities that share in those resources. The proposed restoration activity for Phase 3 of the Winters Putah Creek Nature Park will improve habitat for native wildlife and increase access and recreational opportunities for the local community. For this reason, Putah Creek Trout strongly supports the science-based restoration activities on Lower Putah Creek, and we encourage the USACOE to approve 19047-1 WPCNP Phase 3.

Sincerely,

Chris Yarnes, PhD
Secretary of the Board
Putah Creek Trout

Mark Snyder

From: Rod Macdonald <wetlands@omsoft.com>
Sent: Monday, March 06, 2017 1:02 PM
To: Luke, Brian J CIV CESPK CESPD (US)
Subject: [EXTERNAL] Comments on Winters Putah Creek Nature Park Channe

Comments on Winters Putah Creek Nature Park Channel Realignment and Restoration Project (WPCNP Phase 3), 19047-1

My name is Maura Metz. My husband and I are property owners along the north bank (Yolo County side) of Putah Creek, very near Stevenson's Bridge, which is about 10 miles downstream from the project site. I have lived here since 1981 and look at the Creek constantly, as it is right outside my kitchen window and part of my backyard.

I am concerned that if the Creek channel is narrowed and made more shallow, we will have a greater chance of being flooded. It is my understanding that the Solano County Water Agency eventually wants to do this along the ENTIRE Creek downstream from Winters all the way to the bypass. Preposterous! Mother Nature made this Creek channel over thousands of years, continued to form and reform it to new specifications after Monticello Dam went in. It is working well. We have never flooded, even in the super rainfall season, 1982/83, when we got about 38 inches.

The Creek outside my window also worked well in the severe drought years of the late 1980s/early 90s. It is very deep here. It never dried out. In fact, I once spoke to a researcher, who was in a boat, checking for fish. He was all smiles because there were some. This was at a time when people were up in arms about dead fish in stretches of Creek that had dried out. So I don't see how getting rid of any deep spots that are in the Creek in the proposed project area are going to help fish.

The incredible wildlife values and return of the salmon to the Creek have been well documented by UCD's Dr. Peter Moyle and others. No human "enhancement" was necessary. How will making the volume of water in the Creek SMALLER allow the Creek to nourish MORE fish, animals and plants?

From my kitchen window over the years I have seen beaver, otter, muskrats, gray squirrels, gray foxes, herons, ducks and, once, a mountain lion. This shows what a great wildlife corridor the Creek has been. That will not be the case after the amazingly destructive bulldozer work being proposed.

I am afraid that the channel reconfiguration and bulldozer work already done in Winters nature Park, phases 1 and 2, probably already affects this corridor. It's effect on getting native plants to return is especially experimental. Please don't add to the habitat destruction. Let's study phases 1 and 2 for a long time, 20 to 30 years, to see if it really works.

Thank you for considering my comments.

Maura Metz
34811 Creeksedge Rd.
Davis, CA 95616

Sent from my iPad

To: Mr. Brian Luke at US Army Corps of Engineers

Attn: Brian Luke, Natural Resources Specialist
US Army Corps of Engineers, Sacramento District
1325 J Steet, Room 1460
Sacramento, California 95814-2922

Comments regarding Winters Putah Creek Nature ParkChannel Realignment Project Phase 3 (19047-1) pursuant to 33 USC 408 (Section 408)

From: Glen Holstein, PhD

Dear Mr. Luke,

I have 25 years of professional experience doing California riparian and wetland restoration and currently am a certified advisor to the Yolo Habitat Conservancy, an HCP/NCCP collaboration between local government and federal and state wildlife agencies. In addition I am on the boards of three conservation organizations: Tuleyome, California Native Plant Society Sacramento Valley Chapter, and Habitat 2020 of the Environmental Council of Sacramento, which named me 2013 Sacramento Environmentalist of the Year. I have also contributed papers on riparian ecology to two of the few academic books whose subject was specifically California riparian areas (Warner & Hendrix 1984, Faber 2003).

A first rule in restoration, as in medicine, should be to do no harm. Unfortunately the project under consideration here has already done immense harm and would do much more if approved. Agencies like yours must work on an honor system that expects project proponents to provide accurate information. The manager of this project Richard Marovich, however, has consistently described it inaccurately to both the public and to agencies like yours that must approve it.

NAWCA3 would extend a project downstream that began in September 2011 with Calfornia Proposition 1 funding and was justified by claiming it would improve Putah Creek, a stream described as in degraded and ruined condition, and specifically increase its native fish and their habitat. Improvement of riparian habitat for other species was also promised.

Contrary to these claims, Putah Creek before the project, while far from pristine and unaltered, was hardly a degraded stream. It was cooled by shade of a dense riparian gallery forest providing high productivity during the growing season and habitat for numerous species. Its porous riparian soils permitted rapid groundwater recharge, and its backwater areas, some created by past gravel mining, added habitat diversity in pools sometimes deep enough to retain cool water throughout the region's hot summers. These conditions are indicative of ecological health (Poole & Berman 2001), and not surprisingly before the project Marchetti and Moyle (2000) identified it as a hotspot of native fish biodiversity since they

found it greatest along lower Putah Creek at its confluence with Dry Creek, their sampling station closest to and essentially adjacent to the Winters project area. Similar pre-project results were found by Kiernan et al. (2012) at Kilometer 6, their sampling area nearest the project site.

In contrast a series of fish sampling studies (Salamunovich 2014-2017) document a dramatic loss of native fish in the Winters project area, in direct contradiction to the project's aims even though the studies were financed by the project proponents. For example, the studies show that by 2016, 5 years after the project's start, the project area had only 36.5% as many native fish as an undisturbed site upstream and 28.5% as many as an undisturbed site downstream. Project proponents have claimed these figures indicating native fish loss in the project area only reflect lack of time for the project's good effects to occur, but they are progressively getting worse. In four years of surveys native fish in the project area have declined 75.7%. Project proponents have tried to blame this decline of native fish in the area where they were once most abundant on a drought in California during the same period, but that doesn't explain why an undisturbed site upstream declined only 45.5% and one downstream only 42.0%. This project claiming to benefit native fish has clearly harmed them instead. The reasons for this become quite clear when how the project was constructed is examined.

Starting in 2011 early phases of this project denuded the Putah Creek floodplain and converted it to a biological desert that has existed unchanged for 6 years. It was stripped of its riparian trees and alluvial soil, back waters were eliminated, and all was covered by excavation tailings from another construction project of its sponsoring agency, the Solano County Water Agency. These consisted of indurated 2 million year old sandy claystone from the Tehama formation that entirely lacked organic matter (Ellen & Wentworth 1995, Howard 1979).

When this material was deposited across the surface of Putah Creek's floodplain and compacted it quickly reverted to claystone harder than the adobe bricks of California structures still standing after more than 200 years. An attempt was made to plant riparian trees and shrubs in this material 6 years ago, but these plantings all quickly withered and died. Consequently the floodplain remains as barren today as when the project began except for colonization by a few hardy non-native weeds.

The project constructed an artificial channel in the claystone for Putah Creek that its proponents claimed would meander like a natural stream, but it's remained as fixed in the indurated imported claystone covering its floodplain as it would in a concrete channel.

This fact fully explains why the project has been a disaster for what was once the richest part of Putah Creek for native fish, a disaster that project proponents have proposed extending the entire length of lower Putah Creek. In the project area a dense riparian gallery forest cooled the creek by shading it while its deciduous leaves provided the food chain base. Now the creek is directly exposed to solar

radiation and lacks the significant cooling by shading beneficial to native fish (Poole & Berman 2001). Project proponents claim they've cooled the creek by increasing its streambed conductivity, which is theoretically possible, but they provide no stream temperature data adequate to support this claim, just a mish mash of temperature readings done at different times of day and in different seasons. In any case the two most comprehensive studies of Putah Creek temperature and hydrology (Jones & Stokes 1996, Yates 2003) conclude that shading by riparian trees is more significant than stream flow rate in providing cool temperatures they identify as being needed by Putah Creek's native fish. Yates also concluded before the project that lack of coarse sediments in the creek's floodplain was reducing its habitat value for native fish, but the project replaced the material Yates described with even finer Tehama formation claystone excavation tailings that rapidly indurated when wetted and compacted.

In addition to reducing habitat for fish, the project has reduced overall habitat diversity in other ways. It destroyed backwaters on the Putah Creek floodplain that once provided physical refuges for many species as well as reservoirs of cooler water at depth during hot summers. Such habitat diversity explains why riparian zones are rich in species diversity (Poole & Berman 2001). A significant factor in healthy riparian functioning is subsurface flow originating from groundwater recharge. That both significantly cools streams when it resurfaces, as it at least once did at Putah Creek (Jones & Stokes 1996), and provides water and aeration to the riparian forests that shade streams and provide habitat for numerous bird, mammal, and invertebrate species. Unfortunately, however, these forests no longer exist in the project area. The hard claystone the project used to cover the floodplain not only doensn't permit riparian trees to grow, it also greatly inhibits groundwater recharge. Federal soil scientist Jeff TenPas calculates this groundwater loss to be 2,310 acre feet per year in the project area (personal communication).

Many if not most of these problems might have been solved by now if the project's managers like Richard Marovich dealt honestly with stream stakeholders. Unfortunately he did not. He told them the project would be on hold for at least a year until its problems were solved and then started it the next day. He stated in a 2016 EIR to extend the project downstream that his project area riparian plantings are a complete success when they actually are a complete failure. He told stakeholders that he would not start the project's Phase 3 until it was permitted but started it anyway without permits. This dishonest and unethical behavior has been able to continue because agencies must often operate on an honor system that expects honesty from project proponents. In this case they have not received it.

Sincerely,
Glen Holstein, PhD

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Sally Brown
24 East Main Street
Winters, CA 95694

March 8, 2017

Brian Luke, Natural Resources Specialist
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1460
Sacramento, California 95814-2922
Sent via email to: Brian.J.Luke @usace.army.mil

Re: Winters Putah Creek Nature Park Channel Realignment and Restoration Project (WPCNP Phase 3), 19047-1

Dear Brian:

My name is Sally Brown and I have lived in Winters for the past 20 years. Our home is near Putah Creek and easily accessible to me from my back yard. I walk with my dog out at the creek several times every day. Nothing gives me more pleasure than to be out in nature. I also enjoy interacting with other community members along Winters' paved Putah Creek nature trail that runs alongside the creek.

The "wild" undeveloped section that spans less than a quarter mile is the *only part of the creek* visible from the Putah Creek nature trail that has an abundance of wildlife (both mammal and birds). We regularly observe beaver, river otter and mink in the water. What is amazing is how closely we can watch the animals in their natural habitat as the water abuts the fenced area or high banks (at different spots along this stretch), yet the animals feel protected as the water is approximately 8-20 feet below and no pedestrian or dog access is available. We also regularly see kingfisher, great blue heron, green heron and seasonally see many varieties of ducks. Turtle are often observed basking in the sun on downed tree branches. There is also a big eucalyptus tree in this undeveloped section that hosts a red-shouldered hawk nest and for the past three years the community has enjoyed the opportunity to watch the process from hatching to the fledglings' first flight. This year, we are excited that a great horned owl has occupied this nest (although I'm sure much to the dismay of the hawk). This is the section of the creek being considered for a "realignment and restoration" project and subject to your permitting approval.

As I also daily walk on the developed, realigned sections of the creek, I can definitely tell you that I have never witnessed beaver, otter, herons, ducks, turtles or other aquatic animals in those sections of the creek. The channel in those sections (above and below the section slated for Phase 3) is nothing more than a narrow ditch too accessible by foot traffic and dogs, which makes it neither inviting nor natural habitat for the wildlife. I believe that if a permit is given for Phase 3, the rest of the creek within the Winters Putah Creek Nature plan will also become devoid of the aquatic mammals and birds that delight me and my fellow community members.

The City of Winters has a master plan for its Putah Creek Nature Park that was developed in 1995 and updated in 2008. I am very familiar with the plan as for four years I served as an appointee on the Winters Putah Creek Committee (WPCC). Goal 5.1 of the Winters Putah Creek Nature Park Masters Plan (2008) reads as follows:

> **5.1 Universal Access**
> Universal Design is a philosophy that is more than meeting the requirements of the law for accessibility. It is the creation of environments and amenities that are usable by all people, to the greatest extent possible, without the need for adaptation or specialization. Universal Design features should be incorporated into all of the park spaces and amenities **so that people of all ages and abilities can experience the place -young and old, fit and out of shape, able-bodied and those needing assistance.** For Putah Creek Nature Park, Universal Design **means providing access to the entire creek experience.**

I ask you to please deny this permit this project as it would effectively deny all citizens of Winters (young, old, and disabled) an equal opportunity to experience nature in such an up-close-and personal way.

Since 2015, I have been trying to bring the concerns that I have heard from community members, which I share myself, to the attention of WPCC and the Winters City Council. While you may hear from the Streamkeeper that there is little opposition to this development, this is simply not true. I have interacted with scores of community members who believe that this project would deny themselves and generations to come a recreational opportunity to experience nature first hand. In this era of "nature deficit disorder"[1] we need to enhance young people's access to nature rather than to take actions to inhibit exploration.

I wished that I could have an opportunity to take you for a walk along the nature trail past this wild section of the creek so that you could see for yourself how incredibly special it is and have an opportunity to talk with community members who are there enjoying the wildlife. I have yet to talk to any community member out on the nature trail that is in support of this project. It dismays us all that because SCWA was able to get a grant for this project, that they wouldn't listen to and respect the input of the community to please find an alternative way to repair the floodplain without relocating the creek away from public view.

Several years ago I had the pleasure to take Dirk Van Vuren, professor in the Wildlife, Fish, & Conservation Biology at U.C. Davis, down into the floodplain along the realigned section (Phase 2) and then up to the nature trail by the proposed Phase 3 section. His response when we got to the wild section was "Oh my, I can see why you want to preserve this." He told us that it is very rare to have an opportunity within city limits to witness aquatic mammals so closely.

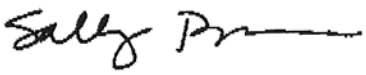
---

[1] Louv, Richard. (2005) *Last child in the woods: saving our children from nature-deficit disorder* Chapel Hill, NC : Algonquin Books of Chapel Hill.

Since I'm unable to take you on this walk, I'm going to attach two brief presentations that I did to try to convince "the powers that be" to reconsider this project. The first is a Powerpoint presentation that I made to the Winters Putah Creek Committee in March 2015 and the second is a shorter presentation that I made to the Winters City Council in April that year. Through these presentations you will be able to see pictures of the area that we all love, value and want to preserve. I hope that it will lead you to the conclusion that if this permit is approved the public will be denied an incredible recreational opportunity to witness nature. Once it is gone, it is gone forever. Please, deny this permit and help the community of Winters preserve this special place for generations to come.

Thank you for considering my comments and the wishes of the Winters Community.

Sincerely,



Sally Brown

Attachments:

Keeping Nature in the Nature Park WPCC Presentation March 2015.pdf
S Brown Comments to Winters City Council April 2015.pdf

Margaret Burns
28500 Alta Vista Drive
Winters CA 95694 530-795-3524 burns.margaret99@gmail.com

February 12, 2017

Attn: Brian Luke, Natural Resources Specialist
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1460
Sacramento, California 95814-2922

Re: Comments On Winters Putah Creek Nature Park Channel Realignment and Restoration Project (WPCNP Phase 3), Identification Number 19047-1

As a private Winters citizen who uses the Nature Trail and Putah Creek Nature Park, I urge you to grant the 408 permit that will allow the Phase 3 work to proceed.

It makes no sense to stop the work that, in only a few years, has resulted in a remarkable change in the accessibility and benefits of a flowing stream to the residents and visitors to the city of Winters.

Phase 3 lies between two already completed sections of the Restoration Project. Why not complete the middle section, part of which has been used as a staging area for the other two components, and needs to be put back into a more natural state.

For the first time in the thirty years we have lived here, Putah Creek is accessible for casual walking, biking, dog walking, and simply enjoying a nature preserve within the town limits.

It has resulted in three specific results – Putah Creek has been designed as a Trout Trophy Stream, important for fisherman and for attracting people to town. Second, in just the past 3 to 4 years, breeding salmon runs that have never before been seen have become an exciting natural occurrence, and resulted in the first Salmon festival in Winters this year, another event adding to the prosperity of our city. Third, the lead agency, Solano County Water Agency, has received three environmental awards for the work they have done from associations that can evaluate the worth of their work.

The enhanced habitat, good water quality of the stream for wild critters and enormously improved accessibility through the Nature Trail provides a haven for all the public. It is used daily, continuously throughout the day and throughout the year to bring us a little closer to nature.

I am not an expert in environmental regulations, wildlife, or channel realignment projects. What I do know is that the efforts to date have turned an ignored property into a jewel. According to the wildlife experts, the fish have benefitted, the insects have benefitted, and I see that we people have benefitted.

Approving the permit to complete the work of Phase 3 is the best action that could be taken.

Thank you!
Sincerely,

Margaret Burns

February 28, 2017

Brian Luke
Natural Resources Specialist
US Army Corps of Engineers
Sacramento District
1325 J Street, Room 1460
Sacramento, California

Sent via e-mail to Brian.J.Luke@usace.army.mil

Subject: Winters Putah Creek Nature Park Channel Realignment and Restoration Project (WPCNP Phase 3), Permit 19047-1

Dear Mr. Luke,

I am writing on behalf of the Board of Directors of the John Muir Chapter of Trout Unlimited (TU). We are a member of the Putah Creek Interdam Reach Work Group. Our Board members have varied professional backgrounds ranging from civil engineering to biology, hydrology to graphic arts, ecology to project management, finance to human resources. We are strategicly connected with sister chapters throughout the state through the California Council and throughout the country through the TU National Council. We work in alignment with TU's professional California staff of scientists and project managers coordinated out of the Emeryville office.

Our Chapter consists of over 500 volunteer members in the East Bay and adjacent communities. Most, but not all, of our members enjoy fishing. However, all enjoy the natural beauty and rejuvenating experience of spending time with family and friends on clean rivers and lakes. What unites us is our passion and committment to Conserve, Protect and Resore natural freshwater ecosystems, healthy watersheds and sustainable populations of wild coldwater fish for the enjoyment of the community and for future generations.

TU is committed to building a future wherein clean, free flowing, natural streams are accessible to all and sustainable populations of salmon, steelhead and resident trout flourish in our watersheds. We believe that restoration of the Putah Creek watershed presents a unique opportunity to achieve that vision. We strongly support the scientifically based plan (WPCNP Phase 3) to improve creek flow characteristics through recontouring of the floodplain, banks and terrace followed by stream channel narrowing and gravel augmentation for spawning. These actions will add significantly enhanced habitat for Fall-Run Chinook Salmon, resident Trout and federally threatened Central Valley Steelhead by reducing water temperature, increasing streambank cover and adding viable new areas for building redds. We support the Putah Creek Restoration Project and request that permit 19047-1 be authorized for WPCNP Phase 3 under Section 408. Putah Creek has tremendous potential to become an even greater asset to the community. Not proceeding with this restoration work would be a major lost opportunity for future generations.

Sincerely,
David Roche
Conservation Chair and Board Member
Trout Unlimited - John Muir Chapter

David Roche / Conservation Chair and Board Member
droche555@gmail.com / (925) 788-1524

Trout Unlimited – John Muir Chapter
http://www.jmtu.org

Brian Luke, Natural Resources Specialist
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1460
Sacramento, California 95814-2922Brian Luke, Natural Resources Specialist
US Army Corps of Engineers, Sacramento District

To Whom It May Concern:

I am writing in reference to the WPCNP Phase Three (I.D. 19047-1) project currently open for public comment. I am a Winters resident and a daily creek walker. I have witnessed the changes that have happened on the creek during the phase 1 and 2 portions of the project. Some of the enhancement has been positive, particularly the walking path which has increased the numbers of people enjoying the park. I used to be one of a very small handful of people who would use the earthpath to enjoy the wildlife sightings and have a daily dose of nature. What I have noticed since the realignment of the creek is that the wildlife is now mostly concentrated in the area that the phase three plan would obliterate. There seems to be more fish in that area than in the realigned channels as well as habitate for a wide diversity of creatures. That is where I see the blue heron and otters fishing for their breakfasts, and that is the area that I notice most of the birds, not to mention the beaver. In addition, that is the area with the closest access for the viewing public and allows the best opportunity for education without disruption of the animals. I believe that the ultimate purpose of promoting habitat for the fish will not be served by continuing with the phase three portion of the current plan. I saw salmon spawning both above, below and in that portion of the creek. It doesn't need to be moved for the salmon spawning to be successful. Leaving this unbelievably beautiful and diverse section is a win-win for everyone and all the creatures involved. In addition, the use of the heavy machinery involved in the proposed project creates so much distruction that it is hard to justify the means, while the end still remains in doubt. I would ask that the moneys allocated for this project be put to use cleaning the phase three section of the invasive arundo and building the bridge across the creek to create a loop, a part of the plan which has never been done but would allow for more use of the south side of the creek.

Sincerely,

Jan Schubert
307 Main St.
Winters, Ca. 95694
beehappycandlesemail@gmail.com

CITY OF WINTERS
california
Est. 1875

February 28, 2017 via e-mail to: Brian.J.Luke@usace.army.mil

Brian Luke, Natural Resources Specialist
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1460
Sacramento, California 95814-2922

Regarding Public Comments on Permit Number 19047-1

Dear Mr. Luke

I am writing on behalf of the City of Winters Putah Creek Committee (WPCC) in **support** of the Winters Putah Creek Nature Park Channel Realignment and Restoration Project (Project) (WPCNP Phase 3), 19047-1.

Putah Creek forms the southern boundary of the City of Winters in Yolo County, California. The Winters Putah Creek Park extends from the Rail Road Avenue bridge downstream (east) approximately 1 mile to a pair of Caltrans bridges spanning Putah Creek (Creek) at Highway 505. The Park occupies both banks of the Creek. The historically ephemeral Creek has been heavily altered. A relic percolation dam was constructed in the 1930's to create a seasonal lake for groundwater recharge. The seasonally dry channel was also mined for aggregate and used to construct seasonal waste water ponds for the City of Winters. In the 1950's, the percolation dam was damaged beyond economically viable repair and left as man-made barrier to flow and fish migration.

In the mid 1950's, construction of the Solano project resulted in perennial flows in the Winters reach of the Creek resulting in bank to bank inundation that appeared for all intense and purpose as a nearly motionless lake. The steep banks of the Creek filled with a mix of native and invasive riparian vegetation that became largely impassible and the slow moving water warmed and became a refuge for invasive fish species such as bass, sunfish and pike.

In the fall of 2002, the historic Putah Creek Settlement Agreement was enacted after nearly a decade of litigation. The agreement stipulated flows in Putah Creek such that a consistent supply of water was available year around for environmental purposes. In addition, the agreement set aside monies so that a permanent Putah Creek Stream Keeper (a local stream steward) could be hired to monitor the condition of the Creek and explore funding opportunities to help match the channel to the stipulated flow conditions. The stream keeper partnered with the UC Davis scientific community to establish baseline studies on fish, wildlife and bird populations along the Creek and to assess the long term impacts of the proposed projects.

318 First Street
Winters. CA 9569-t
l'hon c.530.795. 910
Fax. 530.795A935

In 2003 the Putah Creek Stream Keeper approached the City of Winters with a grant proposal to remove the old percolation dam. This proposal inspired the City Council to re-empanel the Winters Putah Creek Committee for the purposes of evaluating the grant proposals coming from the stream keeper and to retain a landscape architect to revise the Putah Creek Park Master Plan. Between 2003 and 2004, numerous public workshops were held by the WPCC and a revised master plan was developed. Following adoption of the master plan by City Council, an Initial Study/Mitigated Negative Declaration document was prepared examining the proposed projects identified inthe plan. These projects included, channel realignment, trail and bridge construction as well as invasive species removal and re-vegetation.

In 2004, the first project of the revised master plan was funded through the State's River Parkways Program and the percolation dam was extracted from the stream channel. From 2004 through 2014, additional River Parkways funding was obtained, designs were prepared and major stream channel and flood plain modifications were made to the Creek within the park. These modifications were designed to reduce the cross-section of the low flow channel and create broad flood plains to allow for the dissipation of high flow energies while also increasing public access to the water.

Since the WPCC began in 2004, regular public meetings have been held (first monthly, then bi monthly) to discuss projects on the Creek, develop a vegetation management plan and receive public input and regular updates from the stream keeper on project status. I cannot over-emphasize the open and comprehensive nature of the public outreach and engagement that has occurred over the last 12 years as a result of City leadership. The proposed project is consistent with the revised master plan and a continuation of a decade worth of work. **The committee supports the project** and the extensive public process behind the planning and implementation and believes that the realignment work within the park is responsible, to a great degree, for the increased numbers of spawning salmon and the increased day use and stream access now enjoyed by the community. Please approve this permit so that the final infill portion of the realignment project can commence.

Respe tfull Submitted By

Kurt; .Balasek PG, CHG
Wil)ters Putah Creek Committee Chairman
Kbalasek@gmail.com
(916) 275-3024

Mark Snyder

From: Shawn Yarnes <shawnyarnes@gmail.com>
Sent: Friday, February 17, 2017 12:14 PM
To: Luke, Brian J CIV CESPK CESPD (US)
Subject: [EXTERNAL] Public comment 19047-1

February 16, 2017

Identification Number 19047-1

Brian Luke, Natural Resources Specialist
US Army Corps of Engineers

Brian.J.Luke@usace.army.mil

Dear Mr. Luke:

I am Winters resident and a plant scientist. I strongly support completion of the Phase 3 restoration project on Putah Creek. Based on the success of Phases 1 & 2, I believe the project will benefit both the creek and the surrounding community.

Previous restoration work has been a resounding success story for the City of Winters. Phases 1 & 2 are directly responsible for increased human recreation along the creek. Downtown business mostly certainly benefit economically from the attraction. Removal of non-native invasive vegetation allows for increased access to the water along walking paths, which is a pleasant addition to the food and drink options available downtown. Channel improvements that reduced sediment allow for wading and swimming. There is hardly a day in the summer that my children and their friends don't swim and play in Putah Creek. The positive impact the restoration has had for the children of Winters in not quantifiable. Phase 3 reductions in sedimentation and non-native vegetation will improve recreational access to the creek.

Phases 1 & 2 of the restoration have also resulted in ecological success. Prior to the restoration, the water was too warm and the bottom too sediment rich to support native trout and salmon. Since the restoration, the fish have rebounded in amazing numbers, and the increasing abundance of other apex predators, like; otters, mink, and king fishers, is directly related to the improved habitat for native fish. Phase 3 will increase the area of improved riparian habitat.

The current state of the stalled Phase 3 project area is a human health hazard. A stagnant holding pond, meant to be temporary, has become permanent fixture of the nature park since lawsuits halted the project. The warm stagnant water is perfect habitat for mosquitos and bacteria. I live a block away from the pond, and last summer my life was severely disrupted when I contracted a case of West Nile Virus from a mosquito bite. I am still feeling the after effects of this serious and life threatening disease. The Phase 3 project must proceed to eliminate the massive mosquito breeding ground inadvertently established in the center of Winters.

The quality of life for Winters residents, both human and non-human, has been improved tremendously by phases 1 & 2 of the restoration. Phase 3 will continue to improve to the health, economy, and ecology of Winters. Recent flooding has illustrated that riparian wildlife, including our beloved beavers, are perfectly adapted to the dynamic hydrology of Putah Creek. Please support the Phase 3 effort.

Sincerely,

Shawn Yarnes, PhD
Regional Deployment Manager
Integrated Breeding Platform
Winters, CA, USA
Cell: 530.304.1356 Skype: va_yarnes

Mark Snyder

From: Bill Bia <b.bia505@gmail.com>
Sent: Wednesday, March 08, 2017 12:22 PM
To: Luke, Brian J CIV CESPK CESPD (US)
Cc: Carol Scianna
Subject: [EXTERNAL] Public comments on Permit Identification Number 19047-1

March 8th, 2017

Brian Luke, Natural Resources Specialist

US Army Corps of Engineers, Sacramento District

1325 J Street, Room 1460

Sacramento, CA 95814

Brian.J.Luke@usace.army.mil

Public comments on Permit Identification Number 19047-1

Dear Mr. Luke:

I am writing to express my strong support for issuance of Permit ID number 19047-1 to allow construction of Phase 3 of the Winters Putah Creek Nature Park restoration project. I am a current Winters City Council member. I have also served on the Winters Putah Creek Park Committee (WPCC) for more than ten years. I want to be clear that I am writing this letter as a lifelong Winters resident interested in this project and I am in no way representing the City of Winters officially.

Having served on the WPCC, participated in all public meetings, and planning of this project, I am fully aware of the benefits and potential conflicts that restoration of this phase of the creek present. Completion of phases 1 and 2 are showing substantial benefits to the health of the native plant and animal habitat. Spawning of salmon has increased dramatically with increased flow rates and lower water temperatures. Invasive plants have been removed. Completion of phase 3 of the creek restoration project is necessary to connect phases 1 and 2 and add to the improved habitat for native fish, wildlife and plants.

I am a paraplegic and use a wheelchair for mobility. Phase 3 of this project includes a ramp from the lowest portion of the paved trail along the upper north bank down to the floodplain level. This ramp is critical to allow public access to public lands for all persons including those with physical disabilities, families with small children and anyone who is physically challenged. The existing ramp down to the floodplain level is very steep not accessible for anyone with physical mobility challenges. Denial of this project will be a denial to accessibility for key persons in our community.

Based on the success of Phases 1 & 2, I believe phase 3 of the project will benefit both the creek and the surrounding community and allow access to public land for all to enjoy.

Sincerely,

Bill Biasi

400 Edwards Street

Winters, CA 95694

P utahCreek USAC permit 19047_1 support

CITY OF WINTERS
california
Est. 1875

March 2, 2017 via e-mail to: Brian.J.Luke@usace.army.mil

Brian Luke, Natural Resources Specialist
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1460
Sacramento, California 95814-2922

RE: Public Comments on Permit Number 19047-1

Dear Mr. Luke

On behalf of the City of Winters, please let this letter serve in **support** of the Winters Putah Creek Nature Park Channel Realignment and Restoration Project (Project) (WPCNP Phase 3), 19047-1. At its meeting of February 21, 2017, the City Council on a unanimous vote, affirmed their support for both the project and the USACOE permit.

The Putah Creek forms the southern boundary of the City of Winters in Yolo County, California. The restoration of the WPCNP and Phase 3 is the culmination of almost 30 years of planning effort to restore an eco-system decimated by gravel mining and other negative influences. The completion of the Phase 3 site will mend the last remnant of what was once the location of the City's former sewer ponds probably one of the more serious desecrations inflicted upon Putah Creek.

The public process in discussing these projects has been extensive. The City, Lower Putah Creek Coordinating Committee and Winters Putah Creek Committee have held hundreds of public workshops and meetings to receive input from the community regarding improvement plans for Putah Creek and the Nature Park. Masterplans have been created and updated beginning in the early 1990's. The planning and implementation of the creek projects thus far have been well received and vetted within the Winters community and although there has been a very small vocal group opposing aspects of some the restoration efforts, overall it is obvious that the community is supportive of the work and benefits that have been achieved. This can be seen by the daily visits to the area by large numbers of residents and visitors.

In 2007, the City of Winters adopted the Putah Creek Park Master Plan which included extensive environmental review (CEQA) and has led to the implementation of the channel realignment, the North Bank Trail and extensive ecological restoration of native plants. The main goal of the park plan has been to increase access for persons to enjoy the creek.

The channel realignment work that has already been completed on phases I and 2 has had tremendous benefits to the Putah Creek area. The increased flows and cooler water has been instrumental in bringing the salmon back to creek. There have been increasing numbers with each salmon run over the last few years and last year's run was estimated at 1800 salmon. Ken Davis aquatic biologist has been monitoring fish in the creek and more information can be found on his website at: www.creekman.com

Renowned expert, Peter Moyle has been consulted on the restoration efforts and is very supportive of the ongoing efforts of Phase 3 as well. To date over $3 million have been spent on improving Putah Creek, besides the obvious benefits realized with the salmon returning, there has also been ongoing monitoring of birds and other wildlife in the area and it is clear that the improvements to the area are also improving habitat allowing for greater diversity of wildlife, then was previously found in the area.

The restoration work that has been completed thus far at WPCNP, has also been instrumental in bringing the community down to the creek to enjoy nature. Where once there was onJy limited, somewhat dangerous access, since most of the area was covered by invasive weeds, we now have safe access that allows for most to make their way to the lower creek channel. The completion of Phase 3 will also allow for ADA access with the construction of a gradual sloped trail to the lower channel, which is currently not available. This will allow those with limited mobility to enjoy the entire Nature Park and get up close and personal with all of the benefits the Nature Park can provide. Phase 3 will help our community and visitors alike to truly appreciate the Gem that Winters Putah Creek Nature Park has become for the entire region.

This final phase is important for not onJy the completion of the project, but also to finally gain accessibility for all members of the Winters community to the park.

We urge you to approve the 408 Permit which will allow this much anticipated project to be completed.

If you have any questions or need additional information related to the Winters Putah Creek Park Master Plan, please do not hesitate to contact me at (530) 794-6710.

Sincerely,

John W. Donlevy,
City of Winters, City Manager
530-794-6710
john.donJevy@cityofwinters.org

CITY OF WINTERS

RESOLUTION NUMBER PC-2017-01

RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF WINTERS IN SUPPORT OF WINTERS PUTAH CREEK NATURE PARK CHANNEL REALIGNMENT AND RESTORATION PROJECT (WPCNP PHASE 3), 19047-1

WHEREAS, on February 28th, 2017 the Planning Commission considered the above-mentioned item at a regularly scheduled meeting; and

WHEREAS, completion of Phase 3 project will realign approximately 1,200 linear feet of the low flow channel and re-contour the eleyated Putah Creek floodplain; and

WHEREAS, previous phases (1 and 2) of the Putah Creek restoration project have been instrumental in improving habitat for birds, fish and other wildlife while providing the public access to a nature park; and

WHEREAS, in order to complete Phase 3 a 408 permit needs to be obtained from the US Army Corps of Engineers; and

WHEREAS, the City has supported earlier phases to restore Putah Creek and that granting the 408 permit would further completion of the creek's restoration.

NOW, THEREFORE, BE IT RESOLVED that the Winters Planning Commission hereby supports the Winters Putah Creek Nature Park Channel Realignment and Restoration Project, (WPCNP Phase 3), 19047-1.

PASSED AND ADOPTED by the Winters Planning Commission on this 28th day of February, 2017, by the following vote:

AYES: Frazier, Riley, Myer, Baker, Contreras

NOES: None

ABSENT: Adams, Neal

ABSTAIN: None

Kate Frazier, Chair

ATTEST:

Dagoberto Fierros, Management Analyst

Mark Snyder

From: Rod Macdonald <wetlands@omsoft.com>
Sent: Wednesday, March 08, 2017 5:14 PM
To: Luke, Brian J CIV CESPK CESPD (US)
Subject: [EXTERNAL] Re: Winters Putah Creek Nature Park Channel Realignment and Restoration Project (WPCNP Phase 3), 19047-1

FROM:
Roderick Macdonald, 34811 Creeksedge Road, Davis CA 95616

By email to: Brian.J.Luke @usace.army.mil

Attn: Brian Luke, Natural Resources Specialist
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1460
Sacramento, California 95814-2922

Re: Winters Putah Creek Nature Park Channel Realignment and Restoration Project (WPCNP Phase 3), 19047-1

I am a Putah Creek landowner. I am an ecologist, with 40 years experience (statewide) in Putah Creek. I have bored 2 inch water well, cased with sealed 2" EMT. I used a Neutron Probe to determine water in the bed. My deepest well was 70 feet. I recorded transpiration with a poremeter , and I quantified plant moisture stress with a pressure chamber. I studies all 44 woody species, at 4 locations along Putah creek. All my studies 1971 to 1980 were before the introduction of summer water. The premise that underlies the idea of engineering a new aqueduct, over the existing bed is wrong. The claims that things are disconnected, and only construction can fix that are crying wolf. The river is not substantially different than it has been. There in nothing wrong physically today. The vegetation is out of control, due to the extripation the keystone species, the Beaver. Where native woody species dominate, they have a future,with some help from us. Huge sections of the creek are filled with Tamarix, and Eucalyptus. The Rubus "problem" is over-rated. Far more important is escaped Hackberry (Celtis spp.), and Pecan (*Carya illinoinensis*). This was a western creek or river, with typical species and ecosystems. Today, with the introduction of year around water, the drought which favored natives is gone. The natives have lost their edge as we have insisted in ameliorating the native environment. Our modern wells and "riparian" water rights users have changed

the creeks flow timing considerably. The new channel is not needed and will actually make matters worse.

The other question to face is that the volume of habitat will be one fifth of the present habitat. The present habitat offers 4 separate habitable zones in which fish and other animals can live. The engineered "aqueduct" is meant to "keep it moving" and offers only Type 2 habitat, the "Riffle". For a fish this is like being on a treadmill. They may use this habitat but they shelter in other habitats. The 4 habitat zones are separate, spacially, but interconnected by channels and cooled and protected by depth. The present banks are the river's "compost Pile" which make detritus into the useful substrates with bacteria and fungi. In this zone respiration exceeds production and this is essential for the food chain.

I can scientifically demonstrate with instruments, using what ever plants live in a habitat, the functional characteristics that exist in the habitat in question. The introduced vegetation problem can not be helped in any way by physical modification. If too much out of season water is the problem, than a stream redesign to increase water (the project's "disconnected riparian theory"), can not help native species.

The money should be spent to remove,in a careful, way to avoid soil disturbance, and modify over time to not hurt wildlife. We must put botanical ecology back into this project. This really is where the disconnect is, the project framers do not under stand the ecology, the vegetation structure, nor the association ecology of the vegetation.

Leave the existing ancient creaked as it is. It integrates all of the droughts and floods of the Past. It is a perfect work, built by time. every grain is integrated in to the next. Many people do not understand that technically Putah creek is in a canyon that it established 2 million years ago. We were being selected as Homo erectus, but Putah was making its canyon, where we find it today. Do not compare this creek to Cache creek, though their alluvial fans combine into one of the largest alluvial fans i the world. The putah in not like the Sacramento, which is constantly on the move on a plain. The ideas these project engineers are bringing into Putah creek belong to a higher elevation stream from an entirely different landscapes. Putah Creek is the last, and Best remaining example of a diverse Central Valley stream.

The last issue is the fact that the engineered aqueduct stream that is already constructed and in operation (Phase 1 & 2) have caused a substantial, measured, documented loss of water to the stream bed. This is the same a this example. A dirt ditch delivers water to a customer, but SWA puts in 9 water units in order for

the customer to receive the 6 he uses. The other 3 water units went into the stream bed and feed every plant on those floodplains and lower terraces. We can show this with instruments. Once this project puts the water in the engineered aqueduct stream over the entire distance, SWA can meet its release goals with one half the water. The losers are the riparian landowners, the public, because this will deteriorate the vegetation. The vegetation dominates most user's experience. The creek will be pittance of its present diverse self.

Leave Phase 3 as it is.

Stephanie Myers
307 Russell Street
Winters, CA 95694

March 8, 2017

By email to: Brian.J.Luke @usace.army.mil

Attn: Brian Luke, Natural Resources Specialist
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1460
Sacramento, California 95814-2922

Re: Winters Putah Creek Nature Park Channel Realignment and Restoration Project (WPCNP Phase 3), 19047-1

To US Army Corps of Engineers:

I have lived in Winters for the past 30 years and work as a wildlife biologist for ICF in Sacramento, CA. My husband and I are both regular users of the creek and appreciate the seasonal birding and other wildlife viewing opportunities, especially in Phase 3, where the trail is close to the creek. The proposed plan would move this unique ≠section of the creek away from the paved, viewing trail, convert a slower-moving section of creek to a swifter channel, as well as provide easier access to the creek by humans and dogs to the detriment of wildlife.

We usually walk the paved trail from the railroad bridge then drop down to the dirt trails along the creek on both the north and south sides and continue downstream to the bridge over 505. I have been conducting a trap, mark, and recapture study of western pond turtles and red-eared sliders in Putah Creek for several years. We have observed western pond turtles exhibiting nesting behavior in upland habitat on the south side of the creek within the floodplain and within the 'road' used by vehicles and construction equipment.

As a wildlife biologist I appreciate having improved access to the creek with the paved and dirt trails. I also appreciate and know how important it is for wildlife to have areas along the creek that are not as accessible to humans and dogs. This is especially true in Phase 3 where the current creek section is not readily accessible because of its steep banks, vegetation, and lack of trails. This is an area where the public can see wintering hooded mergansers, basking turtles, beaver, otter, and mink.

I have been distressed by what appears to be a lack of professionalism in carrying out restoration activities on the creek. There have been a number of restoration plantings over the years, with initial excitement in getting the plants in, then little to no follow-up with keeping the plants alive for the first critical years. A local soils scientist pointed out that the soils brought in for Phases 1 and 2 were upland soils and therefore not suitable for floodplain restoration and as a result that the new plantings were not surviving. Solano County Water Agency is now trying to fix this problem that should have been part of a robust restoration plan from the beginning. I have witnessed heavy equipment crossing the creek with no sediment control measures in place, vehicle and heavy equipment use within the floodplain, blading roads within the floodplain, as well as cutting down trees and brush during the nesting season with no pre-construction nesting surveys. All under the cover of operations and maintenance.

I agree that the creek would benefit from restoration with different, less destructive alternatives, and conclude that the proposed project is “ injurious to the public interest”.

2/20/17

To: Brian Luke
Natural Resources Specialist
U.S. Army Corp of Engineers, Sacramento District
1325 J Street, Room 1460
Sacramento, California 95814-2922

Re: Winters Putah Creek Nature Park Channel Realignment and Restoration Project
(WPCNP Phase 3), 19047-1

From: Paul Myer
Planning Commissioner and resident of Winters California

I would like to voice my support for approval of the above request. This will compete an extraordinary improvement of a neglected resource – Putah Creek. This will make a portion of this beautiful Creek accessible by both residents and visitors to Winters.

I have heard of opposition to allowing this project to be completed. Some have said that the remaining area should be left in its "natural state". There is actually nothing left resembling the natural state of Putah Creek since people started impacting (abusing) it over 150 years ago. It has been dumped in, filled in, dried up, contained by levees and Berryessa dam, overrun with invasive species and more.

This is Phase 3 of a comprehensive project that will make the creek both healthy and accessible. It is part of a larger effort over the last two decades by many involved stakeholders to bring Putah Creek back from the terrible condition that years of abuse had created.

Under Evaluation Factors, item #2 it indicated that this should be evaluated for "factors injurious to the Pubic Interest". In my opinion this project has an overwhelming positive effect on the items listed including "conservation, economic development, historical properties, cultural resources, environmental impact, water supply, water quality, flood hazard, flood plains, recreation" and more.

I strongly support the Army Corp of Engineers doing everything possible to move this project forward to completion.

Thank you,

Paul Myer
Planning Commissioner and resident
730 Lupine Way
Winters, California 95694

Mark Snyder

From: Tom Morehouse <tmorehouse@gmail.com>
Sent: Thursday, March 09, 2017 1:36 PM
To: Luke, Brian J CIV CESPK CESPD (US)
Subject: [EXTERNAL] Written comments referencing Identification Number 19047-1

To whom is may concern: I am Thomas Morehouse and am The conservancy chairs for The Diablo Valley Flyfishers club located in Walnut Creek We are composed of 400members from the east bay and provide places and education for our members.We view Putah Creek as our home waters and so the health and maintenance of the rives below the Berryessa dam is quite important to us and to all of the Solano County.
We believe that the document referenced above will be an important step in bringing the Putah creek to a useful and healthy waterway fro fish and various other birds and insects and all of the other habitat that depend on the creek.
Furthermore we believe that it is a perfect habitat for rearing and holding of Trout,,Steelhead,,and Salmon as well as many lesser aquatic species that are now residing in the Creek.
It provides also a place for humans to enjoy nature and to walk along the shores of the creek.The document above will provide for the learning of non natural and invasive species that are currently on and around the creek.
Thanks you for your work and providing permission to continue to upgrade and maintain this important asset in the bay area.

Sincerely

Thomas Morehouse
Board member and Conservation Chair
Diablo Valley Flyfisherman.

Tmorehouse@gmail.com
925 254 7213
#2 dalewood Terrance
Orinda,Ca. 94563

Woody Fridae
112 Liwai Village Ct.
Winters, CA 95694
fridaefamily@wavecable.com
530-795-4600
February 19, 2017

Attn: Brian Luke, Natural Resources Specialist
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1460
Sacramento, California 95814-2922

Re: Comments On Winters Putah Creek Nature Park Channel Realignment
and

Restoration Project (WPCNP Phase 3), Identification Number 19047-1

The Putah Creek Committee, the Lower Putah Creek Coordinating Committee, Solano County Water Agency, the Winters Putah Creek Committee and the City of Winters have been working on a phased proctess of realigning the creek bed and establishing a better flow for a creek that is regulated by regular releases after the dam was built. This process has taken nearly two decades and it is now ready for Phase Three.

These changes have shown amazing success in reestablishing vibrant life in the creek. Many species have thrived and we have even seen the establishment of salmon in the habitat.

Along with wildlife, the nature trail allows Winters citizens and visitors to enjoy the habitat with the newly established nature trails. There is excitement around the town about the nature trail and the ability to walk and bike near the creek. We have received awards for the quality of the project, so far.

I would suggest that one modification be made, and that is to have the stream bed where it is now near the lowest point in the trail remain there and then turn veer to the south side of creek. The reason is because as far as viewing, that is the best place for people, to view the wildlife, (especially handicapped folks who could not travel a steep or gravel path).

I think this minor change in the plan would satisfy all members of the community. The beaver dams are located near that spot and would remain a wonderful place to watch them work and play. Please issue the permit with this minor modification to the third phase.

Thanks for your consideration.
Woody Fridae, former Mayor of Winters

Jeff TenPas
Winters Friends of Putah Creek
24 East Main St.
Winters, CA 95694

March 23, 2017

By email to: Brian.J.Luke@usace.army.mil

Attn: Brian Luke, Natural Resources Specialist
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1460
Sacramento, California 95814-2922

Re: Winters Putah Creek Nature Park Channel Realignment and Restoration Project (WPCNP Phase 3), 19047-1

To US Army Corps of Engineers:

My name is Jeff TenPas and I am a resident of Winters. I've established in past comments my expertise and experience in soils, hydrology, and watershed restoration and incorporate that by reference to March 8, 2017 comments on this same project. The following are additional comments submitted in my name and on behalf of the Winters Friends of Putah Creek.

These comments add to our past comments with additional grounds to show that the project should be denied because 1) it is Injurious to the Public Interest, and 2) there is failure of Environmental Compliance with the Clean Water Act, National Environmental Policy Act, and Rivers and Harbors Act.

Injurious to the Public Interest Determination

In regards to the project being Injurious to the Public Interest, we incorporate by reference our past comments (August 9, 2016 and March 8, 2017) including attachments. The following is a summary of detriments of the proposed project.

1. Use of Unsuitable Fill, Compaction Thereof with Heavy Machinery, Loss of Permeability of Bed, Bank and Floodplain, and Permanent Impairment of Groundwater Movement and Recharge. The EA submitted for this project shows great amounts of imported fill will be used and put in place with heavy machinery (BSK Associates, 2016). Ultimately, this is a significant and costly and injurious impact as we come to depend more and more on groundwater in a water-limited environment.

   I have tested and textured over 20 samples of soils in fill areas of Phases I and II and invariably found the fill to be heavy clay loam to clay texture with greater than 30% clay. In contrast, the native floodplain materials which I found in undisturbed sites were lower in clay with sandy loam, loam, and silt loam textures, and I have observed gravel layers and lenses also in the

floodplain (Jeff TenPas, unpublished data).

In comments previously submitted I pointed out the dramatic differences in permeability between clay loams and loams, and between compacted and uncompacted soils. The cumulative effect of textural change and compaction equal a 99% reduction in soil permeability.
In March 8, 2017 comments I reported on stream flow data including pre- and post-Phases I and II, and showed a highly significant correlation between the timing of implementation of the projects and a reduction in water movement from stream to groundwater. This bears out soil analysis and observations of the vegetation death and revegetation failure.

2. Movement of the Phase III Channel Away from Public View, Loss of Scenic Views of Stream and Wildlife, Human Impact. (See August 9, 2016 Comments - Attachment 4.Letter to USACE May 23 2016.docx). Nothing may be so injurious to human enjoyment of Putah Creek in Winters as to move Phase III away from the existing paved trail that it abuts at the distance of a few feet for 1/3 of Phase III. And given the wildlife presence in Phase III of beaver, otter, geese, ducks, pond turtles, heron, and kingfisher, moving the stream will effectually eliminate the majority of wildlife viewing opportunities for most people in Winters.

3. Table of Impacts.

Table 1. Benefits and Detriments of Phase I, II, III

Project Work	Benefits	Detriment
Stream channel – old channel filled, new channel made narrower and deep pools eliminated	Small uncalculated decrease in stream temperature	Loss of deep pools Loss of cooler water refuge in bottom of deep pools Loss of the existing island Loss of vegetated shallows special aquatic site Loss of the existing riffle, larger than any in Phase 1 or 2 Loss of channel habitat diversity Loss of downed trees in-channel
Stream channel moved across floodplain	None	Loss of views to the stream for people Loss of wildlife views for people on creekside trail
Banks – new, built at 2:1 slope, constructed of compacted fill	None	Loss of undercut bank habitat Loss of variation in bank form Loss of vegetated shallows Loss of existing beaver dens Loss of high banks suitable for future beaver dens
Hyporheos – wiped clean, replaced with veneer of gravel on a compacted stream bed, loss of structure and form like buried gravel bars	None	Loss of nutrient processing Loss of mixing and cooling groundwater Loss of biota Loss of groundwater connection

Project Work	Benefits	Detriment
Floodplains, new floodplains built of fill, compacted, sloped 1 -2% to the stream	None	Some remaining mature trees cut Loss of floodplain topographic complexity Lower soil productivity due to • Soils compacted • Fill with lower soil nutrient status • Fill with lower soil organic matter • Loss of groundwater supply • Loss of floodplain permeability and hydrologic function
In-stream Wildlife Habitat – altered stream is narrower and without deep pools	More narrow faster stream habitat – may possibly benefit some native fish over other native fish	Loss of slow deep pool for turtles, beaver, nesting waterfowl, great blue heron Loss of long wide riffle - good prospect for increased salmonid spawning habitat Potential loss of mussels
Floodplain Habitat	None	Loss of groundwater supply Loss of cottonwood riparian forest habitat Loss of bird habitat Loss of mammal habitat Loss of turtle nesting habitat Loss of shade for people
Economic	Gain for SCWA – free disposal of fill Gain for committee members on City of Winters Putah Creek Committee who get contracts Gain for other subcontractors	Taxpayers pay for expensive project - $1.2 million for 1200 feet of stream alteration Less funding available for better projects
Groundwater – smaller channel, compacted banks, clayey fill – all reduce groundwater recharge	More water is left to serve SCWA customers	Groundwater recharge is reduced for: • City of Winters • Local wells
Recreation		Loss of views of stream Loss of views of resident beaver, pond turtle Loss of views of nesting water fowl Loss of potential swimming hole

Environmental Compliance

In regards to the project and Environmental Compliance, we incorporate by reference our previous comments including attachments. The following are a summary with additional comments and clarification.

1. Invalidity of Section 401 Water Quality Certification. A Water Quality Certification is invalidated according to the Standard Condition 4 of the Water Quality Certification (WQC) (WDID#5A48CR00105)if the project is modified and doesn't match the project description submitted to the Regional Water Quality Control Board (RWQCB).

   In the case the project description approved by the RWQCB did not include use of imported fill which was included in the project Phases I and II, and is proposed in Phase III and NAWCA 3. And this is significant because there are apparent and significant negative impacts that arose from the use of the imported fill.

   - In the original application to the RWQCB on September 13, 2011 for the area of Phases I, II, and III, the application described a project (Project Information attachment) that would grade and fill the channel and floodplain using "surplus overbank material to provide the local channel fill needs". (APDX-D.WPCP Phase III Permits_02192015). The project description goes on to describe excavation of 104,730 cubic yards of native soil and use of that "native" soil to be placed as fill.
   - The WQC was amended on August 14, 2014 (WDID#5A48CR00105A1) without any proposed or added change in this aspect of the project. However based on the Environmental Assessment prepared for the 408 PERMISSION #19027, 19047, 19047-1, and 19052 the Phase III project will use 23,600 cubic yards of fill from the stockpile at the Putah Diversion Dam site.
   - The EA also records that the project used around 77,130 cubic yards of imported fill in Phases I and II and there is evidence that this fill is having a significant impact on groundwater movement, floodplain water supply, and groundwater recharge. The evidence has been provided in previous comments in the form of soils analysis, observations of revegetation failure, death of mature trees, and analysis of pre and post-project water flow data.

2. Invalidity of Section 404 Permit. Previous comments (Comment 7 – March 8, 2017) showed that the proposed project's Section 404 permit was invalid as the project as planned and as implemented in Phases I and II is beyond the permissible scope of the Nationwide Permit 27 that was issued for the project. NWP 27 does not allow reduction of open waters or trade of open waters for other water of the United States.

3. Violations of CWA Section 404 Guidelines. Previous comments (Comment 8 – March 8, 2017) pointed out numerous violations of Section 404 Guidelines. These are incorporated by reference.

4. Inadequacy of NEPA. The Environmental Assessment prepared for the 408 permits for the project is wholly insufficient (BSK Associates, 2016). It fails to disclose effects to aquatic sites,

aquatic wildlife, and water contact recreation.

a. Scope. The scope does not but should include the groundwater impacts, groundwater supply to the floodplain vegetation, and groundwater recharge. These are effects about which the project proponent is aware.
b. Scope. The scope does not but should include assessment of the effects of moving the stream in Phase III on public views of the stream and wildlife. This is a significant issue well-known to the applicant and source of public controversy.
c. Disclosure. The EA discloses nothing about the revegetation problems with Phases I and II that are obvious and known to the applicant.
d. Scope. The scope does not but should include assessment of all those detriments identified in Table 1.
e. The project description fails to disclose the real nature of the impact to the Phase III site. The EA states "approximately 80 non-native and native trees and shrubs were removed". In fact, in a 2009 amendment to the Stream Bed Alteration permit (1600-2009-0088) the SCWA requested and the DFG approved "Two hundred and eight native trees averaging six inches in diameter will be removed from the three-acre staging area (800 linear feet)for this project." (DFW, July 27, 2009. Notification No. 1600-2009-0088-R2). The SCWA removed even more trees in 2014 (Jeff TenPas, personal observation).
f. The EA mischaracterizes existing conditions. While the EA is quick to point out that part of the floodplain in Phase III was once used for sewage ponds, it fails to note that was 40 years ago, and in 40 years since then a mature riparian forest of native trees had occupied the site, before it was cleared by the project proponent as a staging area.

Thank you for your time and attention to the issues and concerns of the Winters Friends of Putah Creek.

Respectfully,

Jeff TenPas

References in USACE Files:

BSK Associates, 2016. Revised Environmental Assessment-Putah Creek Channel Restoration Winters, California: 408 Permission #19027, 19047, 19047-1, and 19052.

David and Linda Springer
200 Madrone Court
Winters, CA 95694

July 31, 2016

Brian Luke
Natural Resources Specialist
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1460 Sacramento, California 95814-2922
Brian.J.Luke @usace.army.mil

Subject: Winters Putah Creek Nature Park Channel Realignment and Restoration Project (WPCNP Phase 3), 19047-1

Dear Mr. Luke:

I responded to the previous request for public comment with a letter dated July 31, 2016, and am responding to the second request with more detail. I repeated specific language from the Public Notice that I wanted to address in italics. My responses to these excerpts are in normal font.

Our house backs up to the creek, giving us an opportunity to make observations on a daily basis and to take occasional photos, some of which are attached. I was the first chair of the Winters Putah Creek committee (an advisory committee to the City Council), am a supporter of the Putah Creek Council, and hold a B.S. from UCD Davis in Biological Science.

I want to emphasize that my interest, and that of the Winters Friends of Putah Creek with which I am affiliated, is not to block the Phase 3 project but to redirect it so that existing habitat is not lost and so that environmental damage observed in prior phases is not perpetuated. An alternate plan is included in this letter as Figure 8.

Sincerely,

David Springer

REQUESTER'S PROPOSED ACTON:

> The purpose of the proposed project is to improve fish and wildlife habitat within the project area by improving the form and function of the creek's floodplain and low-flow channel.

There is no evidence supporting the claim that fish habitat was improved by narrowing the channel in the Phase 1 and 2 sections (see Figures 6 and 7). Habitat for other wildlife will be lost with the execution of Phase 3.

> The project will focus on enhancing the riparian area below the embankments, and will directly impact the creek's low-flow channel, banks, floodplain, and upland terrace.

Due to soil compaction in the Phase 1 and 2 regions, it has been necessary to mulch and provide continuous watering to facilitate growth of planted natives. A more intelligent and less costly approach would be to improve existing terrain that already has a population of native plants and to remove invasives.

1. "The floodplain, banks and terrace will be graded (recontoured) to elevations that are ideal for the natural recruitment and growth of native upland and wetland plant species."

Damage was done to the flood plain during Putah Creek Nature Park Phases 1 and 2 and during the construction of the Railroad Avenue Bridge. Vegetation was cleared and a deep pit was dug to obtain fill for Phase 2. This area had been planted with native species around 2001 that were since wiped out. See Figures 1 and 2.

> "The existing topography within the project area favors colonization of upland plant species, and provides very limited surface area that is ideal for colonization of wetland dependent plant species. "

Not a true statement. There is ample surface area for vegetation as shown in the Figures. Most of the area between the high banks shown in Figures 1 and 2 is currently under water and serving as a flood plain.

> This action, coupled with the installation of native trees and shrubs throughout the site, is expected to improve habitat for migratory birds and other wildlife by increasing canopy cover, plant diversity, and plant composition as the site matures.

The existing wider sections of creek provide habitat for migratory birds and other local water fowl that we are not seeing in the narrow channels created by Phases 1 and 2 (see Figure3) and planned for Phase 3. "Other wildlife" including beaver, otter, Western Pond Turtle, and amphibians will lose habitat (see Figures 4 and 5). The Center for Wildlife Diversity petitioned for the Western Pond Turtle to be added to the endangered species list, and the Fish and Wildlife Service found that "the petition presents substantial scientific or commercial information indicating that the petitioned action may be warranted".[1] In an article by Mary K. Hanson, a Certified California Naturalist, in the Winters Express[2]

[1] https://www.regulations.gov/document?D=FWS-R8-ES-2015-0024-0001

she described beaver as “ecosystem engineers”, with a documented history of improving biodiversity and reenergizing damaged landscapes.

> The existing wide and deep low-flow channel will be filled, and a narrower, shallower design channel will be excavated through the center of the recontoured floodplain. The design channel will promote cooler water temperatures by increasing the flow rate and reducing water surface area that is exposed to solar radiation. Water temperature may further be reduced as vegetation matures and increases the area of shaded water. Cooler water temperature, coupled with the addition of 200 cubic yards of spawning gravel is expected to improve habitat for native rainbow trout and Chinook salmon.

As seen in Figures 1 and 2, much of the existing creek location is shaded by trees, many of which are scheduled for removal. It will require decades for young trees to provide the shade offered by existing trees. Water temperature stratifies, maintaining colder water near the streambed. This one-quarter mile section of deeper, wider water has not been an impediment to salmon migration and adds diversity. As we have observed, rock and gravel placed in Phases 1 and 2 was either too large or too cemented in place by silt to enable salmon to create redds in most of the shallows. According to the USDA Natural Resources Conservation Service, “Good trout stream habitat is complex, consisting of an array of riffles and pools, submerged wood, boulders, undercut banks, and aquatic vegetation.”[3]

Evaluation Factors

2) Injurious to the Public Interest Determination.

Conservation – The proposed plan will not conserve natural resources.

Historic properties – The naturally formed historic channel of the creek will be altered.

Environmental impacts – If the plan carries forward, ideal habitat for birds of the heron family (Ardeidae, including green and great blue heron, and egrets), Anseriformes (ducks and geese), as well as kingfishers, phoebes, and other birds will be degraded. The habitat for beaver, which occupy lodges in the creek bank, will be lost. Fish counts completed in 2014 and 2015 respectively showed that Winters Nature Park (WPK) had the lowest and second-lowest fish population of any sampled location from the Putah Creek diversion dam (PDD) to 9.8 mles downstream at Pedrick Road[4] (Figures 6 and 7).

Water supply – No studies have been completed to assess the impact of streambed compaction on groundwater recharge. Given the levels of hexavalent chromium in Winters public wells and mitigation costs, this is a serious concern[5].

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[2] “Big burley beavers can be a boon.” Winters Express, Feb. 9, 2017, p. A-8.

[3] https://www.fws.gov/northeast/wssnfh/pdfs/RAINBOW1.pdf

[4] Normandeau Associates memoranda to the Solano County Water Agency, Jan. 29, 2016 and Feb. 4, 2015.

[5] City Manager John Donlevy Friday update, Jan. 29, 2016: “Changes in State Guidelines on acceptable levels of naturally occurring Chromium 6 will put the City on course to the largest capital expenditure and operations expansion in the City’s history.”

Flood hazards – The winter of 2016-17 has shown there are no flood issues to address.

Floodplains – Floodplains damaged as a result of prior River Parkways and bridge construction need restoration. Winters Friends of Putah Creek have proposed an alternate plan that would improve the existing floodplain without requiring relocation of the channel (see Figure 8).

Shore erosion or accretion – We have not observed high water flows causing erosion of the historic channel in this area for the past 17 years, including the current extremely high flow period.

Recreation – The existing nature trail is frequented by hundreds of people each week, and provides an exceptional viewing opportunity that is non-threatening to wildlife. The proposed creek relocation will move the creek out of viewing area from the trail. There are currently two locations for public access in prior phases, and signs have been posted and fencing erected to discourage people from spooking spawning salmon. Paths proposed for Phase 3 will accentuate this need and will require a high level of maintenance after each high flow. Recent high flows deposited over two inches of silt on one section on the paved nature trail, making it impassable.

3) Environmental Compliance.

A decision on a Section 408 request is a federal action, and therefore subject to the National Environmental Policy Act (NEPA) and other environmental compliance requirements. While USACE is responsible for ensuring environmental compliance, the requester is responsible for providing all information that the district identifies as necessary to satisfy all applicable federal laws, executive orders, regulations, policies, and procedures.

There is no indication in the information supplied to the public that the requester has provided all applicable information. The applicant has a history of neglecting requirements, for example failure to obtain permitting for Phases 1 and 2 from the Central Valley Flood Protection Board. To our knowledge the requester has not completed a thorough assessment of impacts on existing wildlife and groundwater recharge impacts, for example. Experts on wildlife and geomorphic science that have been used in previous phases were recipients of grant funds, creating a conflict of interest.

The floodplain, banks and terrace will be graded (recontoured) to elevations that are ideal for the natural recruitment and growth of native upland and wetland plant species.

See prior comments on soil compaction and removal of existing beneficial vegetation.

The existing topography within the project area favors colonization of upland plant species, and provides very limited surface area that is ideal for colonization of wetland dependent plant species. This action, coupled with the installation of native trees and shrubs throughout the site, is expected to improve habitat for migratory birds and other wildlife by increasing canopy cover, plant diversity, and plant composition as the site matures.

See prior comments. The compacted flood plains created in Phases 1 and 2 have not proven to be “ideal for colonization of wetland dependent plant species” or to “improve habitat for migratory birds and other wildlife.” Much remediation has been required to enable the survival of plantings, and some established cottonwoods are showing signs of stress. Providing full public access will disturb nesting areas for birds and spawning locations for salmon, steelhead, and trout.

Figure 1: The Phase 3 area as it looked in 2005

Figure 2: The Phase 3 area in 2016. The red lines mark the proposed change in the creek channel. The black line is the nature path built in 2013. The green spot in the middle of the image is a stagnant pond used as a source of fill for Phase 2. The proposed plan will move the creek as far as 350 feet from the nature trail, eliminating the current wildlife viewing opportunity.

Figure 3: A merganser (top left), wild mallards (top right), and wood ducks (bottom) are only seen in the wider, still water section of the creek that is proposed for elimination.

Figure 4: Potentially endangered Western Pond Turtles congregate on fallen logs in the Phase 3 section of the creek.

Figure 5: Beaver, including one with a rare piebald coat (right) can be observed nearly every morning and evening from the nature trail. Moving the creek approximately 100 feet to the south from the trail will eliminate this viewing opportunity.

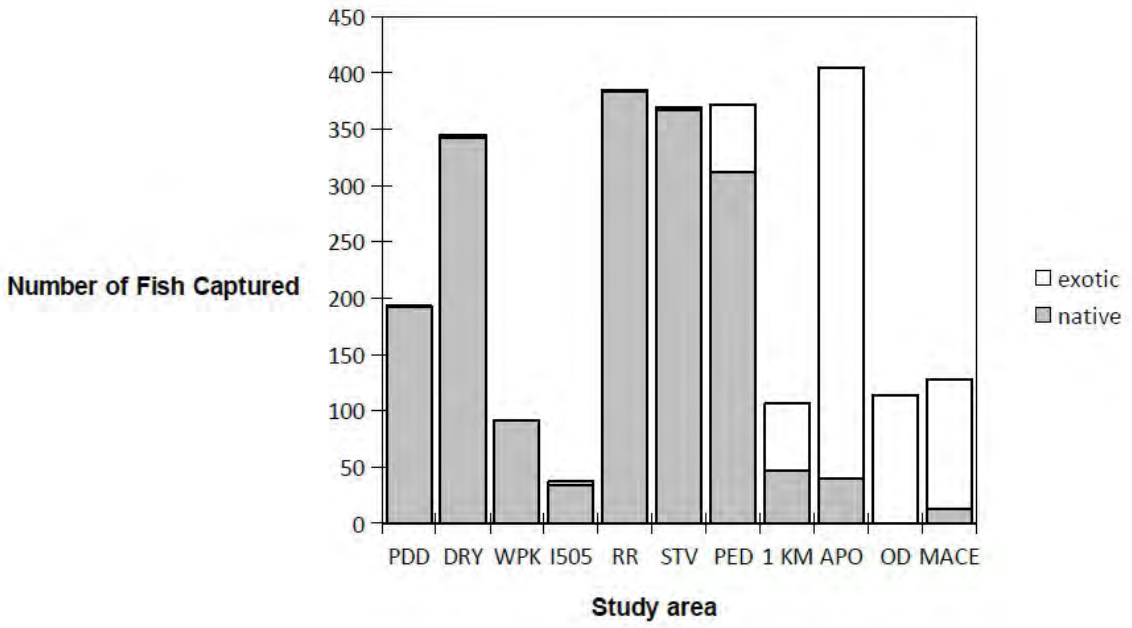


Figure 6: Number of native and exotic fish captured at each of the lower Putah Creek study sites during the October 2015 fish surveys. PDD is the Putah Creek Diversion Dam at Lake Solano. WPK is the Railroad Avenue Bridge at the upper end of Phase 1. I-505 is 0.8 miles downstream of the Railroad Avenue Bridge and less than a quarter mile downstream of the lower end of Phase 2. PED is Pedrick Road, 9.8 miles downstream from Winters in Davis.

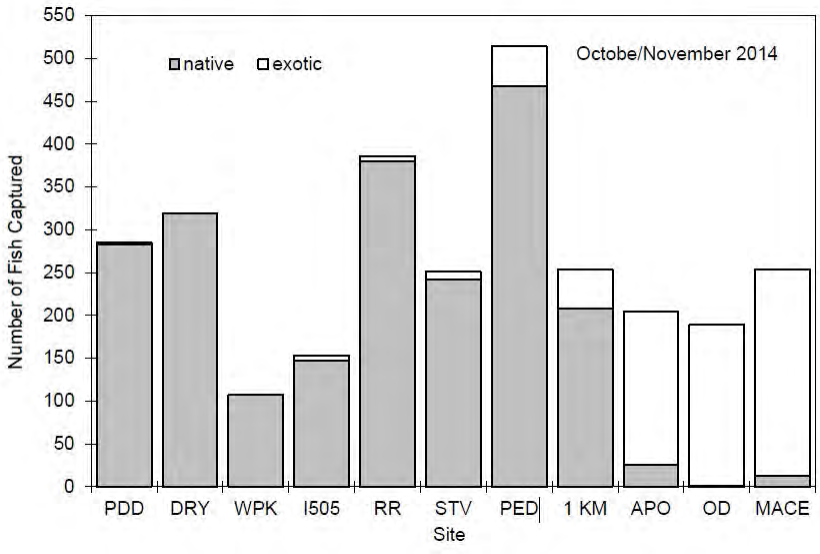


Figure 7: Number of native and exotic fish captured at each of the lower Putah Creek study sites during the late October early November 2014 fish surveys.

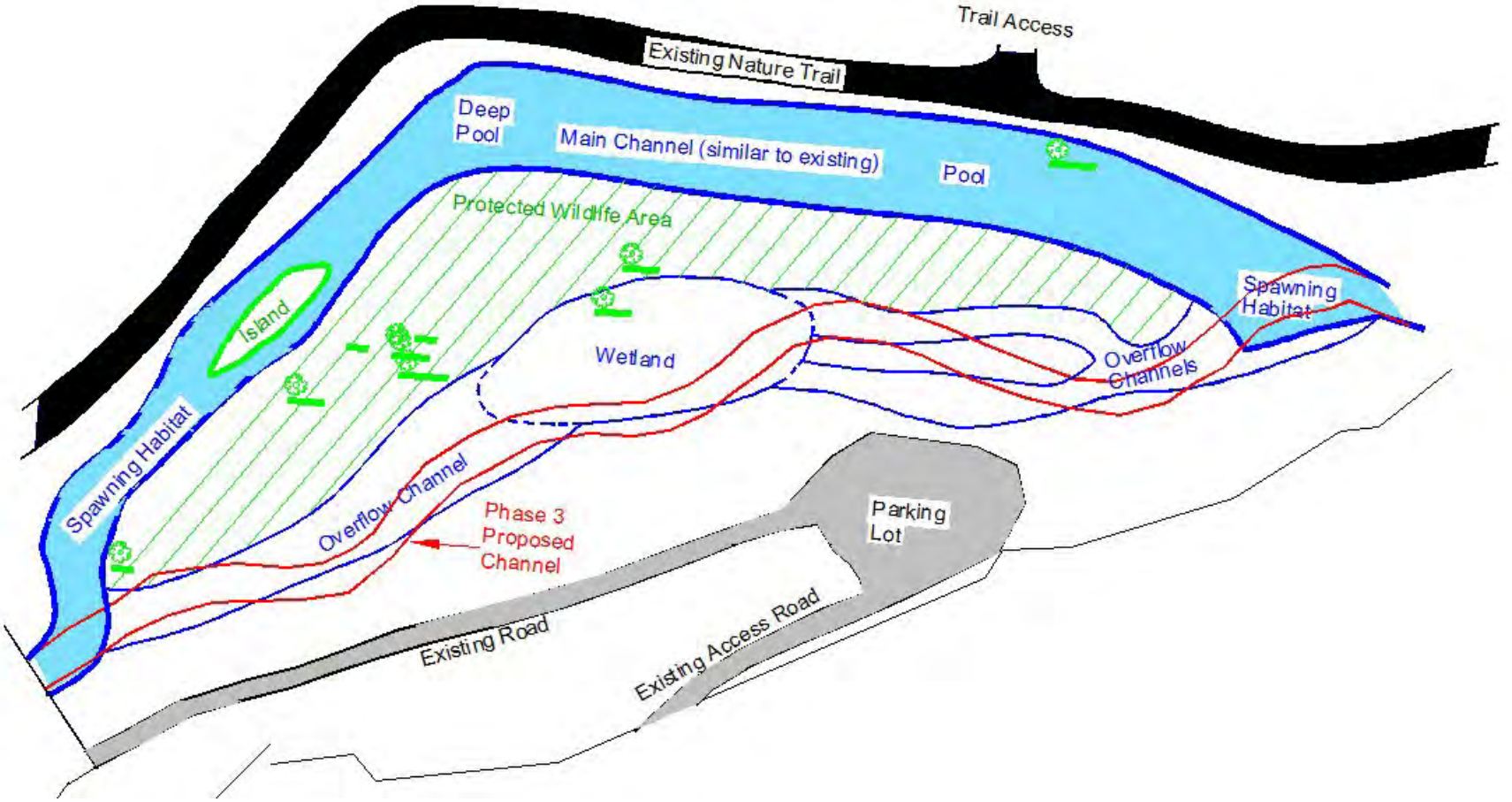


Figure 8: An alternative plan shown above would preserve existing habitat, create more habitat, and will have the same land area available for restoration and plantings as does the proposed plan.

February 2017, Public Notice

Comment Letters

North American Wetlands Conservation Act 3 - Lower Putah Creek Floodplain Restoration (NAWCA 3) 19027

Mark Snyder

From: Lisa Stallings <lisa.stallings@gmail.com>
Sent: Thursday, February 16, 2017 11:05 AM
To: Luke, Brian J CIV CESPK CESPD (US)
Subject: [EXTERNAL] Putah Creek Nawca-3 Project

Dear Mr Lukes,
I am writing this letter in support of the Nawca-3 Project. I am sorry it has taken the applicants so long to get their permits. It appears that Putah Creek Road may be impacted by the Creek this year and public works will dump a bunch of rip- rap in the creek, a situation that could have been avoided if the project had been allowed to go forward in a reasonable amount of time. I have a PhD in soils and have worked with the Army Corps on permits for years both San Francisco and Sacramento Districts- this situation is beyond me… Lisa Stallings

Jeff TenPas
Winters Friends of Putah Creek
24 East Main St.
Winters, CA 95694

March 23, 2017

By email to: Brian.J.Luke@usace.army.mil

Attn: Brian Luke, Natural Resources Specialist
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1460
Sacramento, California 95814-2922

Re: Putah Creek Channel Restoration (NAWCA 3), 19027

To US Army Corps of Engineers:

My name is Jeff TenPas and I am a resident of Winters. I've established in past comments my expertise and experience in soils, hydrology, and watershed restoration and incorporate that by reference to March 8, 2017 comments on this same project. The following are additional comments submitted in my name and on behalf of the Winters Friends of Putah Creek.

These comments add to our past comments with additional grounds to show that the project should be denied because 1) it is Injurious to the Public Interest, and 2) there is failure of Environmental Compliance with the Clean Water Act, National Environmental Policy Act, and Rivers and Harbors Act.

Injurious to the Public Interest Determination

In regards to the project being Injurious to the Public Interest, we incorporate by reference our past comments (August 9, 2016 and March 8, 2017) including attachments. The following is a summary of detriments of the proposed project.

1. Use of Unsuitable Fill, Compaction Thereof with Heavy Machinery, Loss of Permeability of Bed, Bank and Floodplain, and Permanent Impairment of Groundwater Movement and Recharge.

   The EA project description for NAWCA 3 discloses that "approximately 23,600 cy of clean fill and 150 cy of spawning gravel would be imported from SCWA offsite stockpile at PDD" , then fails to disclose that this fill is from the same source as the Phases I and II fill, that the particle size distribution of the fill is clay loam to clay and unlike the native floodplain, and that this fill in Phases I and II is the apparent cause of revegetation failure.

   I have tested and textured over 20 samples of soils in fill areas of Phases I and II and invariably found the fill to be heavy clay loam to clay texture with greater than 30% clay. In contrast, the native floodplain materials which I found in undisturbed sites were lower in clay with sandy loam, loam, and silt loam textures, and I have observed gravel layers and lenses also in the

floodplain (Jeff TenPas, unpublished data).

In comments previously submitted I pointed out the dramatic differences in permeability between clay loams and loams, and between compacted and uncompacted soils. The cumulative effect of textural change and compaction equal a 99% reduction in soil permeability.
In March 8, 2017 comments I reported on stream flow data including pre- and post-Phases I and II, and showed a highly significant correlation between the timing of implementation of the projects and a reduction in water movement from stream to groundwater. This bears out soil analysis and observations of the vegetation death and revegetation failure.

2. Narrowing of the NAWCA 3 Channel , Loss of Swimming Hole, Cumulative Loss of Water Contact Recreation.

   In 2009, Winters youth lost a great swimming hole when the foundation of an old percolation dam was removed and the pool was later filled in Phase I. The project proponents disparaged the swimming hole as a place of partying, when in fact it was used 10 months a year for swimming by a broad cross-section of Winters youth, and was safe and clean. In 2009 there were over 5000 recreational user days of use at the swimming hole, primarily by youth ages ten to eighteen. Since the loss of that swimming hole, water contact recreation in this age group has fallen drastically (personal observation, Jeff TenPas). The best remaining swimming hole in Winters is in NAWCA 3 and would be filled in by channel narrowing. There is no need of this, and the loss is enormous and unconscionable to the youth of Winters. It is great benefit to youth and their contact with nature and outdoors to have a swimming hole.

3. Loss of Salmon Spawning Habitat.

   In NAWCA 3 salmon were sighted at 7 gravel bars in preparation for spawning in November-December 2016 (Jeff TenPas, personal observation). The existing habitat provides as high a density of salmon spawning habitat as in the new “restored” Phases I and II. The existing gravel bars could be made bigger at low cost and low disturbance, without cutting a mature riparian forest and bulldozing a floodplain flat to recontour it.

4. Table of Impacts.

Table 1. Benefits and Detriments of Phase I, II, III

Project Work	Benefits	Detriment
Stream channel – old channels filled or narrowed, and deep pools eliminated	Small uncalculated decrease in stream temperature	Loss of deep pools Loss of cooler water refuge in bottom of deep pools Loss of vegetated shallows special aquatic site Loss of the existing gravel bars and spawning habitat Loss of channel habitat diversity Loss of downed trees in-channel
Banks – new, built at 2:1 slope, constructed of compacted fill	None	Loss of undercut bank habitat Loss of variation in bank form Loss of vegetated shallows

Project Work	Benefits	Detriment
Hyporheos – wiped clean, replaced with veneer of gravel on a compacted stream bed, loss of structure and form like buried gravel bars	None	Loss of nutrient processing Loss of mixing and cooling groundwater Loss of biota Loss of groundwater connection
Floodplains, new floodplains built of fill, compacted, sloped 1 -2% to the stream	None	Mature native trees cut Loss of floodplain topographic complexity Lower soil productivity due to • Soils compacted • Fill with lower soil nutrient status • Fill with lower soil organic matter • Loss of groundwater supply • Loss of floodplain permeability and hydrologic function
In-stream Wildlife Habitat – altered stream is narrower and without deep pools	More narrow faster stream habitat – may possibly benefit some native fish over other native fish	Loss of slow deep pool for turtles, beaver, nesting waterfowl, great blue heron Potential loss of mussels
Floodplain Habitat	None	Loss of groundwater supply Loss of cottonwood riparian forest habitat Loss of bird habitat Loss of mammal habitat Loss of shade for people
Economic	Gain for SCWA – free disposal of fill Gain for committee members on City of Winters Putah Creek Committee who get contracts Gain for other subcontractors	Taxpayers pay for expensive project Less funding available for better projects
Groundwater – smaller channel, compacted banks, clayey fill – all reduce groundwater recharge	More water is left to serve SCWA customers	Groundwater recharge is reduced for: • City of Winters • Local wells
Recreation		Loss of existing swimming hole

Environmental Compliance

In regards to the project and Environmental Compliance, we incorporate by reference our previous comments including attachments. The following are a summary with additional comments and clarification.

1. Invalidity of Section 401 Water Quality Certification.

   The WQC is invalid for being based on an application filed with false information. The WQC Application for NAWCA 3 reports (Section 401 Water Quality Certification Application Form, Line 4.d.) that there would be "0" impacts, permanent or temporary, to "streambed-unvegetated". And at Line 4.f. the WQC application reports that fill of 28,600 CY will be in "riparian area" when given choice of classifying the fill area as "wetland, riparian, streambed, lake ….". It is clear in other documents that the project as planned will fill streambed and "streambed" was a reporting option.

   The application for a USACE permit on March 5, 2015 clearly shows intent to fill 0.91 acres of channel and to reduce another 0.22 acres of channel. The MND for this project, signed March 25, 2015 also lists as primary activities:

   - Fill south branch of split low-flow channel that runs against the south bank
   - Fill over-widened north branch of split low-flow channel

   Narrow over-widened north branch of split low-flow channel and add root wad revetments

   How could a WQC be valid if issued based on representations that there would be no loss of channel and no fill of the streambed? It is not. Why is there this disparity when the USACE permit application was signed March 5, 2015 and the WQC application was signed March 24, 2015 by the same individual?

2. Section 404 Permit- Applied for. The proposed project's application for Section 404 permit should be denied as beyond the permissible scope of a Nationwide Permit 27. NWP 27 does not allow reduction of open waters or trade of open waters for other water of the United States.

3. Violations of CWA Section 404 Guidelines. Previous comments (Comment 8 – March 8, 2017) pointed out numerous potential violations of Section 404 Guidelines if a Section 404 NWP 27 permit were issued. These are incorporated by reference.

4. Inadequacy of NEPA. The Environmental Assessment prepared for the 408 permits for the project is wholly insufficient (BSK Associates, 2016). It fails to disclose potentially significant effects to aquatic sites, aquatic wildlife, and water contact recreation and other resources.

   a. Failure to Disclose. The project description for NAWCA 3 claims "no work has occurred on this site". This is false. I was witness to SCWA working in NAWCA 3 with an excavator clearing vegetation, crossing the flowing stream with an excavator, and building an equipment access trail on the north bank (Jeff TenPas, personal observation). That equipment access trail is there now.

b. Scope. The scope does not but should include the groundwater impacts, groundwater supply to the floodplain vegetation, and groundwater recharge. There are potentially significant effects and this is an issue which the project proponent is aware of.
c. Waters of the U.S. –NAWCA 3. The EA fails to disclose impacts on the aquatic environment and special aquatic sites in NAWCA 3 which are:
    i. Loss of seven existing gravel bars where salmon were observed guarding the sites in November-December 2016 (Jeff TenPas, personal observation).
    ii. Loss of a swimming hole with tree and rope swing. This is the site of most water contact recreation by youth ages about 8 to 16 years in Winters. There are other sites in Phases I and II frequented by parents and small children, but youth use this site primarily.
d. Disclosure. The EA discloses nothing about the revegetation problems with Phases I and II that are obvious and known to the applicant and the implications for NAWCA 3. The project proponent has reason to know that using the same fill and construction techniques in NAWCA 3 could result in the same outcome and needs to disclose this.
e. Scope. The scope does not but should include assessment of all those detriments identified in Table 1.
f. The project description fails to disclose the real nature of the impact to the NAWCA 3 site. The project description should include a description of acres of land cleared, trees cut, and shade lost, and years to recover. Phases I and II had a 50-60 year old riparian forest that will be a very long time regrowing even under good conditions, and never recovering under conditions of poor fill and compacted floodplain.

Thank you for your time and attention to the issues and concerns of the Winters Friends of Putah Creek.

Respectfully,

Jeff TenPas

References in USACE Files:

BSK Associates, 2016. Revised Environmental Assessment-Putah Creek Channel Restoration Winters, California: 408 Permission #19027, 19047, 19047-1, and 19052.

Alan Pryor
2736 Brentwood Pl.
Davis CA 95618

March 8, 2017

Attn: Brian Luke, Natural Resources Specialist
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1460
Sacramento, California 95814-2922

Sent via email: brian.j.luke @usace.army.mil

Re: Comments on Winters Putah Creek Nature Park Channel Realignment and Restoration Project (WPCNP Phase 3), 19047-1 and Putah Creek Channel Restoration (NAWCA 3), 19027

Mr. Luke:

These comments pertain to the pending applications (the "Project Applications" or "Applications") for both the Winters Putah Creek Phase 3 project and the NACWA3 (the "Projects") by the Solano County Water Agency (the "Project Applicant").

As also further discussed below, the Project Applications makes theoretical claims about the proposed environmental and habitat improvements of the Projects which have not been substantiated by the Applicant in similar work done earlier in Phases 1 and 2 of the Winters Putah Creek Parkway project. Indeed, there is much evidence to suggest that such claims of benefits for the current Projects are unproven, at best, if not patently false and the Applicant has withheld this information from their Project Application.

1) <u>The proposed Projects will make the same environmental mistakes as have been seen in Applicant's previous Putah Creek projects</u>

The Project Applications discloses that the proposed Projects will include rechannelization of Putah Creek using massive amounts of unsuitable imported soils and extensive use of very large earth-moving equipment to to reconfigure the creek channel and compact the new floodplain in essentially the same manner as was recently done in Phases 1 and 2 of Winters Putah Creek Parkway Project. This has resulted in extensive plant and animal habitat degradation which has not been mitigated nor is it expected to be mitigated in any reasonable time-frame due to the nature of the degradation as more fully discussed below.

More specifically, many of the Project's programmatic features and practices proposed in the current Project Applications have already been recently unsuccessfully implemented in the previous industrial scale restoration project undertaken by the Applicant for channel realignment at the Winters Putah Creek Parkway Phases 1 & 2 project.

Although, Applicant is acutely aware of these problems, Applicant has not disclosed in their current Project Application that the results of these recent failed efforts in the Winters project have been demonstrably poor. For instance, with respect to the unsuccessful re-vegetation of the newly developed floodplain in the Winters Phase 1 and 2 projects, thousands of new native plantings have died or are stunted or in the process of dying despite repeated replanting attempts. Applicant is directly aware that the revegetative failures are caused by the specific type and compaction of the imported dredged soil used as fill in the earlier projects yet they propose to use the same type of fill and method of compaction in the current proposed Projects. This information, including any quantitative comparative soil and impact analysis necessary to substantiate the claims of public interest benefits, is not disclosed in the current Project Applications.

As further discussed below, there has been dramatic reductions in the fish counts in the reconstructed Phase 1 and 2 portions of the creek compared to immediately upstream and downstream portions of the Creek. Applicant is aware of these reductions because the counts were taken under contract to Applicant and the results have been submitted yearly to the Applicant. This information is not disclosed in the Project Applications. Rather, only vague and general claims of improved fish habitat have been made which do not indicate future public interest benefit in light of the previous failures in Phases 1 and 2 to increase native fish counts.

Because of the Applicant's complete and total failure to disclose ant of these earlier real-world shortcomings in their Project Applications, there is not any discussion or quantitative analysis in the Project Applications that explores why these failures have occurred and how they be prevented in the projects through alternative strategies or mitigations to minimize the future environmental damage.

The Phase 1 & 2 project failures and shortcomings can be explained by Dr. Peter Moyle (a project consultant) who has publicly stated that these restoration activities are”experimental” in nature and have not been sucessfully implemented before. In as much as those specific and defined problems that have arisen in the almost identical earlier Phase I and 2 projects have not been resolved, the proposed activities in the current Projects under review must also still be considered “experimental” with anticipated results that cannot be accurately projected. This information has not been adequately disclosed in the Project Application by the Applicant. Instead, the Project Application functionally proposes to use the same rechannelization methodology with the same soils and compaction techniques that have previously used in the failed Phases 1 & 2 but otherwise inconsistently states the results will be improved habitat.

The uncertain outcome of the proposed Projects with the potential for additional environmental damage clearly cannot be construed to be in the public interest in any shape form or fashion.

2) <u>Insufficient specification of pre-existing problems in the Putah Creek floodplain has been given</u>.

The Project Application merely references the fact that human disturbances of the creek have occurred in the past but does not quantitatively identify or provide any peer-reviewed references of what what the specific “natural form and function” of the Creek should be that they propose to achieve. Instead, the entire proposal is coached in vague and undefined terms of expected environmental improvements or enhancements but there is not ANY quantitative justification of how these unsubstantiated changes are expected to beneficially improve the Creek. For instance, as later discussed the Project Application claims that rechanneization will result in cooler stream temperatures but has not demonstrated these results in real life in Phases 1 and 2 nor has a quantitative theoretical basis for such cooler temperatures been establsihed. Instead, Applicant relies of broad general statements that such temperature drops will occur and that such drops will benefit the creek and,. by inference, the public interest

3) <u>Insufficient evidence has been provided demonstrating that the new proposed projects will not adversely impact existing plant and animal species</u>

There are literally dozens of plant and animal species that could be adversely affected by the type of radical, industrial-scale transformation of the creek and new floodplain that has, in fact, been demonstrably shown to have occurred in the earlier Phases 1 & 2 of the Winters Putah Creek Parkway realignment project. Unfortunately, there has been no quantitative pre-and post-project assessment of the populations for almost all of the affected species ranging from mussels to insects to song and migratory birds to numerous mammals including mink, otters, and beavers in the Winters project. Thus, based on the obvious dearth of reported data, it is impossible for a reasonable detrmination to be made of the likely success or effectiveness of such rechanneleization activities on further portions of Putah Creek such that no determination of public benefit or interest can be made for the Project Application.

Indeed, the only conclusive assessments that can be made about the previous project's impacts on habitat in the Winters project have shown the re-vegetation efforts on the newly constructed floodplain have miserably failed and there has been a marked reduction in the native fish population is Creek areas affected by the previous channel reconstruction in Phases 1 & 2. Unfortunately, these failures and the attendant adverse environmental impacts are also not reported in the Project Application which should result in application rejection and permit denial on this basis alone.

As an example, for about the past 20 years, a consulting company (Normandeau Associates) has been counting fish at pre-selected locations along the entire length of Putah Creek under contract to the Project Applicant (see Appendix A attached a s pdf to this communication for partial reporting of these results). These studies have conclusively shown a severe and marked reduction in native fish populations of the reconstructed portions of the Creek compared to immediate upstream and downstream portions of the Creek and that such declines appear to be more pronounced in the most recent years.

Further, as discussed above, many other animal and plant impacts have NOT been adequately identified nor has proper mitigation been completely and adequately proposed to minimize such

impacts. As a result, substantial harm may be imposed on the plant and animal communities in the proposed project areas to the obvious detriment of the public interest. A careful inventory of all such potentially affected species must be taken and potential adverse effects must be identified with proposed mitigations for each affected species. In this absence also, this Application should be rejected and the permit denied for insufficient information under Federal standards.

Additionally not discussed are the number of trees and plants that are expected to be removed and the number of animals that are expected to be killed due to habitat destruction including special species of interest such as mussels and the Western Pond Turtle.

4) <u>Insufficient evidence has been presented demonstrating that the project will not adversely impact existing Putah Creek water quality</u>

Applicant has claimed in the past that water quality will be improved with cooler temperatures prevailing by eliminating pools of water where, it is claimed, the direct sunlight and slow moving water allows temperatures to rise to unacceptable levels. Unfortunately, there has been insufficient pre- and post-construction measurements or quantitative theoretical calculations or other evidence to support this claim. In contrast, come stream temperature measurements have been taken indicate, contrary to Project Applicant's claims, that there is very little temperature differential in the water passing through these pools and less than that observed in the reconfigured open stream bed itself. This is likely due to the shading over existing pools by the riparian canopy and the depths of the pools allowing temperature buffering. Additionally, the larger surface area size of the pools allows for extensive evaporative cooling and nighttime convective and black body radiation cooling in those pools. In contrast, the water in the reconfigured channel is directly exposed to the sunlight because the riparian canopy has been destroyed thus allowing increased sunlight to strike the water on a proportional per square ft of surface area basis. This can result in increased rather than decreased water temperature rises compared to preexisting conditions. Applicant has failed to disclose this information in the Project Applications.

At minimum, an extensive survey of temperatures along the length of the proposed Project and the recent reconstructed segments of the Creek must be taken and analyzed based on upstream flow and volume characteristics. Additionally, quantitative projections of newly resultant temperatures post-project must be made with substantiation as to the methodology employed consistent with information already obtained at the Winters Putah Creek Parkway Project and other disturbed and undisturbed areas of the creek. In the absence of disclosure of this information, this Project Application should be rejected due to the absence of sufficient information as otherwise required.

5) <u>Insufficient evidence has been provided demonstrating that the project will not adversely impact existing ground water quantity and quality</u>

Putah Creek is an undeniably important source for groundwater regeneration along the entire length of the stream and particularly where gravel pools have formed allowing for extensive infiltration into underground aquifers through the porous soils. By contrast, newly configured stream beds have had such water percolation almost eliminated because of the extensive hard pan created by the alien clayish, and heavily-compacted dredging spoils. There has been no analysis by the Project Applicants of the impacts on groundwater by the proposed Project and this Project Application should be denied until this information is provided and fully analyzed by experts.

Further, the applicant does not provide any details as to the nature of the soil to be imported for the Project, its chemical and mineral composition, or its hydrologic characteristics such as water permeability and moisture retention once the fill is compacted. This lack of specificity is not consistent with demands for proper disclosure and this Project Application should be denied based on the lack of this sufficient information alone.

6) <u>Insufficient evidence has been provided demonstrating that the project will not adversely impact other existing human beneficial uses</u>

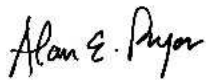
There has been no discussion or quantitative information provided identifying other human beneficial uses of the proposed project particularly including swimming, fishing, and rafting or canoeing. In the absence of such identification and proposed mitigations, the project's impact on such beneficial uses by humans cannot be evaluated and this Project Application should be denied based on the lack of this demonstrated pubic interest..

As an example, a recent email was sent out by the Putah Creek Council extolling the opportunities for summer recreation on Putah Creek (see below). All of the pictures of the creek in this newsletter show broad expanses of the creek such as pools or wide and deep slow moving sections of the creek. The activities proposed in the Project Application indicate that these broad expanses and slow moving sections of the creek will not be possible after the channel realignment process. This would clearly adversely affect these beneficial human activities on Putah Creek in the future which adverse impacts have not been properly analyzed in the Project Application nor mitigations proposed such that permit issuance in this absence would be unlawful.

In summary, this Project Applications are is long on suggested or claimed qualitative benefits that the Applicant proposes will be realized by this project but short on substantiation and documentation of mitigations and any quantitative proof is completely missing. Indeed, comparison with the damage wrought in the Winters Putah Creek Parkway project suggests the proposed benefits will not be realized for decades, if ever, and the Applicant has not otherwise provided any quantitative information of public benefit to the contrary. As such, this Project Application's permit cannot be lawfully issued.

Please inform me of future correspondence and resubmissions or additions to this file and decisions rendered on the Applications. Thank you in advance of this courtesy.

Respectfully submitted,



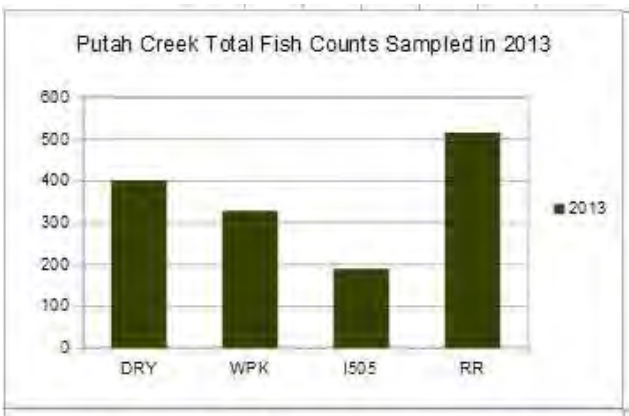
Alan Pryor
ozone21@att.net
916-996-4811 (cell)

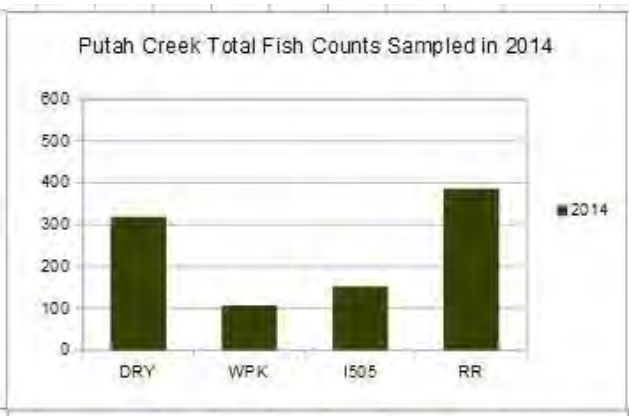
Appendix A – Results of October 2013-October 2016 Lower Putah Creek Fish Surveys. Normandeau Environmental Consultants.

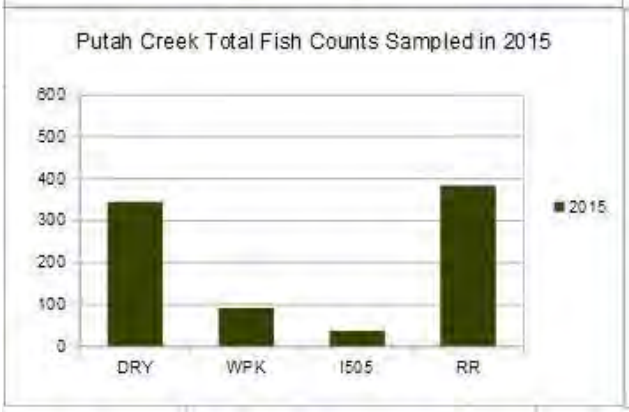
Putah Creek Fish Counts

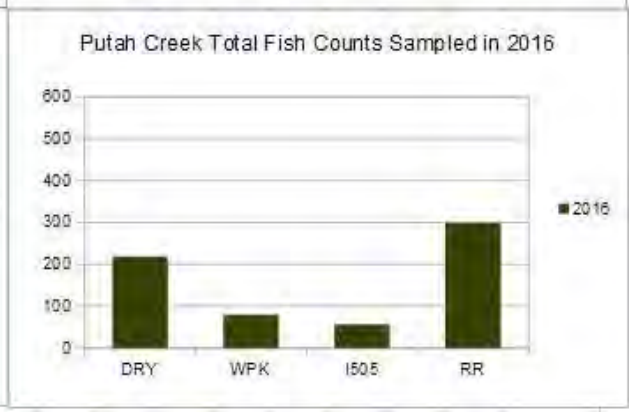
	DRY				WPK				1505				RR				Total
Native Fish	2013	2014	2015	2016	2013	2014	2015	2016	2013	2014	2015	2016	2013	2014	2015	2016	
Sacramento Pikeminnow	56	74	74	42	21	2	16	5	14	10	4	4	258	248	218	29	1075
Sacramento Sucker	196	105	134	65	92	10	17	8	83	36	11	3	52	25	42	97	976
Rainbow Trout	19	24	28	12	8	9	11	2	4	5	8	5	1	2	1	1	140
Threespine Stickleback	1	3		1	49	2	1		19	3	1						80
Prickly Sculpin	14	15	10		49	31	7	9	19	2	3	3	136	32	16	2	348
Riffle Sculpin	13	17	22	14	73	53	35	45				7		6	2		287
Tule Perch	103	80	75	85	37		5	11	51	91	7	30	56	67	104	152	954
Pacific Lamprey		1															1
Exotic Fish																	
Red Shiner																	0
Goldfish																	0
Common Carp																	0
Golden Shiner																	0
Black Bullhead																	0
White Catfish																	0
Inland Silverside														1			1
Western Mosquitofish																	0
Bluegill																	0
Redear Sunfish																	0
Warmouth																	0
Green Sunfish										6	2		2				10
Unid'd Sunfish																	0
Smallmouth Bass														1	1		2
Spotted Bass																3	3
Largemouth Bass			2								1	5	10	4	1	15	38
Striped Bass																	0
Bigscale Logperch																	0
	DRY				WPK				1505				RR				Total
	2013	2014	2015	2016	2013	2014	2015	2016	2013	2014	2015	2016	2013	2014	2015	2016	
Total # Individuals	402	319	345	219	329	107	92	80	190	153	37	57	515	386	385	299	3915
# Native Fish	402	319	343	219	329	107	92	80	190	147	34	52	503	380	383	281	3861
# Exotic Fish	0	0	2	0	0	0	0	0	0	6	3	5	12	6	2	18	54

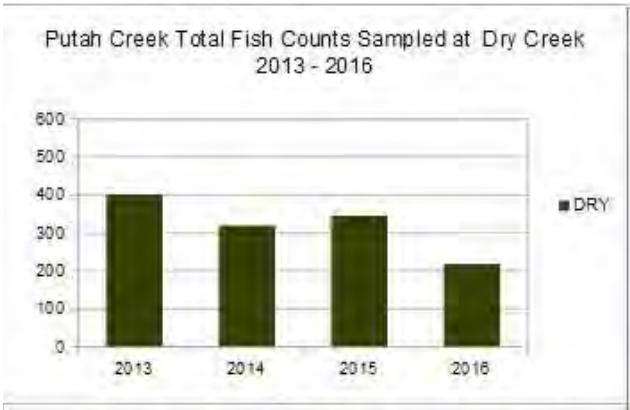
	2013				2014				2015				2016			
	DRY	WPK	1505	RR	DRY	WPK	1505	RR	DRY	WPK	1505	RR	DRY	WPK	1505	RR
Total # Individuals	402	329	190	515	319	107	153	386	345	92	37	385	219	80	57	299
# Native Fish	402	329	190	503	319	107	147	380	343	92	34	383	219	80	52	281
# Exotic Fish	0	0	0	12	0	0	6	6	2	0	3	2	0	0	5	18

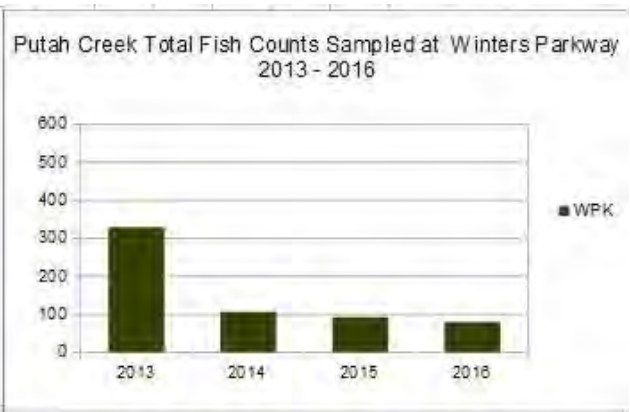

Putah Creek Total Fish Counts Sampled in 2013
600
500
400
300
200
100
0
DRY
WPK
I505
RR
2013

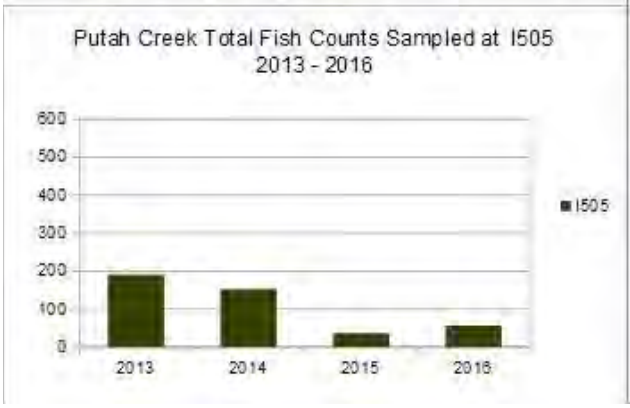

Putah Creek Total Fish Counts Sampled in 2014
600
500
400
300
200
100
0
DRY
WPK
I505
RR
2014

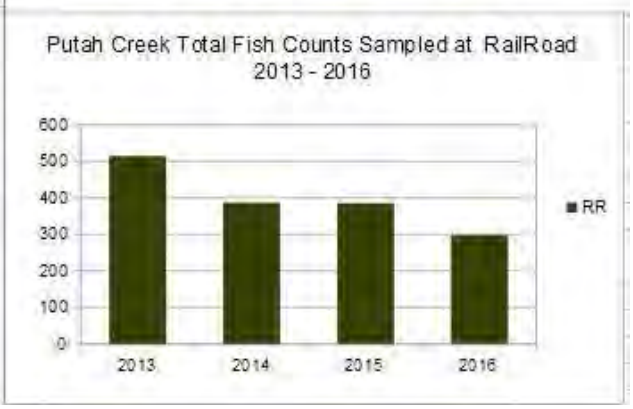

Putah Creek Total Fish Counts Sampled in 2015
600
500
400
300
200
100
0
DRY
WPK
I505
RR
2015


Putah Creek Total Fish Counts Sampled in 2016
600
500
400
300
200
100
0
DRY
WPK
I505
RR
2016


Putah Creek Total Fish Counts Sampled at Dry Creek
2013 - 2016
600
500
400
300
200
100
0
2013
2014
2015
2016
DRY


Putah Creek Total Fish Counts Sampled at Winters Parkway
2013 - 2016
600
500
400
300
200
100
0
2013
2014
2015
2016
WPK


Putah Creek Total Fish Counts Sampled at I505
2013 - 2016
600
500
400
300
200
100
0
2013
2014
2015
2016
I505


Putah Creek Total Fish Counts Sampled at RailRoad
2013 - 2016
600
500
400
300
200
100
0
2013
2014
2015
2016
RR

Appendix B – Excerts from Recent Putah Creek Council promotional Mailing

Putah Creek Council

Excerpts and Photos from July - August, 2016 Putah Creek Council Newsletter

…"It is summertime on Putah Creek and folks are out ***floating, boating,*** **(*emphasis added*)** hiking and ***swimming*** **(*emphasis added*)** along public sections of the creek like the Inter-Dam Reach (IDR), Lake Solano, Winters Putah Creek Nature Park, UC Davis' Putah Creek Riparian Reserve, and the City of Davis' South Fork Preserve.

…
…

...

...

1520 East Covell Blvd
Suite 5, PMB #331
Davis CA 95616
cyarnes@putahcreektrout.org
530-304-1364

March 7, 2017

Brian Luke
Natural Resources Specialist
US Army Corps of Engineers
Sacramento District 1325 J Street, Room 1460
Sacramento, California 95814-2922

RE: Putah Creek Channel Restoration (NAWCA 3), 19027

Brian Luke:

On behalf of the Board of Directors of Putah Creek Trout, I write to you our support of the 408 permit application for Putah Creek Channel Restoration (NAWCA 3), 19027. Previous restoration work along Lower Putah Creek has significantly extended riparian and aquatic habitat for native species in Putah Creek and improved habitat continuity. Long-term monitoring by the UC Davis Museum of Fish and Wildlife has shown riparian bird and mammal species previously confined to upstream habitats near the Coast Range have expanded their ranges further downstream, deep into the Valley floor. Native aquatic fish and invertebrate species once restricted to several miles west of Winters, just below Lake Solano, may now be found as far east as Davis. On-going habitat restoration, combined with the implementation of a natural flow regime following the Putah Creek Accord, has dramatically increased native fall-run Chinook salmon (*Oncorhynchus tshawytscha*) populations within Putah Creek, and the National Oceanic and Atmospheric Administration has specifically targeted Putah Creek as quality habitat for threatened Central Valley steelhead (*O. mykiss*). The science-based restoration activities on Putah Creek have been demonstrated to be a resounding success by the academic and governmental communities that monitor these resources, but also with the public, where these activities have received numerous accolades.

Further channel re-alignment east of Winters (near I-505) will improve aquatic habitat and reduce water temperatures in an area widely-occupied by non-native riparian and aquatic plants. While the loss of a number of large trees is likely, these will be replaced by native plant species, critical to the riparian bird populations that are in decline across California. Increased fish populations have also resulted in increasing numbers of fisherman within the Winters Putah Creek Nature Park, while birding has become more popular along the riparian corridor, both of which are positives for the local economy. This project will continue to extend the native riparian corridor further eastward and directly improve aquatic habitat for increasing populations of endemic aquatic species (fall-run Chinook, rainbow trout), and locally-extirpated threatened species that may come to use this habitat in the future (CV steelhead).

The future of California's wildlife is entwined with the people of California. While we manage our resources to meet the needs of our communities, we must do so in a way that supports and restores the native wildlife communities that share in those resources. The proposed restoration activity will improve habitat for native wildlife and increase access and recreational opportunities for the local community. For this reason, Putah Creek Trout strongly supports the science-based restoration activities on Lower Putah Creek, and we encourage the USACOE to approve Putah Creek Channel Restoration (NAWCA 3), 19027.

Sincerely,

Chris Yarnes, PhD
Secretary of the Board
Putah Creek Trout

Mark Snyder

From: Rod Macdonald <wetlands@omsoft.com>
Sent: Wednesday, March 08, 2017 5:25 PM
To: Luke, Brian J CIV CESPK CESPD (US)
Subject: [EXTERNAL] Comments on Putah Creek Channel Restoration (NAWCA 3), 19027

FROM:
Roderick Macdonald, 34811 Creeksedge Road, Davis CA 95616

By email to: Brian.J.Luke @usace.army.mil

Attn: Brian Luke, Natural Resources Specialist
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1460
Sacramento, California 95814-2922

Re: Comments on Putah Creek Channel Restoration (NAWCA 3), 19027

I am a Putah Creek landowner. I am an ecologist, with 40 years experience (statewide) in Putah Creek. I have bored 2 inch water well, cased with sealed 2" EMT. I used a Neutron Probe to determine water in the bed. My deepest well was 70 feet. I recorded transpiration with a poremeter , and I quantified plant moisture stress with a pressure chamber. I studies all 44 woody species, at 4 locations along Putah creek. All my studies 1971 to 1980 were before the introduction of summer water. The premise that underlies the idea of engineering a new aqueduct, over the existing bed is wrong. The claims that things are disconnected, and only construction can fix that are crying wolf. The river is not substantially different than it has been. There in nothing wrong physically today. The vegetation is out of control, due to the extripation the keystone species, the Beaver. Where native woody species dominate, they have a future,with some help from us. Huge sections of the creek are filled with Tamarix, and Eucalyptus. The Rubus "problem" is over-rated. Far more important is escaped Hackberry (Celtis spp.), and Pecan (*Carya illinoinensis*). This was a western creek or river, with typical species and ecosystems. Today, with the introduction of year around water, the drought which favored natives is gone. The natives have lost their edge as we have insisted in ameliorating the native environment. Our modern wells and "riparian" water rights users have changed the creeks flow timing considerably. The new channel is not needed and will actually make matters worse.

The other question to face is that the volume of habitat will be one fifth of the present habitat. The present habitat offers 4 separate habitable zones in which fish and other animals can live. The engineered "aqueduct" is meant to "keep it moving" and offers only Type 2 habitat, the "Riffllle". For a fish this is like being on a treadmill. They may use this habitat but they shelter in other habitats. The 4 habitat zones are separate, spacially, but interconnected by channels and cooled and protected by depth. The present banks are the river's "compost Pile" which make detritus into the useful substrates with bacteria and fungi. In this zone respiration exceeds production and this is essential for the food chain.

I can scientifically demonstrate with instruments, using what ever plants live in a habitat, the functional characteristics that exist in the habitat in question. The introduced vegetation problem can not be helped in any way by physical modification. If too much out of season water is the problem, than a stream redesign to increase water (the project's "disconnected riparian theory"), can not help native species.

The money should be spent to remove,in a careful, way to avoid soil disturbance, and modify over time to not hurt wildlife. We must put botanical ecology back into this project. This really is where the disconnect is, the project framers do not under stand the ecology, the vegetation structure, nor the association ecology of the vegetation.

Leave the existing ancient creaked as it is. It integrates all of the droughts and floods of the Past. It is a perfect work, built by time. every grain is integrated in to the next. Many people do not understand that technically Putah creek is in a canyon that it established 2 million years ago. We were being selected as Homo erectus, but Putah was making its canyon, where we find it today. Do not compare this creek to Cache creek, though their alluvial fans combine into one of the largest alluvial fans i the world. The putah in not like the Sacramento, which is constantly on the move on a plain. The ideas these project engineers are bringing into Putah creek belong to a higher elevation stream from an entirely different landscapes. Putah Creek is the last, and Best remaining example of a diverse Central Valley stream.

The last issue is the fact that the engineered aqueduct stream that is already constructed and in operation (Phase 1 & 2) have caused a substantial, measured, documented loss of water to the stream bed. This is the same a this example. A dirt ditch delivers water to a customer, but SWA puts in 9 water units in order for the customer to receive the 6 he uses. The other 3 water units went into the stream bed and feed every plant on those floodplains and lower terraces. We can

show this with instruments. Once this project puts the water in the engineered aqueduct stream over the entire distance, SWA can meet its release goals with one half the water. The losers are the riparian landowners, the public, because this will deteriorate the vegetation. The vegetation dominates most user's experience. The creek will be pittance of its present diverse self.

Leave the ancient existing channel Winters to 505 as it is.

Mark Snyder

From: Morgan, Joseph <Morgan.Joseph@epa.gov>
Sent: Tuesday, March 07, 2017 2:45 PM
To: Luke, Brian J CIV CESPK CESPD (US)
Cc: Vallaire, Scarlett C CIV CESPK CESPD (US); Maze, Kaleigh CIV USARMY CESPK (US)
Subject: [EXTERNAL] RE: EPA comments on #19027 Putah Creek Channel Restoration

Hi Brian,

Thank you for clarifying. We have no further comments on this project.

Cheers,
Joe

--
Joseph A. Morgan
Life Scientist
Wetlands Section
EPA Region IX - Water Division (415)972-
3309
morgan.joseph@epa.gov

-----Original Message-----
From: Luke, Brian J CIV CESPK CESPD (US) [mailto:Brian.J.Luke@usace.army.mil]
Sent: Tuesday, March 07, 2017 1:56 PM
To: Morgan, Joseph <Morgan.Joseph@epa.gov>
Cc: Vallaire, Scarlett C CIV CESPK CESPD (US) <Scarlett.C.Vallaire@usace.army.mil>; Maze, Kaleigh CIV USARMY CESPK (US)<Kaleigh.Maze@usace.army.mil>
Subject: RE: EPA comments on #19027 Putah Creek Channel Restoration

Hi Joe,

I received your comments. Please note for clarification; this is a public notice for a Section 408 permit issued by the Corps and the applicant has applied for a separate Section 404 permit (PM Scarlett Vallaire Cc'd) with our Regulatory Division.

Please contact me if you have any questions about the Corps' two permitting actions.

Thanks,
Brian

Brian J. Luke
Natural Resources Specialist
Flood Protection & Navigation Section
U.S. Army Corps of Engineers
1325 J. Street

Sacramento, CA 95814-2922
(916) 557-6629 office
(916) 557-7724 fax
brian.j.luke@usace.army.mil

-----Original Message-----
From: Morgan, Joseph [mailto:Morgan.Joseph@epa.gov]
Sent: Tuesday, March 07, 2017 1:37 PM
To: Luke, Brian J CIV CESPK CESPD (US) <Brian.J.Luke@usace.army.mil>
Subject: [EXTERNAL] EPA comments on #19027 Putah Creek Channel Restoration

Hi Brian,

I just have some brief comments on this project, they are listed below. Please feel free to contact me with any questions at this email or at 415.972.3309. Thank you for the opportunity to comment on this project - please update me as additional information is received.

Thanks,

Joe

--

Joseph A. Morgan

Life Scientist

Wetlands Section

EPA Region IX - Water Division (415)972-

3309

morgan.joseph@epa.gov <mailto:morgan.joseph@epa.gov>

Comments on 19027 (Putah Creek Channel Restoration):

Clean Water Act jurisdiction: The public notice and site map indicate that 0.12 acres of Putah Creek channel will be filled. This discharge, along with any permanent or temporary discharge of fill material into Waters of the United States, is

jurisdictional under the Clean Water Act Section 404 and should be permitted, potentially under Nationwide Permit 27. We have no objections to the issuance of a CWA 404 permit for this discharge as it is likely to result in an increase in function.

Monitoring and reporting: We further recommend that aquatic resource functions in Putah Creek should be assessed using an appropriate assessment method such as the Riverine Module for the California Rapid Assessment Method (CRAM, BlockedBlockedhttp://cramwetlands.org/), and tracked using the Project Tracker function in EcoAtlas (BlockedBlockedhttp://ptrack.ecoatlas.org/).

Jeff TenPas
Winters Friends of Putah Creek
24 East Main St.
Winters, CA 95694

March 8, 2017

By email to: Brian.J.Luke @usace.army.mil

Attn: Brian Luke, Natural Resources Specialist
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1460
Sacramento, California 95814-2922

Re: Putah Creek Channel Restoration (NAWCA 3), 19027

To US Army Corps of Engineers:

My name is Jeff TenPas. I am a resident of Winters, and have lived with Putah Creek 100 yards out my back door for over 20 years. I've walked my dogs along the creek daily, and observed the creek under all conditions, pre-project and post-project, at low flows and in flood. I have the professional and scientific background to understand what I see. I have a Masters in Soil Science from UC-Davis, also education, qualifications, and experience as a hydrologist in federal civil service, and education and experience in wetland, stream, and restoration ecology. I have over 18 years' experience working for the US Forest Service as soil scientist, hydrologist, and as leader of the region's watershed restoration program. And for the past 20 years I have been active in restoration work on Putah Creek.

The following comments are submitted in my name and on behalf of the Winters Friends of Putah Creek. We are committed to the restoration of Putah Creek, habitat improvement, and making beneficial use of the creek.

We oppose the current plans for NAWCA 3 because of the environmental impacts of the project on people, on wildlife, on groundwater recharge, and on stream and floodplain habitat and function. Our comments will show the project should be denied on the grounds that: 1) it is Injurious to the Public Interest, and 2) failure of Environmental Compliance with the Clean Water Act, National Environmental Policy Act, and Rivers and Harbors Act.

We direct your attention particularly to Comment 2 pertaining to the effects of the project on groundwater recharge. Flow data is showing a decline in groundwater recharge in Putah Creek that is correlated to the implementation of Phase 1 and 2 project implementation. We strongly object to giving approval to NAWCA 3 without first investigating and taking remedial action to cure groundwater recharge impacts of previous projects. We also strongly object to allowing NAWCA 3 to increase the

cumulative effect on so vital a resource as the municipal water supply to the City of Winters and surrounding agricultural lands.

1. Lack of Purpose and Need to:
    - Fill and narrow channels to reduce water temperatures, or
    - Recontour floodplains to improve their form and function, or
    - Recontour to reduce bank erosion, or
    - Cut down 146 larger and mature native trees to replace with an immature and uncertain replacement.

    a. Lack of Purpose and Need to Modify Stream Temperatures. Where, or when, or why is there a need to modify stream temperature? Young of year salmon out-migrate from Putah Creek before stream temperatures rise too high in spring. Fish monitoring shows that fall-run chinook salmon out-migration reaches a peak in late March when stream temperatures in Putah Creek are at levels suitable for salmon (Small, KT et al, 2004). Small reports that temperatures in the creek reached levels too high for survival in mid-May, long after out-migration, and also reported there is a refuge of low temperatures below the diversion dam where salmon could survive the summer. And on the other hand native non-salmonid fish are suited to the year round existing conditions in the creek upstream of Pedrick Road. Fish monitoring shows that native fish are already overwhelmingly predominant in Putah Creek upstream of Pedrick Road (Normandeau, 2015).

> "The results also show that, despite three consecutive and worsening water years (WY2012 below normal; WY2013 dry; WY2014 critical) and the lack of extended periods of high flow, native fish continue to dominate the 13.2 miles of the lower basin between the Putah Diversion Dam and the 1 KM site near Davis (Table 4; Figures 3 and 4). ……. In fact, only two non-native fish were captured in the upper 3.0 miles of the study area and native fish made up 96.5 percent of the total catch at the seven study sites located in the upper 12.7 miles of the study area upstream of the Pedrick Road sites (Figure 4). (Normandeau, 2015)

If the stream alteration effort is intended to favor trout, then we need to know why trout should be favored over other native fish. The fact is that trout already occupy the interdam reach. Where and when is there is need for cooler stream temperatures, and for what species? Should stream conditions be altered to promote trout over other native fish? Is it worth $5 million per project mile to promote trout over other native fish?

    b. Lack of need to recontour floodplain to improve form and function. The existing floodplains have a complex topography with multiple overflow and back channels, and floodplains at varying heights. Yesterday (March 7, 2017) with stream flows of

about 1500 cfs the floodplain provided a diversity of habitat, with some lands emerging about the floods and flow down three channels (J TenPas, personal observation). Upstream in Phase 2 where the floodplain had previously been recontoured, the flood flows uniformly inundated the engineered floodplain leaving no high points or refugia (J. TenPas, personal observation). Recontouring the floodplain as proposed to "1.5 feet above the low-flow water surface elevation and graded back from the channel at a 1-2% slope" would reduce floodplain form and function.

c. Lack of need to recontour to reduce bank erosion. Bank erosion is decreased by protecting banks with vegetation, not by clearing the floodplain as proposed. In the past 18 days of flood flows on Putah Creek, there has been substantial bank erosion in Phase 2 where, as a result of the Phase 2 project, the floodplain is bare and banks are more exposed to high velocity flows (J TenPas, personal observation).

d. Lack of need to improve channels for fish habitat. During the fall chinook run last fall, the NAWCA 3 section had salmon at seven gravel beds waiting to spawn (J. TenPas, personal observation). There was a higher density of spawning sites here than in the "restored" stream reaches of Phases 1 and 2.

2. Changes in Groundwater Recharge on Putah Creek Evidenced by Stream Gage Data. A most critical detriment of Phases 1 and 2 and a potential detriment of the proposed NAWCA 3 is a detrimental impact on groundwater supply to the floodplain forest and on groundwater recharge. We present data and analysis below to show the effects of Phases 1 and 2 on groundwater recharge.

   Our August 2016 comments on another project, Phase 3, raised the issue (included in Attachment 3) that projects such as this could reduce on groundwater recharge. Those comments were sent December 8, 2015 to the Central Valley Flood Protection Board. At that point the project plan showed that the wetted perimeter of the stream would be reduced, finer textured fill was proposed, and fill would be compacted per contract specifications, and placed with large earthmoving machinery. Based on those facts and the science and physics of groundwater movement, it was estimated that Phases 1 and 2 might have reduced groundwater recharge in the Phase 1 and 2 project area by 3.2 cfs. NAWCA 3 project would add to the cumulative effect.

   There is flow data and statistical analysis to show that there has been a statistically significant reduction in groundwater recharge between the diversion dam and I-505 stream gage. Solano County Water Agency (SCWA) provided hourly flow data for releases upstream of the projects (releases from the diversion dam) and flows downstream of the project (gaged at I-505) from Jan 1, 2010 (pre-projects) to Dec. 21, 2016 (post-project of Phases 1 and 2). The accuracy and reliability of the data is high, and rating curves are regularly maintained within 5% of actual (Jay Cuetara, SCWA, personal communication to Jeff TenPas, March 3, 2017).

Water losses (approximating groundwater recharge) for the month of August for years 2010 to 2016 were calculated for the reach between the diversion dam and I-505. Pre-project years are 2010 to 2011, and post-project years are 2012 to 2016, these were coded as 0 and 1 for statistical analysis. Flows for August were used because riparian diversions are not allowed this late in the summer. Data were filtered to compensate for changes in water releases at the diversion dam and the time lag in the response at I-505. The data filtering removed the 24 hours of flow data following a flow release change. Evapotranspiration,cause for some water loss, would be relatively constant between years and was not factored out. The data file is attached (August_StataData).

The data were analyzed in Stata with linear regression. Groundwater recharge (water loss) was the dependent variable. Independent variables were year (pre and post project years coded as 0 and 1 respectively) and flow release (cfs) at the diversion dam headworks. The statistical results are displayed in Table 1. Flow release was highly significant as one might expect; higher flows result in higher wetted area, greater head, and more groundwater recharge. The pre:post project variable was also highly significant at the 0.001 level, showing a that there was a significant correlation between implementation of Phase 1 and 2 projects and a decrease in groundwater recharge. The coefficient for the pre:post treatment variable was -3.1, indicating a 3.1 cfs reduction in groundwater recharge after the Phase 1 and 2 projects were completed in October 2011. The 3.1 cfs change in groundwater recharge indicated by the statistical analysis is remarkably close to the 3.2 cfs reduction in groundwater recharge that was posited in the December 2015 letter to the CVFPB. The flow data, the analysis based on soil physics and water movement, and the vegetation indicators all align to show that the past and proposed projects are having a critical negative impact on groundwater recharge and floodplain groundwater supply.

A 3.1 cfs reduction corresponds to an annual reduction in groundwater recharge of 2244 acre feet. This is several times the demand for domestic water supply in Winters, and enough water to irrigate 770 acres of almonds. There is no reasonable expectation that floodplains and stream banks will be recover naturally in any less than geologic time or thousands of years. Priced at $1000 per acre foot of water, a reduction of 2244 acre feet in the annual groundwater water supply is worth over $2 million per year.

Table 1. Linear regression statistics

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. regress Hdwk_I505Loss Pre_Post    Hdwk_cfs

      Source |       SS           df       MS      Number of obs   =     4,075
-------------+----------------------------------   F(2, 4072)      =    883.63
       Model |  12273.1023         2  6136.55115   Prob > F        =    0.0000
    Residual |    28278.85     4,072  6.94470776   R-squared       =    0.3027
-------------+----------------------------------   Adj R-squared   =    0.3023
       Total |  40551.9523     4,074    9.953842   Root MSE        =    2.6353

------------------------------------------------------------------------------
Hdwk_I505L~s |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    Pre_Post |  -3.067412   .1103795   -27.79   0.000    -3.283816   -2.851008
    Hdwk_cfs |  -.1008958   .0096646   -10.44   0.000    -.1198436   -.0819479
       _cons |   18.31789   .3452473    53.06   0.000     17.64102    18.99476
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3. Unsuitability of Floodplains and Stream Banks Constructed with Large Machines . The essential feature or element supporting a floodplain forest is the unseen groundwater movement from the stream to the floodplain. This is what supports riparian cottonwoods and other vegetation that could not grow in the local environment were it not for the water subsidy from the stream. Constructing floodplains with large machines is virtually guaranteed to obstruct groundwater movement with compacted banks and floodplain soils.

   A natural floodplain has layers and bodies of sediment, some with high porosity that allow groundwater movement, some with low porosity and minimal groundwater permeability. Streams sort and lay down these layers during floods with the power of flowing water. The sorting of sediment into layers and bodies of contrasting textures increases the capacity for groundwater movement many times above the capacity of an unsorted profile. Equal parts of sand and clay mixed together yield a sandy clay mix with the very low permeability of the clay, and none of the permeability of sand. The same clay and sand material sorted into a clay layer and a sand layer will have a very high permeability sand layer to transmit water.

   A floodplain constructed with large machines from unsorted fill does not begin to duplicate the layering and sorting of the stream, and does not provide the preferential flow paths of a natural floodplain or provide equal groundwater permeability. Large machines mix floodplain sediments all together into one compacted and low permeability body. Large machines cannot duplicate the low pressure deposition of sediments by flowing water, instead machines compact fill into a dense, compacted, low porosity material with low permeability to groundwater movement.

   Where floodplains and groundwater recharge depend upon a healthy groundwater connection to streams, as in Mediterranean riparian areas, heavy traffic and alteration should be kept to a minimum.

4. Loss of Riparian Forest – Temporary and Permanent. There is a temporary but long lasting loss when you cut down a 60 year old riparian forest and replace it with a new planting. There is also a risk that revegetation efforts will meet with failure as they have in Phases 1 and 2. The failure of revegetation in Phases 1 and 2 is a logical outcome of disturbance and

floodplain compaction with heavy machinery and the resulting obstruction of groundwater supply to the floodplain. Compare these Google Earth photos. Note how plantings die out.

Phase 2 – 2009 – Preproject

Phase 2 - 2012

Phase 2 – 2014


8/2014
38.52422 -121.95681
Google Earth
Imagery Date: 8/23/2014 lat 38.524189° lon -121.957363° elev 92 ft eye alt 424 ft

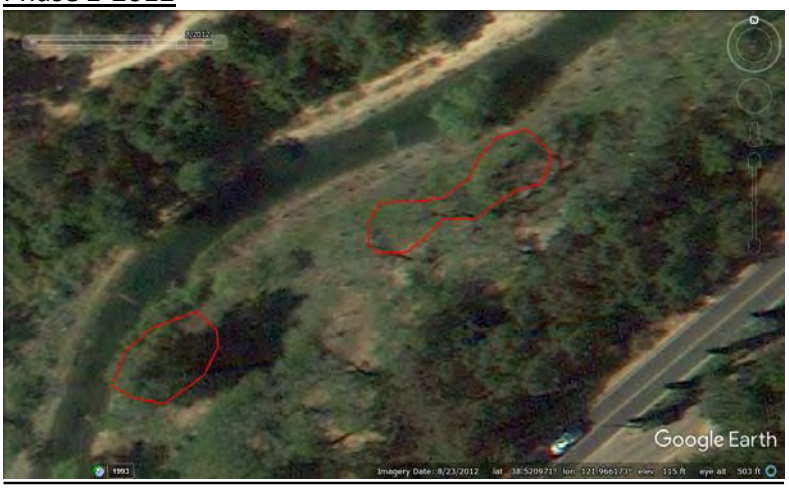
Phase 2 – 2016


38.52422 -121.95681
Google Earth
1993
Imagery Date: 8/13/2016 lat 38.524189° lon -121.957363° elev 92 ft eye alt 424 ft

5. Risk of Death to Cottonwoods and Willows Allowed to Remain. Even the trees allowed to remain in NAWCA 3 are at risk as evidenced by the death of mature cottonwoods allowed to remain in Phase 1.

Phase 1- Preproject

Phase 1-2012



Phase 1 – 2016- Cottonwoods Dead

6. Freshwater mussels were historically found in NAWCA 3 and are unprotected. During Phases 1 and 2 of stream alteration in Winters, there was no survey for mussel presence and the projects may have wiped out mussel beds. The current project may also effect mussels which are an imperiled group of organisms worldwide (Howard, 2010). Native mussels are historically found in the NAWCA 3 reach as reported by sources cited in Howard (2010).
   Jones and Stokes Associates (JSA, 1992) reports that during 1989, and 1990 to 1991 much of the stream reach between Stevenson Bridge and the Yolo Bypass dried up and "thousands of fish, crayfish, and freshwater clams could be seen along the dry creekbed." Howard (2010) resurveyed historical sites on Putah Creek where freshwater mussels *Anodonta* and *Gonidea* were previously found. At three Putah Creek sites no mussels were found during resurvey. Phases 1 and 2 in the Winters Putah Creek Park have already altered 0.8 miles of stream bed, and mussels if they are present in this last 0.2 mile should be protected.

7. Loss of Open Waters. The proposed project would result in a loss of open waters. These waters should be protected, especially as some of the water are special aquatic sites with vegetated shallows. In addition, the open waters have great potential and appropriate hydrology for conversion to wetlands. These waters should not be converted over and filled to make more hard flat floodplains. This is a loss both of the current values as well as the loss of potential.

8. Comments on Section 401 Water Quality Certification, May 20, 2016 (TenPas, J, 2016). Attached are comments made to the Central Valley Regional Water Quality Board on May 20, 2016. These comments are included in their entirety and applied to NAWCA 3 and its permits as well. To summarize the comments:

a. NAWCA 3 violates Sec 404(b)(1) Guidelines which provide that fill should not be discharged "unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact"

b. If fill is imported to NAWCA 3, it should be of suitable texture to be compliant with the fill requirements of Section 230.5 (f) and (h), Section 230.11 (a), and Section 230.20 of the Guidelines. A critical characteristic of floodplains is the permeability of the soils and channel substrate. The SCWA has in the past used spoils of the South Putah Canal project. These spoils are clayey and placement with heavy machinery compacts this material to a nearly impermeable state, and this fill is unsuitable.

c. Section 230.11 (b) of the Guidelines requires that consideration shall be given to project effects on the hydrologic regime, including the hydrology of the floodplain and groundwater. The project does not consider the protect groundwater recharge processes from the effects of channel narrowing, fill, and compaction from equipment traffic.

d. Subpart D of the Guidelines requires that potential impacts on biological characteristics of the aquatic system must be considered. Mussels are particularly at risk from any in-channel work. Mussels are in general decline across California, and channel filling and realigning projects will surely kill any that are present. Given the cumulative effect of Phases 1, 2, and 3, any native mussels in Putah Creek in Winters should be protected (Section 230.31).

e. Other wildlife must be considered (Section 230.32). The proponent must assess effects of the project on the habitat of bats, beaver, otter, western pond turtle, migratory water fowl, and song birds, consider what the project affects might be, and include plans to avoid or minimize disturbance and assess how the alternatives might lower disturbance. This is required before issuance of a permit.

f. Subpart E of the Guidelines requires assessment of potential Impacts on special aquatic sites. Special aquatic sites must be considered in projects affecting waters of the United States (Section 230.41, 230.43, and 230.45). This includes wetlands, pool and riffle complexes, and vegetated shallows. The NAWCA project area contains pool and riffle complexes that should be avoided.

g. Project effects on municipal and private water supplies (Section 230.50). Groundwater recharge will be reduced by narrowing the channel, reducing the wetted channel boundary, and by importing low permeability fill, and compacting the floodplain soils by construction activities. The City of Winters depends entirely upon groundwater for its water supply. The impact of the project on groundwater must be analyzed and disclosed.

h. Effects on recreational use and aesthetics are required to be considered and are not assessed and disclosed (Sec 230.52, Sec 230.53). The NAWCA 3 channel project will affect

recreational use in Winters by filling the single current swimming hole in Winters. There are other places people use for water contact recreation, but only this one place that has a rope swing over a deep pool.

i. Effects on water contact recreation need to be considered in order to maintain this beneficial use (Sec 230.52). There is a deep pool in NAWCA 3 used for swimming.

j. Testing Fill Materials (Sec 230.61). The application does not disclose information on the physical testing of the fill materials as needed based on Sec 230.61. Testing of the fill materials is needed in order to assess the project effects on permeability of the project area and the project's potential effects on groundwater movement. Fill should be tested for texture, for compaction, and for permeability after compaction.

k. Actions to Minimize Adverse Effects (Part 230, Subpart H). Subpart H provides for taking actions to minimize adverse effects of projects in accordance with 230.10 (d). The applicant has not identified actions to minimize adverse effects, nor even taken the prerequisite step of adequately assessing potential adverse effects. Using fill has potential adverse effects on the hyporheic zone, groundwater supply to the floodplain, groundwater recharge to a municipal water supply: these effects can be minimized by choice of a suitable fill material. Effects on floodplain and channel permeability and groundwater movement can be avoided by limiting the use of large machines, by running machines on mats to avoid compaction, and by mitigation with actions to decompact the fills. Effects on special aquatic sites can be minimized by surveying to identify the sites and avoiding or mitigating. Effects on groundwater recharge can be avoided by changing fill, maintaining wetted area, adding wetlands. Effects on aesthetics and recreation can be avoided by keeping the creek in its current location in Phase 3 in Winters.

l. Failure to maintain and support beneficial uses of Putah Creek. The Project record does not provide evidence that the project will continue to support existing beneficial uses. State policy for water quality includes the policy contained in State Water Board Resolution No. 68-16 (Statement of Policy with Respect to Maintaining High Quality of Waters in California). This policy requires that wherever the existing quality of surface or ground waters is better than the objectives established for those waters in a basin plan, the existing quality will be maintained. Beneficial uses for Putah Creek are defined in the Basin Plan for the Sacramento River Basin. The beneficial uses to be maintained in Putah Creek include municipal water supply, agricultural supply, water contact recreation, non-contact water recreation, warm freshwater habitat, warm spawning, reproduction, and early development habitat, and wildlife habitat. The proposed project fails to maintain these existing beneficial uses.

m. The application is incomplete (23 CCR § 3856). The application does not contain a description of steps taken to avoid, minimize, or compensate for loss of or significant adverse impacts to beneficial uses of waters of the state. The application does not include a

description of the adverse impacts of other projects by the applicant in the last five years, including the adverse impacts of the projects in Winters on the riparian forest, groundwater recharge, wetlands, water contact recreation, and wildlife.

9. Injurious to the Public Interest Determination. The benefits of the Project are not commensurate with the risks and foreseeable detriments. The project does not fill the purpose and need and provide the benefits intended (Comment 1) and the Project has multiple risks and critical and foreseeable detriments such as obstruction of groundwater (Comment 2).

10. Environmental Compliance. Environmental analysis of the Project has not been commensurate with the scale and potential effects. The CEQA analysis was performed on a Master Plan, conceptual in nature, and not of a project-specific plan that disclosed the scale and intensity of disturbance. The NEPA to the best of our knowledge is only the generic NEPA done for a Section 404 nationwide permit.

Thank you for your consideration of our comments. We continue to support holistic stream restoration work. For us this has been a learning experience, and a bringing together of observations of the natural world with more hard physical science.

We oppose the current plans and permitting of NAWCA 3 and the foreseeable detrimental effects and cumulative effects on wildlife, habitat, recreation and aesthetics, and groundwater recharge.

Sincerely,

Jeff TenPas

Winters Friends of Putah Creek

Attachments:

August_StataData.xls. 2010 to 2016 flow data for Putah Creek, diversion dam to I-505.

Howard, Jeanette, 2010. Sensitive freshwater mussel surveys in the Pacific Southwest Region: assessment of conservation status

Jones and Stokes Associates, 1992. Final hydraulic, hydrologic, vegetation, and fisheries analysis for the U.S.Fish and Wildlife Service Putah Creek Resource Management Plan

Normandeau, 2015. Memorandum, February 4, 2015, Results of October 2014 lower Putah Creek fish surveys

Small, K.T., et al, 2004. Chinook salmon in Putah Creek, spring, 2004. Report to Lower Putah Creek Coordinating Committee

TenPas, J, 2016. Comments to Central Valley WQCB, May 20, 2016, Comments on 5A48CR00145, Putah Creek Restoration Project-Upper Reach Program

July 2016, Public Notice
Response to Comments
Winters Putah Creek Nature Park Channel Realignment Project
Phase 3 (ID 19047-1)

A. Responses to Jeff Tenpas and Winters Friends of Putah Creek letter dated August 9, 2016.

Comment: The premise that the floodplain in not functional is faulty.

Response:

1. Much of the project area contains steep and high banks that transition into a low terrace(s) that is above the ordinary high water mark. This configuration promotes the establishment of upland species, such as valley oak and black walnut, in addition to non-native species such as tree-of-heaven, eucalyptus, Himalayan blackberries, and giant reed. The steep banks have minimal surface area that is ideal for establishment by native species such as white alder, cottonwood, and willow species; and they reduce the frequency that natural floodplain process, such as erosion and deposition, occur on the low-terrace. The proposed project will create functional floodplains by recontouring the high banks and adjacent low terrace(s) to a lower elevation. This lower top-of-bank elevation and gentle floodplain slope will maximize the surface area that is ideal for the natural recruitment of many different native plant species, including high value wetland dependent species. A significant portion of the recontoured floodplain will be at an elevation that is below the ordinary high water mark, which will subject it to frequent overland flow of water and associated natural processes, such as erosion and depositions.

Comment: A natural channel is being replaced with an artificial channel.

Response:

2. Numerous experts in the field of geomorphology including Eric Larsen, Rick Poore, Kris Vyverberg, Brian Cluer and Greg Pasternak disagree that the current channel is natural, or has the ability under the current hydrological regime to correct itself (except perhaps in decades or even centuries) such that the form and function of the channel and any existing floodplain function naturally and provide habitat that is optimal for Putah Creek.

Comment: The floodplain needs restoration the channel does not.

Response:

3. The existing floodplain, as described by the commenter does need restoration. There is a disconnect between the creek channel and the floodplain because of the incision of the channel. The project proposes to correct this situation and reconnect the floodplain to the channel and thus return the form and function of the floodplain.

Comment: This is a spoils disposal project.

Response:

4. Imported fill was required at Winters Putah Creek Nature Park because there were no nearby sources of native fill within the channel.

The fill soils at Winters Putah Creek Park were taken from the original excavation of the Putah South Canal. Reference to these soils as "exotic," "clayey," "claypan" or "dredgings" are incorrect. They are plainly identifiable as riverine soils from Putah Creek alluvium by the presence of 50% river gravel by volume and by the source – within the alluvial deposits (< 1,000 feet from Putah Creek. The non-gravel fraction is roughly equal parts of sand, clay and loam. The Agency and its consulting soil scientists therefore dispute assertions that the soil is "unsuitable."

Comment: Overall, project is detrimental and injurious to the public interest. Project detriments include loss of deep pools, loss of habitat diversity, loss of views, loss of groundwater connection, and cost of project. Project benefits include small decrease in stream temperature, narrow faster stream habitat and more water to serve SCWA customers.

Response:

5. There were numerous public meetings on the Master Plan which included the Winters Putah Creek Park Restoration Projects and the community as a whole selected the proposed project as the number one priority creek-wide. An environmental assessment has been prepared to analyze the effects of the project and a decision will be made to either sign the Finding of No Significant Effect (FONSI) or to prepare an Environmental Impact Statement (EIS). The project will temporarily reduce habitat diversity and aesthetic value of the project site during and immediately after construction; however, the project is designed to immediately improve aquatic habitat diversity, and it will increase terrestrial habitat diversity as the installed native vegetation matures. Aesthetic value will also increase above the existing condition as the installed vegetation matures. The project will reduce the number of deep pools within the project area in order to improve aquatic habitat value but deep pools are common both upstream and downstream of the project site. The project will not have a significant impact on groundwater.

Comment noted regarding project costs and economic value.

Comment: The project is using heavy equipment, but the floodplain should be restored with a light touch.

Response:

6. Soil compaction from the construction of the channel reconfiguration project at Winters Putah Creek Nature Park has reduced survival and growth rates of planted riparian vegetation in some areas, particularly on the south bank at the east end of the park. The south side of the creek, east of the staging area, was formerly a cliff; floodplains were constructed by placement of fill in areas that were formerly open water. The depth of fill and the machinery required to place the fill resulted in multiple passes over the same ground with heavy equipment. Bid specifications for the Winters Putah Creek Park project included compaction standards that were not enforced, so the compaction was incidental to the use of heavy equipment. Ripping the surface of the soil at the end of construction allowed establishment of erosion control grasses but proved inadequate to support trees and shrubs in some areas. Foot traffic in high use areas is causing ongoing trampling and compacting of soil, but the area of this impact is relatively small. Trials of remedial measures are currently underway. These include measures to de-compact the soil with an excavator by digging holes down to native soil beneath the fill layer and backfilling with a mixture

of loosened soil and organic matter. Ten of twelve one-gallon cottonwood trees from well rooted nursery stock planted on four test plots are currently thriving. De-compaction protocols in development now would be applied to projects implemented under the Program as needed to achieve a matrix of open areas and closed canopy habitat.

The riparian forest at Winters Putah Creek Park is recovering following initial plantings in 2012 and will take time to reach maturity. At last count, over 1,800 trees and shrubs were growing vigorously in the park. Nevertheless, revegetation results to date are mixed. Many alders, cottonwoods and willows are already 20 feet tall but beaver predation and the worst drought in over five hundred years have taken a toll. Some areas that receive heavy foot traffic are completely denuded of vegetation due to trampling. The typical time to establish a nearly closed canopy riparian forest is about ten years with normal winter rainfall. The South Davis Preserve restoration site is good example.

Soil remediation trials are ongoing with various organic amendments including wood grindings and commercial composts to improve growth rates on selected sites where vegetation has been slow to establish. Organic matter is applied as a layer between 2 and 4 inches thick that is incorporated to a depth of approximately two feet with an excavator bucket under the supervision of a soil scientist. The organic amendments help to keep the soil loose and improve penetration of water and air. Results of these and future *in situ* trials will inform future restoration project Best Management Practices.

Comment: If NEPA is done, or drafted, we request an opportunity to review and comment.

Response:

7. The project has been public noticed twice. The first notice was posted from 11 July 2016, to 09 August 2016. Due to problems with notification of the first notice the Corps issued a second notice for the project from 06 February 2017, to 08 March 2017. The public notice is the opportunity for public and agency comment on the project, including environmental issues. An environmental assessment (EA) is being prepared and the public will be notified when a decision is made concerning the FONSI. With respect to the commenter's concerns regarding CEQA compliance, the Corps is not a CEQA agency and therefore cannot address CEQA.

Corps guidance in EC-1165-2-216 7. (c) vi., states Section 408 EA's should not be circulated for public comment. All public comments will be addressed and appended to the EA. The EA will be revised based on public comments where appropriate.

Comment: Request consideration of unauthorized and immediately adjacent alterations in Phases 1 and 2.

Response

8. Phases 1 and 2 were constructed in 2011 and at that time there was no requirement for a Section 408 permit. The requirement for a Section 408 was established on July 31, 2014, with the issuance of Engineering Circular (EC) 1165-2-216. The Corps received a transmittal from the CVFPB on June 4, 2015, requesting authorization of the existing Phase 1 and 2 projects. Phases 1 and 2 have been determined to

have no significant affects to cumulative impacts associated with the proposed project. Please see Cumulative Effects section discussion on page 34.

Comment: Request for reconsideration of Section 404 permit for the project.

Response:

9. The Section 404 permit originally issued for the project was issued before the requirement for a Section 408 permission. The Section 404 permit will be re-verified under the latest Nationwide Permits issued in March 2017, if the Section 408 permission is approved.

Comment: Our review and depth of review was limited.

Response:

10. See response #7. In addition notification for the request to modify a U.S. Army Corps of Engineers Project under Section 408 met U.S. Army Corps of Engineers' and NEPA guidelines. The Corps has added you to our mailing list and will ensure that you are notified when a decision is made concerning the FONSI. If you are interested in obtaining copies of documents related to this project, you may submit a request pursuant to the Freedom of Information Act (FOIA). Procedures, rules, and regulations pertinent to processing FOIA requests can be found on our website at http://www.spk.usace.army.mil/Media/.

Comment: Please consider the attached files as additional comment.

Response:

11.

a. Comment noted.
b.
    1. See response to comments 1,2,3,4, and 6.
    2. Impacts to wildlife in the project area are temporary and there is adequate habitat upstream and downstream of the project area. The nature of these types of restoration projects coupled with environmental conditions, such as rainfall, can affect overall vegetation growth. The typical time to establish a nearly closed canopy riparian forest is about ten years with normal winter rainfall. The South Davis Preserve restoration site is good example.
    3. Not considered a significant impact as the very nature of the restoration project is to restore the form and function of the floodplain connectivity and will be inundated during flood events.
    4. The proposed project does not significantly impact recreation, except that access to the north bank will be significantly improved and made continuous. The mission of the LPCCC does not include promoting recreation, nor do the grants received to implement projects at Winters Putah Creek Park. The River Parkway grants meet other statutory guidelines for

1) promoting wildlife habitat and 2) converting former industrial uses (sewer aeration ponds) to River Parkway. These grants require public access and recreation as an additional statutory benefit but eligible projects need only meet two of five statutory criteria. Recreation should be balanced with wildlife conservation goals, and it is up to the local landowner (City of Winters) to determine the balance between competing public interests through such measures as signage and education programs, restrictions on running dogs off leash, adjusting vegetation management (e.g. mowing), seasonal closures of part(s) of the park and strategic use of vegetation to limit access by people and their dogs. The balance of wildlife values and recreational uses can be monitored and adjusted by the landowner (City of Winters) over time.

5. See response to comment 5.
6. See response to comment 5.

c.

1. See response to comments 1, 4, and 6.

d.

1. The proposed alternative plan is no change, it is the existing condition of the creek at that location. More simply stated, this is the no project alternative that was considered and rejected in the 2008 CEQA analysis. There were numerous opportunities to comment on the project alternatives and the CEQA document. There were numerous public meetings on the Master Plan which included the Winters Putah Creek Park Restoration Projects and the community as a whole selected the proposed project as the number one priority creek-wide.
2. See response to comment 11b 4.

e.

1. See response to comment 5.
2. See response to comment 4.
3. See response to comment 4 and 6.
4. See response to comment 8.

f.

1. See response to comment 4.
2. See response to 11b 2.
3. Ken Davis, aquatic biologist, has surveyed Putah Creek for several years on behalf of the LPCCC and SCWA, looking at invertebrates. Utilizing EPA standards, all mussel surveys in Lower Putah Creek have been negative until this year. These results are supported by surveys completed by Howard in 2010 (Howard 2010) and 2015 (Howard et al. 2015) at sites considered historical habitat for native mussels. Large numbers of native mussels (*Adononta sp*) have been found recently immediately below Putah Diversion Dam, likely washed down from Lake Solano. Samples have been submitted for confirmation of taxonomy.

4. See response to comment 11b 2
5. See response to comment 5.
6. See response to comment 1.
7. See response to comment 11b 4.

g.

1. See response to comment 4 and 6.
2. See response to comment 11b 2.
3. See response to comment 11b 4.
4. The proposed project does not significantly impact aesthetics.
5. See response to comment 11b 2.

B. Responses to Alan Pryor letter dated August 9, 2016.

Comment: Unjustified use of a master plan vs a project specific EIR, and failed revegetation efforts on previously completed project phases due to imported fill and over-compaction.

Response:

1. See response to comment A4, A5 and A6. The Corps is not a CEQA agency and therefore cannot comment on the sufficiency of CEQA compliance, however, SCWA has informed the Corps that the City of Winters approved a Mitigated Negative Declaration for the Winters Putah Creek Restoration Projects in April of 2008 and concluded that with mitigation incorporated, there were no measurable significant impacts to the environment.

Comment: Insufficient evidence has been provided demonstrating that the new proposed projects will not adversely impact existing plant and animal species.

Response:

2. See response to comment A5, A6 and A11b 2. Mitigation measure have been incorporated into the EA to reduce environmental impacts below significant levels. In addition, the appropriate permits and consultations from State and Federal regulatory agencies, such as the California Department of Fish and Wildlife and the United Stated Fish and Wildlife Service, have been obtained.

Comment: Insufficient evidence has been presented demonstrating that the project will not adversely impact existing Putah Creek water quality.

Response:

3. Water temperature data is routinely collected at flow monitoring sites throughout Putah Creek, but it has not yet been analyzed. SCWA/LPCCC has contracted annually with the same team of fish biologists from Normandeau/Thomas R. Payne Associates for 14 of the past 15 years sampling the same sites via electrofishing with the same level of effort at each site. The distribution of trout changed markedly following implementation of the Winters Putah Creek Park channel realignment projects in 2011.

In 2013 and 2014, rainbow trout were found in October at Russell Ranch, six miles further downstream than had been discovered in the previous 14 years of monitoring by Normandeau/ Thomas Payne Associates with electrofishing surveys. Rainbow trout are among the most sensitive of native fish to water temperatures. It is likely that the former gravel pits at Winters Putah Creek Park created a thermal barrier to the migration of trout due to excessive width of surface area exposed to solar radiation and thermal exchange with air temperatures, in addition to low flow velocities and long residence time of water in pools due to excessive cross sectional area and imperceptible flow velocities.

In the gaining reach that starts two miles east of Highway 505, rising groundwater appears to lower water temperatures naturally in addition to increasing flow. The appearance of trout at Russell Ranch starting in 2013 suggests that narrowing of the channel at Winters Putah Creek Park reduced water temperature enough to allow trout to migrate from the cool water upstream of Winters to the rising groundwater reach downstream of Winters. The following is an excerpt from a February 2015 letter report by Normandeau Environmental Consultants (available on the SCWA/LPCCC Putah Creek Restoration website: http://www.scwa2.com/water-supply/lpccc).

"Similar to last year, rainbow trout were captured at all five sites between the PDD and Russell Ranch. The capture of rainbow trout at the Russell Ranch site in both 2013 and 2014 are the only times any salmonid have been captured at this site located about nine below the PDD over thirteen sampling events conducted over the last 14 years. Upstream habitat improvements (e.g. removal of the Winters Percolation Dam and the Winters Park channel restoration) may be aiding the widening distribution of cold water dependent salmonids, through the downstream extension of cool water. Future monitoring may provide additional evidence about whether trout are able to become part of the regular fish fauna found at Russell Ranch and other sites downstream."- Normandeau Environmental Consultants (2015).

Comment: Insufficient evidence has been provided demonstrating that the project will not adversely impact existing ground water quantity and quality.

Response:

4. See response to comment A1.

Comment: Insufficient evidence has been provided demonstrating that the project will not adversely impact other existing human beneficial uses.

Response:

5. See response to comment A11b 4.

C. Responses to David Springer letter dated July 31, 2016.

Comment: The proposed channel modifications have no impact on flood control, and modifications to the SRFCP should not be justified on those grounds.

Response:

1. Comment noted. The proposed project is not a flood control project, but it was designed in a manner that ensures no reduction in flood capacity of Putah Creek.

Comment: The section of the channel in question cannot be classified as "natural".

Response:

2. Comment noted. See response to comments A1 and A2.

Comment: The proposed rechanneling should not be referred to as "restoration", since it will remove more habitat than it will replace.

Response:

3. See response to comment A6.

Comment: As shown by bores drilled by SCWA in prior phases, compaction of soils used to create a flood plain have significantly impeded percolation and ground water recharge, as well as vegetation growth.

Response:

4. See response to comment A6.

Comment: The two prior phases of River Parkways grants have not been successful at removing or controlling invasive vegetation.

Response:

5. See response to comment A1 and A6.

Comment: There is ample spawning gravel both upstream and downstream, as evidenced by the successful salmon spawning last winter.

Response:

6. There are portions of Putah Creek that do provide spawning substrate for salmon, however, in many places the gravel is simply a veneer and does not provide adequate spawning substrate, and in other portions of the creek there is absolutely no gravel at all. After ten years without scouring flows (last event that exceeded 4,000 cfs was in January 2006) gravels have become cemented with fines. SCWA/LPCCC is exploring ways to renew these gravels by loosening them with an excavator, reaching in from the adjacent banks with the bucket only.

Comment: The proposed construction will be injurious to the public interest by eliminating existing beaver habitat and moving the creek approximately 100' away from the existing protected public viewing area.

Response:

7. See response to comment B 2. There will be temporary impacts to habitat and wildlife species, however, once the project is complete, abundance and diversity of wildlife is expected to increase as has been observed in many other restoration sites along Putah Creek.

Comment: If the pending protected species status for the Western Pond Turtle is approved, the proposed work would likely violate NEPA.

Response:

8. See response to comment A 5. Western pond turtles are species of concern under state law, not federal law. As part of its project proposal, SCWA has stated that biological monitors will be on site during construction of the restoration project and any turtles in the project will be moved downstream.

D. Response to Glen Holstein email dated August 5, 2016.

Comment: The proposed project doesn't rehabilitate or restore.

Response:

1. See response to comment A1 and A4.

Comment: Comments submitted for the Lower Putah Creek Restoration Project – Upper Reach Program, Program Environmental Impact Report are relevant to this EA.

Response:

2. The EA pertains to projects that precede the actions described in the PEIR that is referenced by the commenter. SCWA has informed the Corps that comments on the PEIR were addressed and incorporated into the PEIR. SCWA has further informed the Corps that a Mitigated Negative Declaration was prepared by the CEQA lead agency for projects covered by this EA.

February 2017, Public Notice
Response to Comments
Winters Putah Creek Nature Park Channel Realignment Project
Phase 3 (ID 19047-1)

A. Jeff Tenpas (March 8, 2017 Letter)

Comment: There is no need to recontour the floodplain to a functional elevation.

Response:

1. Much of the project area contains steep and high banks that transition into a low terrace(s) that is above the ordinary high water mark. This configuration promotes the establishment of upland species, such as valley oak and black walnut, in addition to non-native species such as tree-of-heaven, eucalyptus, Himalayan blackberries, and giant reed. The steep banks have minimal surface area that is ideal for establishment by native species such as white alder, cottonwood, and willow species; and they reduce the frequency that natural floodplain process, such as erosion and deposition, occur on the low-terrace. The proposed project will create functional floodplains by recontouring the high banks and adjacent low terrace(s) to a lower elevation. This lower top-of-bank elevation and gentle floodplain slope will maximize the surface area that is ideal for the natural recruitment of many different native plant species, including high value wetland dependent species. A significant portion of the recontoured floodplain will be at an elevation that is below the ordinary high water mark, which will subject it to frequent overland flow of water and associated natural processes, such as erosion and depositions. The recontoured floodplains in the previously completed phases are functioning as intended/designed.

   a. Some fall-run chinook salmon may fail to migrate out of the stream during their first year. Any salmon that are holdovers would need to stay in the upper reaches of the creek to survive the summer water temperatures. The majority of the creek's 23 mile length is only suitable for warm water fish during the summer months. As the commenter states, prior to 2004 the only area with water temperatures suitable for trout and salmon in Putah Creek during the summer was located just below the Diversion Dam (Small, Kt et.al, 2004). This habitat enhancement project and previous projects completed after 2004 have expanded the very limited area that is suitable for trout and salmon during the summer months. Prior to channel narrowing at Winters Putah Creek Park in 2011, the range of trout in annual (October) electrofishing surveys was restricted to the first three mile below Putah Diversion Dam. Subsequently trout have been found in October - six miles further downstream - on the outskirts of Davis due to elimination of the gravel pits at Winters Putah Creek Park. The narrower channel has less exposure to solar radiation and a smaller cross sectional area and therefore less residence time in pools. The cooler water links up with a rising groundwater reach that begins about two miles east of Highway 505. Trout have been found at Russell Ranch, nine miles below Putah Diversion Dam in October surveys in 2013 and every year since, demonstrating a 300% increase in the range of trout in the early fall.

   b. Many factors where considered when designing the proposed project, and narrowing the existing channel was an alternative that was originally considered. The current design is more cost effective and has less potential to cause erosion of the north embankment over time compared to the alternative of narrowing the existing channel.

The project also includes a constructed pedestrian ramp that will connect the floodplain to the bike trail, thus improving public access to the creek. Constructing the access ramp would not be feasible if the existing channel was narrowed rather than relocated.

c. Constructing more wetland area is not a primary component of the project. Instead, the project will focus on increasing habitat value and area of seasonally flooded riparian forest. The project was intentionally designed to be somewhat simple, and rather than construct wetlands features within the floodplain that may or may not succeed, it was determined that it would be best to lower the floodplain elevation to increase the frequency of overland flow which could add complexity to the floodplain over time through scour and deposition. The cost savings from this simplified approach allows the project to benefit a larger area of the creek, compared to what would be possible with a more complex and costly project. Indeed as high flows recede, we are discovering naturally formed wetlands through natural patterns of scour and deposition.

d. Vegetation growth on the completed phases 1 and 2 has been stymied in some areas by less than optimal soil compaction, beaver herbivory, pedestrian foot traffic, and the multi-year drought that followed completion of phases 1 and 2. However, the installed vegetation is improving due to ongoing maintenance. A continual adaptive management approach is being taken to improve vegetation growth in phases 1 and 2, and the information learned from this management will be applied to phase 3.

e. A continuous trail along the north bank is not part of the current construction plans however the City of Winters constructed a paved trail along the top of the north bank in 2012.

Comment: There will be a detrimental impact on groundwater supply.

Response:

2. The commenter is correct that the Water Agency does try to maintain its flow rating curves to within plus or minus five percent of the measured flow. However, the control point that influences the I-505 flow station is prone to collecting debris which can lead to a false increase in stage and a subsequent false increase in reported discharge. These errors may persist for an extended period time, as the debris are not likely to be cleared from the control point until the site is visited again by Agency staff. The commenter did not use appropriate data and methods for his analysis.

Comment: Unsuitability of floodplains and stream banks constructed with large machines.

Response:

3. The existing floodplains/elevated terraces within the project area were altered years ago when the site was developed for sewage aeration ponds. The proposed project will improve floodplain function and increase fish and wildlife habitat in an area that has already been altered and negatively impacted by human activities.

Soil compaction from the construction of the channel reconfiguration project at Winters Putah Creek Nature Park has reduced survival and growth rates of planted riparian vegetation in some areas, particularly on the south bank at the east end of the park. The south side of the creek, east of the staging area, was formerly a cliff; floodplains were constructed by placement of fill in areas that were formerly open water. The depth of fill and the machinery required to place the fill resulted in multiple passes over the same ground with heavy equipment. Bid specifications for the Winter's Putah Creek Park project included compaction standards that were not enforced, so the compaction was incidental to the use of heavy equipment. Ripping the surface of the soil at the end of construction allowed establishment of erosion control grasses but proved inadequate to support trees and shrubs in some areas. Foot traffic in high use areas is causing ongoing trampling and compacting of soil, but the area of this impact is relatively small. Trials of remedial measures are currently underway. These include measures to de-compact the soil with an excavator by digging holes down to native soil beneath the fill layer and backfilling with a mixture of loosened soil and organic matter. Ten of twelve one-gallon cottonwood trees from well rooted nursery stock planted on four test plots are currently thriving. De-compaction protocols in development now would be applied to projects implemented under the Program as needed to achieve a matrix of open areas and closed canopy habitat.

The riparian forest at Winters Putah Creek Park is recovering following initial plantings in 2012 and will take time to reach maturity. At last count, over 1,800 trees and shrubs were growing vigorously in the park. Nevertheless, revegetation results to date are mixed. Many alders, cottonwoods and willows are already 20 feet tall but beaver predation and the worst drought in over five hundred years have taken a toll. Some areas that receive heavy foot traffic are completely denuded of vegetation due to trampling. The typical time to establish a nearly closed canopy riparian forest is about ten years with normal winter rainfall. The South Davis Preserve restoration site is good example.

Soil remediation trials are ongoing with various organic amendments including wood grindings and commercial composts to improve growth rates on selected sites where vegetation has been slow to establish. Organic matter is applied as a layer between 2 and 4 inches thick that is incorporated to a depth of approximately two feet with an excavator bucket under the supervision of a soil scientist. The organic amendments help to keep the soil loose and improve penetration of water and air.

Results of these and future *in situ* trials will inform future restoration project Best Management Practices.

See response A.1.

Comment: Failure of revegetation efforts in Phases 1 and 2.

Response:

4. Please see response and A.3.

Comment: Death of cottonwoods and willows in Phases 1 and 2.

Response:

5. Please see response and A.3.

Comment: Freshwater mussels are unprotected.

Response:

6. Ken Davis, aquatic biologist, has surveyed Putah Creek for several years on behalf of the LPCCC and SCWA, looking at invertebrates. Utilizing EPA standards, all mussel surveys in Lower Putah Creek have been negative until this year. These results are supported by surveys completed by Howard in 2010 (Howard 2010) and 2015 (Howard et al. 2015) at sites considered historical habitat for native mussels. Large numbers of native mussels (*Adononta sp*) have been found recently immediately below Putah Diversion Dam, likely washed down from Lake Solano. Samples have been submitted for confirmation of taxonomy.

Comment: Section 404 permit is invalid.

Response:

7. NWP 27 is applicable to the proposed project. For example, NWP 27 authorizes "…modification of the stream bed and/or banks to restore or establish meanders…." NWP 27 requires compensatory mitigation for a loss of more than 1/10 acre of wetlands, but compensatory mitigation is not restricted to the construction of wetlands. This project will not only increase aquatic and terrestrial habitat value, but it will also increase the area of seasonally flooded wetland and therefore increase the area of waters of the United States. The Section 404 permit originally issued for this project will be re-verified under the March 2017, Nationwide permits if the Section 408 is approved.

Comment: Comments on Section 401 Water Quality Certification.

Response:

8.

a. The purpose of this project is to restore the floodplain form and function to improve habitat for a multitude of species. The discharge of fill associated with the construction of this project is required for the project to meet its restoration and enhancement objectives. Mitigation measure have been incorporated into the EA to reduce environmental impacts below significant

levels. In addition, the appropriate permits and consultations from State and Federal regulatory agencies, such as the California Central Valley Regional Water Quality Flood Board and the United Stated Fish and Wildlife Service, have been obtained.

b. Imported fill was required at Winters Putah Creek Nature Park because there were no nearby sources of native fill within the channel. The fill soils at Winters Putah Creek Park were taken from the original excavation of the Putah South Canal. Reference to these soils as "exotic," "clayey," "claypan" or "dredgings" are incorrect. They are plainly identifiable as riverine soils from Putah Creek alluvium by the presence of 50% river gravel by volume and by the source – within the alluvial deposits (< 1,000 feet from Putah Creek. The non-gravel fraction is roughly equal parts of sand, clay and loam. The Agency and its consulting soil scientists therefore dispute assertions that the soil is "unsuitable."

c. See responses A.3, A.8.a. and A.8.b.

d. See the response A.1.

e. See response A.6.

f. Impacts to wildlife in the project area are temporary and there is adequate habitat upstream and downstream of the project area.

As part of its project proposal, SCWA has stated that a biological monitor will be onsite daily during construction. In addition, SCWA will conduct preconstruction nesting bird surveys if the project is scheduled to start during the nesting bird season.

g. The delineation was accepted by USACE and met their requirements.

h. See response A.8.g. The NWP27 permit letter from USACE dated August 12, 2014 states that the permitee will "…construct, enhance and restore a minimum of 2.4 acres of new channel and active floodplain to mitigate of for the loss of 1.8 acres of water of the United States…." The Section 404 permit will be re-verified under the March 2017, Nationwide permits if the Section 408 is approved.

i. The project will not have a significant impact on groundwater. The Solano County Water Agency continually monitors discharge in Lower Putah, and the amount discharge that is lost through infiltration and evapotranspiration in the section of the creek where the project is located is consistent both before construction of the completed phases of the project and after construction was complete.

j. The project's proposed access ramp and floodplain recontouring will improve public access and increase recreational opportunity along the floodplain and channel. The riparian area and

portions of the channel will continue to be viewable from the existing bike trail. The project area is currently disturbed and degraded, but the project will improve aesthetics by installing native vegetation throughout the project area. Aesthetics will continue to improve as the native vegetation matures.

See responses 1.b and A.8.i.

k. See responses A1., A.8.i and A.8.j.

l. See response A.8.b.

m. Please see responses A.1, A.3, A.8.b, A.8.i.

n. Please see responses A.1, A.8.i and A.8.j.

o. Please see response A.7 andA.8.i.

Comment: Injurious to the public interest.

Response:

9. See response A.1 and A.2.

Comment: Environmental compliance is inadequate.

Response:

10. An environmental assessment has been prepared to analyze the effects of the project and a decision will be made to either sign the Finding of No Significant Effect (FONSI) or to prepare an Environmental Impact Statement (EIS). The Corps is not a CEQA agency and therefore cannot comment on the sufficiency of CEQA compliance. SCWA has informed the Corps that the City of Winters approved a Mitigated Negative Declaration for the Winters Putah Creek Restoration Projects in April of 2008, and concluded that with mitigation incorporated, there were no measurable significant impacts to the environment.

B. Alan Pryor letter dated March 8, 2017.

Comment: The proposed project will make the same environmental mistakes as have been seen in the applicant's previous Putah Creek projects.

Response:

1. Please see responses A.1, A.3 and A.8.b.

Comment: Insufficient specification of pre-existing problems in the Putah Creek floodplain has been given.

Response:

2. Numerous experts in the field of geomorphology including Eric Larsen, Rick Poore, Kris Vyverberg, Brian Cluer and Greg Pasternak disagree that the current channel is natural, or has the ability under the current hydrological regime to correct itself (except perhaps in decades or even centuries) such that the form and function of the channel and any existing floodplain function naturally and provide habitat that is optimal for Putah Creek. See response A.1

Comment: Insufficient evidence has been provided demonstrating that the new proposed projects will not adversely impact existing plant and animal species.

Response:

3. Please see responses A.3,. A.8.e, A.8.f, A.8.i and B.2.

Comment: Insufficient evidence has been presented demonstrating that the project will not adversely impact existing Putah Creek water quality.

Response:

4. Agency agrees with the commenter that the new channel will be completely exposed to solar radiation once the project is complete. However, this exposure is temporary because the new channel will be shaded once newly planted vegetation matures, resulting in much less water surface area exposed to solar radiation compared to the existing channel that already has mature vegetation along its banks. Meanwhile the narrower channel will reduce the surface area exposed to solar radiation and thermal exchange with the air, increase flow velocities and reduce the residence time in pools. The cooling effect of channel narrowing on water temperatures in Phases 1 and 2 was achieved before there was much increase in shade over the water. The narrowing of the channel will also enable more shade from vegetation than is currently possible.

Please see response B.2.

Comment: Insufficient evidence has been provided demonstrating that the project will not adversely impact existing ground water quantity and quality.

Response:

5. Please see response A.8.b.

Comment: Insufficient evidence has been provided demonstrating that the project will not adversely impact other existing human beneficial uses.

Response:

6. The proposed project will increases public access and the opportunity for recreation along the creek by constructing a pedestrian ramp that will connect the floodplain to the bike trail. For example, the second photo that the commenter included with his comments shows people enjoying the creek at the completed phase 1 of the project. Prior to construction of phase 1, this area of the creek was inaccessible due to high banks and excessive growth of invasive Himalayan blackberry.

See response A.8.i.

C. Erik Ringleberg email dated February 21, 2017.

Comment: Letter in support of the project.

Response:

1. Comment noted. Thank you.

D. Chris Yarnes letter dated March 7, 2017.

Comment: Letter in support of the project.

Response:

1. Comment noted. Thank you.

E. Maura Metz email dated March 06, 2017.

Comment: I am concerned the project will increase my flood risk and there will be a decrease in the abundance of wildlife.

Response:

1. a. The project is designed to be flood neutral and will not reduce the flow capacity of the creek. HEC-RAS models of the project have confirmed that the project is flood neutral.

b. The proposed project will occur near the City of Winters. The Water Agency and the Lower Putah Creek Coordinating Committee are committed to working with willing landowners throughout the entire length of the creek to restore and enhance fish and wildlife habitat.

c. The project is designed to improve habitat for native cool water fish such as salmon and trout. The project will improve fish habitat by adding suitable spawning gravel, and removing a wide area of channel that promotes warm water temperatures due to a large surface area of water that is exposed to solar radiation, and a long water residence time.

d. Project will remove invasive vegetation, such as Himalayan blackberry and giant reed, and install native vegetation throughout the project site. Also see response E.1.c.

e. The project is designed to improve fish and wildlife habitat. See response E.1.c and E.1.d.

f. See response A.3.

F. Glen Holstein email dated March 07, 2017.

Comment: The project under consideration has already done immense harm and would do more if approved.

Response:

1. Please see response E.1.c above, and responses A.1, A.3, A.8.b, and B.2 In addition, the percentage of surface water that is shaded by vegetation is expected to exceed the pre-project amount of shaded surface water, once the installed vegetation matures, due to the proposed reduction in channel width.

G. Sally Brown email dated March 8, 2017.

Comment: The project would deny community members recreational opportunity and would cause the creek to become devoid of aquatic mammals and birds.

Response:

1. The proposed project will increase public access and the opportunity for recreation along the creek by constructing a pedestrian ramp that will connect the floodplain to the existing bike trail. The bike trail will remain unchanged and will continue to offer views of the creek. Please see responses A.1. and B.2.

H. Margaret Burns letter dated February 12, 2017.

Comment: Letter in support of the project.

Response:

1. Comment noted. Thank you.

I. David Roche email dated February 28, 2017.

Comment: Letter in support of the project.

Response:

1. Comment noted. Thank you.

J. Jan Schubert email dated March 06, 2017.

Comment: The Phase 1 and 2 projects has resulted in fewer wildlife sightings and there is already salmon spawning in the creek.

Response:

1. There are portions of Putah Creek that do provide spawning substrate for salmon, however, in many places the gravel is simply a veneer and does not provide adequate spawning substrate, and in other portions of the creek there is absolutely no gravel at all. After ten years without scouring flows (last event that exceeded 4,000 cfs was in January 2006) gravels have become cemented with fines. SCWA/LPCCC is exploring ways to renew these gravels by loosening them with an excavator, reaching in from the adjacent banks with the bucket only.

   There will be temporary impacts to habitat and wildlife species, however, once the project is complete, abundance and diversity of wildlife is expected to increase as has been observed in many other restoration sites along Putah Creek. Already the abundance and diversity of species in Phases 1 and 2 have recovered to pre-project levels and exceeds the abundance and diversity of species in the Phase 3 project area.

   See response B.2.

K. Kurt Balasek letter dated February 28, 2017.

Comment: Letter in support of the project.

Response:

1. Comment noted. Thank you.

L. Shawn Yarnes email dated February 16, 2017.

Comment: Letter in support of the project.

Response:

1. Comment noted. Thank you

M. Bill Biasi email dated March 8, 2017

Comment: Letter in support of the project.

Response:

1. Comment noted. Thank you

N. John Donlevy letter dated March 02, 2017.

Comment: Letter in support of the project.

Response:

1. Comment noted. Thank you

O. Roderick McDonald email dated March 08, 2017.

Comment: The project is not needed and will make matters worse. The only real problem is nonnative plant species. Phase 1 and 2 have caused a substantial loss of water to the streambed.

1. **Response:**See responses A.1 and B.2.

P. Stephanie Myers email dated March 08, 2017.

Comment: The project would allow more human access to the detriment of wildlife, the soil used in

Phase 1 and 2 are unsuitable for restoration, and the project would be injurious to the public interest.

Response:

1. The project will improve fish and wildlife habitat value, as well as improve public access to the creek.

   See responses A.3, A.8.j and B.2.

Q. Paul Myer email dated February 20, 2017.

Comment: Letter in support of the project.

Response:

1. Comment noted. Thank you.

R. Thomas Morehouse email dated March 09, 2017.

Comment: Letter in support of the project.

Response:

1. Comment noted. Thank you.

S. Woody Fridae letter dated February 19, 2017.

Comment: Suggest leaving the streambed alone near the lowest point in the trail for wildlife viewing.

Response:

1. Please see response A.1.b. Thank you.

T. Jeff TenPas (letter dated March 23, 2017)

Comment: The WPCNP Phase 3 project is injurious to the public interest. a) use of unsuitable fill, b) loss of human enjoyment, c) and d) table of impacts i.e. loss of aquatic habitat, aesthetics, wildlife and wildlife habitat, impacts to groundwater, cost to taxpayers.

Response:

1. a. See responses A1, A2, and A3.

b. See responses A.1.b and A.8.j.

c. See responses A.1, A.8.f, A.8.i and A.8.j.

d. The project will temporarily reduce habitat diversity and aesthetic value of the project site during and immediately after construction; however, the project is designed to immediately improve aquatic habitat diversity, and it will increase terrestrial habitat diversity as the installed native vegetation matures. Aesthetic value will also increase above the existing condition as the installed vegetation matures. The project will reduce the number of deep pools within the project area in order to improve aquatic habitat value but deep pools are common both upstream and downstream of the project site.. Comment noted regarding project costs and economic value.

See responses A.1 A.3, A.8.a, A.8.i and B.6.

Comment: Environmental compliance is insufficient. a) Section 401 is invalid, b) Section 404 is invalid, c) failure to comply with 404(b)(1) guidelines, d) NEPA is inadequate.

Response:

2. a. See responses A.1, A.3, and A.8.b.

b. See response A.7

c. See response A.8.

d. 1. See response A1

2. The EA assesses environmental impacts if the project as a whole, which would include impacts to the channel.

3. See response A3

4. The Environmental Assessment (EA) discusses the project's potential impacts that are significant or less than significant with mitigation incorporated. Where no impact is likely from the proposed Project, the EA does not discuss the NEPA impact category, with the exception of cases where the requester has made an additional environmental commitment.

5. The project's Streambed Alteration Agreement with CA Fish and Wildlife covers all three phases of the project. The EA is correct in that approximately 80 trees were removed from the Phase 3 project site. See response A.3.

6. The EA states that the project will remove native and non-native trees, and native vegetation will be installed throughout the project area. The EA did not state the approximate age of each tree that will be removed.

U. David Springer email dated July 31, 2016.

Comment: There is no evidence supporting the improvement of fish habitat.

Response:

1. See response B.2

Comment: The project should improve existing terrain and remove invasives.

Response:

2. The project will remove invasive weeds and install native vegetation throughout the project site. Recontouring the flood plain to a functional elevation will increase the area that is ideal for natural recruitment and growth wetland dependent plant species.

Comment: Damage was done to the floodplain during Phase 1 and 2.

Response:

3. The proposed project's site, which is also the site of former sewage aeration ponds, served as a staging area during phases 1 and 2. This third and final phase will restore and enhance fish and wildlife habitat to the area that the commenter's area of concern within the Winters Putah Creek Nature Park.

Comment: The existing topography provides ample area for vegetation.

Response:

4. Presently, there is very limited area within the project that is suitable for the natural recruitment of high value wetland dependent plants. The recontoured floodplains will promote natural recruitment of both upland and wetland plant species. The recontoured floodplain will increase the area and frequency that floodwater flows over the floodplains during storm events.

Comment: The existing section of the creek provides habitat for birds we are not seeing in Phase 1 and 2. Other wildlife will also lose habitat.

Response:

5. See responses A.8.f and B.2.

Comment: The existing conditions are better for salmon and water temperature.

Response:

6. See response B.2.

Comment: The project would be injurious to the public interest.

Response:

7. a. The existing floodplains/elevated terraces within the project area were altered years ago when the site was mined for gravels, stripped of all vegetation and developed for sewage aeration ponds. The proposed project will improve floodplain function and increase fish and wildlife habitat in an area that has already been altered and negatively impacted by human activities.

b. Historic properties were evaluated and consultation is ongoing with the State Historic Preservation Office and Indian tribes. See response U.7.a.

c. See responses A.8.f, B.2, and U.7.a.

d. See response A.1

e. This is not a flood control project, but it was designed to not reduce flood capacity of the creek.

f. See response A.1.

g. Comment noted.

h. See response A.8.j.

Comment: There is no indication that the applicant has supplied the required information to complete NEPA.

Response:

8. a. The applicant has submitted an Environmental Assessment and project plans to USACE. If USACE requires additional information, they will notify the applicant.

See response A.8.i.

b. See response A.3.

February 2017, Public Notice

Response to Comments

North American Wetlands Conservation Act 3 - Lower Putah Creek Floodplain Restoration (NAWCA 3) 19027

A. Lisa Stallings email dated February 16, 2017.

Comment: Letter in support of the project.

Response:

1. Comment noted. Thank you.

B. Jeff TenPas (letter dated March 23, 2017)

Comment: Injurious to the public interest, use of unsuitable fill.

Response:

1. The fill soils will be taken from the original excavation of the Putah South Canal. They are plainly identifiable as riverine soils from Putah Creek alluvium by the presence of 50% river gravel by volume and by the source – within the alluvial deposits (< 1,000 feet from Putah Creek. The non- gravel fraction is roughly equal parts of sand, clay and loam. Solano County Water Agency (Agency) and consulting soil scientists find that the soil is suitable fill material.

   Soil compaction from the construction of the channel reconfiguration project at Winters Putah Creek Nature Park has reduced survival and growth rates of planted riparian vegetation in some areas, particularly on the south bank at the east end of the park. The south side of the creek, east of the staging area, was formerly a cliff; floodplains were constructed by placement of fill in areas that were formerly open water. The depth of fill and the machinery required to place the fill resulted in multiple passes over the same ground with heavy equipment. Bid specifications for the Winters Putah Creek Park project included compaction standards that were not enforced, so the compaction was incidental to the use of heavy equipment. Ripping the surface of the soil at the end of construction allowed establishment of erosion control grasses but proved inadequate to support trees and shrubs in some areas. Foot traffic in high use areas is causing ongoing trampling and compacting of soil, but the area of this impact is relatively small. Trials of remedial measures are currently underway. These include measures to de-compact the soil with an excavator by digging holes down to native soil beneath the fill layer and backfilling with a mixture of loosened soil and organic matter. Ten of twelve one-gallon cottonwood trees from well rooted nursery stock planted on four test plots are currently thriving. De-compaction protocols in development now would be applied to projects implemented under the Program as needed to achieve a matrix of open areas and closed canopy habitat.

   The riparian forest at Winters Putah Creek Park is recovering following initial plantings in 2012 and will take time to reach maturity. At last count, over 1,800 trees and shrubs were growing vigorously in the park. Nevertheless, revegetation results to date are mixed. Many alders, cottonwoods and willows are already 20 feet tall but beaver predation and the worst drought in over five hundred years have taken a toll. Some areas that receive heavy foot traffic are

completely denuded of vegetation due to trampling. The typical time to establish a nearly closed canopy riparian forest is about ten years with normal winter rainfall. The South Davis Preserve restoration site is good example.

Soil remediation trials are ongoing with various organic amendments including wood grindings and commercial composts to improve growth rates on selected sites where vegetation has been slow to establish. Organic matter is applied as a layer between 2 and 4 inches thick that is incorporated to a depth of approximately two feet with an excavator bucket under the supervision of a soil scientist. The organic amendments help to keep the soil loose and improve penetration of water and air. Results of these and future *in situ* trials will inform future restoration project Best Management Practices.

Comment: Injurious to the public interest, impacts to recreation.

Response:

2. As mentioned by the commenter, the swimming area in question will be narrowed, but not filled. The swimming area will continue to exist after the project is complete. The project will also improve access for swimming and wading access to other areas of the creek by removing steep banks and other access impedances such as invasive Himalayan blackberries. Safety will also be improved due to swimouts along virtually the entire length in what was previously a steep walled, blackberry lined and otherwise inaccessible reach.

Comment: Injurious to the public interest, loss of salmon habitat.

Response:

3. The project is designed to increase and improve spawning habitat. For example, the project will create a narrow design channel and add approximately 150 cubic yards of spawning gravel to that channel. The purpose of recontouring the floodplain is to promote the natural recruitment and growth of water dependent vegetation, such as alders and willows by increasing the area that is ideal for colonization by this type of vegetation. Mature native trees that area growing with one foot of the design elevation will be preserved. The majority of trees in the project area that will be removed to facilitate grading are non-native species, such as eucalyptus. The project incorporates mitigation for tree removal, and the non-native vegetation will be installed throughout the recontoured floodplain. Prior to Phases 1 and 2 there were no salmon spawning in Winters Putah Creek Park because it was devoid of spawning habitat. For the past two years, salmon have spawned in both Phases 1 and 2 but not in Phase 3 nor in NAWCA 3 west of Highway 505.

Comment: Injurious to the public interest, table of impacts; loss of aquatic and wildlife habitat, impacts to groundwater, economic impacts, loss of recreation.

Response:

4. The new design channel will improve water quality, increase the area of spawning habitat and provide side channel rearing habitat.

   The existing channel is excessively wide, promotes warm water temperatures, and contains very little suitable spawning habitat.

   Recontouring the floodplain will increase the area that is suitable for colonization by wetland dependent plants.

   Comment noted regarding project costs and economic value.

   The project's proposes pedestrian ramp and recontoured floodplains will increase public access and recreational opportunity along the floodplain and channel.

   Construction and operation of Monticello Dam and the Putah Diversion Dam has reduced the frequency and duration of flood flows in Lower Putah Creek. Under existing conditions, the flood plain terraces of the creek and associated vegetation are inundated less frequently. Riparian vegetation studies conducted by HortScience (1997) between 1990 and 1995 indicate that in general, the vegetation on the Putah Creek flood plain terraces located between Winters and the Yolo Bypass receive comparatively little water via the lateral movement of surface stream flows, but rather, via rainfall and periodic inundation during high streamflow events.

   The interaction between Putah Creek surface stream flows and the underlying groundwater table is described in Geological Survey Water-Supply-Paper 1464; authored by H. G. Thomasson, F. H. Olmsted, and E. F. LeRoux, and published in 1960. While the authors of Water Supply Paper 1464 acknowledge that "…within certain limits the rate of movement of a fluid through a saturated porous medium will be directly proportional to the permeability, the cross-sectional area, and the energy (hydraulic) gradient…" (Darcy's Law), they conclude that, with regard to Putah Creek and under steady state conditions (described in the following paragraph), "…the controlling factor in the rate of exchange between the stream and the adjacent groundwater body was not the wetted area covered by surface pools or the infiltration capacity of the streambed materials immediately in contact with the water in the surface stream", but rather, the presence and condition of a "water-table ridge" or "groundwater mound" that provides a saturated connection between the surface water stream and the underlying groundwater table.

   Steady state conditions occur when stream water depths (water stage) do not change by more than a few inches and streamflow rates exceed prevailing percolation loss rates. In other words, there is a continuous streamflow – no "dry segments" - within a given stream reach. Under present day conditions – controlled streamflow releases from the Putah Diversion Dam – Putah Creek exhibits steady state conditions during all but significant storm events, when local runoff originating downstream of Monticello Dam and/or spilling from Lake Berryessa is sufficient to temporarily inundate flood plain terraces along Putah Creek.

As more fully described in Water-Supply Paper 1464, under steady state conditions, the rate of percolation is ultimately determined by the shape and dimensions of the underlying groundwater mound. All other things being equal, streamflow percolation losses will be higher when the groundwater mound between the bottom of the stream channel and the underlying groundwater table is well pronounced (the underlying groundwater table is low and therefore, the vertical distance between the bottom of the stream channel and the underlying groundwater table is comparatively large), versus a situation when the groundwater mound is not well pronounced because there is comparatively little vertical distance between the bottom of the stream channel and the underlying groundwater table (underlying groundwater table is high).

When flood plain terraces are temporarily inundated the rate of percolation through the soils of the flood plain is initially determined by the porosity of the soil material and the total wetted surface area (consistent with Darcy's law). However, once sufficient water has percolated and saturated the soil between the inundated flood plain terrace and the underlying groundwater table, thereby expanding the width of the underlying groundwater mound to not only encompass the bottom of the low flow channel but also the adjacent now inundated flood plain, the overall percolation loss rate declines and typically within two to three days return to the pre-flood flow loss rate. Once again, the controlling factor is not the wetted width of the stream channel, but rather, the dimensions of the groundwater mound and more specifically, the vertical distance between the bottom of the stream channel and the underlying groundwater table

As noted in Water-Supply Paper 1464, much of the Putah Creek stream channel, beginning at Winters and continuing downstream to the Yolo Bypass, is "… incised in a tough silty claylike material which, to the casual observer, would appear to be of very low permeability and incapable of transmitting water in significant quantities.

Nevertheless, the discharge measurements made at several points along the channel show conclusively that (groundwater) gains and losses do take place at rates that vary with time but which are large enough at times to be of considerable economic importance". Accordingly, even within the stream segments dominated by the "tough silty claylike material", a groundwater mound will form and persist under steady state stream conditions.

Streamflow conditions along Putah Creek, downstream of the Putah Diversion Dam, are continuously monitored by the Agency in accordance with the Putah Creek Accord of 2000. Between 1990 and 2003 the Agency conducted extensive field investigations to characterize the temporal and spatial distribution of streamflow percolation losses. Key results of these investigations are summarized in the following documents; "Conceptual Framework of the Lower Putah Creek Riparian Water Availability Forecasting Model", authored by R. Sanford in 2005, and "2009 Update: Lower Putah Creek Riparian Water Availability Forecasting Model", authored by R. Sanford in 2009.

The field data compiled by the Agency since 1990 confirm and are consistent with the results and conclusions described in Water-Supply Paper 1464 – percolation loss rates during steady state conditions, while varying in response to hydrologic year type and prevailing groundwater

conditions, are consistent with those observed prior to the construction of Monticello Dam and the Putah Diversion Dam. Similarly, the streamflow monitoring data compiled to date, including continuous streamflow monitoring data collected at the Interstate 505 Bridge, just downstream of Winters, indicate the channel modifications associated with the Winters Phase 1 and Phase 2 restoration projects have had, under steady state streamflow conditions, no measurable impact on the rate of groundwater recharge within the stream reaches the two restoration projects are located.

Construction and operation of Monticello Dam and the Putah Diversion Dam has reduced the frequency and duration of flood flows in Lower Putah Creek, under existing conditions, the creek's flood plain terraces and associated vegetation are inundated less frequently. Riparian vegetation studies conducted by HortScience (1997) between 1990 and 1995 indicate that in general, the vegetation on the Putah Creek flood plain terraces located between Winters and the Yolo Bypass receive comparatively little water via the lateral movement of surface stream flows, but rather, via rainfall and periodic inundation during high streamflow events.

In summary, Lower Putah Creek percolation losses are largely determined by the presence and condition of the groundwater mound beneath the channel bottom, not the porosity of the soil/geologic material or total wetted surface. The notable exception: during periods of storm runoff and more specifically, when adjacent flood plains are initially inundated. Consequently, Habitat restoration projects that reduce the total wetted area of a given stream reach are not likely to result in significant long-term impacts to groundwater recharge rates or the total amount of groundwater recharge. Therefore this impact would be less than significant and no mitigation measures are required.

See response B.1 and the Jeff Tenpas March 23, 2017 letter for 19047-1, comment T 1.

Comment: Inadequate environmental compliance, invalid Section 401 water quality certification.

Response:

5. A project description and design plan were included with the project's 401 Water Quality Certification application, and these documents disclosed impacts to the riparian area, including the channel. The project's 401 Water Quality Certification states that portions of the low-flow channel will be filled and narrowed.

Comment: Inadequate environmental compliance, invalid Section 404 permit.

Response:

6. The Section 404 NWP 27 permit does allow for a reduction of open waters. The Section 404 permit will be re-verified under the March 2017, Nationwide permits if the Section 408 permission is approved.

Comment: Inadequate environmental compliance, failure to comply with Section 404(b)(1) guidelines.

Response:

7. See response G.8.

Comment: Inadequate environmental compliance, inadequate NEPA.

Response:

8.

a. The Agency conducts invasive weed control throughout Putah Creek and its tributaries. This work is authorized under a Routine Maintenance Agreement with the California Department of Fish and Wildlife. None of the project work described in the Environmental Assessment has occurred.

b. The EA does not discuss insignificant impacts that do not require mitigation. See response B.4.f.

c. See responses B.2 and B.3.

d. See response B.1.

e. The Environmental Assessment (EA) discusses the project's potential impacts that are significant or less than significant with mitigation incorporated. Where no impact is likely from the proposed Project, the EA does not discuss the NEPA impact category, with the exception of cases where the requester has made an additional environmental commitment.

See response B.4.

f. The EA provides a brief description of the project, as is standard, and discusses biological impacts associated with the project's tree removal, revegetation, and grading actions.

See response B.5.

C. Alan Pryor letter dated March 8, 2017.

Comment: The proposed project will make the same environmental mistakes as have been seen in the applicants previous Putah Creek projects.

Response:

1. Please see responses B.1 and B.4.f.

Comment: Insufficient specification of pre-existing problems in the Putah Creek floodplain has been given.

Response:

2. Numerous experts in the field of geomorphology and riparian ecology including Eric Larsen, Rick Poore, Kris Vyverberg, Brian Cluer, Steve Greco and Greg Pasternak disagree that the current channel is natural, or has the ability under the current hydrological regime to correct itself (except perhaps in decades or even centuries) such that the form and function of the channel and any existing floodplain function naturally and provide habitat that is optimal for Putah Creek.

   Water temperature data is routinely collected at flow monitoring sites throughout Putah Creek, but it has not yet been analyzed. SCWA/LPCCC has contracted annually with the same team of fish biologists from Normandeau/Thomas R. Payne Associates for 14 of the past 15 years sampling the same sites via elecrofishing with the same level of effort at each site. The distribution of trout changed markedly following implementation of the Winters Putah Creek Park channel realignment projects in 2011.

   In 2013 and 2014, rainbow trout were found in October at Russell Ranch, six miles further downstream than had been discovered in the previous 14 years of monitoring by Normandeau/ Thomas Payne Associates with electrofishing surveys. Rainbow trout are among the most sensitive of native fish to water temperatures. It is likely that the former gravel pits at Winters Putah Creek Park created a thermal barrier to the migration of trout due to excessive surface area exposed to solar radiation and thermal exchange with summer air temperatures, in addition to low flow velocities and long residence time of water in pools.

   In the gaining reach that starts two miles east of Highway 505, rising groundwater appears to lower water temperatures naturally in addition to increasing flow. The appearance of trout at Russell Ranch starting in 2013 suggests that narrowing of the channel at Winters Putah Creek Park reduced water temperature enough to allow trout to migrate from the cool water upstream of Winters to the rising groundwater reach downstream of Winters. The following is an excerpt from a February 2015 letter report by Normandeau Environmental Consultants (available on the SCWA/LPCCC Putah Creek Restoration website: http://www.scwa2.com/ water-supply/lpccc).

   "Similar to last year, rainbow trout were captured at all five sites between the PDD and Russell Ranch. The capture of rainbow trout at the Russell Ranch site in both 2013 and 2014 are the only times any salmonid have been captured at this site located about nine miles below the PDD over thirteen sampling events conducted over the last 14 years. Upstream habitat improvements (e.g. removal of the Winters Percolation Dam and the Winters Park channel restoration) may be aiding the widening distribution of cold water dependent salmonids, through the downstream extension of cool water. Future monitoring may provide additional

evidence about whether trout are able to become part of the regular fish fauna found at Russell Ranch and other sites downstream."- Normandeau Environmental Consultants (2015).

Comment: Insufficient evidence has been provided demonstrating that the new proposed projects will not adversely impact existing plant and animal species.

Response:

3. The project is designed to improve fish and wildlife habitat. There will be temporary impacts to fish and wildlife, but additional habitat exists upstream and downstream of the project site. Mitigation measures have been incorporated into the project to reduce potential impacts to insignificant levels. In addition, a biological monitor will be onsite daily during construction activities.

   The estimated number of trees to be removed is mentioned in the Public Notice and all of the permit applications that were submitted to regulatory agencies.

Comment: Insufficient evidence has been presented demonstrating that the project will not adversely impact existing Putah Creek water quality.

Response:

4. The Agency disagrees that the new channel will be exposed to more solar radiation once the project is complete because existing native vegetation will be conserved wherever practical and channel narrowing will limit solar radiation. The water temperature reduction from Phases 1 and 2 of Winters Putah Creek Park was sufficient to enable trout to disperse six miles downstream before vegetation had grown sufficiently to increase shade over the channel. The lower edges of the flow channel will enable more natural establishment of native vegetation due to increased frequency and duration of inundation events.

Comment: Insufficient evidence has been provided demonstrating that the project will not adversely impact existing ground water quantity and quality.

Response:

5. See response B.4.f.

Comment: Insufficient evidence has been provided demonstrating that the project will not adversely impact other existing human beneficial uses.

Response:

6. The project will not have significant impacts on human beneficial uses. The project area will continue to be suitable for swimming, fishing, rafting, canoing, etc. Access to the project area will likely improve, as the project will recontour steep banks, and remove invasive weeds such as Himalayan blackberries. For example, the second photo that the commenter included with his comments shows people enjoying the creek at the completed Phase 1 of the project. Prior to construction of Phase 1, this area of the creek was inaccessible due to high banks and excessive growth of invasive Himalayan blackberry.

   Please also see response 5 in Exhibit A.

D. Chris Yarnes letter dated March 7, 2017.

Comment: Letter in support of the project.

Response:

1. Comment noted. Thank you.

E. Roderick McDonald email dated March 08, 2017.

Comment: Leave the existing channel as it is.

Response:

1. See responses B.1 and C.2.

F. Joseph Morgan EPA, email dated March 07, 2017.

Comment: Recommend monitoring aquatic resource functions.

Response:

1. The Agency assisted the United States Army Corps of Engineers with a pre-project CRAM assessment of the project area. Vegetation within the project area will be monitored and maintained for a minimum of five years after construction is complete. A settlement agreement, commonly referred to as the Putah Creek Accord, requires the Water Agency to fund biological monitoring in Lower Putah Creek in perpetuity.

G. Jeff TenPas (letter dated March 8,2017)

Comment: Lack of purpose and need. There is no need to modify stream temperatures, recontour the floodplain, or improve fish habitat,

Response:

1. a. Some fall-run chinook salmon may fail to migrate out of the stream during their first year. Any salmon that are holdovers would need to stay in the upper reaches of the creek to survive the summer water temperatures. The range of native fish that are dependent on cool water has increased steadily since the Putah Creek Accord. As the commenter states, prior to 2004 the only area with water temperatures suitable for trout and salmon in Putah Creek during the summer was located just below the Diversion Dam (Small, Kt et.al, 2004). This habitat enhancement project and previous projects completed after 2004 have expanded the very limited area that is suitable for trout and salmon during the summer months. Even with the implementation of this and future habitat enhancement projects, about half of Lower Putah Creek (below the Pedrick Bridge) will remain suitable mainly to warm water fish during the summer months.

   As pointed out by the commenter, fish surveys conducted in 2015 show that native fish are dominate in Putah Creek between the Diversion Dam and Pedrick Road, which suggests the recent habitat restoration and enhancements project are having a positive impact on native fish and should be continued.

   b. The elevated floodplains/terraces in the project area promote colonization by upland species, including Himalayan blackberry and eucalyptus. Grading the terraces down to a functional elevation will increase functional floodplain area and frequency of inundation of the floodplain, thus allowing colonization of native wetland dependent plant species. The increase in frequency of floodplain inundation and the natural processes of scour and deposition will increase complexity of the floodplain as the project site matures.

   c. Agency agrees that vegetation helps to reduce erosion. After construction is complete the entire site will be revegetated with native vegetation. The recontoured floodplain will help flood water to quickly spread over a large area, thus reducing erosive forces that typically accompany floodwater that is confined by high banks to a narrow channels. The recontoured floodplain will also help to center flood water along the main channel, thus reducing erosive pressure on the large road embankments.

   d. The proposed project will improve salmon spawning habitat adding 150 CY of spawning gravel to a new constructed channel, and narrowing a segment of channel that is excessively wide. The project proposes to fill a segment of channel that is actively eroding a road embankment. This action will increase channel complexity by creating a backwater environment.

Comment: There will be a detrimental impact on groundwater supply.

Response:

2. Agency does try to maintain its flow rating curves to within plus or minus five percent of the measured flow. However, the control point that influences the I-505 flow station is prone to collecting debris which can lead to a false increase in stage and a subsequent false increase in reported discharge. These errors may persist for an extended period time, as the debris are not likely to be cleared from the control point until the site is visited again by Agency staff. Agency believes that the commenter did not use appropriate data and methods for his analysis.

   See response B.4.f

Comment: Unsuitability of floodplains and stream banks constructed with large machines.

Response:

3. The Water Agency recognizes that soil compaction has negative impacts on plant growth, and will work with the contractor to minimize compaction caused by heavy equipment. For example, heavy wheeled machinery, such as dump trucks and water trucks, should stay on designated travel routes within the project area. Areas that have become compacted will undergo decompaction activities, such as ripping, prior to plant installation.

Comment: Loss of riparian habitat.

Response:

4. See response B.1.

Comment: Death of cottonwoods and willows in Phases 1 and 2.

Response:

5. See response G.3.

Comment: Freshwater mussels are unprotected.

Response:

6. Ken Davis, aquatic biologist, has surveyed Putah Creek for several years on behalf of the LPCCC and SCWA, looking at invertebrates. Utilizing EPA standards, all mussel surveys in Lower Putah Creek have been negative prior to this year. Large numbers of mussels tentatively identified as genus *Anodonta* have been found immediately below Lake Solano as high flows recede.

   Reports and documents prepared in support of LPCCC activities are available on the SCWA/LPCCC website: http://www.scwa2.com/water-supply/lpccc

Comment: Loss of open waters.

Response:

7. The project may result in a loss of approximately 0.14 acres of open waters, but the project improve fish and wildlife habitat and add approximately.9 acres of seasonally flooded riparian forest.

Comment: Comments on Section 401 Water Quality Certification.

Response:

8. a. Fill associated with the project is being used to improve fish and wildlife habitat. The fill will not have an unacceptable adverse impact.

   b. Only suitable fill will be used.

   c. See response B.4.f.

   d. See response G.6.

   e. As part of the Corps' analysis of the project under NEPA, appropriate mitigation measures were considered and incorporated to ensure biological impacts would be less than significant. Any permission granted for the project under 33 USC 408 will include a requirement for the requester to implement mitigation measures.

   f. See response G.8.e.

   g. See response B.4.f.

   h. See response B.2.

   i. See response B.2.

   j. See response B.1.

   k. See responses B.1, B.2, B.4.f, G.3, and G.8.e.

   l. The project is consistent with the State Water Board Resolution No. 68-16.

   m. See response G.8.e.

Comment: Injurious to the public interest.

Response:

9. See responses G.1 and G.2.

Comment: Environmental compliance is inadequate.

Response:

10. An environmental assessment has been prepared to analyze the effects of the project and a decision will be made to either sign the Finding of No Significant Effect (FONSI) or to prepare an Environmental Impact Statement (EIS). The Corps is not a CEQA agency and therefore cannot comment on the sufficiency of CEQA compliance. SCWA has informed the Corps that the City of Winters approved a Mitigated Negative Declaration for the Winters Putah Creek Restoration Projects in April of 2008, and concluded that with mitigation incorporated, there were no measurable significant impacts to the environment.