

Potential Adverse Effects of the Preliminary Engineering and Environmental Investigation and Proposed Project

SECTION SIX POTENTIAL ADVERSE EFFECTS OF THE PRELIMINARY ENGINEERING AND ENVIRONMENTAL INVESTIGATION AND PROPOSED PROJECT

This section analyzes potential adverse effects to the federally listed wildlife and plant species under USFWS' jurisdiction identified as having the potential to occur in the project area because suitable habitat is present in the project area, the project area is within the species range, and/or occurrences in or near the project area are documented. Additional clarification on the construction plans may require a supplemental review of the potential effects on federally listed species.

6.1 CALIFORNIA RED-LEGGED FROG

Although suitable habitat for the CRLF is located within the project area, protocol-level surveys for the CRLF conducted for the proposed project determined that the CRLF does not occur within the project area or a 1-mile radius surrounding the project area (FEMA 2009a). Therefore, no adverse effects are expected to occur to the CRLF as a result of the proposed project.

6.2 VALLEY ELDERBERRY LONGHORN BEETLE

Habitat suitable to support the VELB is present in the project area and the 100-foot buffer surrounding the project area. During the 2008 surveys, URS biologists identified 91 blue elderberry shrubs with stems of at least 1 inch in diameter at ground level in the project area and the 100-foot buffer surrounding the project area (Figure 8 [index and sheets 1 through 4] and Figure 9 [index and sheets 1 through 4]). Of the 91 shrubs, 63 shrubs were in the project area, and 28 shrubs were in the 100-foot buffer. All of these elderberry shrubs are potential suitable habitat for the VELB.

Construction activities associated with the proposed project may directly and indirectly affect the VELB and its host habitat. Direct and indirect effects from the proposed project could result in "take" of the VELB. "Take" means "to harass, harm, pursue, hunt, shoot, wound, kill, trap capture, collect, or to attempt to engage in any such conduct." (ESA, Section 3[19]). Different kinds of take are addressed below in three main categories: (1) direct take, (2) erosion and sedimentation, and (3) adverse effects to habitat.

Regarding the City's (1) proposed geotechnical testing and site evaluation program (summer 2009) and (2) potential future geotechnical investigations, if the City implements the measures described in Sections 2.2.1 and 2.2.2, FEMA has determined that there would be **no effect** to VELB. Therefore, these two proposed testing programs are not discussed further in this section. The following effects analysis pertains to the Fall 2008 geotechnical investigations, and future construction, operation, and maintenance of the proposed project.

6.2.1 Direct Effects

According to the ESA Consultation Handbook, direct effects are the direct or immediate effects of the proposed project on the species or its habitat (USFWS and NMFS 1998). Direct effects could potentially occur to VELB in the project area and in the 100-foot buffer surrounding the project area.

6.2.1.1 Direct Disturbance, Injury, or Mortality

Preliminary engineering and environmental investigation and proposed project activities within or adjacent to elderberry shrubs with stems at least 1 inch in diameter at ground level within the project area or within 100-feet from the boundary of the project area could result in disturbance, injury, and/or mortality of the VELB, especially if construction involves the removal and/or damage of elderberry shrubs or if the activity occurs during the VELB's emergent period (March 15–June 15).

Geotechnical Investigations (Fall 2008)

Between October 13, 2008, and November 10, 2008, the City conducted test borings, dug test pits, and conducted cone penetration tests at the project area (Appendix C). Three test borings (borings 1, 4, and 6) were conducted between October 13 and 16, 2008, near the riparian habitat within the project area. Of these three test borings, one (test boring 4) was conducted within 100 feet of elderberry shrubs with stems at least 1 inch in diameter at ground level. Test boring 4 was within 100 feet of the drip line, but greater than 20 feet from the drip line, of 16 elderberry shrubs with stems at least 1 inch in diameter at ground level (Table 6-1; Figure 8, Sheet 3). Five of these shrubs have at least one stem with exit holes. Test boring 4 was within 20 feet of the drip line of one elderberry shrub with two stems at least 1 inch in diameter at ground level (Table 6-2; Figure 8, sheet 3). Exit holes were not present on this shrub.

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Table 6-1. Field data for the elderberry shrubs and associated stems less than 100 feet but more than 20 feet from the geotechnical activities conducted in Fall 2008.

Shrub ID Number	Stem ID Number*	Location (Project Area/Buffer)	Stem Diameter (in inches)	Presence of Exit Holes?	Riparian?
16	N25	Project area	>5	N	Y
17	N26	Project area	1-3	N	Y
18	N27	Project area	>5	N	Y
	N28		>5	N	Y
	N29		>5	N	Y
	N30		>5	N	Y
19	N31	Project area	>5	Y	Y
	N32		>5	Y	Y
	N33		>5	Y	Y
	N34		1-3	N	Y
20	N35	Project area	1-3	N	Y
21	N36	Project area	>5	N	Y
22	N37	Project area	3-5	Y	Y
23	N38	Project area	>5	Y	Y
24	N39	Project area	3-5	N	Y
	N40		1-3	N	Y
25	N41	Project area	1-3	N	Y
26	N42	Project area	1-3	N	Y
27	N43	Project area	>5	Y	Y
28	N44	Project area	>5	N	Y
29	N45	Project area	3-5	Y	Y
30	N46	Project area	>5	N	Y
31	N47	Project area	3-5	N	Y
	N48		3-5	N	Y
32	N49	Project area	1-3	N	Y

ID = identification

Table 6-2. Field data for the elderberry shrubs and associated stems less than 20 feet from geotechnical activities conducted in of the Fall 2008.

Shrub ID Number	Stem ID Number*	Location (Project Area/Buffer)	Stem Diameter (in inches)	Presence of Exit Holes?	Riparian?
24	N39	Project area	3–5	N	Y
	N40		1–3	N	Y

ID = identification

The potential for adverse effects to VELB, as a result of the activities conducted with test boring 4, is extremely low for several reasons:

- Test boring 4 was conducted outside of the riparian area in an upland area which appears to have been historically used as an access road within the orchard (Appendix C)
- The area of ground-disturbance from test borings is minimal (i.e., 4 to 8 inches in diameter)
- The activity occurred during clear weather
- The boring was conducted outside of the emergent period for VELB (March 15–June 15)

All other geotechnical investigations were conducted greater than 100 feet from the drip line of elderberry shrubs identified during the 2008 surveys in upland areas during clear weather. A biological monitor was also present for geotechnical investigation activities that were conducted after October 17, 2008. Therefore, FEMA has determined that the remaining geotechnical investigation activities conducted in fall 2008 had no adverse effects on the VELB or its suitable habitat.

Construction of the Alamo Creek Detention Basin

Construction of the inlet structure would likely remove and/or damage two elderberry shrubs with stems at least 1 inch in diameter at ground level (N97 and N98; see Figure 9, sheet 1). Although neither of these two shrubs presented exit holes, they provide suitable habitat for VELB. Removal of these elderberry shrubs could result in adverse effects to the VELB, in the form of disturbance, injury, and/or mortality. No other construction activities associated with the project would require removal of elderberry shrubs.

Construction of the outlet and the south end of the detention basin structure would require encroachment in the 100-foot buffer from some elderberry shrub drip lines (Figure 9, index sheet and sheets 1 through 4). The exact number of elderberry shrubs would be dependent upon the size of the temporary work areas adjacent to the outlet and detention basin.

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Encroachment within the 20-foot buffer from the drip lines of elderberry shrubs with stems at least 1 inch in diameter at ground level is not anticipated except for the two elderberry shrubs that would be removed.

Operation and Maintenance

Weed abatement through mowing and/or use of an herbicide (Aquamaster) would be performed 2 to 3 times in the summer to restrict the accumulation of fire fuel and maintain water flow in the ACDB. If weed abatement activities remove or damage elderberry shrubs within the project area or the 100-foot buffer surrounding the project area, these activities could result in disturbance, injury, and/or mortality of the VELB if the elderberry shrub is occupied by this species.

6.2.1.2 Erosion and Sedimentation

Elderberry shrubs, and therefore potentially the VELB, if present, could be affected by potential erosion and sedimentation during construction activities.

Construction of the Alamo Creek Detention Basin

Heavy equipment would be used to construct the inlet, outlet, and basin structures. The movement of equipment and the placement of permanent structures along the creek embankment could cause erosion of the bank, bank instability, and increased erosion and sedimentation in the creek. The loss of soil and potentially riparian habitat along the creek bank could adversely affect the survival of elderberry shrubs in the project area, and therefore, the beetle that may inhabit that shrub. These effects could be minimized through the implementation of standard BMPs that the City would be required to implement through its compliance process with Sections 401, 402, and 404 of the Clean Water Act of 1972, Section 1600 *et seq.* of the California Fish and Game Code, local regulations or by local regulatory agencies.

Operation and Maintenance Activities

Debris removal would mostly occur after winter and spring, but may infrequently occur during the winter in the wet season. Depending on where these activities occur (e.g., near the riparian habitat at the inlet or outlet structures versus in the upland area within the basin) and if they are conducted during the wet season, the heavy equipment used (i.e., backhoe or excavator) to conduct the debris removal could cause erosion and sedimentation that could adversely affect riparian habitat, elderberry shrubs, and VELBs, if this species is present in the shrub. These effects could be minimized through the implementation of standard BMPs that the City would be required to implement through its compliance process with Sections 401, 402, and 404 of the Clean Water Act of 1972, Section 1600 *et seq.* of the California Fish and Game Code, local regulations or by local regulatory agencies.

6.2.1.3 Adverse Effects on Riparian Habitat

Construction activities could permanently and temporarily disturb potential habitat for the VELB within the project area.

Construction of the Alamo Creek Detention Basin

Besides the construction of the inlet and outlet structures, no other activities associated with the construction of the ACDB would occur inside the riparian zone.

At the proposed inlet location, about 0.683 acres of riparian habitat could be permanently removed. At the proposed outlet location, about 0.004 acres of riparian habitat could be permanently removed. The exact size of the temporary work areas adjacent to these locations is not known at this time but would be minimized to reduce potential adverse effects to the riparian habitat and Alamo Creek. In addition, temporarily disturbed soils within the project area would be hydroseeded.

Besides the two elderberry shrubs with stems at least 1 inch in diameter at ground level in the riparian habitat that may be permanently removed as a result of the construction of the inlet, no other riparian habitat with elderberry shrubs with stems at least 1 inch in diameter at ground level is expected to be permanently or temporarily disturbed.

Operation and Maintenance Activities

If the bottom of the basin is used for agriculture, runoff from applied herbicides, pesticides, and chemical fertilizer could potentially reach the riparian zone through the inlet or outlet locations, depending on the time of year these chemicals were applied. This runoff could damage riparian habitat adjacent to elderberry shrubs or the elderberry shrubs themselves.

6.2.2 Indirect Effects

According to the ESA Consultation Handbook, indirect effects are effects occurring later in time as a result of the proposed project (USFWS and NMFS 1998). Indirect effects could occur to the VELB potentially in the project area and in the 100-foot buffer surrounding the project area.

6.2.2.1 Dust Accumulation

Dust raised by construction equipment could potentially coat elderberry shrubs within the project area and in the 100-foot buffer surrounding the project area, which in time could lead to stress to these shrubs (e.g., water stress, dead stems, smaller leaves). Dust accumulation could adversely affect the survival of elderberry shrubs, and therefore, the beetle that may inhabit that shrub. These effects could be minimized through the implementation of standard BMPs that the City would be required to implement through its compliance process with Sections 401, 402, and 404 of the Clean Water Act of 1972, Section 1600 *et seq.* of the California Fish and Game Code, local regulations or by local regulatory agencies.

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6.2.2.2 *Adverse Effects on Riparian Habitat*

Construction of the inlet and outlet would cause the permanent loss of soil and riparian habitat along the creek bank. While the majority of the riparian habitat that would be removed does not currently contain elderberry shrubs (Figure 9), this area is suitable habitat for the shrub. In the future, it could be possible for additional elderberry shrubs to become established in this habitat. The loss of riparian habitat through implementation of the proposed project would result in a reduced amount of habitat available for elderberry shrubs to establish in within the project area. in the future, and consequently, a reduced amount of suitable habitat available in the project area for the VELB.

6.3 PLANT SPECIES

No plant species federally listed or proposed to be listed under the Federal ESA were observed during botanical surveys conducted at appropriate flowering times in 2008 (FEMA 2008b). Therefore, no direct or indirect adverse effects are expected to occur as a result of the proposed project to plant species federally listed or proposed to be listed under the Federal ESA.

**SECTION SEVEN INTERRELATED PROJECTS, INTERDEPENDENT PROJECTS,
AND CUMULATIVE EFFECTS**

7.1 EFFECTS OF INTERRELATED PROJECTS

According to the ESA Consultation Handbook, interrelated projects are all other projects that would not occur but for a larger project and depend on the larger project for their justification (USFWS and NMFS 1998).

The ACDB would be constructed to prevent future flooding hazards in the City downstream, an event which has occurred frequently in previous years because of Alamo Creek's insufficient channel capacity. To FEMA's understanding, there are no other projects currently proposed that are dependent on the proposed ACDB project for their justification.

7.2 EFFECTS OF INTERDEPENDENT PROJECTS

According to the ESA Consultation Handbook, interdependent projects are all other projects that would not occur but for the project under consultation (USFWS and NMFS 1998).

No other projects are known of by FEMA that would depend on the ACDB project being built in order for them to occur.

7.3 CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local, or private projects that are reasonably certain to occur in the project area considered in this BA. Future Federal projects that are unrelated to the proposed project are not considered in this section because they require separate consultation pursuant to Section 7 of the ESA (ESA, Section 402.14[g][4]).

The elderberry shrub, the host plant for the VELB, was identified in the 100-foot buffer surrounding the project area during protocol-level surveys in 2008 conducted for the proposed project. The 100-foot buffer is based on guidance in the "*Conservation Guidelines for the Valley Elderberry Longhorn Beetle*" (USFWS 1999). Since elderberry shrubs have been identified within the 100-foot buffer, FEMA is including any future State, tribal, local, or private projects that it is aware of that are reasonably certain to occur in this 100-foot buffer in this analysis of cumulative effects. FEMA is aware of one such project, the City's proposed Florence Detention Basin (FDB).

The City has notified FEMA that it is investigating the feasibility of constructing the FDB approximately 0.25 mile northeast of the proposed ACDB project area at a site at the end of Florence Drive. As part of the FDB project, the City proposed to construct an access road from Rogers Lane to the FDB site. Part of this proposed access road would be within the 100-foot buffer surrounding the ACDB project area. The proposed footprint of the FDB would not overlap

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any portion of the ACDB project area and would be located outside of the 100-foot buffer of the ACDB project area.

The City has acquired an easement from the property owner for construction of FDB. A pre-design report has been completed, and the proposed FDB project is currently going through the California Environmental Quality Act compliance process. According to the City, no funding is available for construction of the FDB at this time, and preparation of a schedule by the City for completing this project would depend on funding. It is currently unclear if the proposed FDB would require a permit from the USACE under Section 404 of the Clean Water Act. Thus, FEMA is uncertain if there would be a Federal nexus for the proposed FDB project and if consultation with the USFWS under Section 7 of the ESA would take place.

The City has stated that the proposed FDB would provide flood mitigation by impounding sheetflows that occur during heavy rain events from adjacent orchards. Currently, sheetflows flow into the adjacent neighborhood and overwhelms the existing stormdrain system of the neighborhood. FDB would be an “offline” detention facility, because it would not impound stormwater flows directly from a creek. The sheetflows impounded by this facility would be metered into the City’s storm drainage system, which eventually flows into Alamo Creek. FDB would not be hydrologically connected to ACDB. FDB would have a storage capacity of 16 acre-feet.

The proposed location for the FDB, including the proposed access road, is currently used for agriculture and an orchard is located at this proposed site. FEMA is not aware of any analysis of habitat suitability for federally-listed species for this location. At its closest point, the proposed FDB project area is approximately 1,200 feet north of Alamo Creek. Due to the distance from Alamo Creek, it is unlikely that riparian habitat occurs at this site. Thus, suitable habitat for elderberry shrubs and VELB is not likely to occur in the FDB project area. Due to the close distance of the FDB project area to the ACDB project area and that 2008 CRLF protocol-level surveys for the ACDB project area were negative, it is not likely that the CRLF would occur in the FDB project area. Without an assessment of the habitat at this site, it cannot be ruled out that valley and foothill grassland habitat occurs at the FDB project area. Thus, if valley and foothill grassland is present within the FDB project area, this habitat could support federally-listed plant species discussed in this BA. No federally-listed plant species were observed in the ACDB project area during 2008 protocol-level survey for those species. Due to the current and active use of the FDB project area as an orchard, if valley and foothill grassland occurs in this location it is expected to be minimal. Given that suitable habitat for federally-listed species is not likely present at the FDB project area, the construction, operation, and maintenance of the proposed FDB in conjunction with the proposed ACDB project would not be expected to result in cumulative effects to federally-listed species.

SECTION EIGHT CONCLUSIONS AND DETERMINATION

Proposed project activities could result in temporary disturbance and permanent effects to habitats that are potentially utilized by species protected under the Federal ESA. These species include the California red-legged frog, Tiburon paintbrush, Contra Costa goldfields, showy Indian clover, and valley elderberry longhorn beetle.

8.1 CALIFORNIA RED-LEGGED FROG

Although the project area contains habitats suitable to support the breeding cycle of the California red-legged frog, USFWS protocol-level surveys for this species in the project area and a 1-mile radius surrounding the project area did not find this species to be present in the areas surveyed. Therefore, FEMA has determined that the proposed project would have **no effect** on the California red-legged frog.

No designated or proposed critical habitat for the CRLF is located in the project area, and therefore critical habitat for this species would not be adversely affected by the proposed project.

8.2 TIBURON PAINTBRUSH, CONTRA COSTA GOLDFIELD, AND SHOWY INDIAN CLOVER

Although the project area contains habitats suitable to support Tiburon paintbrush, Contra Costa goldfield, and showy Indian clover, focused surveys for these species during their appropriate blooming periods in the project area did not find these species present in the project area. FEMA has determined that the proposed project would have **no effect** on these three plant species.

The project area does not overlap proposed or designated critical habitat for these three plant species; therefore, critical habitat for these species would not be adversely affected by the proposed project.

8.3 VALLEY ELDERBERRY LONGHORN BEETLE

The VELB likely occurs within the project area, as indicated by the documented occurrences of the host plant for this species (i.e., elderberry shrub with stems at least 1 inch in diameter at ground level) within the project area and the identification of exit holes on elderberry shrub stems within the project area.

FEMA has determined that the fall 2008 geotechnical investigation did not adversely affect the VELB for the following reasons:

- Boring 4 (which occurred less than 20 feet from an elderberry shrub with stems of at least 1 inch in diameter) was conducted outside of the riparian area in an upland area that appears to have been historically used as an access road within the orchard.

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- The area of ground disturbance from the geotechnical investigation was minimized to the extent possible.
- The activities occurred during clear weather.
- The activities were conducted outside of the emergent period for VELB (March 15–June 15).
- Other than boring 4, all other geotechnical investigations were conducted more than 100 feet from the drip line of elderberry shrubs identified during the 2008 surveys in upland areas during clear weather.
- A biological monitor was present for the geotechnical investigation activities conducted after October 17, 2008.

FEMA has determined that the 2009 geoarchaeological testing and site evaluation program had **no effect** on VELB as it was conducted within the following constraints:

- Ground-disturbing activities occurred during the dry season, specifically between June 15 and October 15; and
- Ground-disturbing activities occurred 100 feet or more from the drip line of all elderberry shrubs.

FEMA has determined that potential future geotechnical investigations and geoarchaeological testing and site evaluation would have **no effect** on the VELB if they are conducted with the following constraints:

- Ground-disturbing activities would occur during the dry season, specifically between June 15 and October 15; and
- Ground-disturbing activities would occur 100 feet or more from the drip line of all elderberry shrubs.

If the City requires modifications to the above buffers, then the City shall notify FEMA prior to conducting the activity and FEMA would consult with the USFWS.

FEMA has determined that the activities associated with the construction of the ACDB and the operation and maintenance of the ACDB may adversely affect the VELB. Therefore, the proposed project **is likely to adversely affect** the VELB. This determination is based on the following:

- Construction of the inlet would likely require the removal and/or damage of two elderberry shrubs with stems of at least 1 inch in diameter at ground level within the project area that could potentially be occupied by the VELB.
- Operation and maintenance of the ACDB could disturb or injure the VELB during weed abatement activities and because of runoff from potential agricultural chemicals if the ACDB is used for agricultural purposes.

- Dust raised by construction equipment could potentially coat elderberry shrubs within the project area and in the 100-foot buffer surrounding the project area, which in time could lead to stress to these shrubs (e.g., water stress, dead stems, smaller leaves), and therefore, the beetle that may inhabit that shrub.

The potential adverse effects could be minimized through the implementation of standard BMPs, which the City will be required to implement through its compliance process for Sections 401, 402, and 404 of the Clean Water Act of 1972, Section 1600 *et seq.* of the California Fish and Game Code, local regulations, or the regulations of local agencies.

No designated or proposed critical habitat for the VELB is located in the project area; therefore, critical habitat for this species would not be adversely affected by the proposed project.

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- _____. 2009. USFWS database of Federal species listed as endangered or threatened, proposed for listing or candidates that may occur in or may be affected by projects in USGS 7.5-minute quadrangles Denverton, Fairfield North (project area) Fairfield South,

Alamo Creek Detention Basin: Biological Assessment for USFWS

Cordelia, Allendale, Elmira, Mt. Vaca, Capell Valley, and Mt. George. Available at http://www.fws.gov/sacramento/es/spp_lists/auto_list_form.cfm. Accessed September 2009.

USFWS and NMFS (U.S. Fish and Wildlife Service and National Marine Fisheries Service). 1998. *Endangered Species Consultation Handbook. Procedures for Conducting Consultation and Conference Activities under Section 7 of the Endangered Species Act*. March.

Western Regional Climate Center 2009. Historical weather records. Vacaville Station. Period of Record : 1/ 1/1893 to 12/31/2008. Available at: <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca9200>. Accessed June 29.

**Appendix A:
Federally Listed Species under USFWS Jurisdiction
with Potential to Occur in the Vicinity of the Project Area**

Federally Listed Species under USFWS Jurisdiction with Potential to Occur in the Vicinity of the Project Area

Table A-1. Federally listed species under USFWS jurisdiction with potential to occur in the vicinity of the project area.¹

Scientific Name	Common Name	Federal Status ²	Preferred Habitat ³	Likelihood of Occurring in the Project Area
Plants				
<i>Catilleja affinis</i> ssp. <i>neglecta</i>	Tiburón paintbrush	E	Valley and foothill grassland (serpentine). Blooms April-June. Elevation ranges: 60-400 m.	Potential. Suitable habitat (valley and foothill grassland) present in project area. The closest documented occurrence of this species is approximately 18 miles southwest of the project area (CDFG 2009, Occurrence Number 5).
<i>Cirsium hydrophilum</i> var. <i>hydrophilum</i>	Suisun thistle	E	Marshes and swamps. Blooms July-September. Elevation ranges: 0-1 m.	No potential. No suitable habitat (marshes and swamps) within project area. The closest documented occurrences of this species are in the USGS Fairfield South quadrangle, approximately 10 miles south of the project area (CDFG 2009, Occurrence Numbers 1). The location information for these occurrences is sensitive and suppressed by the CDFG.
<i>Cordylanthus mollis</i> ssp. <i>mollis</i>	soft bird's-beak	E	Marshes and swamps (coastal salt). Blooms July-August. Elevation ranges: 0-3 m.	No potential. No suitable habitat (marshes and swamps) within project area. The closest documented occurrence of this species is approximately 10 miles south of the project area (CDFG 2009, Occurrence Number 19).
<i>Lasthenia conjugens</i>	Contra Costa goldfields	E	Cismontane woodland, playas, valley and foothill grassland, vernal pools/mesic. Blooms March-June. Elevation ranges: 0-470 m.	Potential. Suitable habitat (valley and foothill grassland and cismontane woodland) present in project area. Closest documented occurrence of this species is approximately 4 miles southeast of the project area (CDFG 2009, Occurrence Number 36).

Alamo Creek Detention Basin: Biological Assessment for USFWS

Table A-1. Federally listed species under USFWS jurisdiction with potential to occur in the vicinity of the project area.¹

Scientific Name	Common Name	Federal Status ²	Preferred Habitat ³	Likelihood of Occurring in the Project Area
<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i>	few-flowered navarretia	E	Vernal pools (volcanic ash flow). Blooms May-June. Elevation ranges: 400-855 m.	No potential. No suitable habitat (vernal pools) within project area. Closest documented occurrence of this species is approximately 12 miles northwest of the project area (CDFG 2009, Occurrence Number 7).
<i>Orcuttia inaequalis</i>	San Joaquin Valley Orcutt grass	T	Vernal pools. Blooms April-September. Elevation ranges 10-755 m.	No potential. No suitable habitat (vernal pools) within project area. Closest documented occurrence of this species is approximately 10 miles southeast of the project area (CDFG 2009, Occurrence Number 63).
<i>Trifolium amoenum</i>	showy Indian clover (or two-fork clover)	E	Coastal bluff scrub and valley and foothill grassland (sometime serpentinite). Blooms April-June. Elevation ranges 5-415 m.	Potential. Suitable habitat (valley and foothill grassland) present in project area. Closest documented occurrence of this species is approximately 2 miles southeast of the project area (CDFG 2009, Occurrence Number 11).
Invertebrates				
<i>Branchinecta conservation</i>	Conservancy fairy shrimp	E	Vernal pools. Found in large, turbid pools. Currently known from several disjunct populations, including the Solano-Colusa vernal pool region on the greater Jepson Prairie area in Solano County.	No potential. Suitable habitat (large vernal pools) not present in project area. Closest documented occurrence of this species is approximately 10 miles southeast of the project area (CDFG 2009, Occurrence 27).
<i>Branchinecta lynchi</i>	vernal pool fairy shrimp	T	Vernal pools (seasonal wetlands) or vernal pool-like habitats from Southern Oregon south to Riverside County.	No potential. Suitable habitats (vernal pool-like habitats) not present in project area. Closest documented occurrence of this species is approximately 4 miles northeast of the project area (CDFG 2009, Occurrence 19).

Federally Listed Species under USFWS Jurisdiction with Potential to Occur in the Vicinity of the Project Area

Table A-1. Federally listed species under USFWS jurisdiction with potential to occur in the vicinity of the project area.¹

Scientific Name	Common Name	Federal Status ²	Preferred Habitat ³	Likelihood of Occurring in the Project Area
<i>Desmocerus californicus dimorphus</i>	valley elderberry longhorn beetle	T	Almost always found in relation to elderberry (<i>Sambucus</i> sp.) shrubs throughout the California Central Valley. Elderberry shrubs are associated with riparian forests along rivers and streams.	Potential to occur. Elderberry shrubs with and without exit holes have been identified within the project area.
<i>Elaphrus viridis</i>	Delta green ground beetle	T	Grasslands interspersed with vernal pools, including several larger vernal pools. Only known to occur in the greater Jepson Prairie area in south-central Solano County.	No potential. Suitable habitats not present in project area. Closest documented occurrence of this species is approximately 10 miles southeast of the project area (CDFG 2009, Occurrence 7).
<i>Lepidurus packardii</i>	vernal pool tadpole shrimp	E	Ephemeral wetland habitats and vernal pools containing clear to highly turbid water. Found across California Central Valley and San Francisco Bay area.	No potential. Suitable habitats (vernal pool-like habitats) not present in project area. Closest documented occurrence of this species is approximately 3 miles southeast of the project area (CDFG 2009, Occurrence 26).
<i>Speyeria callippe callippe</i>	callippe silverspot butterfly	E	Grassland with a significant component of native grasses. Larval host plant Johnny jump-up (<i>Viola pedunculata</i>) must be present. Host plant blooms February to April.	Not likely. Grasses within project area mostly non-native. Host plant not observed during botanical surveys (Apr-July) of project area. No documented occurrences of this species within the 9 quadrangles surrounding and including the project area (CDFG 2009).
<i>Syncaris pacifica</i>	California freshwater shrimp	E	Low elevation, low gradient freshwater coastal streams in Sonoma, Napa, and Marin Counties.	No potential. Project area is outside of the range of this species (USFWS 1998, 2008). No documented occurrences of this species in all of Solano County (CDFG 2009).

Alamo Creek Detention Basin: Biological Assessment for USFWS

Table A-1. Federally listed species under USFWS jurisdiction with potential to occur in the vicinity of the project area.¹

Scientific Name	Common Name	Federal Status ²	Preferred Habitat ³	Likelihood of Occurring in the Project Area
Amphibians				
<i>Ambystoma californiense</i>	California tiger salamander	T	Annual grasslands and grassy understory of valley-foothill hardwood habitats. Needs underground refuges during dry season and vernal pools or other seasonal water sources for breeding. Known elevational range of this species extends up to 3,460 feet.	Not likely to occur. No vernal pools or stock ponds are located within project area. The closest occurrence of this species is approximately 6 miles southeast of the project area (CDFG 2009, Occurrence 828).
<i>Rana draytonii</i> , formerly <i>Rana aurora draytonii</i>	California red-legged frog	T	Lowlands and foothills in or near pools of deep water with dense, shrubby or emergent riparian vegetation.	Potential to occur. Habitats suitable to support the CRLF breeding cycle present in the project area and vicinity. Closest documented occurrence of this species is approximately 8.5 miles northwest of the project area (CDFG 2009, Occurrence 401).
Reptiles				
<i>Thamnophis gigas</i>	giant garter snake	T	Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches.	Not likely to occur. Riparian woodlands typically do not provide suitable habitat for this species (Hansen and Brode 1980). No documented occurrences of this species within the 9 USGS quadrangles surrounding and including the project area (CDFG 2009).
Birds				
<i>Charadrius alexandrinus nivosus</i>	western snowy plover	T	Sandy coastal beaches, salt pans, coastal dredged spoils sites, dry salt ponds, levees and gravel bars. Nests occur in flat, open areas with sandy or saline substrates.	Not likely to occur. No suitable habitats located in the project area or immediate vicinity. No documented occurrences of this species in all of Solano County (CDFG 2009).

Federally Listed Species under USFWS Jurisdiction with Potential to Occur in the Vicinity of the Project Area

Table A-1. Federally listed species under USFWS jurisdiction with potential to occur in the vicinity of the project area.¹

Scientific Name	Common Name	Federal Status ²	Preferred Habitat ³	Likelihood of Occurring in the Project Area
<i>Pelecanus occidentalis californicus</i>	California brown pelican	E	Forages in estuarine, marine subtidal, and marine pelagic waters along the California coast. Nests on rocky, or low, brushy slopes of undisturbed islands, usually on the ground, but occasionally in bushes.	Not likely to occur. No suitable habitats located in the project area or immediate vicinity. No documented occurrences of this species in all of Solano County (CDFG 2009).
<i>Rallus longirostris obsoletus</i>	California clapper rail	E	Salt-water and brackish water marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed (<i>Salicornia virginica</i>), but feeds away from cover on invertebrates from mud-bottomed sloughs.	Not likely to occur. No suitable habitats (salt marsh and tidal slough) located in the project area or immediate vicinity. Closest documented occurrence of this species is approximately 7 miles south of the project area (CDFG 2009, Occurrence 331).
<i>Sterna antillarum (albifrons) browni</i>	California least tern	E	Forages in shallow estuaries or lagoons where small fish are abundant. Nests on barren to sparsely vegetated sites near water, usually on sandy or gravelly substrate, and free of human or predatory disturbance.	Not likely to occur. No suitable habitats (sandy beaches) located in the project area or immediate vicinity. No documented occurrences of this species within the 9 USGS quadrangles surrounding and including the project area (CDFG 2009).
<i>Strix occidentalis caurina</i>	northern spotted owl	T	Found in old growth forests (typically conifer, occasionally hardwood) with a moderate to high (60-90 percent) canopy closure, that is multi-layered with multiple species with large overstory trees (with diameter at breast height greater than 30 inches), with a high incidence of large trees with various deformities, and large snags and large accumulations of fallen trees and other woody debris on the ground, but still sufficient open space below the canopy for spotted owls to fly.	Not likely to occur. Project area lacks the large old growth trees and canopy cover required for northern spotted owl nesting and foraging. There are no documented occurrences of this species in all of Solano County (CDFG 2009).

Alamo Creek Detention Basin: Biological Assessment for USFWS

Table A-1. Federally listed species under USFWS jurisdiction with potential to occur in the vicinity of the project area.¹

Scientific Name	Common Name	Federal Status ²	Preferred Habitat ³	Likelihood of Occurring in the Project Area
Mammals				
<i>Reithrodontomys raviventris</i>	salt marsh harvest mouse	E	Primary habitat is saline emergent wetlands with abundant pickleweed, but also requires non-submerged, salt-tolerant vegetation for escape during highest tides.	No potential. Suitable habitats (emergent wetlands with pickleweed) missing from project area. Closest documented occurrence of this species is approximately 9 miles south of the project area (CDFG 2009, Occurrence 114).
Fish				
<i>Hypomesus transpacificus</i>	delta smelt	T	Brackish water. Endemic to the Sacramento-San Joaquin estuary, river channels and sloughs. Occurs in the Delta primarily below Isleton on the Sacramento River, below Mossdale on the San Joaquin River, and in Suisun Bay. Moves into freshwater when spawning and can occur in: the Sacramento River as high as Sacramento, the Mokelumne River system, the Cache Slough region, the Delta, and the Montezuma Slough area of the estuary. In high flow periods can enter Suisun Bay and San Pablo Bay.	No potential. Project area is outside of the range of this species (USFWS 1996). No documented occurrences of this species within the 9 USGS quadrangles surrounding and including the project area (CDFG 2009).

¹ The species in this table were identified in a search of the following references:

California Department of Fish and Game. 2009. Rarefind 3, a program created by CDFG allowing access to the California Natural Diversity Database (CNDDDB). Search of USGS 7.5-minute quadrangles Denverton, Fairfield South, Cordelia, Allendale, Elmira, Mt. Vaca, Capell Valley, Mt. George, and Fairfield North. June.
 U.S. Fish and Wildlife Service. 2009. Federal Endangered and Threatened Species that May Occur in or May be Affected by Projects in USGS 7.5-minute quadrangles Denverton, Fairfield South, Cordelia, Allendale, Elmira, Mt. Vaca, Capell Valley, Mt. George, and Fairfield North. Available at http://www.fws.gov/sacramento/es/spp_lists/auto_list_form.cfm.

² Federal status codes:

E = Endangered. Species in danger of extinction throughout all or a significant portion of its range.

T = Threatened. Species likely to become endangered within the foreseeable future.

³ Preferred habitat description compiled from the following references:

Federally Listed Species under USFWS Jurisdiction with Potential to Occur in the Vicinity of the Project Area

Table A-1. Federally listed species under USFWS jurisdiction with potential to occur in the vicinity of the project area.¹

Scientific Name	Common Name	Federal Status ²	Preferred Habitat ³	Likelihood of Occurring in the Project Area
California Department of Fish and Game 2005. California Interagency Wildlife Task Group. California Wildlife Relationships version 8.1 personal computer program. Sacramento, California.				
California Department of Fish and Game 2008. California Natural Diversity Database (CNDDDB) Program Rarefind 3. Created by the California Department of Fish and Game, September 2008 version.				
California Native Plant Society. 2008. California Native Plant Society's Inventory of Rare and Endangered Plants of California. Online Inventory: http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi				
Goals Project. 2000. Baylands Ecosystem Species and Community Profiles: Life histories and environmental requirements of key plants, fish and wildlife. Prepared by the San Francisco Bay Area Wetlands Ecosystem Goals Project. P.R. Olofson, editor. San Francisco Bay Regional Water Quality Control Board, Oakland, Calif.				
United States Fish and Wildlife Service. 1996. Recovery Plan for the Sacramento-San Joaquin Delta Native Fishes. Region 1, Portland, Oregon.				
U.S. Fish and Wildlife Service. 1998. Recovery Plan for the California Freshwater Shrimp (<i>Syncaris pacifica</i>). Region 1, Portland, Oregon.				
United States Fish and Wildlife Service. 2005. Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon. Region 1, Portland, Oregon.				
United States Fish and Wildlife Service. 2008. Species accounts. U.S. Fish & Wildlife Service Office, Sacramento Division. Accessed at http://www.fws.gov/sacramento/es/spp_info.htm				

Appendix B:
Photographs of the Project Area

Appendix B
Photographs of the Project Area



**Photo 1. Abandoned orchard
(April 2008).**



**Photo 2. Abandoned Orchard
(June 2008).**

Appendix B
Photographs of the Project Area



**Photo 3. Agricultural field
(June 2008).**



**Photo 4. Alamo Creek.
Approximate Location of
Outlet. Picture taken facing
east (February 2008).**



Photo 5. Alamo Creek. Approximate Location of Inlet. Picture taken facing south (February 2009).



Photo 6. Alamo Creek. Approximate Location of Inlet. Picture taken facing west (February 2009).

Appendix B
Photographs of the Project Area



**Photo 7. Alamo Creek
(April 2008).**



**Photo 8. Alamo Creek
(July 2008).**

Appendix B
Photographs of the Project Area



**Photo 9. Alamo Creek
(July 2008).**



**Photo 10. Elderberry
shrub cluster - Stem
ID N14–N15; N17-
N22; N91–N94 (June
2008).**



Photo 11. Elderberry shrub cluster in non-riparian area - Stem ID N64–N74 (June 2008).

Appendix C:
Photographs of the Geotechnical Investigations

Appendix C
Photographs of the Geotechnical Investigations



**Photo 1. Test boring 1
(October 2008).**



**Photo 2. Test boring 6
(October 2008).**

Appendix C
Photographs of the Geotechnical Investigations



**Photo 3. Test Pit 6
(October 2008).**



**Photo 4. Test Pit 9
(October 2008).**

Appendix C
Photographs of the Geotechnical Investigations



**Photo 5. Test Pit 13
(October 2008).**



**Photo 6. Test Pit 14
(October 2008).**

Appendix C
Photographs of the Geotechnical Investigations



**Photo 7. Test Pit 16
(October 2008).**



**Photo 8. Test Pit 17
(October 2008).**

Appendix C
Photographs of the Geotechnical Investigations



**Photo 9. Test Pit 19
(October 2008).**



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

AUG 18 2010

In response refer to:
2009/01633

RECEIVED
AUG 19 2010

BY: Sharon (D) [Signature]

Ms. Donna M. Meyer
Deputy Environmental Officer
US Department of Homeland Security
FEMA Region IX
1111 Broadway, Suite 1200
Oakland, California 94607-4052

Dear Ms. Meyer:

This letter is in response to the Federal Emergency Management Agency (FEMA) letter dated January 22, 2010, requesting the initiation of formal consultation under section 7 of the Endangered Species Act (ESA) regarding potential effects of the proposed Alamo Creek Detention Basin project (Project) on federally listed California Central Valley steelhead (*Oncorhynchus mykiss*) (CCV steelhead) distinct population segment (DPS) and their designated critical habitat.

The proposed Project would be undertaken by the City of Vacaville (City) which would receive Federal funding from FEMA through the Hazard Mitigation Grant Program and administered by the California Emergency Management Agency acting as intermediary. The proposed Project is located in Solano County, California. The work site is on city-owned property on the north side of, and adjacent to Alamo Creek. The purpose of the Project would be to reduce the safety hazards and potential damage from periodic flooding events.

Background

The City has experienced major flooding events in December 2002 and December 2006 with property damages estimated at approximately \$3.4 and \$26.5 million dollars respectively. This has occurred largely because Alamo Creek is deeply incised and incapable of containing flows from major storm events without overtopping its banks. The Project is designed to reduce the overall likelihood and severity of damages when flooding occurs in Vacaville from storms generating precipitation sufficient to cause a "10-year flood" event.

The Project would be located on the northwest outskirts of the City of Vacaville; approximately 55 kilometers southwest of Sacramento. The Project area would utilize a 77-acre parcel owned by the city where the detention basin would be constructed. The finished structure would include the earthen bottom basin, engineered earthen berms, an emergency spillway, a 92-meter articulated concrete block inlet structure, an outlet with a 1.067-meter (42-inch-diameter) reinforced-concrete pipe, and a 4-meter-wide maintenance road on the crest of the earthen berm



encompassing the basin. Other permanent features of the facility would include an excavation disposal area (where excess soil from the excavation of the basin would be stored on the north side of the basin), two parking lots, an access road, perimeter fencing, and access gates.

The design capacity of the basin is approximately 575 acre-feet (710,000 cubic meters) with a surface area of approximately 87,000 square-meters. At full capacity the basin would only hold approximately one-third of the volume expected in Alamo Creek in a "100-year, 24-hour storm" event. Since the detention basin only receives water passively from Alamo Creek and since water levels are "self-seeking", scour would not occur beneath the spillway from the basin. That is, there would be no head pressure as the water from Alamo creek would be at the identical elevation as the water within the basin. The detention basin would be expected to retain water for not longer than 24 to 48 hours.

Construction activities within Alamo Creeks' bed and bank would be limited to the dry season between June 15 and October 15. Prior to any construction activities commencing, a NMFS-approved biologist will conduct training sessions to familiarize all construction personnel with the identification of CCV steelhead and their habitats, as well as the general provisions and protections afforded by the ESA, measures implemented to protect these species, and clarification of Project boundaries. NMFS-approved biologists will monitor for CCV steelhead in Alamo Creek while construction activities are underway near the Alamo Creek bank. All best management practices will be employed to prevent wind and/or water erosion as well as any erosion caused by construction vehicles (e.g. bulldozers, excavators, dump trucks, etc.) in the course of their work as outlined in Section 5.3 of the Biological Assessment; Avoidance and Minimization Measures: Erosion, Sedimentation, Spill Prevention, and Pollution Control.

ESA Consultation

FEMA has requested that NMFS initiate section 7 consultation under the ESA with regard to the Project. FEMA has provided all of the necessary information for NMFS to conduct consultations on federally listed fish species within the proposed action area for the time period when construction activities will be undertaken. Based on our review of the material provided, site visits, telephone conversations, physical and electronic correspondence with Ms. Donna Meyer of FEMA and Mr. James D. Loomis P.E. of Vacaville's Department of Public Works, as well as the best scientific and commercial information currently available, NMFS has determined that effects from construction activity relating to the Project on CCV steelhead may affect, but are not likely to adversely affect CCV steelhead or their designated critical habitat. The Alamo Creek Detention Basin facility is not located in an area that has been designated as critical habitat for salmonid species. The Project area is not considered essential fish habitat for salmonid species. Accordingly, this Project in the Alamo Creek Detention Basin is not bound by any additional restrictions related to essential fish habitat under the Magnuson-Stevens Fishery Conservation and Management Act. NMFS has reached the determination of not likely to adversely affect CCV steelhead based on the fact that the applicant will:

- 1) Perform all construction activities within Alamo Creek's bank and riparian zone between June 15 and October 15 which is the period that CCV steelhead are least likely to be within Alamo Creek;

- 2) Provide a NMFS-approved biologist to conduct training sessions familiarizing all construction personnel with the identification of CCV steelhead and their habitats, as well as the general provisions and protections afforded by the ESA so as to raise awareness of potential factors that might degrade habitat during construction and avoid them;
- 3) Provide a NMFS-approved biologist to monitor all construction activities in, or adjacent to the active stream channel of Alamo Creek to ensure compliance with best management practices outlined in Section 5 of the Biological Assessment;
- 4) Remove debris that accumulates within the detention basin (during flooding events) at a time when the area is dry when CCV steelhead cannot be present (*i.e.* June – September) unless waiting for the dry season would create undue safety concerns;
- 5) Ensure that all demolition, and removal, of structures in the course of completing this project conforms to all applicable hazardous materials safety guidelines;
- 6) Ensure that all areas that are particularly susceptible to erosion from flooding events (*e.g.* the intake and spillway) have been appropriately “hardened” against scour, and;
- 7) Avoid entrainment of CCV steelhead within the detention basin through the installation of a 42-inch-diameter reinforced-concrete pipe outlet at the lowest elevation within the basin.

This concludes ESA consultation for the proposed action. This finding does not provide incidental take authorization pursuant to section 7(b)(4) and section 7(o)(2) of the Endangered Species Act, as amended. Reinitiation of consultation is required where discretionary Federal agency involvement, or control over the action has been retained (or is authorized by law), and if: (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 action itself is subsequently modified in a manner that adversely effects listed species or critical habitat; or (3) a new species is listed, or critical habitat designated, that may be affected by this action.

This letter also serves as consultation under the authority of, and in accordance with, the provisions of the Fish and Wildlife Coordination Act of 1934 (FWCA), as amended. The purpose of the FWCA is to ensure that wildlife conservation receives equal consideration and is coordinated with other aspects of water resources development [16 U.S.C. 661]. The FWCA establishes a consultation requirement for Federal departments and agencies that undertake any action that proposes to modify any stream or other body of water for any purpose, including navigation and drainage [16 U.S.C. 662(a)]. The FWCA provides the opportunity to offer recommendations for the conservation of species and habitats beyond those currently managed under the ESA and the Magnuson-Stevens Fishery Conservation and Management Act. The Project will not affect any species or habitats under NMFS' jurisdiction other than as discussed above. Therefore, NMFS has no FWCA recommendations to offer regarding this Project.

If you have any questions or require additional information concerning this project, please contact Stephen Hillyer via email at Stephen.Hillyer@NOAA.gov or by telephone at (916) 930-3600.

Sincerely,



For Rodney R. McInnis
Regional Administrator

* Cc: Copy to file ARN: F/SWR2009SA00172
Mr. James Loomis, P.E., City of Vacaville Public Works Department,
650 Merchant Street, Vacaville, California 95688-6908



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Sacramento Area Office
650 Capitol Mall, Suite 5-100
Sacramento, California 95814-4708

In response refer to:
2009/01633

Ms. Donna Meyer
Deputy Environmental Officer
U.S. Department of Homeland Security
FEMA Region IX
1111 Broadway, Suite 1200
Oakland, California 94607-4052

Dear Ms. Meyer:

NOAA's National Marine Fisheries Service (NMFS) received a letter from Mr. James Loomis, P.E., of the Public Works Department of the City of Vacaville (the City), California on October 14, 2010. This letter requested that archeological excavations be allowed prior to the commencement of construction activities at the Alamo Creek Detention Basin facility. Federal Emergency Management Agency (FEMA) had previously consulted with NMFS with regard to the Alamo Creek Detention Basin facility. Construction activities were not scheduled to take place until June of 2012 and no action has yet taken place at the site. Informal section 7 consultations found that the action was not likely to adversely affect Federally-listed salmonid species. Archeological artifacts of cultural significance have recently been discovered at the site, and a thorough examination of the area is warranted to investigate and to document any potential historical artifacts for posterity. This excavation will take place within the riparian zone bordering Alamo Creek, but will not occur within the banks of the creek. The conduct of this archeological dig will comply with standing agreements between FEMA, the Yocha Dehe Wintun Tribe and the City.

Mr. Loomis's letter further requested that the work dates be adjusted to allow the archeological investigation to begin on April 15, 2011, rather than the June 15, 2012, start date originally requested for construction of the project. Making this allowance would afford the City an opportunity to complete its historical investigation, as well as initiate several major construction activities for the Project prior to the close of the "dry" work window on October 15, 2011.

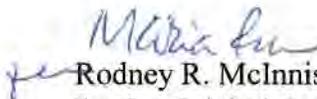
NMFS has reviewed the request, and has determined that the revised action plan will not adversely affect Federally-listed species (*i.e.* winter-run Chinook salmon, spring-run Chinook salmon, Central Valley steelhead). The City will employ best management practices to prevent any adverse impacts to the Alamo Creek waterway during construction activities. These will include such measures as the installation of silt fencing and other sediment trapping mechanisms downslope of work areas (*i.e.* between the action area and the creek). Hydro-seeding of any disturbed areas will occur after the archeological excavation, and before the initiation of construction should there be any delay in construction activities. There is no indication of listed



species in the action area which is neither an area designated critical habitat, nor is it designated essential fish habitat. NMFS further finds that the request to advance the timetable for the Project by fourteen months is not likely to adversely affect any Federally-listed salmonid species within the Alamo Creek Detention Basin action area. This concludes Section 7 consultation with FEMA for the Alamo Creek Detention Basin.

If you have any questions or comments regarding this matter, please contact Stephen Hillyer at (916) 930-3627 or by email at Stephen.Hillyer@noaa.gov.

Sincerely,


Rodney R. McInnis
Regional Administrator

cc: Copy to file ARN: 151422SWR2009SA00172
Mr. James Loomis, P.E., City of Vacaville Public Works Department, 650 Merchant Street, Vacaville, California 95688-6908
Melissa Newman, URS Corporation, 1333 Broadway, Suite 800, Oakland, CA 94612



FEMA

January 22, 2010

Maria Rea
Sacramento Area Supervisor
National Marine Fisheries Service
Protected Resources Division
650 Capitol Mall, Suite 8-300
Sacramento, CA 95814-4708

Re: Alamo Creek Detention Basin Project
FEMA-1628-DR-CA and FEMA-1646-DR-CA, HMGP #1628-31-14
Subgrantee: City of Vacaville

Dear Ms. Rea:

The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) proposes to provide Federal financial assistance (Federal action) under the Hazard Mitigation Grant Program (HMGP) to the City of Vacaville (City), through the California Emergency Management Agency (CalEMA), to implement the Alamo Creek Detention Basin Project (proposed project) in Solano County, California. The detention basin, which would be constructed on approximately 77 acres of City-owned property, would reduce the potential for damage from flooding on Alamo Creek.

This letter represents FEMA's request for formal consultation with the National Marine Fisheries Service (NMFS) under Section 7 of the Endangered Species Act (ESA) for the proposed project. Accordingly, FEMA is submitting the enclosed Biological Assessment for your review of the proposed project. The enclosed Biological Assessment describes the proposed project, describes the environmental setting, describes the federally listed species, analyzes the potential adverse effects on the species, and proposes avoidance and minimization measures. The study methods that were used to evaluate the potential effects of the proposed project to federally listed species under NMFS jurisdiction are discussed in this cover letter, below.

FEMA obtained a list of species that are listed as endangered, threatened, or proposed for listing as endangered or threatened under the ESA that may occur in the vicinity of the project area from the following sources:

- The Sacramento Field Office USFWS website (accessed August 18, 2009) for the nine United States Geological Survey (USGS) 7.5-minute quadrangles surrounding the project area: Fairfield North (project area), Denverton, Fairfield South, Cordelia, Allendale, Elmira, Mt. Vaca, Capell Valley, and Mt. George.
- The California Department of Fish and Game's (CDFG) California Natural Diversity Database (CNDDDB) Rarefind 3 computer program query for records of federally listed species within a 10-mile radius of the project area.

A literature review was conducted to identify habitat requirements and distribution of the species identified during the database searches. The literature review included a review of relevant sections of the *Federal Register*, designated and proposed critical habitat, draft and final recovery plans, and other published reports including the California Wildlife Habitat Relationship System¹ and CalFish².

FEMA's consultant, URS Group, Inc. (URS), conducted numerous surveys of the project area and vicinity in 2008. All species-specific surveys were conducted for species under USFWS jurisdiction, except for the analysis of vegetation communities and habitat types in the project area and its vicinity. General habitat characteristics of the project area were evaluated during the surveys to determine if habitats suitable for species under NMFS jurisdiction are located within the project area.

As a result of the field and background review, FEMA determined that the project area may provide habitat suitable to support one species regulated by NMFS under the ESA: California Central Valley steelhead (CCV steelhead) (*Oncorhynchus mykiss*), distinct population segment (DPS).

The CCV steelhead DPS may occur within the project area, as steelhead presence has been documented, at least periodically, within Alamo Creek, including upstream of the project area. Alamo Creek within the project area does not appear to provide the physical or biological characteristics required for steelhead spawning, but Alamo Creek within the project area could be used by juvenile CCV steelhead DPS for juvenile rearing and dispersal and by adult CCV steelhead DPS for migration. FEMA has determined that the proposed project is likely to adversely affect the CCV steelhead DPS.

¹ California Department of Fish and Game, California Interagency Wildlife Task Group, California Wildlife Habitat Relationships version 8.1 personal computer program. Sacramento, California.

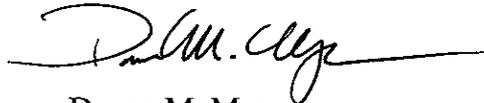
² CalFish, California cooperative anadromous fish and habitat data program. (California Department of Fish and Game: <http://www.calfish.org/FishDataandMaps/FishMaps/tabid/88/Default.aspx>).

Ms. Maria Rea
January 22, 2010
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The project area does not overlap with designated critical habitat for the CCV steelhead DPS. Therefore, FEMA has determined that the proposed project would have no effect on designated critical habitat for this species.

If you should require any additional information, please do not hesitate to contact me at (510) 627-7027 or Fema-RIX-EHP-Documents@dhs.gov. Thank you in advance for your assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "D.M. Meyer", with a long horizontal line extending to the right.

Donna M. Meyer
Deputy Environmental Officer

Attachment

cc: Paul Ransom, CalEMA
Dennis Castrillo, CalEMA
James Loomis, City