DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 9TH MISSION SUPPORT GROUP (ACC)
BEALE AIR FORCE BASE, CALIFORNIA

JUN 11 2014

MEMORANDUM FOR NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION FISHERIES
ATTN: MR. JEFF MCLAIN
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814

FROM: 9 CES/CD
6451 B Street
Beale AFB, CA 95903-1708

SUBJECT: Informal Consultation – Four Bridges Replacement, Beale Air Force Base (AFB), California

1. The intent of this letter is to gain written concurrence from the National Oceanic and Atmospheric Administration (NOAA) Fisheries that the Four Bridges Replacement Project for Beale AFB, California is not likely to adversely affect species listed under the federal Endangered Species Act. Beale AFB has prepared a package summarizing the details of the project (Attachment 1).

2. Beale AFB does not believe this project will result in impacts to Central Valley steelhead (*Oncorhynchus mykis*). Furthermore, Beale AFB does not believe this project is likely to adversely affect other federally-listed species occurring in the general region of the Dry Creek project site. Beale AFB submitted a letter to the U.S. Fish and Wildlife Service (USFWS) for written concurrence on a not likely to adversely affect the vernal pool tadpole shrimp (*Lepidurus packardi*), vernal pool fairy shrimp (*Branchinecta lynchi*), and Giant garter snake (*Thamnophis gigas*) (Attachment 2).

3. Please review the enclosed documents and contact Jamie Visinoni at (530) 634-4451 or jamie.visinoni.1@us.af.mil if you have comments or need additional information.

GREGORY S. CAPRA, P.E., LEED AP
Deputy Base Civil Engineer

for LARRY R. HARRIS, Lt Col., USAF
Commander, 9 CES

2 Attachments:
1. Informal Consultation (NLAA) – Four Bridges Replacement
2. USFWS Informal Consultation (NLAA) – Four Bridges Replacement

FOUR BRIDGES REPLACEMENT

AT

BEALE AIR FORCE BASE, CALIFORNIA

Informal Consultation

JUNE 2014

PREPARED BY:

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Acronyms and Other Abbreviations

9 CES/CEIE	9th Civil Engineer Squadron/Environmental Section
AFB	Air Force Base
AMM	avoidance and minimization measure
BMP	best management practice
INRMP	*Integrated Natural Resources Management Plan*
LiDAR	Light Detection and Ranging
MFH	Military Family Housing
NOAA Fisheries	National Oceanic and Atmospheric Administration, National Marine Fisheries Service
PBO	Programmatic Biological Opinion
proposed project	Four Bridges Replacement Project
SAMP	Special Area Management Plan
USFWS	U.S. Fish and Wildlife Service
WoUS	Jurisdictional Waters of the United States

1. Purpose and Need

The purpose of the Four Bridges Replacement Project (proposed project) is to replace four bridge segments along Gavin Mandery Drive that provide access to the Military Family Housing (MFH) area. The need for this action is a result of a recent severe storm event that generated flood flows that exceeded the conveyance capacity of the Dry Creek and Best Slough channels and overtopped the four bridges. Additionally, the current bridge segments pose a safety hazard to vehicle and pedestrian traffic due to the narrow width of the spans (i.e., single car capacity) and lack of protective guard rails. Future heavy rain events could generate flood flows that again exceed the conveyance capacity of the channels at the bridge locations resulting in overtopping of the existing structures and potential damage to pipeline utilities (sanitary sewer and communications lines) affixed to the side of the bridge, which could cause environmental impacts associated with discharges from damaged pipelines.

2. Description of Proposed Project

Beale Air Force Base (AFB) proposes to replace four bridges over Dry Creek and Best Slough along Gavin Mandery Drive (Figure 1). The project will involve the following activities:

- Replace four bridges over Dry Creek and Best Slough along Gavin Mandery Drive (approximately 450 feet of existing bridge infrastructure along an approximately 1,125-foot stretch of road).
    - The bridge replacement action would raise the height of the bridges a maximum of three feet and reduce the number and size of piers within the channels.
    - During demolition and construction within the Best Slough and Dry Creek channels, the channel would be temporarily dewatered using a bladder dam. Flows would be routed through a culvert and re-enter the channel downstream of the construction area.
- Reinstall sewer and communication lines attached to the bridges, moving them above the 100-year high water elevation.
- Widen Gavin Mandery Drive from one to two traffic lanes through the project area, increasing the width of paved roadway from 18-22 feet (18 to 22-foot travel lanes with variable width gravel shoulders) to 32 feet (24-foot travel lanes with 4-foot paved shoulders).
- Install a new sewage pump station consisting of a series of two or three belowground vaults that would house pumps and controls approximately 200 feet east of Dry Creek and south of Gavin Mandery Drive. The pump station would include a perimeter fence and an aboveground emergency generator with secondary containment of the fuel tank. The pump station footprint would cover approximately 100 square feet.
- Install approximately 50 feet of additional sanitary sewer force main from the new pump station to a manhole located west of the bridge structures. Sanitary sewer would be attached to the bridges over the Dry Creek and Best Slough channels, and would be installed at a depth of between 3 and 14 feet below ground surface within previously disturbed annual grassland east and west of the bridges.
- Install approximately 300 feet of new below ground communication line and 60 feet of electrical line north of Gavin Mandery Drive to service the new pump station. Electrical and communications lines would be installed within a 3- to 4-foot wide and 2- to 2.5-foot deep trench, within the road shoulder of Gavin Mandery Drive.

- Installation of up to 3 manholes along the additional sanitary sewer force main, which will require excavation to a depth of 5 to 16 feet and disturbance of approximately 10 feet diameter at each location.
- Construction access would be from Gavin Mandery Drive and staging areas would be located along the road and/or within 50 feet of the edge of the road.
- Gavin Mandery Drive, through the proposed project area, would be closed to vehicle traffic during the 3 to 5 month construction period. Residents within the MFH area would be directed to use Camp Beale Highway and 14th Street as an alternate travel route.
- To eliminate the threat of overtopping the existing bridges and damage to sewer pipelines, the project should be completed prior to the start of the 2015 rainy season (generally beginning November 1). The bridge replacements are expected to take 3 to 5 months.
- Best management practices (BMPs) and avoidance and minimization measures (AMMs) outlined in Section 4 will be utilized to prevent any adverse environmental impact.

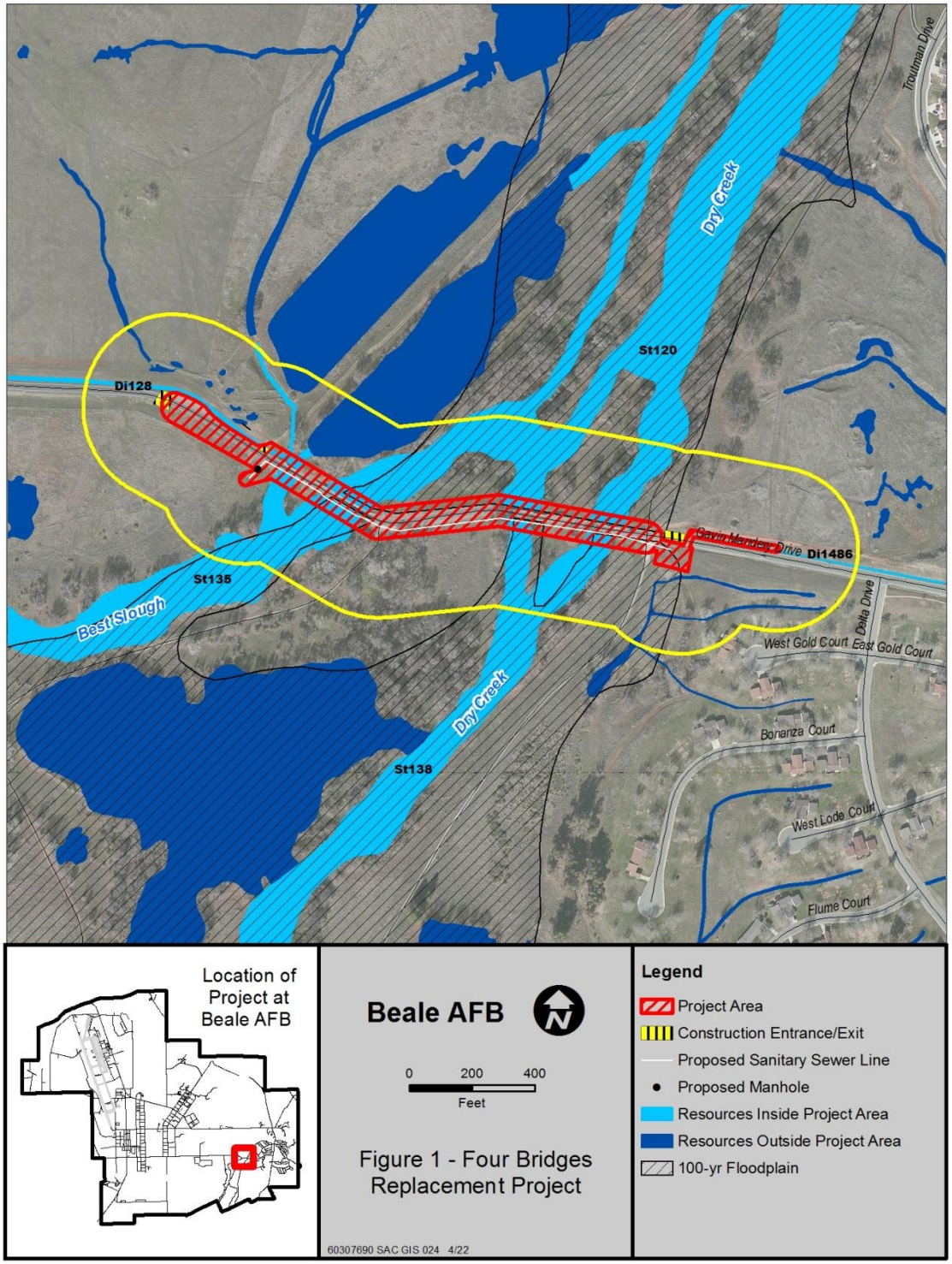
Figure 1 illustrates the project area, wetland features, potential threatened and endangered species habitat, staging areas, construction entrance/exit locations, and access routes.

3. Affected Environment

The proposed project area is focused around Dry Creek and Best Slough within disturbed annual grassland and riparian forest. The area east of the proposed project is residential development, the area north and south of the proposed project includes the Dry Creek and Best Slough channels and woodlands, and the area west of the site is annual grassland with some scattered vernal pools and swales. The proposed project area is mostly within previously disturbed land associated with Gavin Mandery Drive.

Waters of the United States

There are several features within the project area and vicinity that meet the criteria for Jurisdictional Waters of the United States (WoUS) (Figure 1; Table 1). Dry Creek and Best Slough, as well as 2 roadside ditches, are present within the project area. There are vernal pools outside of the project area but within 250 feet of the project area. Beale AFB is consulting with the U.S. Fish and Wildlife Service (USFWS) regarding potential effects on federally listed vernal pool species (Attachment 2). Demolition and construction activities associated with the proposed project would occur within the Best Slough and Dry Creek channels and the 100-year floodplain. The channels would be temporarily dewatered using a bladder dam, with flows routed through a culvert around the construction area. The roadside ditches may be temporarily affected during construction. A Section 401 water quality certification from the California Regional Water Quality Control Board and a Nationwide Permit from the U.S. Army Corps of Engineers will be obtained prior to commencing construction-related activities.


Troutman Drive
Dry Creek
St120
Di128
Gavin Mandary Drive
Di1486
St135
Best Slough
Delta Drive
West Gold Court
East Gold Court
Dry Creek
Bonanza Court
St138
West Lode Court
Flume Court
Location of Project at Beale AFB
Beale AFB
0 200 400
Feet
Figure 1 - Four Bridges Replacement Project
60307690 SAC GIS 024 4/22
Legend
Project Area
Construction Entrance/Exit
Proposed Sanitary Sewer Line
Proposed Manhole
Resources Inside Project Area
Resources Outside Project Area
100-yr Floodplain

Threatened and Endangered Species Habitat

Central Valley steelhead (*Oncorhynchus mykiss*) is listed as threatened under the ESA and falls under the jurisdiction of the National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries). Dry Creek on Beale AFB provides potential migration, seasonal rearing, and spawning habitat for Central Valley steelhead (AECOM 2010). Historically, steelhead spawned and reared in the most upstream portions of the upper Sacramento and San Joaquin Rivers and most, if not all, of their perennial tributaries (Beale AFB 2011).

The current status of Central Valley steelhead in Dry Creek on Beale AFB is unknown, but it is likely that steelhead use Dry Creek to migrate upstream during high flow years (Beale AFB 2011). Central Valley steelhead have been observed upstream of Beale AFB on the Spenceville Wildlife Management and Recreation Area (Hiscox, pers. comm., 1997 in Beale AFB 2011), which is approximately 2 miles upstream of the project area. More recent aquatic snorkel surveys in Dry Creek on Beale AFB have not detected any steelhead (AECOM 2008, 2010). Best Slough is not likely used as a main migratory corridor due to frequent low water conditions. Potential migration into Dry Creek is expected to occur between August and March and peak in January, similar to migration on the lower American River (Beale AFB 2011).

The potential for rearing habitat in Dry Creek on Beale AFB likely varies from year to year, depending on water temperatures. Warmer water temperatures limit the suitability for juvenile steelhead rearing. A warm water fish assemblage was observed in Dry Creek on Beale AFB during winter and spring surveys, which is typical of Central Valley and foothill creeks (AECOM 2008, 2010). Best Slough is unlikely to support steelhead rearing because it lacks a diversity of flow habitats and structure.

The potential for spawning habitat in Dry Creek on Beale AFB also likely varies from year to year, as the optimum water temperature for spawning is 48 to 52° F (McEwan and Nelson 1991). Central Valley steelhead historically spawned in Dry Creek above the current boundary of Beale AFB (Beale AFB 2011). Most spawning takes place between late December and April (Beale AFB 2011).

Construction work within the Dry Creek channel would be conducted outside the migration and spawning season for Central Valley steelhead; therefore, no impacts to migrating or spawning Central Valley steelhead are anticipated due to implementation of this project. Additionally, preconstruction aquatic surveys will be conducted by a qualified fish biologist, and fish relocation efforts will be coordinated with NMFS if necessary, to prevent any potential adverse effects to juvenile salmon using Dry Creek as rearing habitat (see Section 4 in this document). The USFWS issued a Special Area Management Plan (SAMP) Programmatic Biological Opinion (PBO) that includes a number of BMPs and AMMs that should be adhered to during implementation projects at Beale AFB that may affect threatened and endangered species. Strict adherence to these BMPs and AMMs (outlined in Section 4 of this document) should avoid any potential impacts to Central Valley steelhead in the proposed project area.

Table 1. Waters of the United States (not including Wetlands) within the Proposed Project Area

ID and Wetland Type	Acreage	Potential Central Valley Steelhead Habitat	Description and Justification
Di 128	0.05	N	This is a roadside ditch north of Gavin Mandery Drive at the western end of the project area. This ditch empties into Best Slough just upstream of the bridge structure. This ditch is unlikely to support Central Valley steelhead because it is wet for periods that are too short to support the species.
Di 1486	0.03	N	This is a roadside ditch north of Gavin Mandery Drive at the eastern end of the project area. Because this ditch is not connected to Dry Creek or Best Slough, it could not support Central Valley steelhead.
St 120	0.27	Y	These are the Dry Creek and Best Slough channels north of the bridge structures. Dry Creek in the project area provides potential migratory and spawning habitat for Central Valley steelhead. Best Slough is unlikely to support Central Valley steelhead because it does not provide riffle-run complexes or deep pools with structure for holding fish. No impacts to steelhead are anticipated because construction within the Dry Creek channel would be conducted outside the expected migration and spawning periods, and preconstruction fish surveys will be conducted by a qualified fish biologist to ensure absence of rearing steelhead. Strict adherence to erosion and sediment control BMPs should avoid any potential indirect impacts to steelhead.
St 135	0.20	N	This is the Best Slough channel south of the bridge structures. Best Slough is unlikely to support Central Valley steelhead because it does not provide riffle-run complexes or deep pools with structure for holding fish, and is unlikely to be used as a migratory corridor due to frequent low water conditions.
St 138	0.13	Y	This is the Dry Creek channel south of the bridge structures. Dry Creek in the project area provides potential migratory, rearing, and spawning habitat for Central Valley steelhead. No impacts to steelhead are anticipated because construction within the Dry Creek channel would be conducted outside the expected migration and spawning periods, and preconstruction fish surveys will be conducted by a qualified fish biologist to ensure absence of rearing steelhead. Strict

ID and Wetland Type	Acreage	Potential Central Valley Steelhead Habitat	Description and Justification
			adherence to erosion and sediment control BMPs should avoid any potential indirect impacts to steelhead.

4. Avoidance, Minimization, and Compensation Measures

The Environmental Office has identified which avoidance, minimization, and compensation measures to be implemented as part of the proposed action (Table 2). Our assessment of the potential impacts of the proposed action is based on the implementation of these measures.

Table 2. Avoidance and Minimization Measures (Adapted from the PBO)

General Avoidance and Minimization Measures	
1. Preconstruction Surveys	A biologist approved by the NOAA Fisheries will conduct preconstruction surveys of all in-channel disturbance areas within sensitive habitats to determine if any federally listed species may be present prior to the start of construction. These surveys will be conducted two weeks prior to the start of construction activities in any sensitive habitat. If any federally-listed species are found during the preconstruction surveys, the NOAA Fisheries approved biologist will contact the NOAA Fisheries to determine how to proceed, potentially including fish relocation prior to the start of construction. At least 15 days prior to the onset of activities, Beale AFB will submit the name(s) and credentials of biologists who will conduct these preconstruction surveys. No project activities will begin until proponents have received written approval from the NOAA Fisheries that the biologist(s) is qualified to conduct the work.
2. Biological Monitor	A NOAA Fisheries approved biologist will monitor construction activities in or adjacent to sensitive habitats. The biological monitor will ensure compliance with the avoidance and minimization measures required to protect federally listed species and their habitats. If federally listed species are found that are likely to be affected by work activities, the NOAA Fisheries approved biologist will have the authority to stop any aspect of the project that could result in unauthorized take of a federally listed species. If the biological monitor exercises this authority, he/she must notify the NOAA Fisheries by telephone and letter within one working day.
3. Environmental Awareness Training	Environmental awareness training will be provided for all construction personnel working on the proposed project. Training will be provided at the start of work and within 15 days of any new worker arrival. The program will consist of a briefing on environmental issues relative to the proposed project. Training will be conducted by a NOAA Fisheries approved biologist. The training program will include an

	overview of the legal status, biology, distribution, habitat needs, and compliance requirements for each federally listed species that may occur in the project area. The presentation will also include a discussion of the legal protection for endangered species under the Endangered Species Act, including penalties for violations. A fact sheet conveying this information will be distributed to all personnel who enter the project site. Upon completion of the orientation, employees will sign a form stating that they attended the program and understand all avoidance and minimization measures. These forms will be filed at Beale AFB offices and will be accessible to the appropriate resource agencies.
4. Invasive Species	A biological monitor will ensure that the spread or introduction of invasive exotic plant species will be avoided to the maximum extent possible (see Beale AFB *Integrated Natural Resources Management Plan* [INRMP] [Beale AFB 2011]). When practicable, invasive exotic plants identified in the project area will be removed.
5. Erosion Control	All drainages will have erosion control measures (straw waddles, hay bales, silt fencing) installed when work is within 250 feet of a drainage or where hydrological continuity exists between the construction activities and the drainage. Construction boundaries within the buffer will be designated with fencing to ensure no equipment and/or construction workers access those protected areas.
6. Exclusionary Period	No work will be conducted in the vicinity of drainages between November 1st and May 1st, unless specifically approved by the Beale AFB Environmental Office who will field verify soil saturation, visual ponding, and expected surface disturbance. The NOAA Fisheries will be notified of any work approved between November 1st and May 1st.
7. Off-Road Travel	Off-road travel outside of the demarcated construction boundaries will be prohibited.
8. Demarkation of Work and Staging Areas	Beale AFB (or the contractor to Beale AFB) will provide all materials to stake and flag boundaries of the work area. Beale AFB will coordinate with the biological monitor to stake and flag the boundaries of all work and staging areas in portions that have the potential to support federally listed species or their habitat. The contractor will remove all fencing, stakes and flagging within 60 days of construction completion. Orange construction barrier fencing will designate exclusion zones where construction activities cannot occur.
9. Report Kills/Injuries	Any worker that inadvertently kills or injures a federally listed species, or finds one injured or trapped, will immediately report the incident to the biological monitor. The biological monitor will inform the 9th Civil Engineer Squadron/Environmental Section (9 CES/CEIE). The 9 CES/CEIE will verbally notify the NOAA Fisheries within three days and will provide written notification of the incident within five days.
10. Fueling and Servicing in	Motor vehicles and equipment will only be fueled and serviced in designated service areas. All fueling and maintenance of vehicles and

Designated Areas	other equipment and staging areas will occur at least 250 feet from any wetland/drainage habitat or water body. Prior to the onset of work, Beale AFB will prepare a plan to allow a prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.
11. Garbage Removal	During construction activities, all trash that may attract predators will be properly contained, removed from the work site daily, and disposed of. Following construction, all refuse and construction debris will be removed from work areas. All garbage and construction-related materials in construction areas will be removed immediately following project completion.
12. Disposal of Excavated Soil	All soil excavated during construction occurring near drainages will be removed and disposed of outside the project area. Coordination with Beale AFB Environmental Office and appropriate regulatory agencies is required prior to disposal of the excavated soil.
13. Minimization of Access Routes etc.	The number of access routes, number and size of staging areas, and the total area of the activity will be limited to the minimum necessary to achieve the project goal. Routes and boundaries will be limited to the minimum necessary to achieve the project goal. Routes and boundaries will be clearly demarcated, and those areas will be outside of drainages.
14. Speed Limits	All vehicle operators will follow the posted speed limit on paved and a 20-mile per hour speed limit on unpaved roads.
15. Pets/Firearms	No pets or non-military firearms will be allowed in the project area.
16. Pesticide Use	Any pesticide use will follow the Beale AFB INRMP (Beale AFB 2011) guidelines.

5. Justification for Not Likely to Adversely Affect

Based on the proposed project construction activities, knowledge of the proposed project area, and strict adherence to the BMPs and AMMs outlined in Section 4, the Beale AFB Environmental Office believes that the proposed "Four Bridges Replacement" project is not likely to adversely affect any federally listed threatened or endangered species. Dry Creek provides potential migratory, rearing, and spawning habitat for Central Valley steelhead; however, AMMs, as outlined in Section 4, would be implemented to avoid impacts to this species during implementation of the proposed project. Construction work within the Dry Creek channel would be conducted outside the migration and spawning periods for Central Valley steelhead (generally August through April), and preconstruction surveys will be conducted by a qualified fish biologist to confirm absence of rearing juveniles; therefore, no adverse effects to Central Valley steelhead are anticipated due to implementation of this project. Strict adherence to erosion and sediment control BMPs, as outlined in Section 4, would be implemented to avoid potential indirect impacts to Central Valley steelhead in Dry Creek. Best Slough is unlikely to support Central Valley steelhead because it does not provide riffle-run complexes or deep pools with structure for holding fish, and is unlikely to be used as a migratory corridor due to frequent low water conditions. Other WoUS (roadside ditches) in the project area are not suitable habitat for Central Valley steelhead because they lack the necessary habitat elements (i.e., are not wet

for sufficient periods or are not connected to Dry Creek). Ultimately, the proposed project would result in a net beneficial impact to aquatic habitat for Central Valley steelhead, as it would remove a flow obstruction and potential raw sewage discharge source from the channels by raising the sewer line attached to the bridges above the 100-year high water elevation.

6. References

AECOM 2008	AECOM. 2008. Special Status Species Surveys. Beale Air Force Base. Sacramento, CA.
AECOM 2010	AECOM. 2010. Special Status Species Surveys Report. Beale Air Force Base. Sacramento, CA.
Beale AFB 2009	Beale Air Force Base. 2009. Wetlands GIS data. Beale AFB, CA.
Beale AFB 2011	Beale Air Force Base. 2011 (October). *Integrated Natural Resources Management Plan, Beale Air Force Base, California, August 2011 to August 2016*. Final. Updated by Beale Air Force Base, 9th Civil Engineer Squadron, Environmental Element. Beale AFB, CA.
Hiscox, pers. comm., 1997	Fishery Biologist. California Department of Fish and Game, Grass Valley, CA. December 16, 1997 – telephone conversation.
McEwan and Nelson 1991	McEwan, D. and J. Nelson. 1991. Steelhead restoration and management plan for the American River, Sacramento, CA. California Department of Fish and Game, Inland Fisheries Division.
Special Area Management Plan (SAMP) Programmatic Biological Opinion (PBO)	United States Fish and Wildlife Service. October 2012. Reference number 81420-2009-F-1118-1.