

Appendix H Agency Consultation

U.S. Army Corps of Engineers
Jurisdictional Determination



DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1398

JUL 09 2009

REPLY TO

Regulatory Division

SUBJECT: File Number SPN-2007-400401 N

Mr. Jeffery Jensen
Division of Biological Sciences and Permits
California Department of Transportation
Post Office Box 23660
Oakland, California 94623-0660

Dear Mr. Jensen:

This letter is written in response to your submittal of March 20, 2008, requesting confirmation of the extent of Corps of Engineers jurisdiction for the Interstate 80/Interstate 680/State Route 12 Interchange Project in Solano County, California.

Enclosed are maps showing the extent and location of Corps of Engineers jurisdiction. We have based this jurisdictional delineation on the current conditions on the site as verified during site visits performed by our staff on January 6, 2009, January 7, 2009, and April 1, 2009. A change in those conditions may also change the extent of our jurisdiction. This jurisdictional delineation will expire in five years from the date of this letter. However, if there has been a change in circumstances that affects the extent of Corps jurisdiction, a revision may be completed before that date.

You are advised that the Corps has established an Administrative Appeal Process, as described in 33 C.F.R. Part 331 (65 Fed. Reg. 16,486; March 28, 2000), and outlined in the enclosed flowchart and "Notification of Administrative Appeal Options, Process, and Request for Appeal" form (NAO-RFA). If you do not intend to accept the approved jurisdictional determination, you may elect to provide new information to the District Engineer for reconsideration or submit a completed NAO-RFA form to the Division Engineer to initiate the appeal process. You will relinquish all rights to appeal, unless the Corps receives new information or a completed NAO-RFA form within sixty (60) days of the date of the NAO-RFA.

Should you have any questions regarding this matter, please call Andrea Meier of our Regulatory Division at 415-503-6798. Please address all correspondence to the Regulatory Division and refer to the File Number at the head of this letter. If you would like to provide comments on our permit review process, please complete the Customer Survey Form available online at <http://per2.nwp.usace.army.mil/survey.html>.

Sincerely,

ORIGINAL SIGNED

BY *James M. Johnson*
ACTING CHIEF, REG. DIV., SOUTH BR.

FOR
Jane M. Hicks
Chief, Regulatory Division

Enclosures

Copies furnished (with wetland delineation maps to follow via email):

CA RWQCB, Oakland, CA
CA SWRCB, Sacramento, CA
US EPA, San Francisco, CA
US FWS, Sacramento, CA

CF:

CESPN-R (Rdg File)

AM
MEIER
CESPN-R
-6798
06/24/09

JM
MARTEL
CESPN-R

AM
JOHNSON
CESPN-R-S *7/2/09*

HICKS
CESPN-R
JUL 09 2009

Floodplain Issue



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION NINE
CALIFORNIA DIVISION
980 Ninth Street, Suite 400
Sacramento, CA 95814-2724

ARIZONA
CALIFORNIA
NEVADA
HAWAII
GUAM
AMERICAN SAMOA
N. MARIANA IS.

April 13, 1998

IN REPLY REFER TO
HA-CA
File #: 540-General Hydraulics
Document #: S19056

Mr. James W. van Loben Sels, Director
CALTRANS, 1120 N Street
Sacramento, California 95814

Attention: Federal Resources Branch, Room 3500
for Mr. Robert L. Buckley

Dear Mr. van Loben Sels:

SUBJECT: FLOODING ON MAJOR FACILITIES

The Federal Highway Administration (FHWA) is concerned with recent partial and full closures of major facilities during this year's winter storms in that storm intensities did not appear great enough, yet caused flooding and closures on some major facilities including the Interstate System which should be capable of passing a 50-year flood event without encroachment of through lanes.

FHWA sees this as an opportunity to focus on those facilities which experienced this type of flooding by performing engineering studies to determine the need for improvements to meet current capacity standards and to repair the conditions that contributed to closures. Some examples of impacted facilities include I-580 near Marina Vista, State Route 4 near Loveridge, I-80 at Redtop Road Slide, State Route 101 at Lucky Drive in Marin County, Interstate 80 between the West Texas Street and Abernathy Road exits in Fairfield, and State Route 37. Again, FHWA sees this as a great opportunity to provide solutions with construction projects that would prevent future closures during heavy winter rain periods. A good example is a recent project using lightweight fill on the I-680 undulations near the Benicia-Martinez Bridge where the facility has experienced many closures in past years.

Mr. Arlo Waddoups, our Regional Hydraulic Engineer, and the California Division Office can offer technical assistance on this matter. Should you have any questions, please call Brett Jackson at (916) 498-5852.

Sincerely,

/s/ Bradley D. Keazer

For
Jeffrey A. Lindley
Division Administrator

Section 6002 of the Safe, Accountable, Flexible, Efficient, Transportation Act: A Legacy for Users



DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1398

REPLY TO
ATTENTION OF

Regulatory Division

DEC 31 2009

SUBJECT: File Number SPN-2007-400401 S

Ms. Melanie Brent
Office of Environmental Analysis
California Department of Transportation, District 4
PO Box 23660
Oakland, California 94623-0660

Dear Ms. Brent:

This letter is written in response to your invitation to become a cooperating agency for the preparation of an environmental impact statement (EIS) for the Interstate 80/Interstate 680/State Route 12 Interchange Project in accordance with the SAFETEA-LU authority. We would like to accept your invitation to become a cooperating agency during the development of the EIS for this project.

We would like to take this opportunity to emphasize that one of our greatest concerns is cumulative impacts to waters of the U.S. in the I-80/I-680/SR-12 corridor from transportation projects, residential development, and commercial/industrial development. As a cooperating agency, we will be encouraging a thorough evaluation of cumulative impacts to waters of the U.S. in this area, that we hope will include those areas of concern presented in our August 6, 2009 letter.

As a part of your standard permit application package, we will require that you provide information to perform an alternatives analysis to satisfy our requirements in the Clean Water Act Section 404(b)(1) Guidelines. The information and analysis needed can be incorporated into your EIS or it can be completed as a separate document. We look forward to assisting you in guiding your collection of pertinent information and guiding you through the 404(b)(1) analysis for the project.

Should you have any questions regarding this matter, please call Andrea Meier of our Regulatory Division at 415-503-6798 or email her at andrea.j.meier@usace.army.mil. Please address all correspondence to the Regulatory Division and refer to the File Number at the head of this letter.

Sincerely,

A handwritten signature in cursive script that reads "Jane M. Hicks".

Jane M. Hicks
Chief, Regulatory Division

Copy Furnished:

US EPA, San Francisco, CA

Section 106 of the National Historic Preservation Act

DEPARTMENT OF TRANSPORTATION

111 GRAND AVENUE
P. O. BOX 23660
OAKLAND, CA 94623-0660
PHONE (510) 286-5618
FAX (510) 286-5600
TTY (800) 735-2929



*Flex your power!
Be energy efficient!*

October 14, 2009

Mr. Milford Wayne Donaldson, FAIA
State Historic Preservation Officer
Office of Historic Preservation
1416 Ninth Street, Room 1442-7
Sacramento, CA 95814

RE: Historic Property Survey Report for the I-80/I-680/SR-12 interchange project in Solano County (EA 0A5300)

Dear Mr. Donaldson:

The California Department of Transportation (Caltrans), under the authority of the Federal Highway Administration (FHWA), is initiating consultation with the State Historic Preservation Officer (SHPO) regarding the I-80/I-680/SR-12 interchange project in Solano County. This consultation is undertaken in accordance with the January 1, 2004 *Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation (PA)*.

Caltrans is initiating this consultation as a federal agency, following the provisions of the *Memorandum of Understanding (MOU) between the Federal Highway Administration and the California Department of Transportation concerning the state of California's Participation in the Surface Transportation Project Delivery Pilot Program*, which became effective on July 1, 2007. The MOU was signed pursuant to Section 6004 of the 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), which allows the Secretary of Transportation to assign, and the State of California to Assume, responsibility for compliance with federal environmental laws with respect to some highway projects in California. For those projects, the state may also be assigned FHWA's responsibilities for environmental consultation and coordination under other federal environmental laws. By statute, the state is deemed to be a federal agency for these assigned responsibilities. In that this project is covered by the above referenced MOU, FHWA has assigned, and Caltrans has assumed, FHWA responsibility for environmental review, consultation, and coordination on this project. Please direct all future correspondence on this project to Caltrans.

The undertaking includes improvements to the I-80/I-680/SR-12 interchange, widening of all three highways, and the relocation and expansion of the westbound truck scales on I-80.

Two full-build alternatives are being considered (alternatives B and C). Alternative B retains the current alignments for I-80 and I-680, while alternative C would realign I-680 to the west to connect directly with the I-80/SR-12W interchange. Completion of construction for the full-build alternatives is anticipated to take approximately 30 years to complete. Each of the two alternatives has a phase I component that represents a funded phase with logical termini and independent utility. The alignments and construction footprints for each full-build alternative and the phase I component of each alternative are shown on the Area of Potential Effect (APE) maps in the Historic Property Survey Report (HPSR).

Enclosed is an HPSR for this undertaking, with attached Historic Resource Evaluation Report (HRER) and Archaeological Survey Report (ASR). The HRER includes DPR forms for 210 properties, including the Village of Cordelia Historic District and 11 individual properties in Suisun City that have previously been determined eligible for inclusion on the National Register of Historic Places. The HRER concludes that five properties that were previously determined to be contributors to the Cordelia Historic District are no longer contributors. Three of these (Map Reference Numbers 7, 8, and 11) have been demolished in recent years and two (Map Ref. Nos. 26 and 31) have lost integrity due to recent alterations. The HRER also concludes that two additional properties are eligible for National Register listing:

- Neitzel Farm at 3936 Suisun Valley Road, Map Reference Number 51
- Suisun City Historic District, including most of the properties from Map Reference Number 63 through 208. The district includes 95 contributing and 36 non-contributing properties. The district boundary, with contributing and non-contributing properties indicated, is shown on Sheet 14a of the APE map.

We are consulting with you under Stipulation VIII.C.5 of the PA, and request your concurrence on the following:

- Properties 26 and 31 are no longer contributors to the Cordelia Historic District
- Property 51 and the Suisun City Historic District are eligible for inclusion on the National Register of Historic Places.
- The remaining properties that have not previously been evaluated are ineligible for National Register listing.

As discussed in the Archaeological Survey Report, two archaeological resources were identified within the APE through archival research. The included sensitivity assessment identified large areas of the APE as highly sensitive for buried resources. Because the recorded sites and sensitive zones are located in areas covered by pavement and sidewalks, the presence of the two known resources and any buried resources within the project footprint cannot be determined at this time. Limited access to these areas, the high potential for buried archaeological resources, the number of alternatives under consideration, and long timeframe for the ultimate build-out pose formidable challenges to completing the identification of potential archaeological properties within the APE. We propose that identification and evaluation of archaeological properties within the APE, and any necessary resolution of adverse effects upon those properties, be provided for in a programmatic agreement specific to this undertaking.

It is anticipated that a Historic Properties Treatment Plan (HPTP), including a detailed protocol for

identification, evaluation, and treatment of any affected historic properties, will be developed and attached to the programmatic agreement. The HPTP will also include protocols for archaeological monitoring, and evaluation and treatment of unanticipated discoveries that may be encountered during implementation of the undertaking.

If you have any questions or need any additional information, please do not hesitate to contact architectural historian Andrew Hope at (916) 654-5611 or archaeologist Brett Rushing at (510) 286-6336.

Sincerely,



JENNIFER DARCANGELO
Chief, Office of Cultural Resource Studies
California Department of Transportation
District 4

Enclosure: HPSR with HRER and ASR

c: Jill Hupp, Cultural and Community Studies Office, Caltrans Headquarters

**OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION**

P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@parks.ca.gov
www.ohp.parks.ca.gov



March 20, 2010

Reply To: FHWA091021B

Jennifer Darcangelo
Chief, Office of Cultural Resource Studies
Caltrans District 4
PO Box 23660
Oakland, CA 94623-0660

Re: Determinations of Eligibility for the Proposed I-80/I-680/SR-12 Interchange Project in Solano, CA

Dear Ms. Darcangelo:

Thank you for consulting with me about the subject undertaking in accordance with the *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California (PA)*.

The California Department of Transportation (Caltrans) is requesting my concurrence, pursuant to Stipulation VIII.C.5 of the PA, that the following properties are not eligible for the National Register of Historic Places (NRHP):

- Claus & Henry Mangels Sheep Barn and Ranch, Fairfield, CA
- Utility Buildings, 0148260040, Fairfield, CA
- 3360 Ramsey Road, Fairfield, CA
- 2172 Bridgeport Avenue, Cordelia, CA
- 3607 Ritchie Road, Fairfield, CA
- 3605 Thompson Court, Fairfield, CA
- 3617 Ritchie Road, Fairfield, CA
- 3621 Ritchie Road, Fairfield, CA
- Utility Building, 004-530-0030, Fairfield, CA
- Cordelia Truck Scales, Fairfield, CA
- 2543/2547 Cordelia Road, Cordelia, CA
- Irrigation Ditch adjacent to APN 0027272180
- 4012 Russel Road, Fairfield, CA
- 2621 Cordelia Road, Cordelia, CA
- 4015 Hale Ranch Road, Fairfield, CA
- 2814 Rockville Road, Fairfield, CA
- 2818 Rockville Road, Fairfield, CA
- 260 Benton Court, Suisun City, CA
- 212 Sacramento Street, Suisun City, CA
- 216 Sacramento Street, Suisun City, CA
- 520 School Street, Suisun City, CA
- 302, 304 Sacramento Street, Suisun City, CA
- 515 Suisun Street, Suisun City, CA
- 306 Sacramento Street, Suisun City, CA
- 701 West Street, Suisun City, CA
- 705 West Street, Suisun City, CA
- 201 California Street, Suisun City, CA
- 205 California Street, Suisun City, CA
- 806 West Street, Suisun City, CA
- 808 West Street, Suisun City, CA
- 206 Morgan Street, Suisun City, CA
- 1012 Suisun Street, Suisun City, CA
- 1009 Main Street, Suisun City, CA
- 1013 Main Street, Suisun City, CA
- 510 Cordelia Road, Suisun City, CA
- 516 Cordelia Road, Suisun City, CA
- 519 Line Street, Suisun City, CA

Ms. Darcangelo
March 20, 2010
Page 2

Based on my review of the submitted documentation, I concur with the above determinations.

Caltrans is also requesting my concurrence that 2100 Bridgeport Avenue and 2124 Bridgeport Avenue no longer contribute to the *Village Cordelia Historic District* due to substantial alterations that have diminished the historic integrity of the buildings. I concur.

Caltrans determined that the property located at 3936 Suisun Valley Road is eligible for the NRHP. I cannot concur with this determination based on additional information that the buildings on the property are no longer extant.

Caltrans is also requesting my concurrence that the Suisun City Historic District is eligible for the NRHP under criterion A, at the local level of significance, in the area of community development during the period of 1880-1934, and under Criterion C in the area of architecture. The district reflects distinctive examples of late nineteenth and early twentieth century architecture. I concur.

Caltrans also proposes that identification and evaluation of archeological properties within the APE, and any resolution of adverse effects on those properties, be provided for in a programmatic agreement (PA) specific to this undertaking. An attachment to the PA will include a Historic Properties Treatment Plan (HPTP) to be developed that will include a detailed protocol for identification, evaluation and treatment of any affected historic properties. The HPTP will also include protocols for archeological monitoring, and evaluation and treatment of unanticipated discoveries that may be encountered during implementation of the undertaking. I agree that the PA and HPTP are appropriate for this situation.

Thank you for considering historic properties during project planning. If you have any questions, please contact Natalie Lindquist of my staff at (916) 654-0631 or e-mail at nlindquist@parks.ca.gov or Dwight Dutschke at (916) 653-9134 or e-mail at ddutschke@parks.ca.gov.

Sincerely,



Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

**PROGRAMMATIC AGREEMENT
BETWEEN THE CALIFORNIA DEPARTMENT OF TRANSPORTATION
AND THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE I-80/I-680/SR-12 INTERCHANGE PROJECT,
SOLANO COUNTY, CALIFORNIA**

WHEREAS, the Federal Highway Administration (FHWA) has assigned and the California Department of Transportation (Caltrans) has assumed FHWA responsibility for environmental review, consultation, and coordination under the provisions of the *Memorandum of Understanding (MOU) between the Federal Highway Administration and the California Department of Transportation Concerning the State of California's Participation in the Surface Transportation Project Delivery Pilot Program*, which became effective on July 1, 2007 and applies to this project; and,

WHEREAS, Caltrans and the Solano Transportation Authority (STA) propose to implement the I-80/I-680/SR-12 Project (Undertaking), located near the cities of Fairfield and Suisun City in Solano County, that currently consists of two ultimate alternatives (Alternatives B and C) and two fundable alternatives (Alternative B Phase I and Alternative C Phase 1) that will be constructed in a number of stages; and,

WHEREAS, Caltrans has consulted with the State Historic Preservation Officer (SHPO) pursuant to the 1 January 2004 *Programmatic Agreement Among The Federal Highway Administration, The Advisory Council On Historic Preservation, The California State Historic Preservation Officer, And The California Department Of Transportation Regarding Compliance With Section 106 Of The National Historic Preservation Act, As It Pertains To The Administration Of The Federal-Aid Highway Program In California* (Federal-Aid Highway PA), and, where the Federal-Aid Highway PA so directs, in accordance with 36 CFR Part 800, the regulation implementing Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470f), as amended (NHPA), regarding the Undertaking's potential to affect historic properties, has decided to prepare a programmatic agreement (PA) pursuant to 36 CFR §800.4(b)(2) and 800.14(b), and has notified the Advisory Council on Historic Preservation (ACHP) that a PA will be prepared, pursuant to 36 CFR § 800.6(a)(1)(i)(C), who is not participating by their letter dated March 7, 2011; and

WHEREAS, Caltrans has chosen to prepare this PA to ensure completion of the identification and evaluation of potential historic properties within the Undertaking's Area of Potential Effects (APE), and provide for the resolution of any adverse effects on identified historic properties subsequent to its approval of the Undertaking; and

WHEREAS, the Undertaking, as currently proposed, has the potential to affect historic properties, including the Village of Cordelia Historic District, the Suisun City Historic District, and the Suisun City Train Depot that have been determined eligible for listing in the National Register of Historic Places (NRHP), and may affect archaeological properties and resources of significance to Native Americans that have not yet been identified; and

WHEREAS, the Yocha Dehe Wintun Nation has participated in the consultation and has been invited to concur in this PA, and Caltrans will continue to afford them, should they so desire, with the opportunity to participate in the implementation of this PA and the undertaking; and

WHEREAS, Caltrans has initiated consultation with the Cortina Band of Indians regarding the proposed undertaking and its effects on historic properties, and will continue to afford them, should they so desire, with the opportunity to participate in the implementation of this PA and the undertaking; and

WHEREAS, Caltrans District 04 (District 04) and the STA have participated in the consultation and have been invited to concur in this PA;

NOW, THEREFORE, Caltrans and the SHPO agree that, upon Caltrans' decision to proceed with the Undertaking, Caltrans shall ensure that the Undertaking is implemented in accordance with the following stipulations in order to take into account the effects of the Undertaking on historic properties and further agree that these stipulations shall govern the Undertaking and all of its parts until this PA expires or is terminated.

STIPULATIONS

Caltrans shall ensure that the following measures are carried out:

I. AREA OF POTENTIAL EFFECTS

- A.** The APE for the Undertaking is described and depicted in the 2009 Historic Property Survey Report (HPSR) for the Undertaking. The APE encompasses the maximum extent of the area anticipated to be potentially affected, directly or indirectly, by construction of either of the ultimate alternatives. The APE is included within Attachment 1 of this PA.
- B.** If Caltrans determines modifications to the Undertaking subsequent to the execution of this PA or identification results necessitate revision of the APE, Caltrans will submit the appropriate APE revisions to the PA parties along with any documentation prepared to complete identification, evaluation and effects assessments for each stage of the proposed project. In this manner, the APE may be amended without amending the PA. Revisions to the APE will be consistent with guidance in Attachment 3 of the Federal-Aid Highway PA.

II. PHASED IDENTIFICATION, EVALUATION, AND APPLICATION OF THE CRITERIA OF ADVERSE EFFECTS

Caltrans shall, upon its decision to proceed with future stages of the Undertaking, and prior to the start of construction for that stage, complete its efforts to identify, evaluate, and apply the criteria of adverse effect to historic properties within the APE for that stage in accordance with 36 CFR §800.4(b)(1), §800.4(c)-(d), and §800.5(a)(1) as follows:

A. Archaeological Resources

- 1. All work regarding the identification, evaluation, assessment of effects, and mitigation of any adverse effects on archaeological resources shall be completed for future stages of the Undertaking with the approval of Caltrans Professionally Qualified Staff (CTPQS) in the appropriate discipline and in accordance with the Federal-Aid Highway PA.
- 2. Due to the general lack of surface visibility, access limitations, lack of design detail, and potential for subsurface archaeological resources within the APE, STA in consultation with District 04 and the Yocha Dehe Wintun Nation, prior to the construction of each stage, shall assess the impacts of that stage against the extent of the previous efforts to identify archaeological resources and the archaeological sensitivity of the location, and prepare for District 04 approval, a Historic Properties Identification Proposal (HPIP) detailing what additional actions will be taken to identify archaeological resources within the footprint of that stage. The assessment shall include impacts associated with utility relocation and tree removal. The HPIP may include more than one stage, provided sufficient design detail has been prepared to assess the impacts and any access limitations have been resolved.

3. If a conclusion that no further efforts to identify archaeological resources is justified in the HPIP, and District 04 agrees, District 04 will notify the other PA parties of this finding and allow 30 days for the parties to comment. Any objection received within 30 days will be resolved in accordance with Stipulation VIII.C of this PA.
4. If subsurface exploration is indicated, the HPIP shall include an Extended Phase I (XPI) proposal, consistent with Caltrans policies and guidelines and the October 2010 *Historic Properties Treatment Plan, I-80/I-680/SR-12 Interchange Project* (Treatment Plan), and any subsequent addenda to the Treatment Plan. The Treatment Plan is included as Attachment 1 of this PA.
5. Any approved XPI investigations shall occur prior to construction. An XPI report, consistent with Caltrans guidelines, documenting the results of any XPI investigations, shall be submitted to the Yocha Dehe Wintun Nation for 30 day review and District 04 for review and approval. If archaeological resources are identified as a result of XPI investigations or during construction of any stage, and those resources can be protected during construction from any project effects by the establishment and effective enforcement of an Environmentally Sensitive Area (ESA), those resources may be considered eligible for the NRHP for the purposes of the Undertaking without conducting additional subsurface testing or surface collecting in accordance with Stipulation VIII.C.3 of the Federal-Aid Highway PA.
6. If archaeological resources are identified that do not appear eligible for listing in the NRHP, documentation supporting that determination shall be included in the XPI report. If the Yocha Dehe Wintun Nation and District 04 agree with the determination, District 04 will submit the documentation to SHPO for concurrence in accordance with Stipulation VIII.C.5 of the Federal-Aid Highway PA.
7. If archaeological resources considered eligible for listing in the NRHP are identified as a result of XPI investigations or the monitoring of construction excavations for any stage, and those resources cannot be protected from any potential effects by the establishment of an ESA, Caltrans shall follow section C of this stipulation and the Treatment Plan.

B. Built Environment Resources

1. All work regarding the identification, evaluation, assessment of effects, and mitigation of any adverse effects on built environment resources shall be completed for future stages of the Undertaking with the approval of Caltrans Professionally Qualified Staff (CTPQS) in the appropriate discipline and in accordance with the Federal-Aid Highway PA.
2. STA, in consultation with District 04, shall include in the HPIP an assessment of the adequacy of the previous built environment studies against the design details of that stage, and include any additional built environment properties in an amended APE. The assessment shall also consider the need to re-evaluate properties due to the passage of time and changing conditions.
3. If any additional built environment properties are identified within an amended APE that do not qualify as exempt under Stipulation VIII.C.1 and Attachment 04 of the Federal-Aid Highway PA, prior to the construction of each stage, STA in consultation with District 04,

shall evaluate the properties in accordance with stipulation VIII.C.2 of the Federal-Aid Highway PA and the Treatment Plan.

4. As currently proposed the Undertaking will have no adverse effect on NRHP eligible built environment properties. For any future stage of the project that will potentially affect NRHP listed or eligible built environment properties, Caltrans shall follow section C of this stipulation.

C. Assessment of Effects

STA in consultation with District 04 shall assess the effects of each stage of the Undertaking on any properties listed, eligible, or considered eligible for the NRHP within the APE for that stage in accordance with Stipulation X of the Federal-Aid Highway PA and Caltrans policies and guidelines.

1. If District 04 determines that a stage of the Undertaking meets the conditions of Stipulation X.B.2.a of the Federal-Aid Highway PA, District 04 shall notify Caltrans and SHPO of a finding of No Adverse Effect with Standard Conditions in accordance with Stipulation X.B.2.b of the Federal-Aid Highway PA. Documentation, consistent with Caltrans guidance, supporting the finding shall be submitted with the notification.
2. If District 04 concludes that a stage of the Undertaking will have an effect on properties listed, eligible, or considered eligible for the NRHP, but the effect is not considered adverse, District 04 shall propose a finding of No Adverse Effect to Caltrans in accordance with Stipulation X.B.1.a of the Federal-Aid Highway PA. Following approval, Caltrans shall consult with SHPO regarding the finding, after which SHPO shall have 30 days to provide comment. If SHPO does not comment within 30 days of receipt of the documentation, Caltrans may proceed with the No Adverse Effect finding in accordance with Stipulation X.B.1.b of the Federal-Aid Highway PA.
3. If District 04 concludes that a stage of the Undertaking will have an adverse effect on properties listed, eligible or considered eligible for the NRHP, District 04 shall propose a finding of Adverse Effect to Caltrans in accordance with Stipulation X.C of the Federal-Aid Highway PA. Following approval, Caltrans shall consult with SHPO regarding the finding, after which SHPO shall have 30 days to provide comment. If SHPO does not comment within 30 days of receipt of documentation, Caltrans may assume the SHPO's concurrence with the finding in accordance with Stipulation X.C.2 of the Federal-Aid Highway PA.

III. TREATMENT OF HISTORIC PROPERTIES

Caltrans shall, upon its decision to proceed with construction of a stage of the Undertaking, and prior to implementation of that stage, resolve adverse effects to historic properties within the APE for that stage of the Undertaking in accordance with 36 CFR § 800.6, as follows:

A. Archaeological Resources

1. Caltrans may, as a result of consultation to resolve adverse effects for any stage of the Undertaking, conduct data recovery work on historic properties determined to be significant exclusively under Criterion D of the NRHP pursuant to Stipulation X.C.2 of the Federal-Aid Highway PA. STA, in consultation with District 04 and the Yocha Dehe Wintun Nation, shall prepare a Data Recovery Proposal (Proposal), to be included as an addendum to the Treatment Plan, detailing the treatment for historic properties specific to that stage.

Following Caltrans approval, Caltrans shall consult with SHPO regarding the Proposal, after which SHPO shall have 45 days to provide comment. This comment period is to run concurrently with that provided in Stipulation II.C.3 if the Proposal accompanies the finding of adverse affect. If SHPO does not comment within 45 days of receipt of the documentation, Caltrans may proceed with the implementation of the Proposal.

2. In order to avoid adverse effects to deposits that contribute to the NRHP eligibility of archaeological sites described in stipulation III.A.1, above, where data recovery is not prescribed, Caltrans will protect those contributing deposits from any potential effects during construction by establishment and effective enforcement of ESA(s). Provisions for the protection of the ESA(s) will be described, and the locations depicted, in information included in the final construction plans for that stage of the Undertaking. The ESA provisions will indicate that no work will take place within the ESA(s), either horizontally or to a depth that may impact the deposits, and that temporary fencing will be placed between the areas of impact and the location of the contributing deposits of the archaeological sites. Caltrans shall further ensure that a professional archaeologist will coordinate the installation of the fence. A Yocha Dehe Tribal Monitor will be invited to be present during installation of the fence. Caltrans shall be responsible for ensuring its integrity is maintained for the duration of construction activities in the vicinity of deposits that contribute to the NRHP eligibility of the archaeological sites.

B. Built Environment Resources

In the event that a stage of the Undertaking will result in an unavoidable Adverse Effect to built environment properties in accordance with stipulation II.C.3 above, Caltrans shall consult to resolve the adverse effect in accordance with stipulation XI.A of the Federal-Aid Highway PA and 36 CFR § 800.6(a) and 36 CFR § 800.6(b)(1). To support the consultation, STA shall prepare, for Caltrans review and approval, a Built Environment Treatment Plan (BETP) outlining an approach to resolve the adverse effect. Caltrans shall ensure that the agreed upon resolution is thereafter implemented.

C. Treatment Plan Amendments

Any PA party may propose amendments to the Treatment Plan. Such amendment will not require amendment of this PA. Disputes regarding amendments proposed hereunder shall be addressed through further consultation among the PA parties. Consultation regarding the proposed amendment shall extend for 30 days. If the dispute is resolved within this time frame, the PA parties shall proceed in accordance with the terms of that resolution. If the dispute is not resolved within this time frame, Caltrans shall render a final decision regarding the dispute and the PA parties shall proceed in accordance with the terms of that decision.

D. Caltrans Authorization

Caltrans shall not authorize the execution of any Undertaking activity, for any stage, that may affect (36 CFR § 800.16(i)) historic properties in the Undertaking's APE prior to the completion of the fieldwork and appropriate consultation stipulated in this PA and the Treatment Plan found in Attachment 1 of this PA.

IV. REPORTING REQUIREMENTS AND RELATED REVIEWS

- A. For any XPI, Phase II or Phase III investigations, reporting will follow the guidance found in Caltrans Standard Environmental Reference and the Treatment Plan, which is included as Attachment 1 of this PA.
- B. Reporting for built environment studies will follow stipulations VIII.C.5 and stipulations IX-X of the Federal-Aid Highway PA, as appropriate. Mitigation measures developed through consultation conducted in accordance with stipulation III.B of this PA shall be reported as a result of such consultation.

V. NATIVE AMERICAN CONSULTATION

The Yocha Dehe Wintun Nation and the Cortina Band of Indians have been consulted regarding the proposed undertaking and its effect on historic properties, will continue to be consulted, and will be afforded, should they so desire, the opportunity to participate in the implementation of the PA and of the Undertaking. Should any of the parties consulted with desire, individually, to participate as a PA party as herein set forth, Caltrans will make an effort to reach a consensus with each such party regarding the manner in which they may participate in the implementation of this PA and the Undertaking, and regarding any time frames or other matters that may govern the nature, scope, and frequency of such participation.

VI. TREATMENT OF HUMAN REMAINS OF NATIVE AMERICAN ORIGIN

The PA parties agree that human remains and related items discovered during the implementation of the terms of this PA and of the Undertaking will be treated in accordance with the requirements of § 7050.5(b) of the California Health and Safety Code. If, pursuant to § 7050.5(c) of the California Health and Safety Code, the county coroner/medical examiner determines that the human remains are or may be of Native American origin, then the discovery shall be treated in accordance with the provisions of § 5097.98(a)-(d) of the California Public Resources Code.

VII. LATE DISCOVERIES AND UNANTICIPATED EFFECTS

If Caltrans determines, after commencement of any stage of the Undertaking, that construction of that stage will affect a previously unidentified property that may be eligible for the National Register, or affect a known historic property in an unanticipated manner, Caltrans will address the discovery or unanticipated effect in accordance with 36 CFR § 800.13(b)(3). Caltrans at its discretion may hereunder assume any discovered property to be eligible for the National Register in accordance with 36 CFR § 800.13(c).

VIII. ADMINISTRATIVE PROVISIONS

A. Standards

1. **Definitions.** The definitions provided at 36 CFR § 800.16 are applicable throughout this PA.
2. **Professional Qualifications.** All activities prescribed by stipulations I, II, III, IV, V, VI and VII of this PA shall be carried out under the authority of Caltrans by or under the direct supervision of a person or persons meeting at a minimum *Secretary of the Interior's Professional Qualification Standards* (48 FR 44738-39) (PQS) in appropriate disciplines. Nothing in this stipulation, however, may be interpreted to preclude Caltrans or any agent or contractor thereof from using the properly supervised services of persons who do not meet the PQS.

3. **Documentation Standards.** Written documentation of activities prescribed by stipulations II, III, IV, VI, and VII of this PA shall conform to the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* (48 FR 44716-44740), as well as to applicable standards and guidelines established by the SHPO.
4. **Curation Standards.** Caltrans shall ensure that, to the extent permitted under § 5097.98 and § 5097.991 of the California Public Resources Code, the materials and records resulting from the activities prescribed by this PA are curated in accordance with 36 CFR § 79. Caltrans shall ensure that the views of the PA parties are taken into consideration when decisions are made about the final disposition of archaeological materials resulting from activities prescribed by this PA.

B. Confidentiality.

The parties to this PA acknowledge that historic properties covered by this PA are subject to the provisions of § 304 of the NHPA and § 6254.10 of the California Government Code (Public Records Act), relating to the disclosure of archaeological site information and, having so acknowledged, will ensure that all actions and documentation prescribed by this PA are consistent with said sections.

C. Resolving Objections

1. Should any party to this PA object to the manner in which the terms of this PA are implemented, to any action carried out or proposed with respect to implementation of the PA (other than the Undertaking itself), or to any documentation prepared in accordance with and subject to the terms of this PA, Caltrans shall immediately notify the other PA parties of those objections, and shall consult with the objecting party and with the other parties for no more than 14 days to resolve the objection. Caltrans shall reasonably determine when this consultation will commence. If the objection is resolved through such consultation, the action subject to dispute may proceed in accordance with the terms of that resolution. If, after initiating such consultation, Caltrans determines that the objection cannot be resolved through consultation, Caltrans shall forward all documentation relevant to the objection, including Caltrans' proposed response to the objection, to the ACHP, with the expectation that the ACHP will, within thirty (30) days after receipt of such documentation, do one of the following:
 - a. advise Caltrans that the ACHP concurs in Caltrans' proposed response to the objection, whereupon Caltrans will respond to the objection accordingly. The objection shall thereby be resolved; or
 - b. provide Caltrans with recommendations, which Caltrans will take into account in reaching a final decision regarding its response to the objection. The objection shall thereby be resolved; or
 - c. notify Caltrans that the objection will be referred for comment pursuant to 36 CFR § 800.7(c) and proceed to refer the objection and comment. Caltrans shall take the resulting comments into account in accordance with 36 CFR § 800.7(c)(4) and Section 110(1) of the NHPA. The objection shall thereby be resolved.
2. Should the ACHP not exercise one of the above options within 30 days after receipt of all pertinent documentation, Caltrans may proceed to implement their proposed response. The objection shall thereby be resolved.

3. Caltrans shall take into account any of the ACHP's recommendations or comments provided in accordance with section C of this stipulation with reference only to the subject of the objection. Caltrans' responsibility to carry out all actions under this PA that are not the subjects of the objection shall remain unchanged.
4. At any time during implementation of the measures stipulated in this PA, should an objection pertaining to such implementation be raised by a member of the public, Caltrans notify the PA parties in writing of the objection and take the objection into consideration. Caltrans shall consult with the objecting party and, if the objecting party so requests, with the other PA parties, for no more than 15 days. Within 10 days following closure of the consultation period, Caltrans will render a decision regarding the objection and notify all consulting parties hereunder of its decision in writing. The objection will thereby be resolved. In reaching its decision, Caltrans will take into account any comments from the consulting parties regarding the objection, including the objecting party. Caltrans' decision regarding the resolution will be final.
5. Caltrans shall provide all PA parties, the ACHP when the ACHP has issued comments hereunder, and any parties that have objected pursuant to section C.4 of this stipulation, with a copy of its final written decision regarding any objection addressed pursuant to this stipulation.
6. Caltrans may authorize any action subject to objection under section C.4 of this stipulation to proceed after the objection has been resolved in accordance with the terms of section C.5, above.

D. Amendments

Any PA party may propose that this PA be amended, whereupon the PA parties will consult for no more than 30 days to consider such amendment. Caltrans may extend this consultation period. The amendment process shall comply with will 36 CFR §§ 800.6(c)(1) and 800.6(c)(7). This PA may be amended only upon written agreement of the signatory parties. If it is not amended, this PA may be terminated by any of the signatory parties in accordance with section E of this stipulation, below.

E. Termination

1. If this PA is not amended as provided for in section D of this stipulation, above, or if any signatory proposes termination of this PA for other reasons, the signatory party proposing termination shall, in writing, notify the other PA parties, explain the reasons for proposing termination, and consult with the other PA parties for at least 30 days to seek alternatives to termination. Such consultation shall not be required if Caltrans proposes termination because the Undertaking no longer meets the definition set forth in 36 CFR § 800.16(y).
2. Should such consultation result in an agreement on an alternative to termination, the signatory parties shall proceed in accordance with the terms of that agreement.
3. Should such consultation fail, the signatory party proposing termination may terminate this PA by promptly notifying the other PA parties in writing. Termination hereunder shall render this PA without further force or effect.

4. If this PA is terminated hereunder, and if Caltrans determines that the Undertaking will nonetheless proceed, then Caltrans shall either consult in accordance with 36 CFR § 800.6 to develop a new PA, or request the comments of the ACHP, pursuant to 36 CFR Part 800.

F. Duration of the PA

1. Unless terminated pursuant to section E. of this stipulation, or unless it is superseded by an amended PA, this PA will be in effect following execution by the signatory parties until Caltrans, in consultation with the other PA parties, determines that all of its stipulations have been satisfactorily fulfilled. This PA will terminate and have no further force or effect on the day that Caltrans notifies the other PA parties in writing of its determination that all stipulations of this PA have been satisfactorily fulfilled.
2. The terms of this PA shall be satisfactorily fulfilled within ten (10) years following the date of execution by the signatory parties. If Caltrans determines that this requirement cannot be met, the PA parties will consult to reconsider its terms. Reconsideration may include continuation of the PA as originally executed, amendment of the PA, or termination. In the event of termination, Caltrans will comply with section E of this stipulation if it determines that the Undertaking will proceed notwithstanding termination of this PA.
3. If the Undertaking has not been implemented within ten (10) years following execution of this PA by the signatory parties, this PA shall automatically terminate and have no further force or effect. Prior to such time, Caltrans may consult with the other consulting parties to reconsider the terms of the PA and extend its duration through amendment pursuant to section D of this stipulation. If not amended, Caltrans shall notify the other PA parties in writing and, if it chooses to continue with the Undertaking, shall reinstate review of the Undertaking in accordance with 36 CFR Part 800.

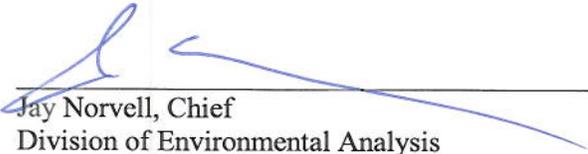
G. Effective Date

This PA will take effect on the date that it has been executed by Caltrans and the SHPO.

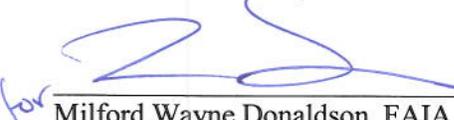
EXECUTION of this PA by Caltrans and the SHPO, its transmittal by Caltrans to the ACHP in accordance with 36 CFR §800.6(b)(1)(iv), and subsequent implementation of its terms, shall evidence, pursuant to 36 CFR§800.6(c), that this PA is an agreement with the ACHP for purposes of Section 110(1) of the NHPA, and shall further evidence that Caltrans has taken into account the effects of the Undertaking on historic properties and has afforded the ACHP an opportunity to comment on the Undertaking and its effects on historic properties.

SIGNATORY PARTIES:

California Department of Transportation

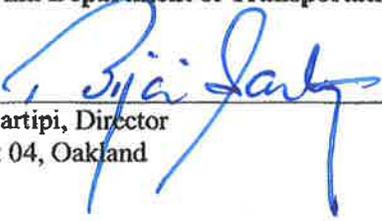
By  _____ Date 4/3/11
Jay Norvell, Chief
Division of Environmental Analysis

California State Historic Preservation Officer

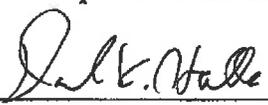
By  _____ Date 11/7/11
for Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

CONCURRING PARTIES:

California Department of Transportation

By:  Date: 7/20/12
Bijan Sartipi, Director
District 04, Oakland

Solano Transportation Authority

By:  Date: 7/11/12
Daryl K. Halls, Executive Director

Yocha Dehe Wintun Nation

By: _____ Date: _____
Marshall Mckay, Chairman

Section 7 of the Federal Endangered Species Act



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

January 14, 2011

In response, refer to:
2010/06180

James Richards, Deputy District Director
Department of Transportation
Caltrans District 4
Office of Environmental Analysis
111 Grand Avenue
Oakland, California 94610

Dear Mr. Richards:

Thank you for your letter of December 8, 2010, requesting initiation of consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Effective July 1, 2007, the Federal Highway Administration assigned, and the California Department of Transportation (Caltrans) has assumed all responsibilities for consultation and approval on most highway projects in California. Therefore, Caltrans is now considered the Federal action agency for ESA consultations with NMFS for Federally funded projects. This letter also serves as consultation under the authority of, and in accordance with, the Essential Fish Habitat (EFH) provisions of the Magnuson Stevens Fishery Conservation and Management Act (MSA), and the provisions of the Fish and Wildlife Coordination Act of 1934 (FWCA), as amended. These consultations pertain to Caltrans' proposed Interstate-80/Interstate-680/State Route 12 Interchange Improvement Project in Solano County, California.

The Interstate-80/Interstate-680/State Route 12 (I-80/I-680/SR 12) Interchange Improvement Project covers several miles of roadway around the City of Fairfield in Solano County, California. The western boundary of the Project is the Red Top Road crossings of I-680, I-80, and SR 12; the eastern boundary of the Project is the Suisun Valley Road crossing on I-80 and the Ledgewood Creek road crossing on SR 12. Surface water in the action area includes Green Valley Creek and Ledgewood Creek. The purpose of the project is to improve the I-80/I-680/SR 12 interchange complex to meet traffic demands and alleviate cut-through traffic on local roads. The project consists of construction or realignment of the following interchanges: 1) I-80/I-680/SR 12 West; 2) I-680 and Red Top Road; 3) I-80 and Green Valley Road; 4) I-80/Red Top Road and Business Center Drive; and 5) and SR 12 West and Red Top Road. Construction will also involve widening of I-80 and a new lane on eastbound SR 12, which will require a new bridge and off-ramp over Green Valley Creek, and widening of the culvert over Ledgewood Creek. All proposed in-stream work will occur during the dry season (June 1 through October 15).



Green Valley Creek originates in Green Valley, northwest of Rockville Hills Regional Park, and flow south to Cordelia Slough which is a tributary of Grizzly Bay. At the existing I-80 and I-680/I-80 West Interchange overcrossing, Green Valley Creek flows in a concrete-lined, trapezoidal channel approximately 670 feet long and 70 feet wide. The proposed action will remove the existing I-80 West bridge and replace it with a single span structure measuring approximately 103 feet long and 133 feet wide. Additionally, a single span structure to carry the Green Valley Road off-ramp over the creek will replace the existing I-680/I-80 West interchange.

In-stream construction at Green Valley Creek is proposed to occur between June 1st and October 15th, over approximately four construction seasons. Construction at Green Valley Creek will occur within a 10-20 year time frame. The first phase will involve construction of the outside (northernmost) westbound lanes on I-80 while maintaining traffic flow on the existing structure. Demolition of the existing I-80 West bridge, and completion of the new I-80 West bridge and the new off-ramp structure will follow.

Piles for the new free-spanning structures will be located at the top of the creek bank and are anticipated to be 12-inch square piles driven to a depth of approximately 70 feet. Approximately 40 piles per abutment will be installed for the westbound I-80 bridge, and approximately 24 piles per abutment will be installed for the new off-ramp structure. Vibratory hammers will be used for pile driving to the maximum practicable extent. Pile driving will only occur during low precipitation periods (June 1 to October 15) and any work occurring before June 1 or after October 15 will be restricted to road or bridge surface only, with water quality control measures in place.

Ledgewood Creek originates in the Vaca Mountains, north of the Solano/Napa County line, and flows south to Paytonia Slough which is a tributary of Grizzly Bay. In the vicinity of the existing SR 12 overcrossing, Ledgewood Creek is confined to a levee-lined trapezoidal channel. Beneath the five-span bridge at SR 12, Ledgewood Creek is conveyed through concrete-lined box culverts. Within the action area, riparian and riverine cover is limited to areas downstream of these culverts. The culverts at SR 12 and Ledgewood Creek is proposed to be extended 15 feet to the south (downstream) to accommodate an additional lane on SR 12; this would permanently impact 15 linear feet of the existing earthen channel. Construction associated with the culvert is expected to last only one season from June 1 to October 15.

Dewatering of both Ledgewood Creek and Green Valley Creek will involve construction of the following in-channel features: 1) temporary cofferdams (made of gravel and fabric) constructed 20-50 feet beyond the limit of bridge/culvert widening; and a pipe diversion to facilitate dewatering of the channel and bypass creek flow; 2) cofferdams constructed utilizing the same methods to facilitate excavation of existing bridge/culvert footings; and 3) falsework placed within the banks and channel to support construction of the cast-in-place concrete box girder structures of the new bridges/culverts. No construction related material (including dewatering and bypass structures) will remain in the channel between October 15 and June 1. When construction is completed, falsework will be removed and any disturbed portions of the creek bed and bank temporarily affected during construction will be restored to pre-project conditions. Additionally, the channel under the new bridges at Green Valley Creek will be restored to an

earthen channel; and a concrete fish passage structure involving a low flow channel and possibly baffles will be constructed in the culvert at SR 12 and Ledgewood Creek.

Standard best management practices (BMPs) for construction site and sediment and stormwater runoff control will be utilized on this project. Biofiltration swales and biostrips will be used when possible to control runoff. Vegetation will be trimmed rather than removed when possible. Temporarily disturbed riparian areas will be replanted with the native species prior to October 15 to minimize erosion and creek sedimentation, and revegetation will be monitored annually for 3 years.

Endangered Species Act

In its December 8, 2010, letter Caltrans asked for concurrence with a finding that the project is not likely to adversely affect Central California Coast (CCC) steelhead (*Oncorhynchus mykiss*). Reaches of Green Valley Creek and Ledgewood Creek within the project area are not designated critical habitat for CCC steelhead. Available information indicates the following DPS may occur in the project area:

Central California Coast steelhead Distinct Population Segment (*O. mykiss*) DPS Threatened (January 5, 2006; 71 FR 834).

The life history of steelhead is summarized in Busby *et al.* (1996). Steelhead typically immigrate to tributaries of San Francisco Bay between November and April, peaking in January and February (Fukushima and Lesh 1998). Adult CCC steelhead are generally not present in streams between May and October; warm summer water temperature and poor habitat quality within the project area further reduce the likelihood of adult steelhead presence during summer months. Juvenile steelhead emigrate episodically from natal streams during fall, winter, and spring high flows. Emigrating CCC steelhead use Green Valley Creek and portions of the San Francisco Bay for rearing and as a migration corridor to the ocean. In summer months, reaches of Green Valley Creek and Ledgewood Creek within the action area are unsuitable for salmonid rearing due to poor water and habitat quality. Although data regarding the emigration timing of steelhead smolts from Green Valley Creek and Ledgewood Creek is lacking, steelhead from other streams draining to San Francisco Bay typically emigrate from March through June (Fukushima and Lesh 1998). NMFS assumes that steelhead from Green Valley Creek and Ledgewood Creek emigrate at the same time and smolting steelhead should be absent during the in-channel construction window of June 1 through October 15.

O. mykiss have been collected in Green Valley Creek from the 1950s to the present, and unpublished data indicates *O. mykiss* were collected 1 mile upstream of I-80 in January 1997 (Leidy *et al.* 2005). Therefore, it is likely that steelhead spawning and rearing occur above the I-80 crossing of Green Valley Creek. Beneath I-80 and the I-680/I-80 West interchange Green Valley Creek passes through a 670 foot long, concrete-lined trapezoidal channel and primarily provides a migration corridor for salmonids at this location. This crossing contains an engineered low-flow channel and concrete weirs to enhance fish passage, but lacks significant riparian canopy and natural instream cover due to the concrete channel invert.

Caltrans proposes to restore approximately 300 feet of Green Valley Creek to natural earthen channel and in the process enhance habitat at the site. Proposed actions will not inhibit fish passage at the site, and could provide additional rearing habitat for juvenile salmonids. Salmonids are not likely to be present during summer in-channel construction and pile driving work windows. Construction activities that are proposed to occur when migratory steelhead are likely to be present will be restricted to road or bridge surfaces only, with water quality control measures in place. Therefore, CCC steelhead are not likely to be adversely affected by the proposed actions at Green Valley Creek.

In the vicinity of the SR 12 crossing, levees line both banks of Ledgewood Creek and the channel has a trapezoidal cross section. SR 12 crosses Ledgewood Creek over a five-span bridge. At low flows Ledgewood Creek passes through the second culvert from the east bank, which forms a V-shaped channel to maximize water depths at low flows. No observations of steelhead have been reported in Ledgewood Creek. The Ledgewood Creek drainage, however, is adjacent to the Suisun Creek Watershed which is known to support steelhead populations. Furthermore, Chinook salmon have been observed spawning in Ledgewood Creek above the project site, indicating that Ledgewood Creek supports migratory habitat for anadromous salmonids (NMFS 2011).

Proposed activities at Ledgewood Creek involve widening the SR 12 crossing by 15 linear feet to the south. This will permanently impact 15 linear feet of the existing earthen channel by converting it to a concrete invert slab. This action will exacerbate the existing shallow water depth issues at low flows; and concrete low-flow walls and potentially baffles will be constructed to enhance low-flow fish passage of the culvert. Ledgewood Creek is not designated critical habitat for CCC steelhead, and there is no confirmed documentation of *O. mykiss* within the drainage. The proximity of Ledgewood Creek to the Suisun Creek watershed, however, indicates migratory steelhead could be present during periods of higher flows. All construction activities associated with the culvert will occur over one dry season, from June 1 to October 15. Therefore, the presence of CCC steelhead is unlikely during proposed construction activities, and CCC steelhead are not likely to be adversely affected by the proposed actions at Ledgewood Creek. Proposed passage improvements at Ledgewood Creek will address the addition of 15 linear feet of hardened creek bottom, and potentially make higher quality habitat above the culvert more accessible to CCC steelhead.

Based on the best available information, NMFS concurs with Caltran's determination that threatened CCC steelhead are not likely to be adversely affected by the I-80/I-680/SR 12 Interchange Improvement Project. This concludes informal consultation in accordance with 50 CFR 402.13(a) for the proposed I-80/I-680/SR 12 Interchange Improvement Project in Solano County, California. However, further consultation may be required if: (1) new information becomes available indicating that listed species or critical habitat may be affected by the project in a manner or to an extent not previously considered; (2) current project plans change in a manner that causes an effect to listed species or critical habitat in a manner not previously considered; or (3) a new species is listed or critical habitat designated that may be affected by the action.

Magnuson-Stevens Fishery Conservation and Management Act

The project area is located within an area identified as EFH for Central Valley fall/late fall-run Chinook salmon, managed with the Pacific Coast Salmon Fishery Management Plan under the MSA. As discussed in the above ESA section, no in-water construction will take place when Chinook salmon are likely to be present. However, adverse effects to EFH could occur from increased sedimentation and turbidity following construction activities. While these impacts are considered minor and temporary, NMFS has made the determination that the proposed action would adversely affect EFH for this species. However, the proposed action contains adequate measures to avoid, minimize, mitigate, or otherwise offset any adverse effects to EFH. Therefore, NMFS has no additional EFH Conservation Recommendations to provide.

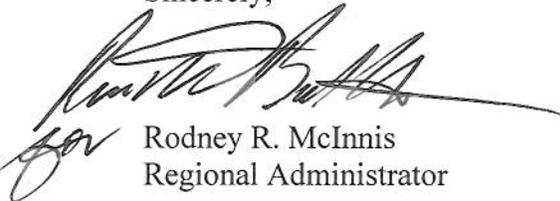
This concludes EFH consultation for Caltrans' proposed I-80/I-680/SR 12 Interchange Improvement Project, Solano County, California. Pursuant to 50 CFR 600.920(l) of the EFH regulations, Caltrans must reinstate EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH Conservation Recommendations.

Fish and Wildlife Coordination Act

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)]. Consistent with this consultation requirement, NMFS provides recommendations and comments to Federal action agencies for the purpose of conserving fish and wildlife resources. With implementation of the previously-referenced EFH conservation recommendations, NMFS has no further comments to provide.

Please contact Mr. Joseph Heublein at (707) 575-1251, or via e-mail at joe.heublein@noaa.gov should you have any questions.

Sincerely,



Rodney R. McInnis
Regional Administrator

cc: Chris Yates, NMFS, Long Beach
Bob Hoffman, NMFS, Long Beach
Bryant Chesney, NMFS, Long Beach
Ahmad Hashemi, Caltrans District 4
Copy to File ARN: 151422-SWR-2010-SR00524

Literature Cited

- Busby, P.J., T.C. Wainwright, G.J. Bryant, L. Lierheimer, R.S. Waples, F.W. Waknitz and I.V. Lagomarsino. 1996. Status Review of West Coast Steelhead from Washington, Idaho, Oregon, and California. United States Department of Commerce, National Oceanic and Atmospheric Administration Technical Memorandum NMFS-NWFSC-27. 261 pages.
- Fukushima L., and E.W. Lesh. 1998. Adult and juvenile anadromous salmonid migration timing in California streams. California Department of Fish and Game 84(3):133-145.
- Leidy, R.A., G.S. Becker, B.N. Harvey. 2005. Historical Distribution and Current Status of Steelhead/Rainbow Trout (*Oncorhynchus mykiss*) in Streams of the San Francisco Estuary, California. Oakland, CA: Center of Ecosystem Management and Restoration.
- National Marine Fisheries Service (NMFS). Central Valley Chinook Salmon, Current Stream Habitat Distribution Table. <http://swr.nmfs.noaa.gov/hcd/dist2.htm>. Accessed January, 2011.



US Fish & Wildlife Service
Pacific Southwest Region
2800 Cottage Way, Room W-2606
Sacramento, CA 95825-1846



California Department of
Transportation
Division of Environmental Analysis
1120 N. Street, MS 27
Sacramento, CA 95814

April 10, 2012

Susan Moore
Field Supervisor
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W-2605
Sacramento, CA 95825-1846

Bijan Sartipi
District 4 Director
California Department of Transportation
111 Grand Avenue
Oakland, CA 94612

This memo documents the final resolution of the automatic elevation of the Interstate 680/80, State Route 12 Caltrans Section 7 Consultation with the U.S. Fish and Wildlife Service (USFWS). The automatic elevation process follows the policy and procedures outlined in the March 18, 2011 memo describing the Caltrans/USFWS automatic elevation¹ and October 2006 Joint Memorandum for the Dispute Resolution Process².

This particular elevation process has been complex and has required several meetings, input from staff at Caltrans District 4 (D4) and the USFWS Sacramento Fish and Wildlife Service Office (SFWO), and has resulted in major revisions to the Draft Biological Opinion.

The attached Biological Opinion (BO) incorporates the results of this resolution process. This BO shall be signed by the SFWO and sent to D4 no later than noon, Monday April 16, 2012.

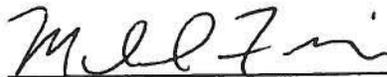
¹ Tracking Federal Endangered Species Act Consultations and Automatic Elevation Procedures
<http://www.dot.ca.gov/ser/downloads/bio/STEVETracking.pdf>

² Joint Memorandum for the Dispute Resolution Process
http://www.dot.ca.gov/ser/downloads/guidance/Dispute_Resolution_Process.pdf

Finally, we want to thank you and your staff for participating in the automatic elevation process. We believe that the elevation process, including the auto-elevation process will help us find solutions to on-going issues and result in positive partnerships, transparency, and timeliness of the consultation process.

If you have any questions please contact Amy Bailey at (916) 651-8166 or Jay Norvell at (916) 653-7136 at Caltrans or Roberta Gerson (916) 978-6191 at the RO.

Sincerely,



MICHAEL FRIS
Assistant Regional Director
Ecological Services
U.S. Fish and Wildlife Service, Region 8 Office

Date: 4/10/12

For 
JAY NORVELL
Chief
Division of Environmental Analysis
California Department of Transportation

Date: 4/10/12

Attachments: 1) Resolution Memo
2) Biological Opinion for Signature

Interstate 80/680/12 Auto Elevation Resolution: EA 04-0A5300/0400000150, Service File: 81420-2009-F-0857

This particular elevation process has been complex and has required several meetings, input from staff at Caltrans District 4 (D4) and the USFWS Sacramento Fish and Wildlife Service Office (SFWO), and has resulted in major revisions to the Draft Biological Opinion. Much of the resolution process was spent on trying to bring perspectives closer together, clarifying the science, understanding that there are unknowns associated with access to properties, and providing forums for communication of these perspectives. Note that any decisions made during this elevation process utilized best available science but are case-specific to this project and not to be assumed as precedent-setting for future projects.

The attached Biological Opinion (BO) incorporates the results of this resolution process. The BO shall be signed by the SFWO and sent to D4 no later than noon, Monday April 16, 2012.

The following notation outlines the process and decisions that were made by Caltrans Headquarters Division of Environmental Analysis (HQDEA) and USFWS Region Office (RO) (Elevation Panel) for this dispute resolution:

- On March 2, 2012 D4 submitted project description revisions for the Biological Assessment (BA) related to the vernal pool fairy shrimp and tadpole shrimp and frog to reflect : 1) incorporation of the conservation measures and analysis related to vernal pool (VP) species and the California red-legged frog (frog) as outlined in their February 17, 2012 memo, 2) A statement identifying when pre-construction surveys will be completed to clarify and confirm the amount of impacts/effects to the frog, and 3) The intent to identify a monitoring approach and plan, which will be submitted to and approved by the Service prior to construction.
- Information regarding the Callippe silverspot butterfly (butterfly) was requested by the elevation panel and reviewed on February 22, 2012.
 - The panel concluded that the available data supported that the butterfly could be reasonably inferred to be present within the general area of the proposed Business Center Drive and the Red Top Road Extensions. Therefore, Caltrans needed to enter formal consultation on the butterfly. Caltrans and USFWS needed to evaluate avoidance, minimization, and conservation measures, and these needed to be included in the Biological Assessment (BA) and incorporated into the BO.
 - The elevation panel scheduled two facilitated meetings with project-level staff from SFWO and D4 to collect additional information on avoidance, minimization and conservation measures and to understand perspectives and points of disagreement regarding project impacts.
 - The first meeting focused on clarifying and refining impact acreage mapping and identifying ways of avoiding or minimizing the impacts to the butterfly and its habitat. Also, D4 and SFWO discussed temporary and permanent impacts and expectations associated with avoidance, minimization and conservation measures related to each impact. D4

presented refined GIS mapping and all reviewed it to better understand the project impacts.

- Between the first and second meeting, the elevation panel tasked D4 and SFWO with revising the conservation measures, terms and conditions of the Draft BO as appropriate, and refining impact area mapping based on the first facilitated meeting. This action was not fully achieved by the parties; however, they did make partial progress on revisions and they did provide some information to the elevation team for further consideration. Due to this incomplete resolution, the elevation panel was unable to review a complete package of agreements and disagreements between D4 and SFWO. As a result, the second facilitated meeting that had been scheduled to finalize the resolution was modified to allow additional discussion and clarification between the elevation panel, SFWO and D4. The SFWO and D4 were again tasked with revising the Draft BO and the elevation panel developed a schedule for edits and opportunities for reviews and comments on any outstanding disagreements.
- The elevation panel met to go over each section of the revised Draft BO on March 23, 2012. Jay Norvell and Mike Fris discussed the proposed revisions to the BO were made, based on those discussions. Specific areas of resolution, discussion and associated rationale for decisions made included:
 - The elevation panel agreed that the ratios for preservation and restoration ratios for Vernal Pool species are to be based on the premise that effects to low value conservation areas will be compensated in medium to high value areas.
 - Based on information and rationale provided to the elevation panel, we determined appropriate on-site conservation measures and appropriate off-site preservation needs.
 - The elevation panel clarified that compensation will coincide with the phasing of construction packages presented in the BA. Implementation is defined as including a) identification of land to be restored or enhanced, b) associated agreements to fund restoration or enhancement activities, and c) a restoration plan and schedule approved by the Service.
 - The elevation panel modified the language associated with the Solano HCP planning throughout the document to indicate a preference for these locations rather than a requirement.
 - The panel agreed that compensation acreage for permanent impacts to the butterfly can be in the form of preservation, restoration or enhancement. Compensation for permanent impacts to the frog can be in the form of off-site preservation only. Compensation implemented within Service-approved areas that serve as appropriate upland frog habitat and butterfly habitat may be overlaid on common acreage (commonly called

“stacking”). Caltrans will receive conservation credit for the area from the Service for both species if compensation is done in this manner.

- The panel agreed that the extent of habitat loss and reduced habitat connectivity caused by the new Business Center Drive extension includes loss of and fragmentation of designated critical habitat and warrants off-site habitat preservation for the frog.
- The panel modified the Restoration Monitoring Plan to address concerns related to timing and costs associated with monitoring.
- The panel notes the need for an agreement with the entity that will be in charge of operations and maintenance of Business Center Drive in order to convey the requirements of this formal consultation should those areas be used as mitigation.
- The panel included routine maintenance considerations in the project description. Mitigation ratios to offset temporary impacts to habitat were defined for areas both within areas that would be maintained and areas that would not be maintained. Restrictions associated with routine maintenance are described in the BO as it relates to each species.

The size and technical complexities associated with this project have made this resolution process difficult. The different perspectives and points of view have resulted in the need for elevation. HQDEA and RO have attempted to arrive at the best solution that ensured conservation of the frog, butterfly, and vernal pool crustaceans, and enabled project planning to proceed. This agreement shouldn't be seen as a guideline for future projects as it is context-dependent and is a result of the information provided in this resolution process. It is fully anticipated that reinitiation will be needed due to the complexity and lengthy timeline associated with the construction of this action. We expect all parties to work collaboratively and expeditiously in these instances.

Please note: Current regulation and policy provided adequate guidance to resolve these elevations therefore no policy revision or precedential decisions were required.



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:
81420-2009-F-0857- 7

April 16, 2012

Ms. Moujan Mostaghimi
California Department Transportation
Environmental Division, MS 8E
111 Grand Avenue
Oakland, California 94612

Subject: Biological Opinion on the Effects of the Proposed Interstate 80/Interstate 680/State Route 12 Interchange Phase 1 Project, Solano County, California (EA 0A5300)

Dear Ms. Mostaghimi:

This is in response to your April 20, 2011, request for consultation with the U.S. Fish and Wildlife Service (Service) on the proposed Interstate 80 (I-80)/Interstate 680 (I-680) /State Route 12 (SR 12) Interchange Phase 1 Project in Solano County, California. At issue are the effects of the proposed action on the endangered showy Indian clover (*Trifolium amoenum*), endangered Contra Costa goldfields (*Lasthenia conjugans*) and its critical habitat, endangered vernal pool tadpole shrimp (*Lepidurus packardii*), threatened vernal pool fairy shrimp (*Branchinecta lynchi*), endangered callippe silverspot butterfly (*Speyeria callippe callippe*), threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), threatened Central California Distinct Population Segment of the California tiger salamander (*Ambystoma californiense*), the threatened California red-legged frog (*Rana draytonii*) and its critical habitat, and the endangered salt marsh harvest mouse (*Reithrodontomys raviventris*).

The Service concurs with the California Department of Transportation's (Caltrans) determination that the proposed project may affect, but is not likely to adversely affect the showy Indian clover, Contra Costa goldfields, and the Central California Distinct Population Segment of the California tiger salamander.

Caltrans has not completed protocol-level surveys for showy Indian clover in the entire action area due to access problems. Due to its extreme rarity we concur that the proposed project may affect, but is not likely to adversely affect this listed plant. Caltrans has committed to conducting Service protocol-level plant surveys of the previously inaccessible parcels on the Mangels' property north of SR 12 West (SR 12W) for showy Indian clover prior to the initial groundbreaking for Construction Package 3. Caltrans will reinstate consultation pursuant to section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 *et seq.*)(Act) if

the listed plant is found, with the understanding that the presence of any additional listed species could lead to additional conservation measures that will be determined in conjunction with the Service. In the case of reinitiation, Caltrans' course of action with this species could lead to project delays, project redesign, or other significant effects on the project.

Caltrans has minimized potential effects such that it will not adversely affect the Contra Costa goldfields, Central California Distinct Population Segment of the California tiger salamander, and salt marsh harvest mouse. This determination was based upon: (1) the proposed retaining wall along the south shoulder of SR 12 East (SR 12E) between Ledgewood Creek and approximately 300 feet east of Pennsylvania Avenue and (2) information provided in the April 2011 Biological Assessment (BA) stating that the proposed construction activities and project design would not adversely affect the hydrology of the Gentry Suisun wetlands. The adjacent Gentry Suisun wetlands are occupied by Contra Costa goldfields and this lowland area is designated critical habitat for the species. The area provides potential habitat for the Central California Distinct Population Segment of the California tiger salamander and sufficient surveys have not been conducted to discount species presence. There are records of the salt marsh harvest mouse from within the pickleweed habitat in the Gentry Suisun wetlands (CDFG 2011a, 2011b). Along with *Proposed Conservation Measure 23*, the proposed retaining wall will avoid intrusion of proposed road widening into the low-lying wetland and will be of sufficient height to prevent salamanders that may inhabit the area from entering the SR 12E roadway.

In their April 20, 2011, letter, Caltrans requested formal consultation on the valley elderberry longhorn beetle and the California red-legged frog. Caltrans determined the project may affect, but is unlikely to adversely affect the Contra Costa goldfields, vernal pool tadpole shrimp, vernal pool fairy shrimp, and callippe silverspot butterfly. Pursuant to 50 CFR 402.13(d), we do not concur with the determination by Caltrans on the vernal pool fairy shrimp, vernal pool tadpole shrimp, and callippe silverspot butterfly. During the technical assistance phase, the Service informed Caltrans and Solano Transit Authority (STA) that it is our biological opinion that the project may affect and is likely to adversely affect the vernal pool fairy shrimp, vernal pool tadpole shrimp, and callippe silverspot butterfly. This adverse effects determination was reflected in the DEIR/EIR and was not challenged by Caltrans or STA during the technical assistance phase, prior to issuance of the April 2011 BA. The Service repeated the biological reasoning for our determinations in our June 30, 2011 30-Day Letter and subsequent meetings with Caltrans and STA after Caltrans issued contrary effects determinations in their April 2011 BA. The Service disagreed with the biological rationale provided by Caltrans to support their not likely to adversely affect determinations for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and callippe silverspot butterfly in their April 2011 BA, their August 17, 2011 response to the 30-day letter, and in meetings with the Service subsequent to the issuance of the April 2011 BA. Therefore, we are issuing this biological opinion on the adverse effects of your project.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users legislation (23 U.S.C. § 327) allows the Secretary of the U.S. Department of Transportation acting through the Federal Highway Administration (FHWA) to establish a Surface Transportation Project Delivery Pilot Program, whereby a State may assume the FHWA responsibilities under the National Environmental Policy Act (NEPA) for environmental review,

responsibilities under the National Environmental Policy Act (NEPA) for environmental review, agency consultation and other actions pertaining to the review or approval of a specific project. Caltrans assumed these responsibilities for the FHWA on July 1, 2007 through a Memorandum of Understanding within the State of California

(http://www.dot.ca.gov/ser/downloads/MOUs/nepa_delegation/sec6005mou.pdf) and are exercising this authority as the Federal nexus for section 7 consultation on this project.

This biological opinion is based on: (1) the April 2011 BA, (2) the September 15, 2011 meeting with Caltrans and STA, (3) site visits and meetings during the technical assistance phase of the consultation; (4) discussions with Sue Wickham of the Solano Land Trust (SLT) regarding listed species in nearby SLT holdings; (5) miscellaneous correspondence and electronic mail (e-mail) messages between the Service and Caltrans; (6) results from the joint resolution process; and (7) other information available to the Service.

Consultation History

- | | |
|-------------------|---|
| March 26, 2007 | The Service received meeting notes from a March 15, 2007, NEPA/404 Integration Memorandum of Understanding checkpoint meeting. The Service did not attend the meeting. |
| March 10, 2009 | The Service received a California red-legged frog habitat assessment for the project from STA's consultant. |
| May 29, 2009 | The Service received meeting notes for a February 10, 2009, presentation of the alternatives for inclusion in the Draft Environmental Impact Statement (EIS) for the project and the criteria for the selection of alternatives from Caltrans. The Service did not attend this meeting. |
| November 19, 2009 | The Service met with Caltrans and STA's consultant to discuss future consultation on the project. The expectations for the BA and the need to incorporate wildlife passage into the project design were discussed. The Service was informed that the first project phase was expected to begin in 2012 and later phases may not start for 30 years or more. Caltrans and STA stated that each project phase had independent utility and Caltrans planned to initiate separate consultation on Phase 1. Their current EIS was limited to Phase 1 but the Environmental Impact Report (EIR) included Phase 1 and 2. |
| June 28, 2010 | The Service attended a meeting with Caltrans and STA to discuss the consultation process and a revised project description. |
| July 15, 2010 | The Service provided technical assistance via an e-mail message to STA's consultant in response to the March 2009 California red-legged frog habitat assessment. |

- July 19, 2010 The Service visited Solano Land Trust land holdings with STA's consultant to discuss needed funding to complete and perform California red-legged frog-associated restoration and habitat management projects. STA was exploring compensation opportunities to minimize the effects of the proposed project on the listed frog. The Service emphasized that preservation and management of red-legged frog breeding and upland habitat adjacent to the proposed Business Center Drive Extension is the preferred option for minimizing the projects' adverse effects on the frog. A conservation easement on this land would preserve the proposed road undercrossing connections between a primary breeding pond and the remainder of the SOL-2 California red-legged frog critical habitat unit.
- July 20, 2010 The Service received Wildlife and Fish addendums for the DEIR/EIS from Caltrans for review.
- August 13, 2010 The Service received Volumes 1 and 2 of the DEIR/EIS from Caltrans. Although a final alternative has not been selected, Caltrans decided to pursue section 7 consultation on what is identified as Alternative C Phase 1 in the DEIR/EIS. Caltrans included the Solano County Draft Habitat Conservation Plan (HCP) (SCWA 2009) in the *Consistency with State, Regional, and Local Plans and Programs*, Section 3.1.1.2. The DEIR/EIS acknowledged the draft Solano HCP as establishing a framework for complying with State and Federal endangered species regulations. According to the DEIR/EIS, all the proposed project alternatives would result in impacts to callippe silverspot butterfly, vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, California red-legged frog and their habitat. The document stated that Alternative C, Phase 1 had the potential to destroy or disturb callippe silverspot butterfly or its habitat. The DEIR/EIS also stated that Alternative C Phase 1 would result in impacts to 1 71 acres (1.45 acres direct impacts + 0.26 acre indirect impacts) of vernal pool fairy shrimp/vernal pool tadpole shrimp habitat. In the DEIR/EIS, Caltrans committed to compensating for direct effects to vernal pool fairy shrimp and vernal pool tadpole shrimp at 3:1 and at a minimum of 1 1 1 for indirect effects. The DEIR/EIS stated that the actual ratios would be determined through consultation with the Service and that credits would be purchased through a Service-approved conservation bank. Although the analysis was not included in the April 2011 BA, the DEIR/EIS acknowledged that the proposed Business Center Drive Extension would reduce dispersal opportunities within the California red-legged frog SOL-2 critical habitat unit. The DEIR/EIS concluded that this reduction in dispersal could result in substantial frog mortality. The DEIR/EIS stated that the effects to the California red-legged frog would be compensated by habitat enhancement or contribution to a California red-legged frog conservation bank. In the *Growth-Inducing Impacts* section of the DEIR/EIS, Caltrans concluded that the proposed project would accommodate growth and that it would indirectly

- lead to development and intensification of land uses by improving access and roadway capacity.
- October 18, 2010 The Service issued a DEIR comment letter (Service File #81420-2009-TA-0857-1) to Caltrans.
- November 4, 2010 The Service met with STA and their consultant to discuss our DEIR/EIS comments relevant to the consultation. We explained the need for adequate passage to allow listed species and wildlife to safely cross roads, wildlife passage structures and directional fencing designs, construction scheduling, conservation measures, effects determinations on Contra Costa goldfields critical habitat, and the California tiger salamander habitat assessment.
- November 10, 2010 The Service sent STA's consultant comments regarding their draft of the November 4, 2010, meeting notes. The Service recommended that the two large crossings on the Business Center Drive Extension be spanned structures rather than culverts and that the western crossing (the third undercrossing on the Business Center Drive Extension) be at least 78 inches wide with a natural bottom. The Service clarified that the use of vegetation would not be an effective alternative to fencing to direct California red-legged frogs to safe undercrossings or exclude them from the road.
- November 18, 2010 The Service visited the proposed project site with Caltrans and STA's consultant to discuss the Business Center Drive Extension and the Contra Costa goldfields critical habitat, potential branchiopod habitat, and potential California tiger salamander habitat in the Gentry Suisun wetland area.
- November 29, 2010 The Service attended a NEPA/Section 404 Integration Process checkpoint meeting. The Service recommended that the planned relocation of businesses displaced by the project should be covered in the section 7 consultation because the relocations would not occur if not for the proposed project. Caltrans and STA informed the Service that a BA would be provided for the project within a week of the meeting.
- April 21, 2011 The Service received a digital and hard copy of an April 2011 BA from Caltrans with a letter requesting formal consultation for the California red-legged frog and valley elderberry longhorn beetle, and informal consultation on Contra Costa goldfields, vernal pool tadpole shrimp, vernal pool fairy shrimp, callippe silverspot butterfly, and the Central California Distinct Population Segment of the California tiger salamander.
- May 24, 2011 The Service received a letter from Caltrans stating that the Service was beyond the 30-day review period for the BA. However, the BA that had been provided to us by Caltrans was incomplete and it did not contain all

- of the information necessary to initiate formal consultation pursuant to 50 CFR 402.14(c).
- June 30, 2011 The Service issued a 30-day letter (Service File #81420-2009-0857-2) to Caltrans in response to the April 2011 BA.
- August 19, 2011 The Service received Caltrans' August 17, 2011 response to the Service's June 30, 2011 30-day letter. In the letter, Caltrans requested the issuance of a draft biological opinion.
- August 26, 2011 Caltrans notified the Service via an e-mail message that they were entering the formal elevation process to resolve consultation conflicts. This is a procedure both agencies have to agree to in order to resolve impasses on projects.
- September 15, 2011 The Service met with Caltrans and STA to discuss Caltrans' August 19, 2011, response to the June 30, 2011, 30-day letter. The issues and requests for adequate project and species information were not resolved during the meeting. Caltrans asserts that under section 7 they do not recognize in-perpetuity preservation of habitat as a means to minimize the project's effects on listed species. The Service explained the biological reasons why the vernal pool fairy shrimp, vernal pool tadpole shrimp, and callippe silverspot butterfly are likely to be affected by the proposed project. Caltrans and STA stated they were reluctant to seek take coverage for these species because of their concerns of the costs associated with conservation measures for these species. Caltrans and STA requested a list of conservation measures that would be appropriate to minimize the adverse effects on these listed animals. Caltrans requested that the Service issue a biological opinion for the project without authorization for incidental take for these three species with the acknowledgement they would accept the risk of violating the prohibitions of section 9.
- October 7, 2011 The Service Caltrans Liaison preparing the draft biological opinion was instructed to stop work on the project while Caltrans considered approval to provide additional funding to complete consultation.
- November 3, 2011 In response to a request made during the September 15, 2011 meeting, the Service sent a written list of recommended conservation measures to minimize the proposed project's effects on listed species to Caltrans and STA (Service File #81420-2009-F-0857-3).
- November 17, 2011 The Service received Caltrans' November 15, 2011 letter response to the Service's November 3, 2011 letter via e-mail. Caltrans declined to change their determination and request formal consultation for the vernal pool fairy shrimp, vernal pool tadpole shrimp, and callippe silverspot butterfly. However, they provided no biological explanation for their determination.

Caltrans also declined adoption of the appropriate conservation measures listed in the Service's November 3, 2011 letter to minimize effects to the vernal pool fairy shrimp, vernal pool tadpole shrimp, callippe silverspot butterfly, valley elderberry longhorn beetle, and California red-legged frog.

November 30, 2011 The Service Caltrans Liaison received approval from Caltrans to resume work on the consultation.

December 1, 2011 The Service attended a NEPA/Section 404 checkpoint meeting. Caltrans and STA discussed the project alternatives and avoidance and minimization measures with a collection of State and Federal regulatory agencies. A final project alternative had not been selected. Caltrans is still in the process of finalizing a Least Environmentally Damaging Practicable Alternative determination and approval of a Conceptual Mitigation Plan.

December 15, 2011- April 11, 2012 Caltrans and the Service entered into and completed the joint dispute resolution elevation process to resolve outstanding issues on the consultation

BIOLOGICAL OPINION

Description of the Proposed Action

The following project description was provided by Caltrans with minor modifications for reasons of clarity and accuracy provided by the Service.

Caltrans' full-build project involves comprehensive transportation improvements to the I- 80/ I-680 /SR 12 interchange complex intended to meet the future traffic demand over a 20-year planning horizon. The full-build includes the widening of I-680 and I-80 and the relocation, upgrade, and expansion of the I-80 westbound truck scales. The full scope of these improvements is not currently funded under the Metropolitan Transportation Commission's Regional Transportation Plan, 2035. Consequently, a fundable first phase of the full-build project has been developed (referred to as Phase 1). Phase 1 is the subject of evaluation under NEPA and the action for which a record of decision will be issued. STA has provided rationale for why Phase 1 has independent utility and therefore is the proposed action for this section 7 consultation.

General Scope of Work

The proposed Phase 1 project is comprised of the following components:

1. Improvements to the I-80/I-680/SR 12W) interchange;
2. Realignment of I-680;

3. A new interchange at I-680 and Red Top Road;
4. A new road connecting the I-80/Red Top Road interchange to Business Center Drive (Business Center Drive Extension);
5. A new interchange at SR 12W and the new Red Top Road alignment;
6. A modified interchange at I-80 and Green Valley Road;
7. New I-80 bridges over Green Valley Creek;
8. Widening I-80;
9. A new lane on eastbound SR 12E; and
10. Widening of the SR 12E bridge over Ledgewood Creek.

Construction Schedule and Funding

The proposed project will be constructed in a series of seven discrete Construction Packages over an eight-year period, as funding becomes available. A summary of the anticipated construction packages, associated activities, and their sequencing is shown in Table 1.

Table 1. Construction Packages and Scheduling

Construction Package Number	Main Construction Elements	Scheduling
1	<ol style="list-style-type: none"> 1. Construct the westbound I-80 to westbound SR 12W (Jameson Canyon) Connector. 2. Widen westbound I-80 between the existing I-80/I-680 separation and SR 12W. 3. Reconstruct the west half of the I-80 Green Valley Road interchange. 	Start in 2013 with approximate two-year duration.
2	<ol style="list-style-type: none"> 1. Construct the I-680/Red Top Road interchange. 2. Realign Lopes Road and Fermi Road. 3. Realign Ramsey Road around the proposed I-680/Red Top Road interchange. 	Start in 2014 with approximate 1.5-year duration.
3	<ol style="list-style-type: none"> 1. Construct the westbound I-80 to southbound I-680 connector. 2. Widen westbound I-80 between the I-80/Suisun Valley Road and the I-80/ Green Valley Road interchanges. 3. Reconstruct the westbound I-80 bridge over Green Valley Creek. 4. Construct a new westbound on-ramp from I-80 at Suisun Valley Road. 5. Construct a new westbound off-ramp from I-80 to Green Valley Road. 6. Construct new bridge over Green Valley Creek carrying westbound off-ramp to Green Valley Road. 7. Remove the existing I-80/I-680 connector bridges over I-80 and Green Valley Creek. 8. Remove Neitzel Road. 9. Remove eastbound I-80 to SB I-680 connector. 10. Excavation and grading of the Business Center Drive Extension. 	Start in 2014 with approximate two-year duration.

4	<ol style="list-style-type: none"> 1. Construct the northbound I-680 to eastbound I-80 connector. 2. Reconstruct the eastbound SR 12W connector to eastbound I-80. 3. Reconstruct the eastbound I-80 off-ramp to Green Valley Road. 4. Reconstruct Green Valley Road on-ramp to eastbound I-80. 5. Realign both Lopes Road and Green Valley Road to connect to the original I-680 alignment. 6. Widcn SR 12E one lane to the south, including widening the culvert for Ledgeewood Creek. 	Start in 2014 with approximate two-year duration. FHWA and Caltrans will adopt the full new alignment of I-680 and transfer the original alignment to local control.
5	<ol style="list-style-type: none"> 1. Construct the northbound I-680 to westbound SR 12W connector. 2. Reconstruct the I-80/Red Top interchange. 3. Construct a new SR 12W/Red Top Road interchange. 4. Construct the Red Top Road/Business Center Drive extension. 	Start in 2018 with approximate two-year duration.
6	<ol style="list-style-type: none"> 1. Construct the I-80/I-680 HOV connectors. 	Start in 2018 with approximate two-year duration.
7	<ol style="list-style-type: none"> 1. Construct the northbound I-680/WB I-80 loop on-ramp. 2. Construct the eastbound I-80 connector to southbound I-680. 3. Reconstruct the Union Pacific Railroad underpass. 	Start in 2018 with approximate 1.5-year duration.

NOTE: This schedule is approximate and subject to change.

Work in drainages and wetlands will be restricted to the dry season (April 15–October 15, or as otherwise specified in regulatory permits). Work in drainages that support habitat for anadromous fish, such as Green Valley Creek and Ledgeewood Creek, will be restricted to the time when fish are not as likely to be present. To the extent possible, vegetation removal will be limited to between September 1 and January 31 to minimize adverse effects to migratory birds. Nighttime construction will be minimized.

Construction Activities

Highway and Road Construction

Highway construction for Phase 1 will consist of widening I-80 to the north for approximately 1 mile between a point west of Suisun Valley Road and SR 12W, realignment of I-680 and realignment of the connector between westbound I-80 and SR 12W. Caltrans will acquire additional ROWs to accommodate the widening. Some highway construction will take place in all seven Construction Packages.

Highway construction will generally consist of cutting and filling to create a roadbed, grading to a maximum depth of 3.3 feet, paving or repaving, and striping or restriping. Highway sections will be constructed or altered to encourage drainage to the sides of the highway.

Roadway excavation will be conducted using equipment such as scrapers, front-end loaders, and motor graders to excavate the area and haul material to construct the embankments necessary to support the proposed roadways. Surplus excavated material will be hauled offsite to an approved commercial disposal site using dump trucks when necessary. The location(s) of material borrow and location and type of material disposal will be determined by the contractor. Caltrans will require the contractor to obtain any necessary environmental clearances associated with obtaining a material borrow site, or with the disposal or reuse of surplus materials. Once the roadbed has been excavated, the soil will be rolled and vibrated with a sheepsfoot or drum roller to 95 percent relative compaction.

SR 12E Widening

In Construction Package 4, a third eastbound lane and standard shoulder will be constructed along SR 12E from I-80 east to the existing Webster Street off-ramp immediately east of the SR 12E/Pennsylvania Avenue intersection. Construction of the lane and shoulder will include retaining walls to minimize temporary and permanent disturbance south of SR 12E, and the existing ROW fence would remain in its current location. Drainage improvements along SR 12E would maintain existing hydrological conditions and patterns.

Business Center Drive Extension

Construction of the extension of Red Top Road to Business Center Drive will include excavation to a maximum depth of 95 feet in some areas prior to grading and paving. Excavation and grading will occur during Construction Package 3 and roadway construction will occur during Construction Package 5. Three undercrossings will be included in the Business Center Drive Extension between the existing terminus of Business Center Drive and the proposed intersection with Jameson Canyon Road (SR 12W). The undercrossings will include two approximately 15 by 14 feet span style undercrossings corresponding with two existing dirt access roads. The easternmost large undercrossing will allow continued vehicle access to an existing residence and the second undercrossing will enable access for vehicles and cattle to the Mangels' Pond. The third culvert will be located between the pond access and Jameson Canyon Road. This 60-inch diameter round culvert will convey an ephemeral drainage and will be designed to have a natural bottom (dirt or gravel). The extension from the Jameson Canyon Road intersection to I-80 will include a span bridge over Jameson Canyon Creek.

Approximately 2.5 miles of directional fencing will be attached to the ROW fencing paralleling the Business Center Drive Extension. The ROW fencing is intended to define the ROW, deter access to adjacent private land, and keep livestock from entering the ROW. The attached directional fencing is intended to exclude California red-legged frogs from the ROW and guide them to the three undercrossings and Jameson Canyon Creek Bridge described in the previous paragraph. The fencing will consist of hard plastic or a combination of permanent hardware cloth and flashing with a lip sufficient to deflect frogs on the top, or similar material and design. Directional fencing will be attached to the newly installed ROW fence on both sides of the new roadway constructed between Business Center Drive and I-80. The fence will be constructed along Business Center Drive, which is a local road off the State highway system, and its long-term maintenance will be the responsibility of STA.

Culverts and Bridge/Box Culvert Construction

The project would require the extension/widening of 12 existing culverts and bridges.

Bridge Replacement Construction Activities. The existing I-80 bridges over Green Valley Creek will be replaced with single-span structures. In Construction Package 3, the existing westbound I-80 bridge will be removed and replaced with a single-span structure approximately 103 feet long and 133 feet wide. A new single-span Green Valley Creek bridge for the I-80 Green Valley Road off-ramp will be approximately 180 feet long and 39 feet wide.

Bridge replacement will occur in two segments to maintain traffic on I-80. The work within Green Valley Creek bed and bank for each segment is expected to take approximately four

months and will be scheduled between June 15 and October 15. Bridge demolition will occur when Central Valley fall-run/late-fall-run Chinook salmon and central California coast steelhead are less likely to be present. Any work occurring before June 15 or after October 15 will be restricted to the road or bridge surface, and all work in or adjacent to a creek will be done with the implementation of water quality best management practices (BMPs).

Construction equipment would access the site from the north side of I-80. A staging area will be located within the curve of the I-680 entrance to westbound I-80. Bridge construction will involve the following activities.

1. Bridge abutment locations will be scarified and then excavated to the bottom of the abutment or pile cap using backhoes or bobcats. In some cases, the area adjacent to the abutment will be over-excavated by several feet to ensure that low-expansion material is adjacent to the abutment and wing walls.
2. Temporary cofferdams will be constructed both upstream and downstream of the bridge, and a piped water diversion system will be installed. The cofferdams will be at least 20 feet from the limit of the existing bridge.
3. Pile driving will be necessary to construct new bridge abutments for both bridges over Green Valley Creek. Piles will be located at the top of the creek bank and are anticipated to be 12-inch-square piles driven to a depth of approximately 70 feet. A vibratory hammer will be used when feasible. The number of strikes will depend on the loading and soil characteristics. Pile driving equipment will be operated from beyond the top bank.
4. Concrete abutments or pile caps will be constructed above the piles.
5. Wooden or steel falsework will be placed within the creek (banks and channel) once the abutments and columns have been constructed as necessary to support the construction of the cast-in-place concrete box girder structures.
6. When the reinforcement is set, the concrete will be placed for the superstructure. Once the concrete for the superstructure has hardened the tendons will be tensioned.
7. The last elements of major construction for the bridges will be bridge railings, approach slabs (placed on the embankment approaches to the bridge), and slope paving.
8. To the extent practicable, disturbed portions of Green Valley Creek (bed and bank) will be restored to pre-project conditions upon completion of construction. This may include grading and contouring the site, and seeding or planting with native plants as appropriate.

Culvert Construction Activities. Culvert construction will take place at Ledgewood Creek in Construction Package 3 and at Jameson Canyon Creek in Construction Packages 3 and 4. Construction associated with the culverts is expected to take approximately four months and will be scheduled during the driest time of the year (June 15–October 15).

Culvert construction will involve the following activities:

1. Temporary cofferdams (made of gravel, fabric, and pipe) will be constructed upstream and downstream from the culvert; a water diversion system using pipes will be installed to facilitate dewatering of the channel within the cofferdam during construction while bypassing creek flow. The cofferdams will be approximately 20 feet from the limit of the existing culvert.
2. Temporary cofferdams will be constructed to facilitate excavation of existing footings. The cofferdams will consist of gravel wrapped in fabric and would be slightly larger than the footing plan dimensions.
3. Vibratory equipment will be used to compact soil if feasible.
4. Falsework will be placed within the creek (banks and channel) as necessary to support construction of the cast-in-place (poured) concrete box culvert.
5. Falsework will be removed after concrete has set.
6. The concrete invert slab (i.e., invert of the culvert) will be extended to the edge of the widened culvert.
7. To the extent practicable, disturbed portions of Ledgewood Creek and Jameson Canyon Creek (bed and bank) will be restored to pre-project conditions when construction is complete. This may include grading and contouring the site, and seeding or planting with native plants as appropriate.

Ledgewood Creek Culvert. The Ledgewood Creek culvert will be extended 15 feet to the south to accommodate an additional lane for SR 12E (Construction Package 4). The existing crossing consists of a series of five culverts, each measuring 16.5 feet wide and supported by wall piers.

Construction associated with the culvert is expected to take approximately four months and will be scheduled during the driest time of the year (June 15–October 15) for ease of operation and to avoid potential effects to anadromous fish.

Jameson Canyon Creek Culvert. The Jameson Canyon Creek culvert will be constructed under the new I-680 alignment. It will be a two-box culvert, with each box approximately 12 feet wide and 8 feet high. Construction associated with the culvert is expected to last approximately four months and will be scheduled during the driest time of the year (June 15–October 15).

Utilities

As part of the proposed project, utilities within the project footprint will be relocated, realigned, or extended as necessary to accommodate project construction and operation. The maximum extent of disturbance from utilities falls within the project footprint. Utilities that will be affected are water, electrical, gas, cable/fiber, and telephone lines. Actions affecting these utilities will be coordinated with the respective operators. Caltrans will submit detailed

descriptions of utility relocations should the area of disturbance exceed the limits of the current proposed project footprint.

Staging Locations

Caltrans has identified potential construction staging areas within the proposed action area. Should construction contractors determine that other staging areas within or outside the state ROW and proposed action area are necessary to complete work, the contractor will be required by Caltrans or STA to obtain all necessary environmental clearances associated with the alternative staging areas prior to their use for staging purposes. Staging locations will be used for temporary placement of heavy construction equipment and vehicles; construction materials such as shotcrete (a mixture of concrete, fine aggregate, and water blown pneumatically through a hose), gravel, road base, and rebar; equipment maintenance shops; field offices; and rest rooms.

Access roads linking staging areas to the various work areas will be cleared and graded using equipment such as excavators, bobcats, and bulldozers. Upon project completion, and to the extent practicable, staging location and access roads will be returned to their pre-project conditions.

Construction Site Restoration

Caltrans plans to restore areas of temporary ground disturbances, including storage and staging areas, and temporary roads. These areas will be re-contoured, if appropriate, and revegetated with seeds and/or cuttings of appropriate native plant species to promote restoration of the area. Caltrans has developed a restoration plan that will be submitted to the Service for approval prior to initial ground breaking. This plan includes immediate application of permanent erosion control measures for all areas disturbed by construction activities. The permanent erosion control measures will include native (here referring to species naturally occurring in Solano County) grass and forb seed, fertilizer, compost and mulch for soil protection. The restoration plan also includes planting at each creek crossing using a combination of wetland, riparian and upland/transitional species appropriate for the conditions at the specific creek crossings and is informed by local reference sites. To the maximum extent practicable (i.e., presence of natural lands), topsoil will be removed, cached, and returned to the site according to successful restoration protocols. Loss of soil from run-off or erosion will be prevented with straw bales, straw wattles, or similar means provided they do not entangle or block California red-legged frog escape or dispersal routes.

Equipment

Construction is expected to require heavy equipment such as cranes, pile drivers, vibratory and hydraulic hammers, excavators, bobcats, bulldozers, roadheaders, hydraulic excavators or backhoes, scrapers, rubber-tired dump trucks, front-end loaders, load-haul-dumps, drill jumbos, front-end loaders and motor graders, sheepsfoot or drum rollers, and asphalt-paving machines.

Temporary construction areas will be cleared, graded, and reestablished using equipment such as excavators, bulldozers, and/or bobcats.

Routine Maintenance

Routine maintenance activities are anticipated within the R-O-Ws. Within R-O-Ws determined to be temporarily impacted, routine maintenance may have restrictions.

Proposed Conservation Measures

Caltrans proposes to avoid and minimize effects to the showy Indian clover, Contra Costa goldfields, vernal pool tadpole shrimp, vernal pool fairy shrimp, callippe silverspot butterfly, valley elderberry longhorn beetle, Central California Distinct Population Segment of the California tiger salamander, and California red-legged frog by implementing the following measures:

1. All construction personnel will attend a mandatory Worker Environmental Awareness Training Program delivered by a Service-approved biologist prior to working on the project site. The program will focus on the conservation measures that are relevant to employee's personal responsibility and will include an explanation as how to best avoid take of the vernal pool tadpole shrimp, vernal pool fairy shrimp, callippe silverspot butterfly, valley elderberry longhorn beetle, and California red-legged frog. The program will include an explanation of Federal laws protecting these listed species as well as the importance of compliance with this biological opinion. Documentation of the training, including sign-in sheets, will be kept on file and will be available on request.
2. Project employees will be provided with written guidance governing vehicle use, speed limits on unpaved roads, fire prevention, and other hazards.
3. A Service-approved biologist(s) will be on-site during any ground-disturbing activities that have the potential to adversely affect the showy Indian clover, Contra Costa goldfields, vernal pool tadpole shrimp, vernal pool fairy shrimp, callippe silverspot butterfly, valley elderberry longhorn beetle, California tiger salamander, and California red-legged frog.
4. A Service-approved biologist will be present during all construction-related activities in sensitive habitats. If special-status species are discovered during these activities, the Service-approved biologist, through the Resident Engineer, will halt all work within 50 feet of the species and contact the Service to determine how to proceed.
5. Prior to construction, Environmentally Sensitive Areas will be delineated using high-visibility orange construction fencing installed along the perimeter of the work areas to clearly delineate the extent of the construction area. The project plans will show the locations where fencing will be installed. The plans will also define the fencing installation procedure. The project's special provisions package will provide clear language regarding acceptable fencing material and prohibited construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within sensitive areas.

6. No more than 20 calendar days prior to any ground disturbance in a given location, pre-construction surveys will be conducted by a Service-approved biologist for the showy Indian clover, Contra Costa goldfields, vernal pool tadpole shrimp, vernal pool fairy shrimp, callippe silverspot butterfly, elderberry plants, and California red-legged frog where habitat was identified for each respective species. These surveys will consist of walking surveys of the project limits and accessible adjacent areas within at least 50 feet of the project limits. The biologist(s) will investigate all potential California red-legged frog cover sites. This includes thorough investigation of mammal burrows, appropriately sized soil cracks, and debris. Native vertebrates found in the cover sites will be documented and relocated to an adequate cover site in the action area vicinity. The entrances and other refuge features within the project limits will be collapsed or removed following investigation and clearance.
7. Vegetation clearing will be limited throughout the proposed project area to the non-nesting season (September 1–January 31) to the extent possible. Vegetation removal work outside this window will be preceded by preconstruction nest clearance surveys.
8. Vegetation will be cleared only where necessary and will be cut approximately 4 inches above soil level except in areas that will be excavated for roadway construction. This will allow plants that reproduce vegetatively to resprout after construction. All clearing and grubbing of woody vegetation will be done using hand tools, small mechanical tools, or backhoes and excavators. All cleared vegetation will be removed from the project footprint to prevent attracting animals to the project site.
9. All slopes or unpaved areas temporarily disturbed by construction activities will be stabilized to prevent erosion at least three days prior to a forecasted rain event. After construction activities, the temporarily disturbed areas will be restored to pre-project conditions to the maximum extent practicable. Where disturbance includes the removal of trees, native species will be replanted.
10. To reduce the spread of invasive, nonnative plant species and minimize the potential decrease of palatable vegetation for wildlife species, Caltrans will comply with Executive Order 13112. This order is intended to prevent the introduction of invasive species and provide for their control to minimize adverse economic, ecological, and human health effects. In the event that noxious weeds are disturbed or removed during construction-related activities, the contractor will be required to contain the plant material associated with these noxious weeds and dispose of them in a manner that will not promote the spread of the species. The contractor will be responsible for obtaining all permits, licenses, and environmental clearances for properly disposing of materials. Areas subject to noxious weed removal or disturbance will be replanted with fast-growing native grasses or a native erosion control seed mixture. If seeding is not possible, the area of disturbance will be covered to the extent practicable with heavy black plastic solarization material until the end of project construction.
11. Construction access, staging, storage, and parking areas will be located within the project ROW or temporary easements and outside of designated Environmentally Sensitive

Areas. Access routes and the number and size of staging and work areas will be limited to the minimum necessary to construct the proposed project. Routes and boundaries of roadwork will be clearly marked prior to initiating construction or grading.

12. All food and food-related trash items will be enclosed in sealed trash containers and removed completely from the site at the end of each day.
13. No firearms will be allowed in the action area except for those carried by authorized security personnel, or local, State, or Federal law enforcement officials.
14. Caltrans and STA will install bio-swales and bio-filtration in the area adjacent to roadways to avoid and minimize sediment loading and point source pollutants.
15. Stormwater pollution prevention plans (SWPPPs) and erosion control BMPs will be developed and implemented to minimize any wind- or water-related erosion and will be in compliance with the requirements of the Regional Water Quality Control Board. The design staff will include provisions in construction contracts for measures to protect sensitive areas and prevent and minimize stormwater and nonstormwater discharges. Protective measures will include, at a minimum, those listed below.
 - a. No discharge of pollutants from vehicle or equipment cleaning will be allowed into any storm drains or water courses.
 - b. Vehicle and equipment fueling and maintenance operations will be at least 50 feet away from water courses, except at established commercial gas stations or established vehicle maintenance facilities.
 - c. Concrete waste and water from curing operations will be collected in washouts and will be disposed of and not allowed into water courses.
 - d. Spill containment kits will be maintained onsite at all times during construction operations and/or staging or fueling of equipment.
 - e. Dust control measures will include use of water trucks and organic tackifiers to control dust in excavation-and-fill areas, covering temporary access road entrances and exits with rock (rocking), and covering of temporary stockpiles when weather conditions require.
 - f. Silt fences, coir rolls, or straw wattles will be installed along or at the base of slopes during construction to capture sediment.
16. All equipment will be maintained such that there will be no leaks of automotive fluids such as gasoline, oils, or solvents, and a Spill Response Plan will be prepared.
17. To prevent inadvertent entrapment of animals during construction, all excavated, steep-walled holes or trenches more than 1 foot deep will be covered at the close of each

working day with plywood or other suitable material, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled they must be thoroughly inspected for trapped animals. All replacement pipes, culverts, or similar structures stored in the action area overnight will be inspected before they are subsequently moved, capped, or buried. If at any time a listed species is discovered, the Resident Engineer and Service-approved biologist will be immediately informed. The animal will be allowed to move out of the area on its own volition.

18. If requested through the Resident Engineer or Construction Inspector before, during, or upon completion of groundbreaking and construction activities, Caltrans will ensure that the Service and/or its designated agents can, immediately and without delay, access and inspect the project site for compliance with the proposed project description, conservation measures, and terms and conditions of the biological opinion, and to evaluate project effects on listed species and their habitat.
19. The following measures are intended to avoid and minimize effects to the showy Indian clover
 - a. Prior to groundbreaking for Construction Package 3, protocol-level surveys of the inaccessible parcels on the Mangels' property north of SR 12W will be conducted for showy Indian clover in accordance with the Service protocol.
 - b. If protocol-level surveys identify showy Indian clover plants within 250 feet of the project footprint, the project footprint will be fenced and flagged to ensure that construction equipment and construction activities are confined and completely avoid any potential direct or indirect effects on individual showy Indian clover plants during construction. In the event of a positive survey finding, Caltrans will implement the following specific measures.
 - i. Orange Environmentally Sensitive Area construction barrier fencing at least 4 feet in height will be installed to protect Environmentally Sensitive Areas. A Service-approved biologist will identify sensitive biological resources adjacent to the construction area; the Environmentally Sensitive Areas to be fenced will be included in the contract plans and specifications.
 - ii. A Service-approved biologist will identify potential showy Indian clover habitat, and a protective silt fence, described in the Caltrans Standard BMPs, will be installed to protect down-gradient habitat for showy Indian clover from being affected by sediment loading.
 - iii. Construction activities conducted within the area of potential showy Indian clover habitat will be confined to the driest season (June 1–October 15) to protect down-gradient, showy Indian clover habitat and minimize potential indirect dust effects on identified flowering showy Indian clover plants.

- iv. A Service-approved biologist will be present during all ground-disturbing activities occurring within 250 feet of occupied showy Indian clover habitat to ensure that showy Indian clover habitat is avoided.
- v. Vegetation removal within 250 feet of occupied showy Indian clover habitat will be limited to the maximum extent practicable.
- vi. A Service-approved biologist will develop and conduct environmental education training for construction employees working on ground-disturbing activities. The program will include the following: a description of showy Indian clover and its habitat needs, photographs of the plant species, an explanation of its legal status and protection under the Act, and a list of the measures that will be implemented to minimize and avoid potential effects on showy Indian clover.
- vii. The Service-approved monitor will coordinate with the Resident Engineer to ensure that the contractor maintains the staked, fenced, and flagged perimeters of the construction area and staging areas adjacent to sensitive biological resources, including occupied or potential showy Indian clover habitat.

20. The following measures are intended to minimize direct and indirect effects to callippe silverspot butterfly.

- a. Caltrans will minimize harm to the callippe silverspot butterfly resulting from the adverse effects to 58.14 acres of habitat. Compensation implemented within Service-approved areas that are both California red-legged frog habitat and Callippe silverspot butterfly may be overlaid on common acreage as long as it is appropriate habitat for each species. The area will receive conservation credit from the Service for both species. The compensation will be phased to coincide with project construction packages as presented in Table 1 and implemented 60 calendar days prior to the date of initial ground disturbance.

Compensation will be based on the amount of permanent and temporary loss of callippe silverspot butterfly habitat. Temporary habitat loss will be compensated at rates based on the amount of time it takes to restore the habitat to baseline conditions following the date of initial habitat disturbance and whether the restored habitat will be subjected to ongoing roadway maintenance activities that would not be entirely beneficial to the species. Off-site conservation will offset routine maintenance activities that are short in duration, e.g. mowing. Habitat value in these R-O-W areas is diminished but not permanently destroyed. Should the determination of permanent versus temporary habitat loss change after Caltrans has provided this compensation, Caltrans will provide additional compensation, if necessary, or apply excess compensation towards future projects that adversely affect the callippe silverspot butterfly.

The maintained ROW is defined as the ROW between the edge of pavement or denuded road shoulder and the Caltrans ROW fence. Permanent effects will

occur within the bounds of the maintained ROW (road surface and area between edge of pavement and ROW fence).

Callippe Silverspot Butterfly Habitat Compensation

Level of Effect	Duration ¹	Compensation Ratio	Acres of Effects ²	Acres of Compensation ³
Permanent	Permanent	3:1	38.82	116.46
Temporary	Within 1 year	1:1 on-site 0.5 off-site	19.32	9.66
	Within 2 years	1:1 on-site 1.5:1 off-site	0	0
	Greater than 2 years	3:1 off-site OR 2:1 off-site AND 1:1 on-site	0	
TOTAL			58.14	126.12

¹ period of time from the date of initial ground disturbance until the success criteria described in the restoration/revegetation plan are met.

² as per GIS map dated March 2012, potential to be adjusted at final project design, with subsequent reinitiation.

³ Acres of compensation = off-site areas.

Caltrans will compensate for adverse effects to callippe silverspot butterfly habitat by implementing one of the following two options:

- i. Caltrans will establish in-perpetuity callippe silverspot butterfly habitat preservation by purchasing habitat or purchasing callippe silverspot butterfly habitat credits from a Service-approved conservation bank.

Compensation will be implemented with in-perpetuity preservation of callippe silverspot butterfly habitat with high conservation values and (1) include ridge line topographical features associated with callippe silverspot butterfly breeding behavior and adult and/or larval nectar plants, and (2) preference given to areas located within the Callippe Silverspot Butterfly Conservation Area defined in the Draft Solano HCP (SCWA 2009). Location of the proposed conservation areas will be submitted to the Service for review and approval.

The habitat will include a Service-approved conservation easement, held by a third party. An approved ecologically-based conservation easement will include managed public access, a management plan, and an in-perpetuity endowment or other permanent non-wasting management fund based on a PAR-like property analysis. The management plan will include a description of the site, management needs (e.g. grazing plan, non-native vegetation and animal control, etc), when the management activities will be implemented, how often and to what level monitoring of the site will occur, and an action/contingency plan to address potential management issues.

- ii. Caltrans will implement or fund restoration and enhancement actions within occupied callippe silverspot butterfly habitat that will have beneficial effects on the species. Such measures shall be implemented on lands with in-perpetuity conservation beneficial to the callippe silverspot butterfly.

Implementation includes identification of land to be restored or enhanced, associated agreements to fund restoration or enhancement activities, and a restoration plan and schedule approved by the Service.

- b. Caltrans will survey for the presence of adult nectar and larval host plants and adult nectar sources within areas that will be subject to temporary effects within callippe silverspot habitat. The surveys will be conducted during the blooming season (March to May) no more than one year prior to the excavation and grading of the Business Center Drive Extension proposed to occur during Construction Packages within Callippe silverspot butterfly habitat. SLT will be contacted in order to synchronize the surveys with peak *Viola* blooming on the Swett Ranch. Observed adult nectar plants and *Viola* will be mapped and flagged. Caltrans will modify the boundaries of temporary work areas to avoid the nectar and host plants when feasible.
- c. To the maximum extent possible, Caltrans will avoid areas of *Viola* delineated prior to construction and during preconstruction surveys within temporary affected areas.
- d. The project footprint will be clearly delineated with Environmentally Sensitive Area fencing and signage to limit construction activities to the described footprint and to maintain awareness. All Environmentally Sensitive Areas will be shown on the final construction drawings.
- e. Grading activities within callippe silverspot butterfly habitat will be conducted between August 1 and April 1, to the extent practicable as determined during constructability review. When grading activities must take place after April 1 and before August 1, daily biological monitoring will occur for the callippe silverspot butterfly.
- f. Insecticides or herbicides in the Business Center Drive Extension ROW will not be applied during road construction or long-term operational maintenance within 300 feet of the host plant occurrences mapped by Monk & Associates in 2004 or otherwise identified or adult nectar plants or from other locations where the chemical treatments can be carried in by wind or surface flow.
- g. Standard erosion and dust control measures will be implemented to minimize the deposition of dust, soil, and silt on callippe silverspot butterfly habitat.

- h. Caltrans and STA will ensure there is no drift of sprayable dust control formulations used for dust and erosion control towards callippe silverspot butterfly habitat during construction. Appropriate spray devices and application methods, such as spray pressures, nozzle opening size, and additives such as spray retardants, will be used to prevent drift. Applications will be made on calm days or when the wind speed is low and blowing away from callippe silverspot butterfly habitat. Spray applications will not be made within 200 yards by air or 40 yards by ground upwind from callippe silverspot butterfly habitat. Applications will not occur during rain events.
- i. No equipment will be driven or parking or laydown areas established within 20 feet of larval host plants located outside the defined construction footprint and, to the extent feasible, within 20 feet of adult nectar plants located outside the defined construction footprint.
- j. If any other life history phases of the callippe silverspot butterfly are found such as adults, pupae, larvae, or eggs, the Service shall be immediately contacted for further guidance.

21 The following measures are intended to avoid and minimize direct and indirect effects to vernal pool fairy shrimp and vernal pool tadpole shrimp.

- a. The potential vernal pool fair shrimp and vernal pool tadpole shrimp habitat within the action area is within what is described in the draft Solano HCP as having a low conservation value. Caltrans will compensate for the effects to 1.71 acres (1.45 acres direct effects + 0.26 acre indirect effects) of vernal pool habitat based on the conservation strategy in the draft Solano HCP as follows:

Listed Vernal Pool Crustacean Compensation

Type of Effect	Compensation Ratio	Acres of Effects	Acres of Compensation	Type of Compensation
Direct	1:1	1.45	1.45	Preservation of vernal pool and swale habitat
Direct	1:1	1.45	1.45	Restoration of vernal pool and swale habitat
Indirect	1:1	0.26	0.26	Preservation of vernal pool and swale habitat

- i. The above compensation of 1.71 acres of preservation and 1.45 acres of restoration will be implemented no later than sixty (60) calendar days prior to the date of initial ground disturbance of the specific construction packages. The compensation will be phased to coincide with the initiation of the individual project construction packages as presented in Table 1.
- ii. Preservation and restoration for adverse effects to Low Value Conservation Areas shall occur within Medium to High Value Conservation Areas identified in the draft Solano HCP. The location of the compensation will be submitted for Service approval. Preservation and restoration ratios reflected

above are based on the premise that effects to low value conservation areas will be compensated in medium to high value areas.

- b. To the extent practicable, Caltrans and its contractors will initiate all work in or within 250 feet of potential habitat for vernal pool crustaceans between May 1 and November 1. When construction activities must take place after November 1 and before May 1, daily biological monitoring will occur for the vernal pool crustaceans.
 - c. To the extent practicable, Caltrans will incorporate design modifications to avoid direct permanent effects on potential habitat for federally listed branchiopods.
 - d. Caltrans will avoid potential vernal pool fairy shrimp and vernal pool tadpole shrimp habitat, to the maximum extent practicable, during construction activities in temporary work areas. All potential vernal pool fairy shrimp and vernal pool tadpole shrimp habitat not directly affected will be designated as an Environmentally Sensitive Area and protected with appropriate fencing and signage. All Environmentally Sensitive Areas will be shown on the final construction drawings.
 - e. Caltrans will perform all work in accordance with a SWPPP BMPs will be implemented and may include the use of silt fences, sandbags, detention basins, and other means as appropriate to prevent erosion into any potential habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp.
22. The following measures are intended to avoid direct and indirect effects to Contra Costa goldfields, and effects to potential listed branchiopods and California tiger salamander habitat immediately south of SR 12E, between Ledgewood Creek and Suisun City.
- a. Caltrans will construct a retaining wall along SR 12E, between Ledgewood Creek and Suisun City. This design feature will limit the roadway expansion to the existing raised roadbed and avoid permanent intrusion into the immediately adjacent seasonal wetland habitat (Gentry Suisun wetland).
 - b. The boundaries of this habitat along SR 12E will be identified as inaccessible by an orange construction barrier fence and depicted on final design plans. The fence will be at least 4 feet high, it will include signage as the boundary of an Environmentally Sensitive Area, and the installation will be guided and monitored by a Service-approved biologist.
 - c. A Service-approved biologist will identify potential Contra Costa goldfields habitat prior to ground-disturbing activities, and a protective silt fence, described in the Caltrans Standard BMPs, will be installed to protect down-gradient areas from being affected by sediment loading. This fencing will prevent direct impacts on wetlands south of SR 12E between Ledgewood Creek and the eastern end of the construction area.

- d. A Service-approved biologist will conduct construction monitoring in and adjacent to all sensitive special-status plant populations. Construction monitoring frequency will range from daily to weekly depending on the biological resource and the construction activities.
 - e. A Service-approved biologist will coordinate with the Resident Engineer to ensure that the contractor maintains the staked, fenced, and flagged perimeters of the construction area and staging areas adjacent to sensitive biological resources, including potential Contra Costa goldfields habitat.
 - f. Vegetation removal on the south side of the existing SR 12E will be limited to the minimum necessary.
 - g. The Service-approved biologist will be present during all ground-disturbing activities occurring within 250 feet of vernal pool habitat.
 - h. Construction activities conducted within the area between Ledgewood Creek and Suisun City will be confined to the driest season (April 15–October 15, or as otherwise specified in regulatory permits) to protect down-gradient habitat.
 - i. Caltrans or STA will survey the seasonal wetland / pools south of their Biological Study Area located between SR 12E, Pennsylvania Avenue, Ledgewood Creek, and the SPRR rail line for California tiger salamander prior to construction. Should these surveys find occurrences of California tiger salamander within the action area, Caltrans and STA will reinitiate formal Section 7 consultation with the Service.
23. The following measures are intended to avoid and minimize direct and indirect effects to valley elderberry longhorn beetle.
- a. Caltrans will install Environmentally Sensitive Area fencing and flag all areas to be avoided during construction activities. In areas where encroachment on the 100-foot buffer has been approved by the Service, the fencing will provide a minimum 2-foot setback from the drip line of each elderberry plant.
 - b. Caltrans will provide contractors with training educating them on the status of the valley elderberry longhorn beetle and its host plant and emphasize the need to avoid damaging elderberry plants.
 - c. Caltrans will erect signs every 50 feet 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.” The signs will be clearly readable from a distance of 20 feet, and will be maintained for the duration of construction.

- d. Caltrans will restore, to the maximum extent practicable, any damage or disturbance to the buffer area (areas within 100 feet of elderberry plants) during construction. Caltrans will provide erosion control and revegetate the areas with appropriate native plants.
- e. Caltrans will prohibit the use of insecticides, herbicides, fertilizers, or other chemicals that might harm the beetle or its host plant in the buffer areas or within 100 feet of any elderberry plant with one or more stems measuring 1.0 inch or more in diameter at ground level.
- f. Caltrans and STA will work with the Solano County Resource Conservation District or a Service-approved bank to facilitate the plant removal and transplanting effort. Transplantation of ten elderberry shrubs that are within the construction footprint will be done prior to ground-disturbing activities within 100 feet of the shrubs and will be conducted according to the Service's 1999 *Conservation Guidelines for the Valley Elderberry Longhorn Beetle*. A Service-approved biologist will be on-site to monitor the transplanting of the elderberry plants.
- g. Caltrans will implement one or a combination of the following:
- i. Provide replacement plantings and associated native plantings as described in Table 1 at a Service-approved location.

Table 1. Minimization ratios based on location, stem diameter of affected elderberry plants at ground level, and presence or absence of exit holes.

Location	Stem Diameter (inches)	Exit Holes Present (No/Yes)	Number of Stems	Elderberry Seedling Ratio	Elderberry Seedling Plantings	Associated Native Plant Ratio	Associated Native Plantings
Non-riparian	1-3	N	8	1:1	8	1:1	8
		Y	2	2:1	4	2:1	8
	3-5	N	7	2:1	14	1:1	14
		Y	1	4:1	4	2:1	8
	> 5	N	5	3:1	15	1:1	15
		Y	2	6:1	12	2:1	24
Riparian	1-3	N	20	2:1	40	1:1	40
		Y	0	4:1	0	2:1	0
	3-5	N	8	3:1	24	1:1	24
		Y	0	6:1	0	2:1	0
	> 5	N	9	4:1	36	1:1	36
		Y	0	8:1	0	2:1	0
Total			62		157		177

- ii. Purchase valley elderberry longhorn beetle credits from a Service-approved conservation bank.
- h. Two elderberry shrubs are located within 100 feet of the limit of disturbance. These shrubs will be protected by:

- i. Fencing and flagging all areas to be avoided during construction activities. In areas where encroachment on the 100-foot buffer has been approved by the Service, Caltrans will provide a minimum setback of at least 20 feet from the dripline of each elderberry plant.
- ii. Erecting signs every 50 feet 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." The signs should be clearly readable from a distance of 20 feet, and must be maintained for the duration of construction.

24. The following measures are intended to avoid and minimize direct and indirect effects to California red-legged frog.

- a. Caltrans will compensate for harm resulting from adverse effects to the California red-legged frog and 97.80 acres of its habitat, and the adverse effects critical habitat for the California red-legged frog by providing appropriate habitat compensation.

The compensation will be based on the amount of permanent and temporary loss of red-legged frog habitat. Temporary habitat loss will be compensated at rates based on the amount of time it takes to restore the habitat to baseline conditions following the date of initial habitat disturbance and whether the restored habitat will be subjected to ongoing Caltrans routine maintenance activities, e.g. mowing, that may affect the species.

The maintained ROW is defined as the ROW between the edge of pavement or denuded road shoulder and the Caltrans ROW fence. Permanent effects will occur in areas of maintained ROW that include barriers to frog movement. Areas of ROW within and adjacent to retaining walls will be permanently affected by the project. Caltrans commits to installing a Service-approved frog exclusion fence along the proposed Business Center Drive Extension from the existing Business Center Drive to Jameson Canyon Road in order to direct California red-legged frogs to the three proposed undercrossings. Since the exclusion fence will likely prevent individuals of this threatened species from entering the maintained ROW, the entirety of the ROW within this area will be permanently affected by the proposed project. However, less compensation is necessary as the directional fence also results in a beneficial effect to California red-legged frogs by directing them to safe undercrossings. Off-site compensation is proposed to offset temporary impacts within the maintained R-O-W since habitat will continue to be impacted by on-going routine maintenance activities, e.g. mowing. Lastly, additional off-site compensation is necessary for temporal loss of habitat.

Caltrans will compensate for the loss of habitat of the California red-legged frog by implementing the following:

California Red-Legged Frog Habitat Compensation					
Level of Effect	Location of disturbance	Duration ¹	Compensation Ratio	Acres of Effects ²	Acres of Compensation ³
Permanent	Within or beyond maintained ROW	Permanent	3:1	78.48	235.44
	Within maintained ROW and excluded by directional fence	Permanent	2:1	0	0
Temporary	Within the maintained ROW	Within 1 year	1:1 on-site 1:1 off-site	0	0
	Beyond the maintained ROW	Within 1 year	1:1 on-site 0.5:1 off-site	19.32	9.66
	Within the maintained ROW	Within 2 years	1:1 on-site 1.5:1 off-site	0	0
	Beyond the maintained ROW	Within 2 years	1:1 on-site 1:1 off-site	0	0
	Within or beyond maintained ROW	Greater than 2 years	3:1 off-site OR: 2:1 off-site AND 1:1 on-site	0	0
TOTAL				97.80	245.1

¹ period of time from the date of initial ground disturbance until the success criteria described in the restoration/revegetation plan are met.

² as per GIS map dated March 2012, potential to be adjusted at final project design, with subsequent reinitiation.

³ Acres of compensation = off-site lands.

Compensation implemented within areas that are both California red-legged frog habitat and Callippe silverspot butterfly habitat may be overlaid on common acreage as long as the area is appropriate habitat for each species. With Service approval, the conservation lands would receive compensation credit from the Service for both species.

Compensation will be implemented with in-perpetuity preservation of California red-legged frog habitat with high conservation values, consistent with the parameters described in the Draft Solano HCP (SCWA 2009) within sixty (60) calendar days prior to the date of initial ground disturbance at the project.

California red-legged frog habitat used for conservation will be: (1) preferably located within the California Red-Legged Frog Conservation Area defined in the Draft Solano HCP (SCWA 2009), (2) within 0.7 mile of unobstructed California red-legged frog breeding habitat and non-breeding aquatic habitats, (3) within a California red-legged frog critical habitat unit or within the vicinity of frog critical habitat, and (4) approval by the Service.

- b. The Resident Engineer will stop work at the request of the Service-approved biologist(s) if activities are identified that may result in take of a California red-legged frog. Should the biologist(s) or Resident Engineer exercise this authority, the Service will be notified by telephone and email within one working day. The Service contact will be the Coast-Bay/Forest Foothills Division Chief in the Sacramento Fish and Wildlife Office at (916) 414-6600.

- c. The Resident Engineer will halt work immediately and contact the Service-approved project biologist and the Service in the event that a California red-legged frog is found within the construction zone. The Resident Engineer will suspend all construction activities in the immediate construction zone until the animal leaves the site voluntarily or is removed by the biologist to a release site using Service-approved transportation techniques.
- d. To the extent practicable, initial ground-disturbing activities will be avoided between November 1 and March 31 to avoid the period when California red-legged frogs are most likely to be moving through upland areas. When ground-disturbing activities must take place between November 1 and March 31, daily monitoring will occur for California red-legged frogs.
- e. Exclusionary fencing will be placed at the edge of active construction areas (cleared by biological surveys) in areas identified as California red-legged frog habitat. The fencing is intended to restrict frog access from the adjacent upland and riparian habitat. The fence will consist of taut silt fabric: 24 inches high, stacked at 10-foot intervals, with the bottom buried 6 inches below grade. The bid solicitation package Special Provisions will clearly describe acceptable fencing material and proper fence installation and maintenance. The wildlife exclusion fence will remain in place throughout the duration of construction activities and will be regularly inspected and fully maintained. The fence will be completely removed upon completion of project-related activities within these areas and the areas returned to preconstruction condition or better.
- f. California red-legged frogs that need to be relocated outside the construction area will be released beyond the exclusion fence within the same riparian area or watershed by the Service-approved biologist. If relocation of the frog outside the fence is not feasible (i.e., there are too many frogs observed per day), the biologist will relocate frogs to a preapproved location determined by Caltrans and the Service. Prior to construction, Caltrans will obtain approval of the relocation protocol from the Service in the event that a California red-legged frog is encountered and needs to be relocated away from the immediate project area.
- g. To prevent inadvertent entrapment of a California red-legged frog during construction, all excavated, steep-walled holes or trenches more than 1 foot deep will be covered at the close of each working day with plywood or similar material, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. If at any time a trapped listed animal is discovered, the onsite biologist will immediately place escape ramps or other appropriate structures to allow the animal to escape, or the Service will be contacted by telephone for guidance. The Service will be notified of the incident by telephone and email within one working day.
- h. Within and adjacent to California red-legged frog habitat, all construction equipment or construction debris left overnight within the action area will be inspected for

California red-legged frogs by the Service-approved biologist prior to the beginning of each day's activities and prior to being moved.

- i. Injured California red-legged frogs will be cared for by a licensed veterinarian or other qualified person such as the onsite biologist; dead individuals of any listed species will be preserved according to standard museum techniques and held in a secure location. The Service will be notified within one working day of the discovery of death or injury to a listed species that results from project related activities or is observed at the project site. Notification will include the date, time, and location of the incident or of the finding of a dead or injured animal clearly indicated on a U.S. Geological Survey (USGS) 7.5-minute quadrangle and other maps at a finer scale, as requested by the Service, and any other pertinent information. Dead frogs will be placed in a sealed plastic bag with a piece of paper containing information on where and when the animal was found along with the name of the person who found it, the bag will be placed in a freezer located in a secure location until instructions are received from the Service regarding the disposition of the specimen or the Service takes custody of the specimen. The Service contacts are the Coast-Bay/Forest Foothill Division Chief in the Sacramento Fish and Wildlife Office at (916) 414-6600 and the Resident Agent-in-Charge of Service's Law Enforcement Division at (916) 414-6660.
 - j. To the extent practicable, nighttime construction will be minimized, especially for those areas adjacent to California red-legged frog habitat. When nighttime work is to be conducted in areas adjacent to potential habitat, all lighting will face away from potential habitat.
 - k. Plastic monofilament netting (erosion control matting) or similar material will not be used in the action area because California red-legged frogs can become entangled and trapped in it. Instead, Caltrans will use alternative materials such as coconut coir matting or pacified hydroseeding compounds.
 - l. Vehicle and equipment speed will be limited to 20 miles per hour in unpaved portions of the action area.
 - m. No pets will be permitted in the action area.
 - n. For onsite storage of pipes and conduits and other materials that could provide shelter for California red-legged frogs, an open-top trailer will be used to elevate the materials above ground. This is intended to reduce the potential for animals to climb into the conduits and other materials.
25. Caltrans will provide a Funding Assurance Letter stating that sufficient funds for habitat compensation have been budgeted in the Interstate I-80/I-680/SR 12 Interchange Phase 1 Project Expenditure Authorization. The Funding Assurance Letter will be signed by the District Deputy Director of Project Management and the District Deputy Director of Environmental Planning and Engineering. The Funding Assurance Letter provides

evidence that Caltrans has allocated sufficient funding to implement the proposed compensation.

26. Land used for habitat compensation will include a Service-approved conservation easement. An approved ecologically-based conservation easement will include managed public access, a management plan, and an in-perpetuity endowment or other permanent non-wasting management fund based on a PAR-like property analysis. The management plan will include a description of the site, management needs (e.g. grazing plan, non-native vegetation and animal control, etc), when the management activities will be implemented, how often and to what level monitoring of the site will occur, and a action/contingency plan to address potential management issues.
27. Caltrans will provide a restoration and revegetation plan for each construction package to be reviewed and approved by the Service no later than sixty (60) calendar days prior to date of its initial groundbreaking of each construction package. The plan will include, but will not be limited to: schedule, methodology, a list of the seed mixes and container plants, plant material source, irrigation, maintenance schedule, monitoring program, success criteria, control of invasive, noxious weeds, and remediation and adaptive management. In addition, annual monitoring reports on the success of the plantings shall be provided to the Service following the completion for each construction package. The reports will be submitted on or before December 31 of each year monitoring is conducted.

The revegetation plan will include a photo monitoring plan. The plan will include, but is not limited, to the following:

- a. An adequate number of photo monitoring stations will be established to provide representative views of project restoration and construction activities. Stations will be located in areas that allow for unobstructed views and a field of vision of approximately 2000 feet, to the extent allowed by surrounding vegetative cover and topography. Each station will provide a representative panoramic view of the restoration footprint. Caltrans will ensure that photo monitoring stations numbers and locations are sufficient to document restoration success.
- b. Baseline photographs will be taken during the spring growing season prior to construction. Following the completion of ground disturbance, photo documentation will be conducted quarterly to document restoration relative to four seasons. Photo documentation will conclude when the Service has agreed that success criteria have been met.
- c. Photo monitoring station locations will be provided to the Service in an acceptable geographic format with the coordinate system identified.
- d. If the Service or the biological monitor(s) determines that additional monitoring stations are necessary, the locations will be added to the inventory of photo monitoring stations prior to the date of the next photo documentation.

- c. During each photo monitoring cycle all stations will be visited within a two day period.
 - f. At the conclusion of restoration, the acreage of restored areas will be tabulated and provided to the Service. The extent of restoration will be delineated with a handheld GPS device and a trackfile provided to the Service Representative.
28. Routine maintenance activities will be identified in the Restoration/Revegetation Plan. Maintained R-O-Ws may include routine maintenance activities that are short in duration, such as spraying and mowing. Specific restrictions may apply for the valley elderberry longhorn beetle, callippe silverspot butterfly , California red-legged frog, and the showy Indian clover.

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 action, the action area includes: (1) all lands associated with the approximately 258.14-acre construction footprint (of which 136.72 acres is existing hardscape) including roads (except for County roads, and State and Federal highways) and other areas accessed by project vehicles, and (2) lands within 1,000 feet of the construction footprint subjected to project-related lighting, noise, vibration, runoff, and fugitive dust.

Analytical Framework for the Jeopardy and Adverse Modification Analysis

Jeopardy Determination

The following analysis relies on four components to support the jeopardy determination for the vernal pool tadpole shrimp, vernal pool fairy shrimp, callippe silverspot butterfly, valley elderberry longhorn beetle, and California red-legged frog: (1) the *Status of the Species*, which evaluates the species’ range wide condition, the factors responsible for that condition, and its survival and recovery needs; (2) the *Environmental Baseline*, which evaluates the condition of the species in the action area, the factors responsible for that condition, and the role of the action area in the species’ survival and recovery; (3) the *Effects of the Action*, which determines the direct and indirect effects of the proposed Federal action and the effects of any interrelated or interdependent activities on the species; and (4) *Cumulative Effects*, which evaluates the effects of future, non-Federal activities in the action area on the species.

In accordance with the implementing regulations for section 7 and Service policy, the jeopardy determination is made in the following manner: the effects of the proposed Federal action are evaluated in the context of the aggregate effects of all factors that have contributed to the species’ current status and, for non-Federal activities in the action area, those actions likely to affect the species in the future, to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the species in the wild.

The following analysis places an emphasis on using the range-wide survival and recovery needs of the species and the role of the action area in providing for those needs as the context for evaluating the significance of the effects of the proposed Federal action, taken together with cumulative effects, for purposes of making the jeopardy determination.

Adverse Modification Determination

This Biological Opinion does not rely on the regulatory definition of “destruction or adverse modification” of critical habitat at 50 CFR §402.02. Instead, we have relied upon the statutory provisions of the Act to complete the following analysis with respect to critical habitat.

In accordance with policy and regulation, the adverse modification analysis in this Biological Opinion relies on four components: (1) the *Status of Critical Habitat*, which evaluates the range wide condition of designated critical habitat for Contra Costa goldfields and California red-legged frog in terms of PCEs, the factors responsible for that condition, and the intended recovery function of the critical habitat at the provincial and range-wide scale; (2) the *Environmental Baseline*, which evaluates the condition of the critical habitat in the action area, the factors responsible for that condition, and the recovery role of the critical habitat in the action area; (3) the *Effects of the Action*, which determines the direct and indirect effects of the proposed Federal action and the effects of any interrelated or interdependent activities on the PCEs and how that will influence the recovery role of affected critical habitat units; and (4) *Cumulative Effects* which evaluates the effects of future, non-Federal activities in the action area on the PCEs and how that will influence the recovery role of affected critical habitat units. For purposes of the adverse modification determination, the effects of the proposed Federal action on Contra Costa goldfields and California red-legged frog critical habitats are evaluated in the context of the range-wide condition of the critical habitat at the provincial and range-wide scales, taking into account any cumulative effects, to determine if the critical habitat range-wide would remain functional (or would retain the current ability for the PCEs to be functionally established in areas of currently unsuitable but capable habitat) to serve its intended recovery role for Contra Costa goldfields and the California red-legged frog.

The analysis in this Biological Opinion places an emphasis on using the intended range-wide recovery function of Contra Costa goldfields and California red-legged frog critical habitat and the role of the action area relative to that intended function as the context for evaluating the significance of the effects of the proposed Federal action, taken together with cumulative effects, for purposes of making the adverse modification determination.

Status of the Species

Vernal Pool Fairy Shrimp

Refer to the *Vernal Pool Fairy Shrimp 5- Year Review* for status and life history information (Service 2007a). This document can be downloaded from the world wide web at:
http://www.fws.gov/cno/es/images/Graphics/VPFS_5-yr%20review%20CNO%20FINAL%2027Sept07.pdf

Vernal Pool Tadpole Shrimp

Refer to the *Vernal Pool Tadpole Shrimp 5- Year Review* for status and life history information (Service 2007b). This document can be downloaded from the world wide web at: http://www.fws.gov/cno/es/images/Graphics/VP%20Tadpole%20Shrimp_5%20yr%20review%20FINAL%20CNO%2027Sept07.pdf

Callipe Silverspot Butterfly

Refer to the *Callipe Silverspot Butterfly 5- Year Review* for status and life history information (Service 2009). This document can be downloaded from the world wide web at: http://ecos.fws.gov/docs/five_year_review/doc2518.pdf.

Valley Elderberry Longhorn Beetle

Refer to *Valley Elderberry Longhorn Beetle (Desmocerus californicus dimorphus) 5-Year Review: Summary and Evaluation* (Service 2006b) for status and life history information. This document can be downloaded from the world wide web at: http://ecos.fws.gov/docs/five_year_review/doc779.pdf.

California Red-Legged Frog

The California red-legged frog was listed as a threatened species on May 23, 1996 (61 FR 25813). A recovery plan was published for the California red-legged frog on September 12, 2002 (Service 2002). A revised critical habitat was designated for this species on March 17, 2010 (75 FR 12816). At this time, the Service recognized the taxonomic change from *Rana aurora draytonii* to *Rana draytonii* (Shaffer *et al.* 2010).

The California red-legged frog is the largest native frog in the western United States (Wright and Wright 1949), ranging from 1.5 to 5.1 inches in length (Stebbins 2003). The abdomen and hind legs of adults are largely red, while the back is characterized by small black flecks and larger irregular dark blotches with indistinct outlines on a brown, gray, olive, or reddish background color. Dorsal spots usually have light centers (Stebbins 2003), and dorsolateral folds are prominent on the back. Larvae (tadpoles) range from 0.6 to 3.1 inches in length, and the background color of the body is dark brown and yellow with darker spots (Storer 1925).

The historic range of the California red-legged frog extended from the vicinity of Elk Creek in Mendocino County, California, along the coast inland to the vicinity of Redding in Shasta County, California, and southward to northwestern Baja California, Mexico (Fellers 2005; Jennings and Hayes 1985; Hayes and Krempels 1986). The species was historically documented in 46 counties but the taxa now remains in 238 streams or drainages within 23 counties, representing a loss of 70 percent of its former range (Service 2002). California red-legged frogs are still locally abundant within portions of the San Francisco Bay area and the Central California Coast. Isolated populations have been documented in the Sierra Nevada, northern Coast, and northern Transverse Ranges. The species is believed to be extirpated from the

southern Transverse and Peninsular ranges, but is still present in Baja California, Mexico (CDFG 2011a).

California red-legged frogs predominately inhabit permanent water sources such as streams, lakes, marshes, natural and manmade ponds, and ephemeral drainages in valley bottoms and foothills up to 4,921 feet in elevation (Jennings and Hayes 1994, Bulger *et al.* 2003, Stebbins 2003). However, California red-legged frogs also have been found in ephemeral creeks and drainages and in ponds that may or may not have riparian vegetation. California red-legged frogs also can be found in disturbed areas such as channelized creeks and drainage ditches in urban and agricultural areas. For example, an adult California red-legged frog was observed in a shallow isolated pool on North Slough Creek in the American Canyon area of Napa County (Christine Gaber/PG&E personal communication with Chris Nagano/Service on October 22, 2008). This frog location was surrounded by vineyard development. Another adult California red-legged frog was observed under debris in an unpaved parking lot in a heavily industrialized area of Burlingame (Patrick Kobernus/Coast Ridge Ecology communication with Michelle Havens/Service on October 16, 2008). This Burlingame frog was likely utilizing a nearby drainage ditch. Caltrans also has discovered California red-legged frog adults, tadpoles, and egg masses within a storm drainage system within a major cloverleaf intersection of Millbrae Avenue and State Route 101 in a heavily developed area of San Mateo County (Caltrans 2007). The California red-legged frog has the potential to persist in disturbed areas as long as those locations provide at least one or more of their life history requirements.

California red-legged frogs typically breed between November and April, although earlier breeding records have been reported in southern localities. Breeding generally occurs in still or slow-moving water often associated with emergent vegetation, such as cattails, tules or overhanging willows (Storer 1925, Hayes and Jennings 1988). Female frogs deposit egg masses on emergent vegetation so that the egg mass floats on or near the surface of the water (Hayes and Miyamoto 1984).

Habitat includes nearly any area within 1 to 2 miles of a breeding site that stays moist and cool through the summer including vegetated areas with coyote brush, California blackberry thickets, and root masses associated with willow and California bay trees (Fellers 2005). Sheltering habitat for California red-legged frogs potentially includes all aquatic, riparian, and upland areas within the range of the species and includes any landscape feature that provides cover, such as animal burrows, boulders or rocks, organic debris such as downed trees or logs, and industrial debris. Agricultural features such as drains, watering troughs, spring boxes, abandoned sheds, or hay stacks may also be used. Incised stream channels with portions narrower and depths greater than 18 inches also may provide important summer sheltering habitat. Accessibility to sheltering habitat is essential for the survival of California red-legged frogs within a watershed, and can be a factor limiting frog population numbers and survival.

California red-legged frogs do not have a distinct breeding migration (Fellers 2005). Adults are often associated with permanent bodies of water. Some individuals remain at breeding sites year-round, while others disperse to neighboring water features. Dispersal distances are typically less than 0.5-mile, with a few individuals moving up to 1 to 2 miles (Fellers 2005). Movements are typically along riparian corridors, but some individuals, especially on rainy nights, move

directly from one site to another through normally inhospitable habitats, such as heavily grazed pastures or oak-grassland savannas (Fellers 2005).

In a study of California red-legged frog terrestrial activity in a mesic area of the Santa Cruz Mountains, Bulger *et al.* (2003) categorized terrestrial use as migratory and non-migratory. The latter occurred from one to several days and was associated with precipitation events. Migratory movements were characterized as the movement between aquatic sites and were most often associated with breeding activities. Bulger *et al.* (2003) reported that non-migrating frogs typically stayed within 200 feet of aquatic habitat 90 percent of the time and were most often associated with dense vegetative cover, i.e., California blackberry, poison oak and coyote brush. Dispersing frogs in northern Santa Cruz County traveled distances from 0.25-mile to more than 2 miles without apparent regard to topography, vegetation type, or riparian corridors (Bulger *et al.* 2003).

In a study of California red-legged frog terrestrial activity in a xeric environment in eastern Contra Costa County, Tatarian (2008) noted that the majority of frogs (57 percent) fitted with radio transmitters in the Round Valley study area stayed at their breeding pools, whereas 43 percent moved into adjacent upland habitat or to other aquatic sites. Her study reported a peak seasonal terrestrial movement occurring in the fall months associated with the first 0.2-inch of precipitation and tapering off into spring. Upland movement activities ranged from 3 to 233 feet, averaging 80 feet, and were associated with a variety of refugia including grass thatch, crevices, cow hoof prints, ground squirrel burrows at the base of trees or rocks, logs, and under man-made structures; others were associated with upland sites lacking refugia (Tatarian 2008). The majority of terrestrial movements lasted from one to four days; however, one adult female was reported to remain in upland habitat for 50 days (Tatarian 2008). Upland refugia closer to aquatic sites were used more often and were more commonly associated with areas exhibiting higher object cover, e.g., woody debris, rocks, and vegetative cover. Subterranean cover was not significantly different between occupied upland habitat and non-occupied upland habitat.

California red-legged frogs are often prolific breeders, laying their eggs during or shortly after large rainfall events in late winter and early spring (Hayes and Miyamoto 1984). Egg masses containing 2,000 to 5,000 eggs are attached to vegetation below the surface and hatch after six to 14 days (Storer 1925, Jennings and Hayes 1994). In coastal lagoons, the most significant mortality factor in the pre-hatching stage is water salinity (Jennings *et al.* 1992). Eggs exposed to salinity levels greater than 4.5 parts per thousand resulted in 100 percent mortality (Jennings and Hayes 1990). Increased siltation during the breeding season can cause asphyxiation of eggs and small larvae. Larvae undergo metamorphosis 3½ to seven months following hatching and reach sexual maturity two to three years of age (Storer 1925; Wright and Wright 1949; Jennings and Hayes 1985, 1990, 1994). Of the various life stages, larvae probably experience the highest mortality rates, with less than one percent of eggs laid reaching metamorphosis (Jennings *et al.* 1992). Under favorable conditions, California red-legged frogs may live eight to ten years (Jennings *et al.* 1992). Populations can fluctuate from year to year; favorable conditions allow the species to have extremely high rates of reproduction and thus produce large numbers of dispersing young and a concomitant increase in the number of occupied sites. In contrast, the animal may temporarily disappear from an area when conditions are stressful (e.g., during periods of drought, disease, etc.).

The diet of California red-legged frogs is highly variable and changes with the life history stage. The diet of the larvae is not well studied, but is likely similar to that of other ranid frogs, which feed on algae, diatoms, and detritus by grazing on the surface of rocks and vegetation (Fellers 2005; Kupferberg 1996a, 1996b, 1997). Hayes and Tennant (1985) analyzed the diets of California red-legged frogs from Cañada de la Gaviota in Santa Barbara County during the winter of 1981 and found invertebrates (comprising 42 taxa) to be the most common prey item consumed; however, they speculated that this was opportunistic and varied based on prey availability. They ascertained that larger frogs consumed larger prey and were recorded to have preyed on Pacific chorus frog, three-spined stickleback and, to a limited extent, California mice, which were abundant at the study site (Hayes and Tennant 1985, Fellers 2005). Although larger vertebrate prey was consumed less frequently, it represented over half of the prey mass eaten by larger frogs suggesting that such prey may play an energetically important role in their diets (Hayes and Tennant 1985). Juvenile and subadult/adult frogs varied in their feeding activity periods; juveniles fed for longer periods throughout the day and night, while subadult/adults fed nocturnally (Hayes and Tennant 1985). Juveniles were significantly less successful at capturing prey and all life history stages exhibited poor prey discrimination, feeding on several inanimate objects that moved through their field of view (Hayes and Tennant 1985).

The direction and type of habitat used by dispersing animals is especially important in fragmented environments (Forys and Humphrey 1996). Models of habitat patch geometry predict that individual animals will exit patches at more “permeable” areas (Buechner 1987; Stamps *et al.* 1987). A landscape corridor may increase the patch-edge permeability by extending patch habitat (La Polla and Barrett 1993), and allow individuals to move from one patch to another. The geometric and habitat features that constitute a “corridor” must be determined from the perspective of the animal (Forys and Humphrey 1996).

Because their habitats have been fragmented, many endangered and threatened species exist as metapopulations (Verboom and Apeldom 1990; Verboom *et al.* 1991). A metapopulation is a collection of spatially discrete subpopulations that are connected by the dispersal movements of the individuals (Levins 1970; Hanski 1991). For metapopulations of listed species, a prerequisite to recovery is determining if unoccupied habitat patches are vacant due to the attributes of the habitat patch (food, cover, and patch area) or due to patch context (distance of the patch to other patches and distance of the patch to other features). Subpopulations on patches with higher quality food and cover are more likely to persist because they can support more individuals. Large populations have less of a chance of extinction due to stochastic events (Gilpin and Soule 1986). Similarly, small patches will support fewer individuals, increasing the rate of extinction. Patches that are near occupied patches are more likely to be recolonized when local extinction occurs and may benefit from emigration of individuals via the “rescue” effect (Hanski 1982; Gotelli 1991, Holt 1993; Fahrig and Merriam 1985). For the metapopulation to persist, the rate of patches being colonized must exceed the rate of patches going extinct (Levins 1970). If some subpopulations go extinct regardless of patch context, recovery actions should be placed on patch attributes. Patches could be managed to increase the availability of food and/or cover

Movements and dispersal corridors likely are critical to California red-legged frog population dynamics, particularly because the animals likely currently persist as metapopulations with

disjunct population centers. Movement and dispersal corridors are important for alleviating over-crowding and intraspecific competition, and also they are important for facilitating the recolonization of areas where the animal has been extirpated. Movement between population centers maintains gene flow and reduced genetic isolation. Genetically isolated populations are at greater risk of deleterious genetic effects such as inbreeding, genetic drift, and founder effects. The survival of wildlife species in fragmented habitats may ultimately depend on their ability to move among patches to access necessary resources, retain genetic diversity, and maintain reproductive capacity within populations (Hilty and Merenlender 2004; Petit *et al.* 1995; Buza *et al.* 2000).

Most metapopulation or meta-population-like models of patchy populations do not directly include the effects of dispersal mortality on population dynamics (Hanski 1994; With and Crist 1995; Lindenmayer and Possingham 1996). Based on these models, it has become a widely held notion that more vagile species have a higher tolerance to habitat loss and fragmentation than less vagile species. But models that include dispersal mortality predict exactly the opposite: more vagile species should be more vulnerable to habitat loss and fragmentation because they are more susceptible to dispersal mortality (Fahrig 1998; Casagrandi and Gatto 1999). This prediction is supported by Gibbs (1998), who examined the presence-absence of five amphibian species across a gradient of habitat loss. He found that species with low dispersal rates are better able than more vagile species to persist in landscapes with low habitat cover. Gibbs (1998) postulated that the land between habitats serves as a demographic “drain” for many amphibians. Furthermore, Bonnet *et al.* (1999) found that snake species that frequently make long-distance movements have higher mortality rates than do sedentary species.

Habitat loss, non-native species introduction, and urban encroachment are the primary factors that have adversely affected the California red-legged frog throughout its range. Several researchers in central California have noted the decline and eventual local disappearance of California and northern red-legged frogs in systems supporting bullfrogs (Jennings and Hayes 1990; Twedt 1993), red swamp crayfish, signal crayfish, and several species of warm water fish including sunfish, goldfish, common carp, and mosquitofish (Moyle 1976; Barry 1992; Hunt 1993; Fisher and Schaffer 1996). This has been attributed to predation, competition, and reproduction interference. Twedt (1993) documented bullfrog predation of juvenile northern red-legged frogs (*Rana aurora*), and suggested that bullfrogs could prey on subadult California red-legged frogs as well. Bullfrogs may also have a competitive advantage over California red-legged frogs. For instance, bullfrogs are larger and possess more generalized food habits (Bury and Whelan 1984). In addition, bullfrogs have an extended breeding season (Storer 1933) during which an individual female can produce as many as 20,000 eggs (Emlen 1977). Furthermore, bullfrog larvae are unpalatable to predatory fish (Kruse and Francis 1977). Bullfrogs also interfere with California red-legged frog reproduction by eating adult male California red-legged frogs. Both California and northern red-legged frogs have been observed in amplexus (mounted on) with both male and female bullfrogs (Jennings and Hayes 1990; Twedt 1993; Jennings 1993). Thus bullfrogs are able to prey upon and out-compete California red-legged frogs, especially in sub-optimal habitat.

The urbanization of land within and adjacent to California red-legged frog habitat has also affected the threatened amphibian. These declines are attributed to channelization of riparian

areas, enclosure of the channels by urban development that blocks dispersal, and the introduction of predatory fishes and bullfrogs. Diseases may also pose a significant threat, although the specific effects of disease on the California red-legged frog are not known. Pathogens are suspected of causing global amphibian declines (Davidson *et al.* 2003). Chytridiomycosis and ranaviruses are a potential threat because these diseases have been found to adversely affect other amphibians, including the listed species (Davidson *et al.* 2003; Lips *et al.* 2006). Mao *et al.* (1999 cited in Fellers 2005) reported northern red-legged frogs infected with an iridovirus, which was also presented in sympatric threespine sticklebacks in northwestern California. Non-native species, such as bullfrogs and non-native tiger salamanders that live within the range of the California red-legged frog have been identified as potential carriers of these diseases (Garner *et al.* 2006). Humans can facilitate the spread of disease by encouraging the further introduction of non-native carriers and by acting as carriers themselves (i.e., contaminated boots, waders or fishing equipment). Human activities can also introduce stress by other means, such as habitat fragmentation, that results in the listed species being more susceptible to the effects of disease.

Negative effects to wildlife populations from roads and pavement may extend some distance from the actual road. The phenomenon can result from vehicle-related mortality, habitat degradation, noise and light pollution, and invasive exotic species. Forman and Deblinger (1998) described the area affected as the “road effect” zone. One study along a four-lane road in Massachusetts determined that this zone extended for an average of 980 feet to either side of the road for an average total zone width of approximately 1,970 feet. However, in some areas they detected an effect greater than 0.6-mile from the road. The road effect zone can also be subtle. Van der Zandt *et al.* (1980) reported that lapwings and black-tailed godwits feeding at 1,575 to 6,560 feet from roads were disturbed by passing vehicles. The heart rate, metabolic rate and energy expenditure of female bighorn sheep increases near roads (MacArthur *et al.* 1979). Trombulak and Frissell (2000) described another type of “road-zone” effect due to contaminants. Heavy metal concentrations from vehicle exhaust were greatest within 66 feet of roads and elevated levels of metals in soil and plants were detected at 660 feet of roads. The “road-zone” varies with habitat type and traffic volume. Based on responses by birds, Forman (2000) estimated the road-zone along primary roads of 1,000 feet in woodlands, 1,197 feet in grasslands, and 2,657 feet in natural lands near urban areas. Along secondary roads with lower traffic volumes, the effect zone was 656 feet. The road-zone with regard to California red-legged frogs has not been adequately investigated.

The necessity of moving between multiple habitats and breeding ponds means that many amphibian species, such as the California red-legged frog are especially vulnerable to roads and well-used large paved areas in the landscape. Amphibians appear especially vulnerable to traffic mortality because they readily attempt to cross roads, are small and slow-moving, and thus are not easily avoided by drivers (Carr and Fahrig 2001). Van Gelder (1973) and Cooke (1995) have examined the effect of roads on amphibians and found that because of their activity patterns, population structure, and preferred habitats, aquatic breeding amphibians are more vulnerable to traffic mortality than some other species. High-volume highways pose a nearly impenetrable barrier to amphibians and result in mortality to individual animals as well as significantly fragmenting habitat. Hels and Buchwald (2001) found that mortality rates for anurans on high traffic roads are higher than on low traffic roads. Vos and Chardon (1998) found a significant negative effect of road density on the occupation probability of ponds by the moor frog (*Rana*

arvalis) in the Netherlands. In addition, incidences of very large numbers of road-killed frogs are well documented (Ashley and Robinson 1996), and studies have shown strong population level effects of traffic density (Carr and Fahrig 2001) and high traffic roads on these amphibians (Van Gelder 1973; Vos and Chardon 1998). Most studies regularly count road mortalities from slow moving vehicles (Hansen 1982; Rosen and Lowe 1994; Drews 1995; Mallick *et al.* 1998) or by foot (Munguira and Thomas 1992). These studies assume that every victim is observed, which may be true for large conspicuous mammals, but may be an incorrect assumption for small animals, such as the California red-legged frog. The carcasses of small soft-bodied amphibians like frogs are quickly decimated under passing tires and are less likely to be detected by researchers and are unlikely to persist for more than a day (Santos *et al.* 2011).

The recovery plan for the California red-legged frog identifies eight recovery units (Service 2002). The establishment of these recovery units is based on the determination that various regional areas of the species' range are essential to its survival and recovery. These recovery units are delineated by major watershed boundaries as defined by USGS hydrologic units and the limits of its range. The goal of the recovery plan is to protect the long-term viability of all extant populations within each recovery unit. Within each recovery unit, core areas have been delineated and represent contiguous areas of moderate to high California red-legged frog densities that are relatively free of exotic species such as bullfrogs. The goal of designating core areas is to protect metapopulations. Thus when combined with suitable dispersal habitat, will allow for the long term viability within existing populations. This management strategy will allow for the recolonization of habitats within and adjacent to core areas that are naturally subjected to periodic localized extinctions, thus assuring the long-term survival and recovery of California red-legged frogs.

Environmental Baseline

Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp

The majority of the action area, including the eastern end of the Business Center Drive Extension is located within the Solano-Colusa vernal pool region, which was designated based largely on presence of endemic vernal pool species identified in the Service's *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (Recovery Plan) (Service 2005a). The vernal pool fairy shrimp and vernal pool tadpole shrimp have been adversely affected by development and modification of vernal pool and grassland habitat within the Solano-Colusa vernal pool region and are present in much of the undeveloped areas within the region.

Most of the seasonal wetland habitat in Solano County has not been surveyed for listed branchiopods. Of the 23 vernal pool fairy shrimp records in Solano County, the CNDDDB includes at least three occurrences within 5 miles of the action area (CDFG 2011a, 2011b). Three of the 30 records for vernal pool tadpole shrimp occur within 5 miles of the action area (CDFG 2011a, 2011b).

Although Caltrans did not perform protocol-level surveys for listed branchiopods, they identified at least 14 seasonal wetland features within 250 feet of the construction footprint that provide habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp. According to Caltrans, half

of these habitat features would be directly affected by the proposed project.

The Service has determined that the vernal pool fairy shrimp and vernal pool tadpole shrimp are likely to occur within the action area due to the presence of appropriate seasonal wetland habitat within the action area such as impervious soils, the seasonal hydroperiod, and topographical features that provide the necessary habitat attributes to support one or all of these species' life history stages. Caltrans identified 14 seasonal wetland features within the action area. Furthermore, wading birds, that visit this and other nearby occupied wetlands, ponds and swales to forage or drink water, act as vectors to transport cysts or adults from one pond to another through their feces or on their feathers or legs. For these reasons, the Service has determined that it is reasonable to conclude that vernal pool fairy shrimp and vernal pool tadpole shrimp to inhabit the identified seasonal wetlands within 250 feet of the construction footprint.

Callippe Silverspot Butterfly

Much of the undeveloped land in Solano County is privately owned and knowledge of the current distribution of callippe silverspot butterfly in the county's remaining areas of potential habitat is limited.

Reported records of the callippe silverspot butterfly in Solano County are located in the hills between Vallejo and Cordelia and northward into Jameson Canyon (SCWA 2009; CDFG 2011a, 2011b). Most of the current knowledge in Solano County is derived from SLT's Swett and King Ranch properties south of I-80 where management activities are being proposed and implemented to enhance callippe silverspot butterfly habitat (SCWA 2009; Service personal communication with SLT 2011).

As defined by the Solano Draft HCP's *Callippe Silverspot Butterfly Conservation Area* the likely distribution of the callippe silverspot butterfly in Solano County extends from Vallejo to at least 4 to 5 miles north of I-80 towards Green Valley and includes the rolling hills south and north of Jameson Canyon Road (SCWA 2009). This conservation area encompasses the proposed project footprint for the Business Center Drive Extension. The 3,300-acre conservation area includes core silverspot habitat and connectivity between these core areas. Approximately 7,870 acres of the conservation area is currently managed as open space by SLT and the Greater Vallejo Recreation District and an additional 660 acres has been preserved as "mitigation lands" (SCWA 2009). These open space lands are subject to varying degrees of public access for the purpose of recreation. Funding for additional surveys, monitoring, management, and enhancement of callippe silverspot butterfly habitat within the conservation area has been limited and inconsistent.

The draft Solano HCP acknowledges that steep slopes are important to the life history of the callippe silverspot butterfly (SCWA 2009). Of the approximately 1,560 acres of callippe silverspot butterfly habitat identified within the urban growth zone in the draft HCP, it was estimated that at least 350 acres of those would be conserved for the species because the slopes were too steep to develop. According to the Solano draft HCP, the cities of Vallejo and Fairfield have adopted restrictions in their general plans that limit development on slopes greater than

30 percent. The analysis in the draft HCP assumes that development would be avoided on all slopes greater than 30 percent and approximately half of those greater than 20 percent. A key element to callippe silverspot butterfly occupation is the distribution of their larval host plant, Johnny jump-up. This perennial violet is found throughout much of the grassland and oak woodlands of coastal California but little is known about its distribution within Solano County. Silverspot butterflies may rely on Johnny jump-up stands of a few to several acres. The annual densities of this rhizomous herb on the King and Swett Ranches is highly variable (Service personal communication with SLT 2011) which is likely true throughout the *Callippe Silverspot Conservation Area*. In 2004, Monk & Associates (Caltrans 2011) found two previously unrecorded Johnny jump-up stands immediately adjacent to the construction footprint for the proposed Business Center Drive Extension. Caltrans was still able to observe a violet flower in 2011 when they attempted to follow-up on the Monk & Associates 2004 observations. However, the investigation was conducted after the plant's prime blooming period at the King/Swett Ranches reference stands (May 17, 2011 Memo from ICF International to Caltrans). Monk & Associates' 2004 observation confirmed that the larval host plant occurs within the conservation area north of I-80 and there are at least two stands adjacent to the proposed action area. Much of the proposed construction footprint for the Business Center Drive Extension is located on eastern-facing slopes. Johnny jump-ups appear to remain in bloom longer on eastern-facing slopes which likely increase the potential for larvae to mature into adulthood (SCWA 2009).

Adult callippe silverspot butterflies are less limited in their use of nectar plants. They are known to utilize native and exotic flowers depending upon availability. The butterflies show particular preference for California buckeye, coyote wildmint, and various thistles within the King and Swett Ranches (personal communication with SLT, 2011). California buckeye occurs within the various riparian areas north of I-80 and along Jameson Canyon Creek. ICF International reported numerous thistle and other adult silverspot butterfly nectar plants in the proposed Business Center Drive Extension area in May 2011 (May 17, 2011 Memo from ICF International to Caltrans).

The *Callippe Silverspot Butterfly Conservation Area* is characterized by rolling hills associated with silverspot butterfly "hill-topping" breeding behavior. Adult butterflies congregate on ridgelines and hilltops for breeding purposes and adult males will defend territories along these topographical features. The majority of the proposed construction footprint for the Business Center Drive Extension includes these associated topographical features.

Caltrans did not conduct surveys for callippe silverspot butterfly but Monk & Associates identified two *Viola* populations during general biological surveys for a former Business Center Drive Extension alignment. Monk & Associates mapped *Viola* stands approximately 20 feet south and 300 feet north of the construction footprint. Monk & Associates did not indicate how many violets they observed in each population. Caltrans was unable to successfully monitor the *Viola* populations following the 2004 observations. In addition to finding the larval host plant, Caltrans also identified numerous adult nectar plants throughout the area.

The Service believes that the callippe silverspot butterfly is reasonably certain to occur within the action area because: (1) it is located within the species' range; and (2) larval host plants, adult nectar plants, and topographical breeding habitat features are located within and/or adjacent

to the proposed construction footprint.

Valley Elderberry Longhorn Beetle

The action area is located within the current range of the valley elderberry longhorn beetle. There are at least five known occurrences of valley elderberry longhorn beetle within 5 miles of the action area (CDFG 2011a, 2011b). The draft Solano HCP states that any elderberry shrub in Solano County has the potential to support the valley elderberry longhorn beetle even though a specific plant may not show evidence of beetle use (SCWA 2009). Caltrans identified the listed beetle's host plant, the elderberry shrub, in the action area as potential habitat (Caltrans 2011). According to the BA, ten elderberry shrubs will be directly affected by the project and will be removed and transplanted. Caltrans found a potential valley elderberry longhorn beetle exit hole in two of the shrubs with stems 1 inch or greater in diameter at ground level. Therefore, the Service has determined that the valley elderberry longhorn beetle is reasonably certain to occur within the action area because of the biology and ecology of the animal, and the presence of suitable habitat.

California Red-Legged Frog

The entirety of the proposed project is located within the species' range and current distribution. The proposed project cuts through a mosaic of industrial, residential, agricultural, fallow, and open space land uses, representing a range of highly modified and degraded to high quality California red-legged frog habitat. The alignment crosses and is adjacent to several creeks (Jameson Canyon Creek, Dan Wilson Creek, Suisun Creek, Ledgewood Creek, and Green Valley Creek), numerous constructed drainage features, and perennial and seasonal ponds and marshes that provide breeding and non-breeding aquatic habitat for the California red-legged frog. Riparian vegetation along creeks and drainages and landscape vegetation in the action area provide valuable refuge, forage, and dispersal habitat for red-legged frogs. Upland grassland areas with rodent burrows and other cover sites along constructed drainage features, in fallow, and grazed fields also provide refuge, forage, and dispersal habitat for the species.

The western portion of the action area, including the Business Center Drive Extension, is within and bisects Core Area #15 (Jameson Canyon-Lower Napa River) of the California red-legged frog Recovery Unit 3 (North Coast and North San Francisco Bay) (Service 2002). The conservation needs for the Jameson Canyon-Lower Napa River core area are: (1) protecting existing populations from current and future urbanization; (2) create and manage alternative breeding habitats; and (3) protecting dispersal corridors. The Jameson Canyon-Lower Napa River Core Area is described in the recovery plan as an important source population for the species.

The Business Center Drive Extension bisects the southeastern quarter of the SOL-2 California red-legged frog designated critical habitat unit (Jameson Canyon Unit). SOL-2 is considered essential for the California red-legged frog because it provides connectivity from Napa County south to unit SOL-3 (American Canyon Unit) which occupies a wedge of habitat located between Jameson Canyon Road and Interstate 80. Critical habitat unit SOL-1 (the Sky Valley Unit) is the southernmost unit in Solano County and extends south to Suisun Bay. The connectivity function

of the three Solano County units is dependent upon maintaining red-legged frog passage across I-80 and Jameson Canyon Road (SR 12W). The construction footprint also enters the eastern corner of SOL-3 at the proposed intersection of the Business Center Drive/Redtop Road and I-80.

The *California Red-Legged Frog Conservation Strategy* in the draft Solano HCP represents the most complete regional scientific data and analysis for the California red-legged frog in Solano County (SCWA 2009). The western portion of the construction footprint, beginning at the SR 12W/I-80 intersection, is located within the *California Red-Legged Frog Conservation Area* defined in the draft HCP. According to the draft HCP analysis, the existing Jameson Canyon Road and Interstate 80 create barriers between the SOL-1, -2, and -3 critical habitat units and “severely restrict or eliminate the natural dispersal and migratory movements of individuals between these three blocks of habitat, reducing the resiliency of populations and limiting genetic diversity.” One of the objectives of the draft HCP is to conserve 20 percent of the historic range of the California red-legged frog within Solano County which amounts to approximately 99 percent of the Jameson Canyon-Lower Napa River core recovery area.

Relatively little is known about the California red-legged frog population in Solano County. Much of the red-leg frog habitat in Solano County occurs on private land and has not been subject to protocol-level or other surveys. As directed by the draft Solano HCP, regional surveys will be conducted for California red-legged frogs within the Jameson Canyon-Lower Napa River Core Recovery Area within two years of adopting the final HCP and will continue every five years for the life of the HCP (SCWA 2009). The first California red-legged frog CNDDDB record for Solano County was not recorded until 1993 (SCWA 2009). There are only two reported observations of the species in the SOL-2 critical habitat unit and both records are the result of surveys conducted by Monk & Associates for the former alignment of the Business Center Drive Extension (Caltrans 2011). The records are located between the proposed Business Center Drive Extension and I-80. One record includes adult and juvenile red-legged frogs found approximately 400 feet from the construction footprint in a plunge pool of an ephemeral drainage. The second record includes adult frogs and tadpoles in Mangle’s Pond, approximately 300 feet north of the construction footprint and south of the Business Center Drive Extension. The CNDDDB record identified red-legged frog breeding on the Mangels’ Property. The Mangels’ pond is likely the primary breeding pond within the SOL-2 California red-legged frog critical habitat unit. There are at least 13 other California red-legged frog occurrences reported to the CNDDDB within 1 to 5 miles from the construction footprint (CDFG 2011a, 2011b).

Caltrans did not conduct standardized or protocol-level frog or other wildlife surveys in the action area or a wildlife movement analysis to support their baseline analysis for the project. Due to limited access, Caltrans and the Service used aerial photography and field observations from available access locations to independently assess habitat throughout the action area vicinity.

In addition to the Mangels’ Pond, Caltrans determined that the marsh immediately south of the Mangels’ Pond is potential red-legged frog breeding habitat. The southern edge of this marsh is within the construction footprint for work occurring at the SR 12W/I-80 interchange. Caltrans also identified a marsh immediately north of Green Valley Creek and I-80 as potential breeding

habitat.

There are numerous barriers and impediments to California red-legged frog movement in the action area vicinity. Existing roads, business, and other development fragments the landscape and prevent or encumber access between aquatic and upland habitat for foraging, movement, dispersal, refuge, and breeding. SR 12, I-80, I-680, and surrounding surface streets do not include barriers to exclude red-legged frogs from the roadway or direct them towards safe undercrossings. Frogs that attempt to cross these roads risk mortality due to vehicle collision and exposure.

The land west of I-80, north and south of SR 12W is primarily open grassland for grazing, with interspersed ranches and vineyards. This area is characterized by large expanses of rolling hills with ephemeral drainages, riparian corridors, stock ponds, and agricultural basins. Critical habitat units SOL-2 and SOL-3 are found within these contiguous blocks of habitat.

The Service believes that the California red-legged frog is reasonably certain to occur within the action area because: (1) it is located within the species' range and current distribution; (2) suitable aquatic, riparian, and upland California red-legged frog habitat intersect the action area in multiple locations; (3) the construction footprint is immediately adjacent to recent California red-legged frog observations; (4) the project is within the California Red-Legged Frog Conservation Area identified in the draft Solano HCP (SCWA 2009); (5) the project will construct a linear barrier between a recorded breeding pond and adjacent upland habitat; (6) all the elements needed to support the species' life history are located within the construction footprint; and (6) the biology and ecology of the animal, especially the ability of adults to move considerable distances.

Critical Habitat Status and Baseline

Critical habitat is defined in Section 3 of the Act as: (1) The specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (a) essential to the conservation of the species and (b) that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. In determining which areas to designate as critical habitat, the Service considers those physical and biological features that are essential to a species' conservation and that may require special management considerations or protection (50 CFR 424.12(b)). The Service is required to list the known Primary Constituent Elements (PCE's) together with the critical habitat description. Such physical and biological features include, but are not limited to, the following:

- 1 Space for individual and population growth, and for normal behavior;
2. Food, water, air, light, minerals, or other nutritional or physiological requirements;
3. Cover or shelter;

4. Sites for breeding, reproduction, rearing of offspring, or dispersal; and
5. Generally, habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species.

Contra Costa Goldfields Critical Habitat

The Service designated 14,730 acres of critical habitat for Contra Costa goldfields in 2005 (Service 2005b). In determining which areas to designate as critical habitat, the Service considers those physical and biological features (PCEs) that are essential to the conservation of the species, and that may require special management considerations and protections (50 CFR §424.14).

Critical habitat PCEs for goldfields are the habitat components that provide:

1. Topographic features characterized by isolated mound and intermound complex within a matrix of surrounding uplands that result in continuously, or intermittently, flowing surface water in the depressional features including swales connecting the pools, providing for dispersal and promoting hydroperiods of adequate length in the pools; and
2. Depressional features including isolated vernal pools with underlying restrictive soil layers that become inundated during winter rains and that continuously hold water or whose soils are saturated for a period long enough to promote germination, flowering, and seed production of predominantly annual native wetland species and typically exclude both native and non-native upland plant species in all but the driest years. As these features are inundated on a seasonal basis, they do not promote the development of obligate wetland vegetation habitats typical of permanently flooded emergent wetlands

The proposed project includes direct effects to 3.83 acres of Contra Costa goldfields critical habitat Unit 5B. This unit encompasses 736.72 acres and is essential to the conservation of the species because it is needed to maintain the current geographic and ecological distribution of the species. The project area lies along the northern boundary of Unit 5B whose boundary is defined by SR 12E. The action area parallels the existing SR 12E and the intrusion into Unit 5B is primarily limited to the existing SR 12E road embankment sloping down to the Gentry Suisun wetland.

California Red-Legged Frog Critical Habitat

The Service designated critical habitat for the California red-legged frog on April 13, 2006 (71 FR 19244) (Service 2006a) and a revised designation to the critical habitat was published on March 17, 2010 (75 FR 12816) (Service 2010).

The PCE's defined for the California red-legged frog provide aquatic habitat for breeding and non-breeding activities and upland habitat for shelter, foraging, predator avoidance, and dispersal across its range. The PCE's and, therefore, the resulting physical and biological features essential for the conservation of the species were determined from studies of California red-

legged frog ecology. Based on the above needs and our current knowledge of the life history, biology, and ecology of the species, and the habitat requirements for sustaining the essential life-history functions of the species, the Service determined that the PCE's essential to the conservation of the California red-legged frog are:

1. Aquatic Breeding Habitat. Standing bodies of fresh water (with salinities less than 7.0 parts per thousand), including: natural and manmade (e.g., stock) ponds, slow-moving streams or pools within streams, and other ephemeral or permanent water bodies that typically become inundated during winter rains and hold water for a minimum of 20 weeks in all but the driest of years.
2. Non-Breeding Aquatic Habitat. Freshwater and wetted riparian habitats, as described above, that may not hold water long enough for the subspecies to hatch and complete its aquatic life cycle but that do provide for shelter, foraging, predator avoidance, and aquatic dispersal for juvenile and adult California red-legged frogs. Other wetland habitats that would be considered to meet these elements include, but are not limited to: plunge pools within intermittent creeks; seeps; quiet water refugia during high water flows; and springs of sufficient flow to withstand the summer dry period.
3. Upland Habitat. Upland areas adjacent to or surrounding breeding and non-breeding aquatic and riparian habitat up to a distance of 1 mile in most cases and comprised of various vegetational series such as grasslands, woodlands, wetland, or riparian plant species that provide the frog shelter, forage, and predator avoidance. Upland features are also essential in that they are needed to maintain the hydrologic, geographic, topographic, ecological, and edaphic features that support and surround the wetland or riparian habitat. These upland features contribute to the filling and drying of the wetland or riparian habitat and are responsible for maintaining suitable periods of pool inundation for larval frogs and their food sources, and provide breeding, non-breeding, feeding, and sheltering habitat for juvenile and adult frogs (e.g., shelter, shade, moisture, cooler temperatures, a prey base, foraging opportunities, and areas for predator avoidance). Upland habitat should include structural features such as boulders, rocks and organic debris (e.g., downed trees, logs), as well as small mammal burrows and moist leaf litter.
4. Dispersal Habitat. Accessible upland or riparian dispersal habitat within designated units and between occupied locations within a minimum of 1 mile of each other that allow for movement between such sites. Dispersal habitat includes various natural habitats and altered habitats such as agricultural fields, which do not contain barriers (e.g., heavily traveled road without bridges or culverts) to dispersal. Dispersal habitat does not include moderate- to high-density urban or industrial developments with large expanses of asphalt or concrete, nor does it include large reservoirs over 50 acres in size, or other areas that do not contain those features identified by PCE's 1, 2, or 3 as essential to the conservation of the subspecies.

With the revised designation of critical habitat, the Service intends to conserve the geographic areas containing the physical and biological features that are essential to the conservation of the species, through the identification of the appropriate quantity and spatial arrangement of the

PCE's sufficient to support the life-history functions of the species. Because not all life-history functions require all the PCE's, not all areas designated as critical habitat will contain all the PCE's. Refer to the final designation of critical habitat for California red-legged frog for additional information (75 FR 12816).

The action area is within critical habitat units SOL-2 and SOL-3. The proposed action will directly affect 12.75 acres of SOL-2 and 0.46 acre of SOL-3.

SOL-2 comprises approximately 3,360 acres in southwestern Solano County and a portion of extreme southeastern Napa County, south of I-80 and west of I-680. SOL-2 is essential for the conservation of the species because it provides connectivity to adjacent units to the south in the interior Coast Range north of the Suisun Bay and is expected to prevent further fragmentation of habitat in this portion of the species' range. The unit contains high-quality permanent and ephemeral aquatic habitats (PCE 1 and PCE 2) consisting of stream and plunge pools as well as large freshwater marsh surrounded by open grassland, willow, and oak that provide for breeding, and upland areas (PCE 3 and PCE 4) for dispersal, shelter, and foraging. The unit consists entirely of private land.

The physical and biological features essential to the conservation of California red-legged frog in the SOL-2 unit may require special management considerations or protection due to nonnative animal species, over grazing of habitat, urbanization, habitat alteration from invasive plant species, and recreational use which may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults due to habitat modification and predation.

SOL-3 comprises approximately 4,597 acres in southwestern Solano County and a portion of extreme southeastern Napa County, north of I-80 and south of SR 12W. The unit contains high-quality permanent and ephemeral aquatic habitats (PCE 1 and PCE 2), consisting of pools, stream, and spring habitat surrounded by riparian tree species and annual grasslands that provide for breeding, and upland areas for dispersal, shelter, and foraging (PCE 3 and PCE 4). The designation of this unit was expected to prevent further fragmentation of habitat in this portion of the species' range and provides connectivity to other units farther north and south in the interior Coast Range north of the Suisun Bay. The unit consists of 1,087 acres of local nonprofit ownership and 3,510 acres of private land.

The physical and biological features essential to the conservation of California red-legged frog in the SOL-3 unit may require special management considerations or protection due to overgrazing of aquatic and riparian habitats, and loss and alteration of habitat due to urbanization, which may alter or eliminate aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults.

Effects of the Proposed Action

The DEIR/EIS (Caltrans 2010) notes that a HCP has been prepared for Solano County. The draft Solano HCP is based on a conservation strategy that has been developed for a number of species, including the vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, callippe silverspot butterfly, the Central Valley Distinct Population Segment of the

California tiger salamander, and California red-legged frog (SCWA 2009). The participants in this strategy include the cities of Vallejo, Fairfield, Suisun City, and the County of Solano. The goal of the conservation strategy is to establish a framework for complying with the Federal and State endangered species acts while accommodating future urban growth, development of infrastructure, and on-going operations and maintenance activities associated with flood control, irrigation facilities, and other public infrastructure undertaken under the permitting authority of the strategy participants within Solano County over the next 30 years. The amount and type of loss and destruction of habitat and the concomitant effects on the covered species is based on a comprehensive analysis of the biology and ecology of the taxa, amount and location of habitat types, and mitigation measures that are necessary to mitigate the adverse effects. The implementation of large scale projects that are not consistent with the strategy, specifically the type, amount, location and in-perpetuity management of appropriate habitat, likely will compromise the ability of the strategy to meet the conservation requirements of the species.

Vernal Pool Fairy Shrimp/ Vernal Pool Tadpole Shrimp

According to Caltrans, construction of the proposed project will result in the loss of 1.45 acres - acre of seasonal wetland habitat suitable for vernal pool fairy shrimp and vernal pool tadpole shrimp (Caltrans 2010). All vernal pool crustaceans occupying the 1.45 acres will be killed due to earth-moving activities and permanent filling of seasonal wetland habitat.

Indirect effects to 0.26 acre of vernal pool crustacean habitat will likely result from changes in hydrology or degradation of water quality resulting from upstream construction activities. The biota of vernal pools and swales can change when the hydrologic regime is altered and small changes can have deleterious effects on entire populations of vernal pool crustaceans (Bauder 1986, 1987). Survival of aquatic organisms like vernal pool fairy shrimp and vernal pool tadpole shrimp is directly linked to the water regime of their habitat (Zedler 1987). Although vernal pool hydrology is driven by the input of precipitation, water input to vernal pool basins also occurs from surface and subsurface flow from the swale and upland portions of the complex (Zedler 1987, Hanes *et al.* 1990, Hanes and Stromberg 1998). Surface flow through the swale portion of the complex allows vernal pool species to move directly from one vernal pool to another. Upland areas are a critical component of vernal pool hydrology because they directly influence the rate of vernal pool filling, the length of the inundation period, and the rate of vernal pool drying (Zedler 1987; Hanes and Stromberg 1998).

The timing, frequency, and duration of inundation are critical to the survival of vernal pool species. Alterations of the hydrology can be particularly harmful to vernal pool crustaceans due to premature pool dry-down before the life cycles of the species are completed, preventing reproduction and disrupting gene flow. Also longer periods of inundation and/or changes in water depth could effectively change seasonal wetland functions (*e.g.*, change from vernal pool to perennial/permanent wetlands). Therefore, construction activities within vernal pool areas will result in the decline of vernal pool crustaceans, including these two listed species.

Caltrans proposes to install and properly maintain erosion control (including dust control) and water quality protection measures that will minimize downstream effects on seasonal wetlands and listed branchiopods that occupy them.

The proposed landscape and habitat restoration is important in minimizing the indirect effects to seasonal wetland habitat and the surrounding uplands. However, restoration of hydrological conditions linked to vernal pools may be difficult if not impossible to achieve in areas such as the proposed Business Center Drive Extension where a dramatic cut will be made through the rolling topography in order to achieve an acceptable road grade. Removal of topographical features will also remove watershed and other functions that influence the inundation and character of the seasonal wetlands within at least 250 feet of the construction footprint.

Caltrans proposal to compensate for permanent and temporal habitat loss with in-perpetuity preservation of 1.71 acres and restoration of 1.45 acres of vernal pool fairy shrimp and vernal pool tadpole shrimp habitat in Solano County will likely offset the adverse effects of the project and provide a benefit for the species.

Conservation measures proposed along SR 12E, including the work window, retaining wall, erosion control and stormwater protection, off-limits fencing, and biological monitoring are likely to be effective in minimizing adverse effects to listed branchiopod habitat in the Gentry Suisun wetlands.

Callippe Silverspot Butterfly

The proposed project will result in the permanent loss of 38.82 acres of callippe silverspot butterfly habitat due to construction of the Business Center Drive Extension from approximately 500 feet west of the existing western terminus of Business Center Drive to the existing Red Top Road/1-80 Intersection as callippe silverspot habitat. Establishment of this new road will require extensive grading and recontouring of rolling grasslands that provide topographical features important for callippe silverspot butterfly hill-topping breeding behavior, foraging, and possible larval development. Construction of the road will result in replacement of butterfly habitat with hardscape and maintained ROW that will likely be inhospitable for the listed butterfly. In addition to the harm and harassment associated with the destruction of callippe silverspot butterfly habitat, the project is also likely to result in effects associated with habitat fragmentation.

Construction of the Business Center Drive Extension will also result in the temporary loss of 19.32 acres of callippe silverspot butterfly habitat. This habitat will be temporarily lost due to construction access, staging, and recontouring for borrow material. Successful restoration of temporarily disturbed areas with a grassland seed mix that includes callippe silverspot butterfly nectar plants is likely to limit the habitat loss to less than one year following the initial ground disturbance.

The construction of Business Center Drive Extension will result in the loss of hilltops and ridgelines likely utilized by the callippe silverspot butterfly for reproduction. The adults of this animal frequently engage in hilltopping (Murphy and Weiss undated; Shields 1967; Thomas Reid Associates 1982), which is the behavior where adults congregate on hilltops for the purpose of locating mates. Males are more likely than females to spend time on hilltops. In a study at San Bruno Mountain in San Mateo County, 62 percent of male callippe silverspot butterflies were caught on hilltops, while only 48 percent of females were caught on hilltops (Thomas Reid

Associates 1982). After mating, females spend less time hilltopping, and more time searching for oviposition sites and nectar sources. Males tended to utilize hilltops throughout their lifespans (Thomas Reid Associates 1982). Males actively patrol hilltops and ridgelines searching for females. Females are mated almost immediately upon emergence from pupae, because males emerge first and doggedly pursue females (Mattoon et al. 1971).

Hilltops and ridgelines play an important role in callippe silverspot butterfly breeding behavior. The importance of hilltops may vary with population density; at high population levels, males may patrol below hilltops, and congregate on them during periods of low population levels (Shields 1967; Baughman et al. 1988). Hilltops and ridge lines should be considered integral components of callippe silverspot butterfly habitat. Losing hilltops from habitat areas likely decreases mate location and genetic mixing over the long-term.

The callippe silverspot butterfly conservation strategy in the draft Solano HCP did not consider the adverse impacts associated with activities such as the proposed 1.3-mile Business Center Drive Extension from the western terminus of Business Center Drive to I-80. Construction of this road extension will involve the removal of topographical features with slopes greater than 20 or 30 percent. These slopes were identified in the draft Solano HCP as important butterfly hilltop habitat that would be conserved for the species. Based on topographical maps it appears that the majority of the 58.14 acres of callippe silverspot habitat that will be directly affected by the project is characterized by slopes that could be used by the callippe silverspot butterfly for breeding purposes.

Clearing and grading may result in temporary adverse effects to some or all the life history stages through crushing or burial during larval diapauses as this process often occurs in leaf litter at the base of the plant. The caterpillars are small and difficult to find. This inability to detect caterpillars prevents any form of site survey or capture and hold of caterpillars during construction.

Use of heavy earthmoving equipment and other ground-disturbing activity resulting in habitat destruction, dust, and prolonged disturbance will likely cause adult butterflies both in and near the construction footprint to flee the area, especially during the approximate mid-May to mid-July flight season for adult butterflies. These disturbances could disrupt essential behaviors such as reproduction and foraging which could lead to adverse effects such as decreased reproductive success due to moving to less suitable areas or increased difficulty in locating a mate.

Adult callippe silverspot butterflies are strong fliers. After road construction is complete, butterflies would likely avoid collision with vehicles by flying over road cuts for the Business Center Drive Extension. However, they would be susceptible to harm and mortality when crossing in areas where habitat on either side of the new road is at or near grade with the road. Road mortality can result in significant reliable loss of adult butterflies over time.

Construction and grading activities may produce dust which can interfere with the respiration and foraging of active adults. Insects breathe via spiracles and inhalation of small particles, such as dust, could prevent their respiration and result in their asphyxiation. Ehrlich (1984) speculated that the decline of the common alpine butterfly in the upper East River drainage of

Gunnison County, Colorado, was the result of an increase in dust from increased vehicular traffic.

Viola populations have been recorded adjacent to the construction footprint but the extent of the populations is not well known. There have been no additional larval host plant surveys since the reconnaissance-level surveys conducted in 2003 and 2004. The food plants of the callippe silverspot butterfly adult nectar plants could be eliminated by construction. Destruction of larval host and larval and adult nectar plants would result in a decrease in the amount of habitat available for reproduction and development of immature butterflies.

Successful propagation and establishment of *Viola* has not been successful to date. Therefore loss of larval host plants cannot be minimized through restoration alone. Successful establishment of adult food plants is feasible and will be an integral part of Caltrans' restoration plan.

Another potential effect of the proposed project on the listed butterfly is the elimination of their habitat due to non-native vegetation invading areas where restoration has not been implemented or is inadequate. Soil disturbance, such as that associated with project associated activities, facilitates the invasion of areas by non-native species. Increased human activity introduces new non-native species. These plants could eventually displace or otherwise out-compete the plants which are depended upon by the callippe silverspot butterfly.

The Business Center Drive Extension construction footprint is immediately adjacent to two previously identified *Viola* populations. The proximity of construction activities may deter livestock grazing in these locations and temporary and permanent road ROW fencing will exclude livestock from accessing these areas. The removal of livestock grazing pressure from patches of vegetation supporting *Viola* could result in a reduction in the abundance and distribution of this plant. This in turn could result in a reduction in available habitat for the early stages of callippe silverspot butterfly.

Caltrans' proposal to compensate for permanent and temporal habitat loss with in-perpetuity preservation or restoration of 126.12 estimated acres of callippe silverspot butterfly habitat in Solano County. This will likely offset the adverse effects of the project and provide a benefit for the species. This habitat will be permanently protected and a management plan will be implemented which will aid the species.

Valley Elderberry Longhorn Beetle

The proposed project will directly affect ten elderberry shrubs that are suitable habitat for the valley elderberry longhorn beetle within the proposed project area. Transplantation of the elderberry shrubs may cause them to die, experience stress, or become unhealthy due to changes in soil, hydrology, microclimate, or associated vegetation. This may reduce their quality as habitat for the valley elderberry longhorn beetle, or impair their production of habitat-quality stems in the future. Branches containing larvae may be cut, broken, or crushed as a result of the transplantation process. The actions described in the *Conservation Measure 23* will reduce, but not eliminate, the potential for these effects. Additionally, the proposed project will ultimately increase the value of the valley elderberry longhorn beetle habitat in the area chosen for

transplantation.

California Red-Legged Frog

The proposed project will likely adversely affect the threatened California red-legged frog during the construction and operational phases of the project. According to Caltrans, the proposed project will result in the permanent loss of 78.48 acres and the temporary loss of 19.32 acres of California red-legged frog habitat that is used by all life stages for breeding, feeding, sheltering, and dispersal. In addition to the harm and harassment associated with the destruction of California red-legged frog habitat (described further below), the project is also likely to result in effects associated with habitat fragmentation.

Caltrans proposes to minimize construction related effects by implementing the *Conservation Measures* and design features (undercrossings and directional fencing along the proposed Business Center Drive Extension) included in the project description section of this biological opinion. However, in spite of these measures the project has the potential to result in a variety of adverse effects that would result in take of the California red-legged frog.

Construction could result in the killing, harming and/or harassment of juveniles and adults inhabiting areas of suitable aquatic and upland habitat. The project as proposed by Caltrans in the project description of this biological opinion would result in the loss of approximately 97.8 acres of California red-legged frog habitat. The Service has determined that the permanent and temporary loss and/or degradation of California red-legged frog habitat will result in the take of all frogs within these areas as a direct result of habitat loss.

During the construction phase, permanent and temporal loss of aquatic and upland habitat will result from the removal and/or disturbance of soil and vegetation. Construction noise, vibration, lighting used for possible night work, and increased human activity during construction may interfere with normal behaviors such as feeding, sheltering, movement between refugia and foraging grounds, and other frog essential behaviors. This can result in avoidance of areas that have suitable habitat but intolerable levels of disturbance.

Unless identified by the biological monitor or site personnel, and rescued by the biological monitor, individual California red-legged frogs exposed during excavations likely will be crushed and killed or injured by construction-related activities. Even with biological monitoring, overall awareness, and proper escape ramps, California red-legged frogs could fall into the trenches, pits, or other excavations, and then risk being directly killed or be unable to escape and be killed due to desiccation, entombment, or starvation.

Red-legged frogs can be expected to fall or willingly enter into excavations created as a result of the project. Juvenile and adult frogs may have difficulty escaping pits. Entrapment may cause frogs to be more susceptible to predation and desiccation due to exposure. Frogs may take refuge in excavations, increasing their likelihood of being crushed, entombed, or otherwise injured. Such excavations are not part of the baseline environmental conditions and therefore Caltrans would have created a feature that could lead to harm and possible frog mortality.

Proper trash disposal is often difficult to enforce on a large construction site and is a common

non-compliance issue. Improperly disposed edible trash could attract predators, such as raccoons, crows, and ravens, to the sites, which could subsequently prey on the listed amphibian. Caltrans commitment to not use erosion control devices with mono-filament should be effective in avoiding the associated risk of entanglement that can result in death by predation, starvation, or desiccation (Stuart *et al.* 2001).

Caltrans proposes to limit initial ground-disturbing activities in California red-legged frog habitat (Caltrans 2011) between April 1 and November 1, when feasible. This measure would primarily avoid the wettest time of year and the onset of the breeding season when frogs are more likely to be involved in upland dispersal. When the work window is not feasible, biological monitoring will be performed when activities occur between November 1 and March 31. Frogs are more likely to move at night and more likely to be taking cover during the day. California red-legged frogs are cryptic and can be difficult for even experienced biological monitors to find. Monitoring will be occurring during the day when most frogs will be taking cover, making them even more difficult to find. Frogs that have moved into work areas at night and taken cover are unlikely to be found by biological monitors and will most likely be killed or harmed by activities. Frogs that are found, captured, and moved will be subjected to displacement and harassment that may lead to death or injury. Therefore allowing ground-disturbing activities with the implementation of biological monitoring during the wet and cool season (November 1 to March 31) likely will result in increased take relative to limiting ground-disturbing activities to the dry season.

Caltrans states they will attempt to minimize adverse effects by locating construction staging, storage and parking areas outside of California red-legged frog habitat; clearly marking construction work boundaries with high-visibility fencing, conducting preconstruction surveys and biological monitoring, and revegetating temporarily disturbed areas. The effects of construction activities and the removal of habitat will be partially minimized by installing wildlife exclusion fencing to deter frogs from wandering onto construction sites; educating workers; and requiring a Service-approved biologist to be present to monitor construction activities.

If unrestricted, the proposed construction activities could result in the introduction of chemical contaminants to frog habitat. Exposure pathways could include inhalation, dermal contact, direct ingestion, or secondary ingestion of contaminated soil, plants or prey species. Exposure to contaminants could cause short- or long-term morbidity, possibly resulting in reduced productivity or mortality. However, Caltrans proposes to minimize these risks by implementing erosion control, stormwater control, and spill prevention plans to minimize the potential degradation of aquatic and upland habitat that could lead to mortality and harm of California red-legged frogs. If unrestricted, biologists and construction workers traveling to the action area from other project sites may transmit diseases by introducing contaminated equipment. The chance of a disease being introduced into a new area is greater today than in the past due to the increasing occurrences of disease throughout amphibian populations in California and the United States. It is possible that chytridiomycosis, caused by chytrid fungus, may exacerbate the effects of other diseases on amphibians or increase the sensitivity of the amphibian to environmental changes (e.g., water pH) that reduce normal immune response capabilities (Bosch *et al.* 2001, Weldon *et al.* 2004).

Preconstruction surveys and the relocation of individual California red-legged frogs may avoid injury or mortality; however, capturing and handling frogs may result in stress and/or inadvertent injury during handling, containment, and transport. Caltrans proposes to minimize these effects by using Service-approved biologists and relocating amphibians to suitable nearby habitat.

The Business Center Drive Extension will likely result in significant fragmentation of the landscape and ecosystem functions. Bridge work within the aquatic and riparian California red-legged frog habitat associated with Jameson Canyon Creek, Ledgewood Creek, and Green Valley Creek will include earth-moving, vegetation clearing, habitat loss, general disturbance, and temporary creek diversions. These activities have the potential to harm and harass frogs that use these areas for year-round refuge, dispersal, and foraging.

The majority of the approximately 1.3-mile road segment from Business Center Drive to SR 12W and then south to I-80 will be bordered by road cuts which limit the potential for wildlife movement or incorporating safe wildlife passage across the road. In conjunction with directional fencing, the three undercrossing will likely provide safe crossing for most wildlife, including the California red-legged frog; however, connectivity will be greatly reduced compared to existing conditions and we anticipate that fewer frogs will successfully find and successfully navigate the new undercrossings.

Of primary concern, the Business Center Drive Extension will limit movement to and from the Mangels' pond which is likely the primary population source for the western portion of the SOL-2 critical habitat unit. Isolation of this breeding pond from the remainder of the surrounding habitat will reduce the size and distribution of California red-legged frogs in the SOL-2 unit by severing or limiting connectivity of what is now largely contiguous habitat north and south of the proposed Business Center Drive Extension. With the addition of the three proposed undercrossings and directional fencing, frogs and other wildlife will be limited to 35 feet of crossing opportunities along the 0.79-mile Business Center Drive Extension from the western terminus of the existing Business Center Drive and Jameson Canyon Road (SR 12W). Construction of this barrier will reduce dispersal to 0.8 percent of the original topography that was available for movement. This adverse effect could be partially minimized if one or more breeding ponds would be constructed north of the Business Center Drive Extension.

The Business Center Drive Extension is within the City of Fairfield's urban growth boundary and establishment of the road will enable access for future industrial, residential, and recreational development within California red-legged frog habitat. This development is likely to result in additional habitat fragmentation, degradation, and loss. Caltrans has not proposed any measures to minimize this take from increased development due to this road extension.

The development associated with the proposed Business Center Drive Extension will further reduce available foraging and dispersal habitat for California red-legged frogs that breed in Mangels' pond and disperse widely to the north and west. This development, when combined with reduced connectivity of habitat caused by construction of the road extension itself, is likely to significantly reduce the size and distribution of frogs that occupy the area from Mangels' pond northward into Napa County as animals will become less successful at reaching Mangels' pond

to breed and disperse north as juveniles and lose the ability to live in the area south of the road extension as habitat is lost to development. The keys to minimizing these effects include:

1. Easements south of the proposed Business Center Drive Extension that connect Mangels' pond and the Business Center Drive Extension underpasses, and
2. Easements north of the Business Center Drive Extension.

The proposed project further precludes a key conservation need for the Jameson Canyon Lower Napa River Core Recovery Area, which is to protect the dispersal corridors between Jameson Canyon Creek and surrounding upland and breeding habitat. Planned infrastructure changes to SR 12W are likely to exacerbate the barrier effects as the roadway is widened and median barriers are installed.

Caltrans proposal to compensate for permanent and temporal habitat loss with in-perpetuity preservation of 245.1 acres of California red-legged frog habitat in Solano County will likely offset the adverse effects of the project and provide a benefit for the species. This habitat will be permanently protected and a management plan will be implemented which will aid the species.

Contra Costa Goldfields Critical Habitat

The proposed action is not expected to appreciably diminish the conservation and recovery value of critical habitat for Contra Costa goldfields. The proposed project will result in the loss of 3.83 acres (1.31 permanent + 2.52 temporary) of the 736.72-acre critical habitat unit 5B. The permanent loss is approximately 0.2 percent of the total unit. The effects will be limited to the northern edge of the unit and will occur on the existing raised SR 12E roadbed and parallel to the bottom of the slope. The completed project will not expand southward into Gentry Suisun wetland and has been designed to sustain existing hydrology. The project will avoid adverse effects to topographical features that influence the hydrology (PCE 1) and will not result in the modification of depressional features (PCE 2) within Contra Costa goldfields habitat.

California Red-Legged Frog Critical Habitat

The proposed action is expected to diminish the value of the SOL-2 critical habitat in its intended function for the conservation and recovery of the California red-legged frog. The proposed project will result in the direct loss of 12.75 acres (8.30 permanent + 4.45 temporary) of the 3,360-acre unit.

The proposed project will result in the isolation of the only verified California red-legged frog breeding habitat (Mangels' Pond) in the SOL-2 unit. Mangels' Pond is also the largest pond in the unit. The Business Center Drive Extension will include three undercrossings and fencing intended to exclude frogs from the roadway and direct them towards the undercrossings. Movement, including juvenile dispersal from breeding habitat and adult movement to and from breeding habitat will be substantially limited due to a 99.2 percent reduction in the available north-south dispersal corridor.

Establishing the new road is also likely to be growth inducing, allowing access for development that will further constrict, degrade, and eliminate upland habitat adjacent to Mangels' Pond and the road undercrossings. Therefore, the proposed project has the potential to completely isolate what is likely a population source breeding pond from the remainder of SOL-2.

The Business Center Drive Extension along with the road widening and vertical barrier construction on SR 12W will severely limit connectivity that now exists between SOL-2 and SOL-3.

Therefore, the proposed project is likely to negatively modify the function of the SOL-2 unit by limiting or eliminating access to a primary breeding pond (PCE 1) and by severely limiting dispersal within the SOL-2 unit and between SOL-2 and SOL-3 (PCE 4). Caltrans' *Proposed Conservation Measures* are unlikely to sufficiently avoid adverse modification of these PCEs because the project includes limited features and the project creates limited potential for maintaining connectivity.

For purposes of the adverse modification determination, the effects on California red-legged frog critical habitat is evaluated in the context of the range-wide condition of the critical habitat at the provincial and range-wide scales. Although the proposed project is likely to significantly impair the habitat function and recovery value of the SOL-2 and SOL-3 units, it is unlikely to adversely modify the range-wide recovery role and functions of overall California red-legged frog critical habitat designation.

Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area. 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.

Although not a covered activity, the proposed project area is included in the zone of covered activities for the draft Solano HCP. The Fairfield General Plan designates much of this area for planned development. Adverse effects to showy Indian clover, Contra Costa goldfields and its critical habitat, vernal pool tadpole shrimp, vernal pool fairy shrimp, callippe silverspot butterfly, valley elderberry longhorn beetle, Central California Distinct Population Segment of the California tiger salamander, and California red-legged frog and its critical habitat including habitat loss and further fragmentation in this area due to non-Federal actions would result in cumulative effects to listed species and their critical habitat. Realignment of the interchanges, particularly extension of Business Center Drive is likely to enhance urban growth potential.

Conclusion

After reviewing the current status of the vernal pool tadpole shrimp, vernal pool fairy shrimp, callippe silverspot butterfly, valley elderberry longhorn beetle, and California red-legged frog, the environmental baseline for the action area; the effects of the proposed I-80/I-680/SR 12 Interchange Phase I Project and the cumulative effects; it is the Service's biological opinion that the project, as proposed, is not likely to jeopardize the continued existence of these listed species.

However, the proposed project likely will result in significant negative effects to critical habitat unit SOL-2 of the California red-legged frog. We based these determinations on the following: (1) pre-construction surveys will be conducted for listed species; (2) a Service-approved biologist will monitor all activities for compliance with this biological opinion; (3) effects to the valley elderberry beetle will be addressed by implementing programmatic conservation measures, including transplantation of elderberry shrubs; (4) directional fencing along and undercrossings across Business Center Drive will avoid complete isolation of a California red-legged frog breeding pond; (5) California red-legged frogs found in the project work area will be relocated to nearby suitable habitat; (6) habitat loss will be compensated with in-perpetuity preservation of vernal pool tadpole shrimp, vernal pool fairy shrimp, and California red-legged frog habitat; (7) callippe silverspot butterfly habitat loss will be compensated with in-perpetuity preservation of callippe silverspot butterfly habitat and/or enhancement of occupied habitat; and (8) other conservation measures, as described in the *Proposed Conservation Measures* of this biological opinion, that will be fully implemented by Caltrans.

The Service has also determined that the proposed action is not likely to result in the destruction or adverse modification of critical habitat for the Contra Costa goldfields due to limiting permanent effects to the existing road embankment.

The proposed action is not likely to result in the destruction or adverse modification of critical habitat for the California red-legged frog because although it will significantly reduce access to the only known breeding pond in this critical habitat unit, the effects likely will diminish the recovery, but not the survival value, of critical habitat units SOL-2 and SOL-3.

INCIDENTAL TAKE STATEMENT

Section 9(a)(1) of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened fish and wildlife species without special exemption. Take is defined as 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 as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, movement, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including movement, 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 this Incidental Take Statement.

The measures described below are non-discretionary, and must be implemented by Caltrans so that they become binding conditions of any grant or permit issued to Caltrans as appropriate, in order for the exemption in section 7(o)(2) to apply. Caltrans has a continuing duty to regulate the activity covered by this Incidental Take Statement. If Caltrans: (1) fails to adhere to the

terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document; and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

Amount or Extent of Take

Vernal Pool Fairy Shrimp/Vernal Pool Tadpole Shrimp

The Service expects that incidental take of vernal pool fairy shrimp and vernal pool tadpole shrimp may occur during this action. The extent of the take will be difficult to detect or quantify because of the ecology and biology of these species. Additionally, their size and cryptic nature makes the finding of a dead specimen unlikely. Seasonal population fluctuations also may mask the ability to determine the exact extent of take. Due to the difficulty in quantifying the number of vernal pool crustaceans that will be taken as a result of the proposed action, the Service is quantifying take incidental to the proposed project as the number of acres of seasonal wetlands (vernal pool crustacean habitat), that will become unsuitable for vernal pool crustaceans due to direct effects as a result of the action. Therefore, the Service estimates that the proposed action will result in the direct take of all vernal pool crustaceans inhabiting 1.45 acres of vernal pool habitat. Anticipated take is expected to be in the form of harm and mortality from habitat loss and modification, construction related disturbance, and reduced fitness.

Callippe Silverspot Butterfly

The Service anticipates incidental take of callippe silverspot butterfly will be difficult to detect or quantify because it is unlikely an injured or dead specimen will be found due to the elusive and cryptic nature of the early stages of this species (eggs, larvae, pupae), the difficulty of non-specialist to observe and identify the adults, and their small size. However, the level of incidental take of this animal can be anticipated by the effects to cover, foraging, and breeding habitat. Conservation measures in this biological opinion will reduce, but are unlikely to eliminate, the potential for incidental take of this listed species. The Service, therefore, anticipates incidental take of callippe silverspot butterfly will result from the proposed project. Upon implementation of the reasonable and prudent measures, all individuals of callippe silverspot butterfly inhabiting 58.14 acres of identified habitat will be subject to incidental take in the form of harm, harassment, injury, and mortality.

Valley Elderberry Longhorn Beetle

The Service expects that incidental take of the valley elderberry longhorn beetle will be difficult to detect or quantify because the life cycle of the beetle and its small body size make discovery of a dead specimen unlikely, losses may be masked by seasonal fluctuations in numbers or other causes, and the species occurs in habitat that makes them difficult to detect. It is not possible to make an accurate estimate of the number of valley elderberry longhorn beetles that will be harassed, harmed, injured, or killed as a result of construction activities. In instances when take is difficult to detect, the Service often estimates take relative to the number of elderberry stems, 1 inch or greater in diameter, that are lost or degraded as a result of the action. Therefore, the Service estimates that all valley elderberry longhorn beetles inhabiting the 62 stems of 1 inch or

greater in the ten identified elderberry shrubs in the action area may be harassed, harmed, injured, or killed, as a result of the proposed action.

California Red-Legged Frog

The Service anticipates that incidental take of the California red-legged frog will be difficult to detect due to their small size, wariness, and cryptic nature. Finding an injured or dead California red-legged frog is unlikely due to their relatively small body size, rapid carcass deterioration, and likelihood that the remains will be removed by a scavenger. Losses of this species may also be difficult to quantify due to a lack of baseline survey data and seasonal/annual fluctuations in their numbers due to environmental or human-caused disturbances. There is a risk of harm, harassment, injury and mortality as a result of the proposed construction activities, the permanent and temporary loss/degradation of suitable habitat, and capture and relocation efforts; therefore, the Service is authorizing take incidental to the proposed action as: (1) the injury and mortality of two adult or juvenile California red-legged frogs; and (2) the capture, harm and harassment of all California red-legged frogs within the construction footprint.

Upon implementation of the following *Reasonable and Prudent Measures*, vernal pool tadpole shrimp, vernal pool fairy shrimp, callippe silverspot butterflies, valley elderberry longhorn beetles, and California red-legged frogs within the action area in proportion to the amount and type of take outlined above will become exempt from the prohibitions described under section 9 of the Act. No other forms of take are exempted under this opinion.

This biological opinion does not authorize take for Federal and non-Federal actions associated with the maintenance of roadways included in this action, and the associated Caltrans and STA ROWs. Routine Caltrans and STA maintenance activities such as the removal/displacement of sand, silt, sediment, debris, rubbish, vegetation, and other obstruction flow, the control of weeds, grasses and emergent vegetation, minor repair of existing facilities, rip-rap replacement, and culvert replacement may affect listed species. Such maintenance activities and their potential effects to listed species are not evaluated in this biological opinion.

Effect of the Take

The Service has determined that the level of anticipated take for the vernal pool tadpole shrimp, vernal pool fairy shrimp, callippe silverspot butterfly, valley elderberry longhorn beetle, and California red-legged frog is not likely to jeopardize the continued existence of this species.

Reasonable and Prudent Measures

The following reasonable and prudent measures are necessary and appropriate to minimize the effect of the proposed action on the vernal pool tadpole shrimp, vernal pool fairy shrimp, callippe silverspot butterfly, valley elderberry longhorn beetle, and California red-legged frog. Caltrans will be responsible for implementation of and compliance with these measures:

- 1 Caltrans will minimize the effect of take to the vernal pool tadpole shrimp, vernal pool fairy shrimp, callippe silverspot butterfly, valley elderberry longhorn beetle, and California red-legged frog.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, Caltrans shall ensure compliance with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are nondiscretionary.

1. The following *Terms and Conditions* implement *Reasonable and Prudent Measure* one (1):
 - a. Caltrans shall minimize the potential for harm, harassment, or killing of vernal pool tadpole shrimp, vernal pool fairy shrimp, callippe silverspot butterfly, valley elderberry longhorn beetle, and California red-legged frog resulting from project related activities by implementing the conservation measures as described in the *Description of the Proposed Action* of this Biological Opinion.
 - b. Caltrans shall require all contractors to comply with the Act in the performance of the action and shall perform the action as outlined in the *Description of the Proposed Action* of this Biological Opinion and all other supporting documentation submitted to the Service.
 - c. Caltrans shall include language in their contracts that expressly requires contractors and subcontractors to work within the boundaries of the project footprints identified in this biological opinion, including vehicle parking, staging, laydown areas, and access roads.
 - d. The Service, and/or their designated agents shall have direct access at any time or immediately upon verbal request to the action area and all Service-approved biologists to ensure compliance with this Biological Opinion. Access to areas outside of the Caltrans ROW or easements shall be coordinated by Caltrans with the respective property owners.
 - e. Qualifications of proposed biological monitor(s) shall be submitted to the Service for approval at least 30 calendar days prior to initiating construction activities for the proposed project.
 - f. Prior to approval, the biologist(s) shall submit a letter to the Service verifying that they possess a copy of this biological opinion and understand its Terms and Conditions. The biologist(s) shall keep a copy of this Biological Opinion in their possession when on-site.
 - g. The Resident Engineer or their designee shall be responsible for implementing the conservation measures and Terms and Conditions of this Biological Opinion and shall be the point of contact for the project. The Resident Engineer or their designee shall maintain a copy of this Biological Opinion onsite whenever construction is taking place. Their name and telephone number shall be provided to the Service at least thirty (30) calendar days prior to groundbreaking for each of the construction packages. Prior to ground breaking, the Resident Engineer must submit a letter to the Service verifying that they possess a copy of this Biological Opinion and have read the Terms and Conditions.
 - h. An outline of the Worker Environmental Awareness Training Program shall be submitted to the Coast-Bay/Forest Foothills Division Chief in the Sacramento Fish and Wildlife

Office within 30 days prior to the initial onset of construction activities. As needed, training will be conducted in Spanish for Spanish language speakers.

- i. A Service-approved biologist(s) shall be onsite during all activities that may result in take of vernal pool tadpole shrimp, vernal pool fairy shrimp, callippe silverspot butterfly, valley elderberry longhorn beetle, and California red-legged frog as determined by the Service. A minimum of one Service-approved biologist shall be onsite throughout the project duration. The Service will consider the implementation of specific project activities without the oversight of a Service-approved biologist on a case-by-case basis.
- j. During construction activities outside the existing hardscape, the Service-approved biologist shall conduct clearance surveys at the beginning of each day within or adjacent to suitable listed species habitat and regularly throughout the workday when construction is occurring within or adjacent to suitable habitat.
- k. Vegetation clearing and construction operations shall be limited to the minimum necessary in areas of temporary access, work areas, and staging. Trees, snags, shrubs, other vegetation, woody debris, and uncompacted forest litter will be protected to the maximum extent practicable. Tree and shrub trimming shall be minimized to the extent possible. Trees shall be pruned, or shrubs that interfere with construction or project operation shall be pruned or topped. Shrubs shall be trimmed above ground and roots will be left intact. All vegetation trimmings shall either be hauled off-site and disposed of properly, or chipped and left on-site as determined by the Caltrans Resident Engineer. When possible, stockpiles of trimmed vegetation shall be kept at least 50 feet from the bed and bank.
- l. In areas where valley elderberry longhorn beetle will be affected, within sixty (60) calendar days prior to the initiation of ground disturbance, Caltrans shall provide a written description of how the valley elderberry longhorn beetle buffer areas will be restored, protected, and maintained after construction is completed.
- m. The following measures are intended to minimize the effect of take in the form of harassment on the California red-legged frog.
 - i. Each California red-legged frog encounter shall be treated on a case-by-case basis in coordination with the Service but general guidance is as follows: (1) leave the non-injured frog if it is not in danger; or (2) move the frog to a nearby location if it is in danger.

These two options are further described below.

- a) When a California red-legged frog is encountered in the action area the first priority is to stop all activities in the surrounding area that have the potential to result in the harm, harassment, injury, or death of the individual. Then the monitor needs to assess the situation in order to select a course of action that will minimize adverse effects to the individual. Contact the Service once the site is

secure. The contacts for this situation are Ryan Olah (ryan_olah@fws.gov) or John Cleckler (john_cleckler@fws.gov). They can be reached at (916) 414-6600. If you get voicemail message for these contacts then contact John Cleckler on his cell phone at (916) 712-6784. The issue of contacting people on the weekend or after office hours is addressed later.

The first priority is to avoid contact with the frog and allow it to move out of the action area and hazardous situation on its own to a safe location. The animal should not be picked up and moved based on it not moving fast enough or an inconvenience for construction activities. This guidance only applies to situations where a California red-legged frog is encountered on the move during conditions that make their upland travel feasible. This does not apply to California red-legged frogs that are uncovered or otherwise exposed or in areas where there is not sufficient adjacent habitat to support the life history of the California red-legged frog should the frogs move outside the immediate area.

Avoidance is the preferred option if a California red-legged frog is not moving and is using aquatic habitat or is within some sort of burrow or other refugia. The area should be well marked for avoidance by construction and a Service-approved biological monitor should be assigned to the area when work is taking place nearby.

- b) The animal should be captured and moved when it is the only option to prevent harm.

If appropriate habitat is located immediately adjacent to the capture location then the preferred option is short-distance relocation to that habitat. This must be coordinated with the Service but the general guidance is the frog should not be moved outside of the radius it would have traveled on its own. Under no circumstances should a frog be relocated to another property without the owner's written permission. It is Caltrans' responsibility to arrange for that permission.

The release must be coordinated with the Service and will depend on where the individual was found and the opportunities for nearby release. In most situations the release location is likely to be into the mouth of a small burrow or other suitable refugia and in certain circumstances pools without non-native predators may be suitable.

Only Service-approved biologists for the project can capture California red-legged frogs. Nets or bare hands may be used to capture California red-legged frogs. Soaps, oils, creams, lotions, repellents, or solvents of any sort cannot be used on hands within two hours before and during periods when they are capturing and relocating California red-legged frogs. To avoid transferring disease or pathogens between sites during the course of surveys or handling of the frogs, Service-approved biologists must use the following guidance for disinfecting equipment and clothing. These recommendations are adapted from

the *Declining Amphibian Population Task Force's Code* which can be found in their entirety at: <http://www.open.ac.uk/daptf/>

- 1) All dirt and debris, including mud, snails, plant material (including fruits and seeds), and algae, must be removed from nets, traps, boots, vehicle tires and all other surfaces that have come into contact with water and/or an amphibian. Cleaned items should be rinsed with clean water before leaving each site.
 - 2) Boots, nets, traps, etc., must then be scrubbed with either a 70 percent ethanol solution, a bleach solution (0.5 to 1.0 cup of bleach to 1.0 gallon of water), QUAT 128 (quaternary ammonium, use 1:60 dilution), or a six percent sodium hypochlorite 3 solution and rinsed clean with water between sites. Avoid cleaning equipment in the immediate vicinity of a pond or wetland. All traces of the disinfectant must be removed before entering the next aquatic habitat.
 - 3) Used cleaning materials (liquids, etc.) must be disposed of safely, and if necessary, taken back to the lab for proper disposal.
 - 4) Service-approved biologists must limit the duration of handling and captivity. While in captivity, individual California red-legged frogs shall be kept in a cool, dark, moist, aerated environment, such as a clean and disinfected bucket or plastic container with a damp sponge. Containers used for holding or transporting should not contain any standing water.
- ii. The Service-approved biologist(s) shall perform a California red-legged frog clearance survey immediately prior to the initial ground disturbance. Safety permitting, the Service-approved biologist(s) will investigate areas of disturbed soil for signs of the listed species within 30 minutes following the initial disturbance of that given area.
 - iii. Construction crews shall review the dewatering plan prior to any in-stream work within the bed and banks that requires the construction of coffer dams and/or dewatering.
 - iv. Removal of vegetation shall be accomplished by a progressive cutting of vegetation from the overstory level to the ground level to allow California red-legged frogs more opportunity move out of the work area under their own volition. Vegetation shall be cleared only where necessary and will be cut approximately 4 inches above soil level except in areas that will be excavated for roadway construction. This is intended to encourage plants that reproduce vegetatively to resprout after construction. All clearing and grubbing of woody vegetation shall be done using hand tools, small mechanical tools, or backhoes and excavators. All cleared vegetation shall be removed from the project footprint to prevent attracting animals to the project site.

- v. If pumping is used for dewatering, intakes shall be completely screened with wire mesh no larger than 0.2 inch to prevent frogs from entering the pump.
- vi. The Service-approved biologist(s) shall permanently remove, from the project site, any aquatic exotic wildlife species, such as bullfrogs and crayfish, to the extent possible.
- n. Erosion control materials other than seeding only shall consist of hydraulically applied erosion control products, organic mulches free of non-native seeds, organic mulch control nettings with loose weave construction (the strands slide along cross strands) and openings over 4 centimeters, staked in straw bales or temporary erosion control fencing. Materials utilizing fixed weaves (strands cannot move), polypropylene, polymer or other synthetic materials shall not be used.
- o. Through the Resident Engineer or their designee, the Service-approved biological monitor(s) will be given the authority to communicate either verbally, by telephone, e-mail message, or hardcopy with Caltrans personnel, construction personnel or any other person(s) at the project site or otherwise associated with the project to ensure that the terms and conditions of this biological opinion are being met. If situations arise where the terms and conditions may not be met or are not being met, the biological monitor will inform the Resident Engineer, who has the authority to stop work. If the Resident Engineer exercises this authority, the Service will be notified by telephone and e-mail message within one working day. The Service contact is the Coast-Bay/Forest Foothill Division Chief in the Sacramento Fish and Wildlife Office at (916) 414-6600. Discussions with the Resident Engineer, biological monitor, Caltrans staff and Service staff, will take place to identify and inform actions to resolve the issue and to document decisions.

Reporting Requirements

Caltrans shall report to the Service any information about take or suspected take of listed wildlife species. Caltrans must notify the Service via an e-mail or telephone message within 24 hours of receiving such information. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and photographs of the specific animal. The individual animal shall be preserved, as appropriate, and held in a secure location until instructions are received from the Service regarding the disposition of the specimen or the Service takes custody of the specimen. The Service contacts are the Coast-Bay/Forest Foothills Division Chief in the Sacramento Fish and Wildlife Office at (916) 414-6600, and the Resident Agent-in-Charge of the Service's Law Enforcement Division at (916) 414-6660.

Caltrans shall submit a post-construction compliance report prepared by the on-site biologist to the Sacramento Fish and Wildlife Office within sixty (60) calendar days of the date of the completion of each Construction Package. This report shall detail (i) dates that construction occurred; (ii) pertinent information concerning the success of the project in meeting compensation and other conservation measures; (iii) an explanation of failure to meet such measures, if any; (iv) known project effects on the vernal pool tadpole shrimp, vernal pool fairy

shrimp, callippe silverspot butterfly, valley elderberry longhorn beetle, and California red-legged frog, if any; (v) occurrences of incidental take to any listed species, if any; and (vii) other pertinent information. The final construction acreage of permanent and temporary habitat loss will be tabulated separately and provided to the Service. The extent of permanent and temporary habitat loss will be delineated with a handheld GPS device and a trackfile of each will be provided to the Service.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that can be implemented to further the purposes of the Act, such as preservation of endangered species habitat, implementation of recovery actions, or development of information and data bases. The Service requests notification of the implementation of any conservation recommendations in order to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats. We propose the following conservation recommendations:

1. Enhancing habitat connectivity and wildlife passage across roads as well as reducing road effects should be included in the *Purpose and Need* section of environmental documents. FHWA agreed to coordinate with the Service on wildlife movement issues in a June 2, 2010, letter addressed to Mr. Greg Costello of the Western Environmental Law Center. As their NEPA delegate, Caltrans District 4 is expected to adopt the commitments made by FHWA to consider wildlife movement in transportation planning and project development.
2. Caltrans District 4 should include a wildlife passage section in their BAs that includes an analysis of the existing passage and how the project will affect passage. The analysis should include identification of the species' resources on both sides of the project boundaries, an appropriately timed road mortality survey to identify "hot spots," and strategic locations where the species could benefit from the enhancement of an existing crossing or the installation of a new crossing. Caltrans District 4 should coordinate with their headquarters office and the University of California at Davis Road Ecology Center to develop a passage and road effects approach. Further guidance is provided by FHWA's *Wildlife Vehicle Collision Reduction Study* (available at: <http://www.fhwa.dot.gov/environment/hconnect/wvc/index.htm>) and Caltrans' *Wildlife Crossings Guidance Manual* (http://www.dot.ca.gov/hq/env/bio/wildlife_crossings/).
3. Efforts should be made to establish upland culverts designed specifically for wildlife movement as well as making accommodations for terrestrial wildlife movement through culverts that convey hydrology. Transportation agencies should also acknowledge the value of enhancing human safety by providing safe passage for wildlife in their early project design.
4. Caltrans should reference their internal system they have developed to keep track of road mortality records and the University of California at Davis, Road Ecology Center's

California Roadkill Observation System (<http://www.wildlifecrossing.net/california/>). Information from these databases should be referenced in road project assessments.

5. Caltrans should consider establishing functioning preservation and creation conservation banking systems to further the conservation of the vernal pool tadpole shrimp, vernal pool fairy shrimp, callippe silverspot butterfly, valley elderberry longhorn beetle, and California red-legged frog and other listed species. Such banking systems also may be utilized for other required mitigation (i.e., seasonal wetlands, riparian habitats, etc.) where appropriate. Efforts should be made to preserve habitat along roadways in association with established or planned wildlife crossings.
6. Caltrans should continue to develop and implement their *Early Statewide Biological Mitigation Planning Project* that has been developed by the University of California at Davis, Road Ecology Center to offset the effects of Caltrans' projects on listed species.

REINITIATION--CLOSING STATEMENT

This concludes formal consultation on the I-80/I-680/SR 12 Interchange Phase 1 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 agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion, including work outside of the project footprint analyzed in this opinion and including vehicle parking, staging, lay down areas, and access roads; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion including use of rodenticides or herbicides; relocation of utilities; and use of vehicle parking, staging, lay down areas, and access roads; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending re-initiation.

If you have any questions regarding this biological opinion for the I-80/I-680/SR 12 Interchange Phase 1 Project, please contact John Cleckler or Ryan Olah at the letterhead address or at (916) 414-6600.

Sincerely,



Susan K. Moore
Field Supervisor

cc:

Scott Wilson and Brenda Blinn, California Department of Fish and Game, Yountville, California

Janet Adams, Solano Transportation Authority, Suisun City, California

Brendan Thompson, San Francisco Bay Regional Water Quality Control Board, Oakland,
California

Carolyn Mulvihill, U.S. Environmental Protection Agency, San Francisco, California

Paula Gill, U.S. Army Corps of Engineers, San Francisco, California

Joe Heublein, National Marine Fisheries Service, Santa Rosa, California

Christopher States, Jeffrey Jenson, Frances Malamud-Roam, and Howell Chan, California
Department of Transportation, Oakland, California

Shahira Ashkar, ICF International, Sacramento, California

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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

January 14, 2011

In response, refer to:
2010/06180

James Richards, Deputy District Director
Department of Transportation
Caltrans District 4
Office of Environmental Analysis
111 Grand Avenue
Oakland, California 94610

Dear Mr. Richards:

Thank you for your letter of December 8, 2010, requesting initiation of consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Effective July 1, 2007, the Federal Highway Administration assigned, and the California Department of Transportation (Caltrans) has assumed all responsibilities for consultation and approval on most highway projects in California. Therefore, Caltrans is now considered the Federal action agency for ESA consultations with NMFS for Federally funded projects. This letter also serves as consultation under the authority of, and in accordance with, the Essential Fish Habitat (EFH) provisions of the Magnuson Stevens Fishery Conservation and Management Act (MSA), and the provisions of the Fish and Wildlife Coordination Act of 1934 (FWCA), as amended. These consultations pertain to Caltrans' proposed Interstate-80/Interstate-680/State Route 12 Interchange Improvement Project in Solano County, California.

The Interstate-80/Interstate-680/State Route 12 (I-80/I-680/SR 12) Interchange Improvement Project covers several miles of roadway around the City of Fairfield in Solano County, California. The western boundary of the Project is the Red Top Road crossings of I-680, I-80, and SR 12; the eastern boundary of the Project is the Suisun Valley Road crossing on I-80 and the LedgeWood Creek road crossing on SR 12. Surface water in the action area includes Green Valley Creek and LedgeWood Creek. The purpose of the project is to improve the I-80/I-680/SR 12 interchange complex to meet traffic demands and alleviate cut-through traffic on local roads. The project consists of construction or realignment of the following interchanges: 1) I-80/I-680/SR 12 West; 2) I-680 and Red Top Road; 3) I-80 and Green Valley Road; 4) I-80/Red Top Road and Business Center Drive; and 5) and SR 12 West and Red Top Road. Construction will also involve widening of I-80 and a new lane on eastbound SR 12, which will require a new bridge and off-ramp over Green Valley Creek, and widening of the culvert over LedgeWood Creek. All proposed in-stream work will occur during the dry season (June 1 through October 15).



Green Valley Creek originates in Green Valley, northwest of Rockville Hills Regional Park, and flow south to Cordelia Slough which is a tributary of Grizzly Bay. At the existing I-80 and I-680/I-80 West Interchange overcrossing, Green Valley Creek flows in a concrete-lined, trapezoidal channel approximately 670 feet long and 70 feet wide. The proposed action will remove the existing I-80 West bridge and replace it with a single span structure measuring approximately 103 feet long and 133 feet wide. Additionally, a single span structure to carry the Green Valley Road off-ramp over the creek will replace the existing I-680/I-80 West interchange.

In-stream construction at Green Valley Creek is proposed to occur between June 1st and October 15th, over approximately four construction seasons. Construction at Green Valley Creek will occur within a 10-20 year time frame. The first phase will involve construction of the outside (northernmost) westbound lanes on I-80 while maintaining traffic flow on the existing structure. Demolition of the existing I-80 West bridge, and completion of the new I-80 West bridge and the new off-ramp structure will follow.

Piles for the new free-spanning structures will be located at the top of the creek bank and are anticipated to be 12-inch square piles driven to a depth of approximately 70 feet. Approximately 40 piles per abutment will be installed for the westbound I-80 bridge, and approximately 24 piles per abutment will be installed for the new off-ramp structure. Vibratory hammers will be used for pile driving to the maximum practicable extent. Pile driving will only occur during low precipitation periods (June 1 to October 15) and any work occurring before June 1 or after October 15 will be restricted to road or bridge surface only, with water quality control measures in place.

Ledgewood Creek originates in the Vaca Mountains, north of the Solano/Napa County line, and flows south to Paytonia Slough which is a tributary of Grizzly Bay. In the vicinity of the existing SR 12 overcrossing, Ledgewood Creek is confined to a levee-lined trapezoidal channel. Beneath the five-span bridge at SR 12, Ledgewood Creek is conveyed through concrete-lined box culverts. Within the action area, riparian and riverine cover is limited to areas downstream of these culverts. The culverts at SR 12 and Ledgewood Creek is proposed to be extended 15 feet to the south (downstream) to accommodate an additional lane on SR 12; this would permanently impact 15 linear feet of the existing earthen channel. Construction associated with the culvert is expected to last only one season from June 1 to October 15.

Dewatering of both Ledgewood Creek and Green Valley Creek will involve construction of the following in-channel features: 1) temporary cofferdams (made of gravel and fabric) constructed 20-50 feet beyond the limit of bridge/culvert widening; and a pipe diversion to facilitate dewatering of the channel and bypass creek flow; 2) cofferdams constructed utilizing the same methods to facilitate excavation of existing bridge/culvert footings; and 3) falsework placed within the banks and channel to support construction of the cast-in-place concrete box girder structures of the new bridges/culverts. No construction related material (including dewatering and bypass structures) will remain in the channel between October 15 and June 1. When construction is completed, falsework will be removed and any disturbed portions of the creek bed and bank temporarily affected during construction will be restored to pre-project conditions. Additionally, the channel under the new bridges at Green Valley Creek will be restored to an

earthen channel; and a concrete fish passage structure involving a low flow channel and possibly baffles will be constructed in the culvert at SR 12 and Ledgewood Creek.

Standard best management practices (BMPs) for construction site and sediment and stormwater runoff control will be utilized on this project. Biofiltration swales and biostrips will be used when possible to control runoff. Vegetation will be trimmed rather than removed when possible. Temporarily disturbed riparian areas will be replanted with the native species prior to October 15 to minimize erosion and creek sedimentation, and revegetation will be monitored annually for 3 years.

Endangered Species Act

In its December 8, 2010, letter Caltrans asked for concurrence with a finding that the project is not likely to adversely affect Central California Coast (CCC) steelhead (*Oncorhynchus mykiss*). Reaches of Green Valley Creek and Ledgewood Creek within the project area are not designated critical habitat for CCC steelhead. Available information indicates the following DPS may occur in the project area:

Central California Coast steelhead Distinct Population Segment (*O. mykiss*) DPS Threatened (January 5, 2006; 71 FR 834).

The life history of steelhead is summarized in Busby *et al.* (1996). Steelhead typically immigrate to tributaries of San Francisco Bay between November and April, peaking in January and February (Fukushima and Lesh 1998). Adult CCC steelhead are generally not present in streams between May and October; warm summer water temperature and poor habitat quality within the project area further reduce the likelihood of adult steelhead presence during summer months. Juvenile steelhead emigrate episodically from natal streams during fall, winter, and spring high flows. Emigrating CCC steelhead use Green Valley Creek and portions of the San Francisco Bay for rearing and as a migration corridor to the ocean. In summer months, reaches of Green Valley Creek and Ledgewood Creek within the action area are unsuitable for salmonid rearing due to poor water and habitat quality. Although data regarding the emigration timing of steelhead smolts from Green Valley Creek and Ledgewood Creek is lacking, steelhead from other streams draining to San Francisco Bay typically emigrate from March through June (Fukushima and Lesh 1998). NMFS assumes that steelhead from Green Valley Creek and Ledgewood Creek emigrate at the same time and smolting steelhead should be absent during the in-channel construction window of June 1 through October 15.

O. mykiss have been collected in Green Valley Creek from the 1950s to the present, and unpublished data indicates *O. mykiss* were collected 1 mile upstream of I-80 in January 1997 (Leidy *et al.* 2005). Therefore, it is likely that steelhead spawning and rearing occur above the I-80 crossing of Green Valley Creek. Beneath I-80 and the I-680/I-80 West interchange Green Valley Creek passes through a 670 foot long, concrete-lined trapezoidal channel and primarily provides a migration corridor for salmonids at this location. This crossing contains an engineered low-flow channel and concrete weirs to enhance fish passage, but lacks significant riparian canopy and natural instream cover due to the concrete channel invert.

Caltrans proposes to restore approximately 300 feet of Green Valley Creek to natural earthen channel and in the process enhance habitat at the site. Proposed actions will not inhibit fish passage at the site, and could provide additional rearing habitat for juvenile salmonids. Salmonids are not likely to be present during summer in-channel construction and pile driving work windows. Construction activities that are proposed to occur when migratory steelhead are likely to be present will be restricted to road or bridge surfaces only, with water quality control measures in place. Therefore, CCC steelhead are not likely to be adversely affected by the proposed actions at Green Valley Creek.

In the vicinity of the SR 12 crossing, levees line both banks of Ledgewood Creek and the channel has a trapezoidal cross section. SR 12 crosses Ledgewood Creek over a five-span bridge. At low flows Ledgewood Creek passes through the second culvert from the east bank, which forms a V-shaped channel to maximize water depths at low flows. No observations of steelhead have been reported in Ledgewood Creek. The Ledgewood Creek drainage, however, is adjacent to the Suisun Creek Watershed which is known to support steelhead populations. Furthermore, Chinook salmon have been observed spawning in Ledgewood Creek above the project site, indicating that Ledgewood Creek supports migratory habitat for anadromous salmonids (NMFS 2011).

Proposed activities at Ledgewood Creek involve widening the SR 12 crossing by 15 linear feet to the south. This will permanently impact 15 linear feet of the existing earthen channel by converting it to a concrete invert slab. This action will exacerbate the existing shallow water depth issues at low flows; and concrete low-flow walls and potentially baffles will be constructed to enhance low-flow fish passage of the culvert. Ledgewood Creek is not designated critical habitat for CCC steelhead, and there is no confirmed documentation of *O. mykiss* within the drainage. The proximity of Ledgewood Creek to the Suisun Creek watershed, however, indicates migratory steelhead could be present during periods of higher flows. All construction activities associated with the culvert will occur over one dry season, from June 1 to October 15. Therefore, the presence of CCC steelhead is unlikely during proposed construction activities, and CCC steelhead are not likely to be adversely affected by the proposed actions at Ledgewood Creek. Proposed passage improvements at Ledgewood Creek will address the addition of 15 linear feet of hardened creek bottom, and potentially make higher quality habitat above the culvert more accessible to CCC steelhead.

Based on the best available information, NMFS concurs with Caltran's determination that threatened CCC steelhead are not likely to be adversely affected by the I-80/I-680/SR 12 Interchange Improvement Project. This concludes informal consultation in accordance with 50 CFR 402.13(a) for the proposed I-80/I-680/SR 12 Interchange Improvement Project in Solano County, California. However, further consultation may be required if: (1) new information becomes available indicating that listed species or critical habitat may be affected by the project in a manner or to an extent not previously considered; (2) current project plans change in a manner that causes an effect to listed species or critical habitat in a manner not previously considered; or (3) a new species is listed or critical habitat designated that may be affected by the action.

Magnuson-Stevens Fishery Conservation and Management Act

The project area is located within an area identified as EFH for Central Valley fall/late fall-run Chinook salmon, managed with the Pacific Coast Salmon Fishery Management Plan under the MSA. As discussed in the above ESA section, no in-water construction will take place when Chinook salmon are likely to be present. However, adverse effects to EFH could occur from increased sedimentation and turbidity following construction activities. While these impacts are considered minor and temporary, NMFS has made the determination that the proposed action would adversely affect EFH for this species. However, the proposed action contains adequate measures to avoid, minimize, mitigate, or otherwise offset any adverse effects to EFH. Therefore, NMFS has no additional EFH Conservation Recommendations to provide.

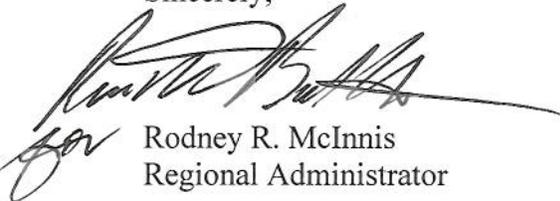
This concludes EFH consultation for Caltrans' proposed I-80/I-680/SR 12 Interchange Improvement Project, Solano County, California. Pursuant to 50 CFR 600.920(l) of the EFH regulations, Caltrans must reinstate EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH Conservation Recommendations.

Fish and Wildlife Coordination Act

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)]. Consistent with this consultation requirement, NMFS provides recommendations and comments to Federal action agencies for the purpose of conserving fish and wildlife resources. With implementation of the previously-referenced EFH conservation recommendations, NMFS has no further comments to provide.

Please contact Mr. Joseph Heublein at (707) 575-1251, or via e-mail at joe.heublein@noaa.gov should you have any questions.

Sincerely,



Rodney R. McInnis
Regional Administrator

cc: Chris Yates, NMFS, Long Beach
Bob Hoffman, NMFS, Long Beach
Bryant Chesney, NMFS, Long Beach
Ahmad Hashemi, Caltrans District 4
Copy to File ARN: 151422-SWR-2010-SR00524

Literature Cited

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NEPA/Section 404 Integration

Memorandum

*Flex your power!
Be energy efficient!*

To: NEPA/404 Integration Participants
(See attached distribution list.)

Date: March 22, 2007

File: 04-Sol-80
EA-04-0A5300
I-80/I-680/SR 12 Interchange

From: MELANIE BRENT
Senior Environmental Planner
Office of Environmental Planning

Subject: Summary of NEPA/404 Integration MOU Checkpoint Meeting and Request for Response

I-80/I-680/SR 12 Interchange Project

NEPA/404 Integration Participants Thursday March 15, 2007, 10 am –1:30 pm

The California Department of Transportation (Caltrans), on behalf of the Federal Highway Administration (FHWA), held a Checkpoint Meeting for the above referenced project on Thursday, March 15, 2007 at the Solano County Government Center in the City of Fairfield, from 10 am to 1:30 pm, to discuss the I-80/I-680/SR 12 Interchange Project and the integration requirements of the National Environmental Policy Act (NEPA) and the Clean Water Act (CWA) Section 404, consistent with the memorandum of understanding (MOU) signed into effect in May 2006. Invitations to the meeting along with information packets were sent out on February 23, 2007.

Project History

FHWA, Caltrans, and the Solano Transportation Authority (STA) published a notice of intent (NOI) and notice of preparation (NOP) in May 2003, describing the preliminary alternatives and potential environmental effects of the project and soliciting input from agencies on the scope of the environmental impact report/environmental impact statement (EIR/EIS). A public scoping meeting was also held on May 12, 2003 to seek additional input from agencies and the public on the Draft EIR/EIS. Since that time, FHWA, Caltrans, and STA have conducted numerous field studies of the project's existing conditions and prepared maps of various constraints in the project area. The lead agencies have also prepared a detailed traffic study, a purpose and need statement, developed screening criteria, and have considered a number of preliminary alternatives.

Meeting Participants

The distribution list below shows the agencies invited to attend the Checkpoint Meeting. The following individuals attended the March 15, 2007 meeting:

1. Mike Monroe, U.S. EPA
2. Carolyn Muhlvihill, U.S. EPA
3. Hal Durio, U.S. Army Corps of Engineers
4. Brendan Thompson, San Francisco Bay Regional Water Quality Control Board
5. Leland Dong, FHWA
6. Dale Jones, Caltrans Headquarters
7. Melanie Brent, Caltrans District 4
8. Nicolas Endrawos, Caltrans District 4
9. Joe Douglas, Caltrans District 4
10. Ahmad Hashemi, Caltrans District 4
11. Janet Adams, Solano Transportation Authority
12. Dale Dennis, Solano Transportation Authority
13. Mike Lohman, Mark Thomas & Company
14. Andrea Glerum, Nolte Associates
15. Matt Henry, Fehr & Peers
16. Scott Steinwert, Circle Point
17. Chris Colwick, Circle Point
18. Maggie Townsley, Jones & Stokes
19. Lisa Webber, Jones & Stokes

A summary of the meeting is provided below. For agencies that could not attend, additional materials (i.e., hand-outs from the March 15 meeting) are enclosed in this meeting summary and request for comments.

Request for Response

Pursuant to Item 11 in Section III, *The NEPA/404 Integration Process*, in the signed NEPA/404 MOU, Caltrans is requesting the signatory federal agencies' response to:

- the Purpose and Need, and
- the alternatives proposed for inclusion in the Draft EIR/EIS.

The type of response currently requested depends on the agency and the Checkpoint—as shown below (and identified in Table 1 of the signed MOU for the *NEPA and Clean Water Act Integration Process for Federal Aid Surface Transportation Projects in California* [signed 2006]). In addition, the non-federal agencies invited to participate (i.e., the Regional Water Quality Control Board and the California Department of Fish and Game) are encouraged to provide comments on the Purpose and Need Statement and the alternatives proposed for inclusion in the Draft EIR/EIS. Table 1 summarizes the only types of response an agency may give at a checkpoint.

Table 1. Types of Response by Agency and Checkpoint

Agency	Purpose and Need	Alternatives
U.S. Corps of Engineers*	Agree/Disagree	Agree/Disagree
U.S. EPA*	Agree/Disagree	Agree/Disagree
USFWS*	Comment	Agree/Disagree
NMFS*	Comment	Comment
RWQCB	Comment	Comment
CDFG	Comment	Comment
*Identifies signatory agency.		

Next Steps

Per the NEPA/404 MOU, each agency has 30 days (i.e., by April 23, 2007) to review and provide written responses to this Request for Response. Within 90 days of April 23, 2007, Caltrans will send each agency a letter identifying the status of any issue that received a negative comment or disagreement from the agencies.

Please call me at 510.286.5231 if you have any questions. We look forward to receiving your comments by Monday, April 23. Thank you!

Distribution List

Project Sponsors

Federal Highway Administration

California Division Office

650 Capitol Mall, #4-100

Sacramento, CA 95814

Attention: Mr. Leland Dong, 916.498.5860

Federal Highway Administration

California Division Office

650 Capitol Mall, #4-100

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Attention: Larry Vinzant, 916.498.5040

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111 Grand Avenue

P. O. BOX 23660

Oakland, CA 94623-0660

Attention: Melanie Brent, Office Chief, Environmental Branch, 510.286.5231

Federal Agencies

National Oceanic and Atmospheric Administration

National Marine Fisheries

777 Sonoma Avenue, Room 325

Santa Rosa, CA 95404

Attention: Gary Stern, San Francisco Bay Team Leader, 707.575.6060

U.S. Army Corps of Engineers

1455 Market Street, Regulatory Branch

San Francisco, CA 94103-1398

Attention: Jane Hicks, Project Manager, 415.977.8438

U.S. Army Corps of Engineers

1455 Market Street, 16th Floor

San Francisco, CA 94103-1398

Attention: Hal Durio, Caltrans Liaison, 415.503.6785

NEPA/404 Integration Participants
March 22, 2007
Page 5

U.S. Fish and Wildlife Service
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Sacramento, CA 95825
Attention: Cay Goude, 916.414.6600

U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street
San Francisco, CA 94105
Mail Code CED-2
Attention: Connell Dunning, Environmental Review Office, 415.947.4161

U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street
San Francisco, CA 94105
Mail code WTR-8
Attention: Mike Monroe, Wetlands, 415.972.3453

U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street
San Francisco, CA 94105
Mail code CED-2
Attention: Carolyn Mulvihill, NEPA Review, 415.972.3597

State Agencies

Regional Water Quality Control Board
SF Bay Regional Water Quality Control Board
1515 Clay St, Suite 1400
Oakland, CA 94612
Attention: Brendan Thompson, Environmental Specialist, 510.622.2506

California Department of Fish and Game
DFG, Central Coast-Region 3
P.O. Box 47
Yountville, CA 94599
Attention: Robert W. Floerke, Regional Manager, 707.944.5517

I-80/I-680/SR 12 Interchange Project

**NEPA 404 MOU Checkpoint Meeting
March 15, 2007
Summary of Discussion**

Caltrans, on behalf of the FHWA, hosted a Checkpoint meeting to discuss the I-80/I-680/SR 12 Interchange Project and the integration requirements of NEPA, as well as CWA Section 404, consistent with the MOU signed into effect in May 2006.

The purpose of the March 15, 2007 meeting was to present an overview of the project, discuss the purpose and need, screening criteria, and preliminary alternatives, and seek input from the signatory agencies on the NEPA/404 MOU process.

This meeting summary below is intended to provide an overview of the comments and questions discussed at the meeting grouped by topic.

I. Project Background

Janet Adams of the STA provided an overview of the project background, including the project's origination in the context of the STA's Comprehensive Transportation Plan and the I-80/I-680/I-780 Major Investment and Corridor Study.

Discussion Questions:

No discussion questions.

II. Purpose and Need

Scott Steinwert of CirclePoint provided an overview of the development of the Purpose and Need statement including current and future traffic demands, deficient levels of service, traffic diversion to local roads, and accident data in the project area. Mr. Steinwert also provided an overview of the public participation during the Scoping process.

Discussion Questions:

- What are the biological differences between the primary and secondary marsh? There is no specific biological difference, but in most instances, the secondary marsh is not wet and is more of an upland environment.
- Where are potential Steelhead runs? Rivers or creeks include Suisun, Jameson, Ledgewood, and American Canyon.
- Have you found vernal pools? There are some areas that could be classified as vernal pools.

- Could you find Vernal Shrimp? Yes.

III. Alternatives Development and Screening

Maggie Townsley, of Jones & Stokes, reviewed the environmental constraints with the project area and explained how these were considered in the evaluation of alternatives. Dale Dennis of STA provided details of the alternatives development and screening process including eight (8) alternatives considered but withdrawn from further study as part of the Tier 1 analysis.

Discussion Questions

- Where is the most/greatest environmental impacts? North of I-80 there is a biological mitigation site that was created as part of a local development project, and in the area of SR 12 East there are Contra Costa goldfields as well as a large wetlands area.
- Where are the riparian sections? Riparian habitat is located along the creeks in the area. The riparian zone along each creek is very narrow due to the surrounding agricultural and suburban development patterns.
- Are any of the habitat areas in the screening matrix overlapping? Yes, some habitat may overlap such as riparian areas overlap waters of the US.
- How did you calculate the delineated acreage? The waters of the US and wetlands that have been mapped were done so through field surveys, using aerial photos and from prior delineations done in the project area for other projects. A formal delineation will be done as part of the EIS/EIR, but the approach used to-date should provide a conservative estimate.
- In the matrix, you should include vernal pools and seasonal wetlands under regulated habitat as these are under Corps jurisdiction.
- How certain are you SR 12 East will be part of the final project? In developing the project scope, it became clear that improvements would be needed on SR 12 East to ensure that traffic would not back up on SR 12 East to a point that it would affect I-80 and the Interchange. So improvements on SR 12 East have been included as part of the project. The project will most likely be built in phases, and improvements on SR 12 East would probably be built as a separate phase of the overall interchange improvements.
- Will SR 12 East eliminate the signalized intersection at Pennsylvania and the railroad? Yes.
- Suisun Creek is essential habitat for the Chinook salmon. Yes, it was inadvertently left out of the matrix.

IV. Recommended Alternatives

Mike Lohman of Mark Thomas & Company presented the four (4) Alternatives A-D, studied in the Tier 2 screening and the two (2) options for SR 12 East. Maggie Townsley reviewed the Tier 2 Screening Matrix.

Discussion Questions

- How will Alt. C affect traffic operations and how will phasing work? Alt C provides the most improvement and allows for more effective phasing due to realigning the interchange.
- What is the public's reaction to Alt B? The public has expressed concern about possibly losing the connection from 680 to SR 12 west.
- How and why are you looking at ways to connect Fairfield and Suisun City? Suisun City has expressed concern that a direct connection with Fairfield is vital for economic reasons.
- What will happen to the ramp area if Webster/Jackson ramps are removed? The existing ramps would be removed and this area would be excess right-of-way that could be used for mitigation.
- How flexible is your design for taking Meyer Way through the Goldfields? There is some flexibility in the precise alignment of Meyer Way. The alignment would need to consider potential land use changes in this area and try to support the locally planned land-use pattern.
- What is the difference in Option 1 and Option 2 for SR 12 East regarding impacts to I-80 mainline? No discernable difference.
- What is the cost difference between Option 1 and Option 2? We currently only have rough estimates; the costs are equivalent.
- What about having Goldfields between the roadways? It may be possible to design the interchange area on SR 12 East to avoid direct impacts to the Goldfields; however, there still may be some indirect effect on the plants.
- What is the status of the Goldfields? They are a federally listed endangered species.
- What is your design year? 2035.
- Clarification on the no-build option: This would still include planned or necessary improvements to the highway system. These improvements, however, are very limited within the planning horizon.
- What will happen to the portion of I-680 that is no longer used as freeway in Alt C? It will be retained for use as a local road, but will not connect to I-80.
- What is the difference in effects that the alternatives have on the primary marsh? None of the alternatives would directly affect the primary marsh.
- Which alternatives provide for greater stormwater treatment such as biostrips? We haven't looked at that in great detail, but Alt C could have greater opportunities to address water quality. Consideration will be given to groundwater levels, swales, and other related issues.
- In the matrix, what does Objective ED3 and Policy ED 2.1 and 2.2 refer to? These are the General Plan objectives and policies regarding economic development and land use for the city and county.

NEPA/404 Integration Participants

March 22, 2007

Page 9

- Do your cost estimates include mitigation? We have included allowances for mitigation.
- The intent of NEPA 404 MOU Checkpoint meetings is to get the resource agencies involved early on in the process of developing a Purpose and Need and alternatives. Resource agencies would have preferred this meeting 6-12 months ago. With that said, the recommendation to drop Alternatives A and D seems to be well thought out.
- Concerned about marsh impacts, but current alternatives seem to minimize or eliminate impacts to marsh.
- Regional Water Quality Control Board is concerned with riparian impacts. Can you identify restoration of creeks as possible mitigation? Restoration of riparian areas along local creeks could be included as a mitigation requirement to reduce project-specific impacts. There may be several locations within the project area where this approach could be feasible.
- Would like to see an addition to the Purpose and Need: Avoid/minimize environmental impacts to sensitive habitat, including the Suisun Marsh. (Noted, and will be included.)
- For conceptual mitigation plans, please talk to the resource agencies early in the process of considering possible mitigation sites.

Next Steps

Resource agencies will have approximately 4 weeks to review the materials and request additional information. On March 22, Caltrans will send a letter to the resource agencies, requesting comments on the Purpose and Need and on the recommended alternatives by April 23, 2007.

California Regional Water Quality Control Board



Linda S. Adams
Secretary for
Environmental Protection

San Francisco Bay Region

1515 Clay Street, Suite 1400, Oakland, California 94612
(510) 622-2300 • Fax (510) 622-2460
<http://www.waterboards.ca.gov/sanfranciscobay>



Arnold Schwarzenegger
Governor

Date: JUN 05 2007
File No.: 2128.04 (BT)

MB
Ms. Melanie Brent
California Department of Transportation
PO Box 23660
Oakland, CA. 94623-0660

SUBJECT: Comments Relating to the I-80/I-680/SR 12 Interchange Project NEPA/404 Integration MOU Checkpoint Meeting

Dear Ms. Brent:

The Regional Water Quality Control Board (Water Board) would like to thank the California Department of Transportation (Department) and the Solano Transportation Authority (STA) for giving staff the opportunity to participate in the I-80/I-680/SR 12 Interchange Project (Project) NEPA/404 meeting held on March 15, 2007. We look forward to participating in future meetings and offer the following comments.

As you know, there is a significant amount of new and redevelopment either occurring or planned to occur in the vicinity of the Project. It is the Water Board's intent to ensure that the beneficial uses of Suisun, Green Valley, Dan Wilson and Ledgewood Creeks, and Suisun Marsh and Bay are protected as development projects in the area move forward. The proposed Project has the potential to impact beneficial uses through permanent impacts to federal and state jurisdictional wetlands and waters, as well as through the introduction of new and impervious surfaces.

At the meeting, three "preferred-build" alternatives were presented that included permanent impacts to federal jurisdictional wetlands and other jurisdictional waters between 6.3 and 10.2 acres. It is staff's understanding that the majority of the impacts will be to riparian waters. After the Department and STA demonstrate full avoidance and minimization of potential impacts to wetland and waters, the Water Board will consider mitigation options. Currently, there are not mitigation banks in the Project's service area offering riparian mitigation credits acceptable to the Water Board. As such, the Department and the STA should evaluate mitigation opportunities from a watershed perspective and identify riparian restoration needs within the local area. Staff recommends working with either the Solano County Resource Conservation District or another local agency, such as the Solano Land Trust, to identify potential mitigation projects. Please note that the Water Board primarily evaluates impacts to riparian waters and the associated compensatory mitigation in terms of linear feet, as opposed to acres. Impacts to such waters

California Environmental Protection Agency

should be characterized in both areal and linear extents in the Project's application for Water Quality Certification.

The Water Board requires that projects within the Department's right-of-way provide appropriate treatment of stormwater runoff from the entirety of the area of new and any redeveloped impervious surface. The Water Board recommends the Department identify on-site treatment options for roadway runoff as soon as possible, in the early phases of Project design.

If you have any questions, please contact Brendan Thompson of my staff at (510) 622-2506, or via e-mail to BThompson@waterboards.ca.gov.

Sincerely,



Keith H. Lichten, P.E.
Senior Engineer

cc: Mr. Mike Monroe, USEPA, San Francisco
Mr. Hal Durio, U.S. Army Corps of Engineers, San Francisco
Ms. Anna Holmes, California Department of Fish and Game, Stockton
Mr. John Cleckler, U.S. Fish and Wildlife Service, Cottage Way, Sacramento
Ms. Jodie Salz, Solano County Resource Conservation District, 1170 N. Lincoln St., Suite 110 • Dixon, California 95620
Ms. Janet Adams, Solano Transportation Authority, One Harbor Center, Suite 130, Suisun City, CA 94585
Mr. Dale Dennis, Solano Transportation Authority
Mr. Rob Goldstein, Solano Land Trust, 1001 Texas St., Suite C, Fairfield, CA 94533
Mr. Hardeep Takhar, California Department of Transportation, Oakland





DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1398

REPLY TO

APR 11 2007

Regulatory Branch

SUBJECT: File Number 400401N

Melanie Brent
Department of Environmental Planning
California Department of Transportation
111 Grand Avenue
Oakland, California 94623-0660

Dear Ms. Brent:

This letter is written in response to your memorandum of March 22, 2007 requesting the U.S. Army Corps of Engineers' (USACE) signatory response to the purpose and need and proposed alternatives of the I-80/I-680/SR12 Interchange Project in Solano County for inclusion in the Draft EIR/EIS pursuant to Item 11 in Section III, NEPA/404 Integration Process, defined in the signed NEPA/404 MOU. This project and the issues were discussed at the Checkpoint Meeting held on March 25, 2007 in Fairfield, California.

The USACE appreciates the opportunity to make comments on the purpose and need and the alternative studies that were demonstrated at the meeting. The USACE at this time however is unable to respond in agreement or disagreement until there is a USACE verified jurisdictional determination of the waters of the U.S. and wetlands that fall within the proposed boundaries of the project.

The USACE acknowledges the hard work you demonstrated in your well organized and informative meeting. The purpose and need was clearly demonstrated and the alternative analysis seemed inclusive. The USACE looks forward to working with you in the near future on the jurisdictional verification process.

Should you have any questions regarding this matter, please call Hal Durio of our Regulatory Branch at 415-503-6785. Please address all correspondence to the Regulatory Branch and refer to the File Number at the head of this letter.

Sincerely,

A handwritten signature in cursive script that reads "Jane M. Hicks".

Jane M. Hicks
Chief, Regulatory Branch

DEPARTMENT OF TRANSPORTATION

P. O. BOX 23660
OAKLAND, CA 94623-0660
PHONE (510) 286-5231
FAX (510) 286-5600
TTY 711



*Flex your power!
Be energy efficient!*

20 May 2009

Ms. Andrea Meier, Regulatory Project Manager
U. S. Army Corps of Engineers
1455 Market Street, 16th Floor
San Francisco, CA 94103-1398

Dear Ms. Meier,

The California Department of Transportation (Caltrans), under its assignment of NEPA responsibilities from the Federal Highway Administration (FHWA) per 23 U. S. C. 237, held a second checkpoint meeting for the Interstate 80 (I-80)/Interstate 680 (I-680)/State Route 12 (SR 12) Interchange Project at the offices of the Solano Transportation Authority in Suisun City, on Tuesday, 10 February 2009, from 2:00 to 4:00 pm. The purpose of the meeting was to present the alternatives for inclusion in the Draft Environmental Impact Statement for the project and the criteria for the selection of the alternatives.

Meeting Participants

Appendix A lists the participants at the meeting.

Meeting Summary

A summary of the meeting is provided as Appendix B. For agencies that did not attend, additional materials (hand-outs from the February 10 meeting) are enclosed.

Request for Response

Pursuant to Item 11 in Section III, *The NEPA/404 Integration Process*, in the signed NEPA/404 MOU, Caltrans is requesting the signatory federal agencies' response to:

- the alternatives proposed for inclusion in the Draft EIR/EIS.

The type of response currently requested depends on the agency and the Checkpoint—as shown below (and identified in Table 1 of the signed MOU for the *NEPA and Clean Water Act Integration Process for Federal Aid Surface Transportation Projects in California*

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[signed 2006]). In addition, the non-federal agencies invited to participate (i.e., the Regional Water Quality Control Board and the California Department of Fish and Game) are encouraged to provide comments on the alternatives proposed for inclusion in the Draft EIR/EIS. Table 1 summarizes the only types of response an agency may give at a checkpoint.

Table 1. Types of Response by Agency and Checkpoint

Agency	Purpose and Need	Alternatives
U.S. Army Corps of Engineers*	Agree/Disagree	Agree/Disagree
U.S. EPA*	Agree/Disagree	Agree/Disagree
USFWS*	Comment	Agree/Disagree
NMFS*	Comment	Comment
RWQCB	Comment	Comment
CDFG	Comment	Comment

*Identifies signatory agency.

Next Steps

Per the NEPA/404 MOU, each agency has 30 days (by 22 June 2009) to review and provide written responses to this Request for Response. Within ninety days of 22 August 2009, Caltrans will send each agency a letter identifying the status of any issue that received a negative comment or disagreement from the agencies.

Please call me at 510.286.5231 if you have any questions. We look forward to receiving your comments by 22 June. Thank you!

Sincerely,



MELANIE BRENT
District Office Chief
Office of Environmental Analysis

Distribution List

Project Sponsors

Caltrans District 4

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P. O. Box 23660

Oakland, CA 94623-0660

Attention: Melanie Brent, Office Chief, Environmental Branch, 510.286.5231

Caltrans Headquarters

Division of Environmental Analysis

1120 N Street

Sacramento, CA 95814

Attention: Dale Jones, Environmental Coordinator (Districts 4 and 7), 916.531.0058

Federal Agencies

National Oceanic and Atmospheric Administration

National Marine Fisheries

777 Sonoma Avenue, Room 325

Santa Rosa, CA 95404

Attention: Jacqueline Pearson-Meyer, 707.575.6057

U.S. Army Corps of Engineers

333 Market Street, 8th Floor

San Francisco, CA 94105

Attention: Andrea Meier, Regulatory Project Manager, 415.503.6798

U. S. Fish and Wildlife Service

2800 Cottage Way, Room 2605

Sacramento, CA 95825

Attention: Cay Goude, 916.414.6600

U. S. Environmental Protection Agency, Region 9

75 Hawthorne Street

San Francisco, CA 94105

Mail Code CED-2

Attention: Carolyn Mulvihill, Environmental Review Office, 415.947.3554

Ms. Andrea Meier
20 May 2009
Page 4

U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street
San Francisco, CA 94105
Mail code WTR-8
Attention: Melissa Scianni, Wetlands, 415.972.3821

State Agencies

Regional Water Quality Control Board
SF Bay Regional Water Quality Control Board
1515 Clay St, Suite 1400
Oakland, CA 94612
Attention: Brian Wines, 510.622.5680

California Department of Fish and Game
DFG, Central Coast-Region 3
P.O. Box 47
Yountville, CA 94599
Attention: Greg Martinelli, 707.944.5570

Copy for:

Federal Highway Administration
California Division Office
650 Capitol Mall, #4-100
Sacramento, CA 95814
Attention: Mr. Lanh Phan, 916.498.5046

APPENDIX B

I-80/I-680/SR 12 Interchange Project NEPA 404 MOU Checkpoint Meeting #2 February 10, 2009 Summary of Discussion

The California Department of Transportation (Caltrans), under assignment from the Federal Highway Administration (FHWA), hosted a Checkpoint meeting to discuss the I-80/I-680/SR 12 Interchange Project and the integration requirements of the National Environmental Policy Act (NEPA) and the Clean Water Act Section 404, consistent with the memorandum of understanding (MOU) signed into effect in May, 2006.

The purpose of the February 10, 2009 meeting was to present an overview of the project alternatives, discuss the purpose and need, present expected impacts on biological and aquatic resources, and seek input from the signatory agencies on the NEPA/404 MOU process.

This meeting summary below is intended to provide an overview of the comments and questions discussed at the meeting grouped by topic.

I. Purpose of Checkpoint Meeting

Maggie Townsley provided an overview of the previous checkpoint meeting in March 2007, which addressed the screening process and the purpose and need. She then discussed the purpose of this meeting, which is to obtain input and request concurrence regarding the Alternatives to be addressed in the Draft Environmental Document. She stated that the purpose and need for the project has not changed since the 2007 meeting and that that public draft document was on an aggressive schedule, to be released in the late summer/early fall of 2009.

Discussion Q and A:

No discussion questions.

II. Project Description

Mike Lohman of Mark Thomas & Company provided an overview of the two full build project alternatives and their first phases (Phase 1s). Maggie Townsley noted that the project footprints haven't changed substantially in the last 2 years; the project alternatives have been refined.

Discussion Q and A:

- **Question:** (EPA) What about the I-80 Eastbound Truck Scales and Jameson Canyon projects?

Answer: They are separate projects. A copy of the I-80 Eastbound Truck Scales EIR/EA was provided.

- **Question:** Was there originally a third alternative?

Answer: There were actually two additional alternatives discussed at the March 2007 Checkpoint Meeting, Alternatives A & D. Alternative A, which was similar to Alternative B, proposed outside connectors for the I-80/I-680 connection. Based on the traffic operations analysis for Alternative A, a consensus was reached that Alternative A would not perform satisfactorily and was therefore screened out. A fourth alternative (D) proposed a raised viaduct along I-80 from I-680 to Suisun Valley Road. This alternative was not well received by the public and was not cost effective. *Note: After researching information provided at the previous March 2007 Checkpoint Meeting, it should*

APPENDIX B

be noted that Alternatives A and D were discussed as having already been screened out. It was made clear at that time that only Alternatives B and C would be evaluated in the EIR/EIS.

- **Question:** Have Alternatives B and C changed much in the past two years?

Answer: Alternatives B & C have been refined, but have not changed substantially. The biggest changes are at Red Top Road, where the interchange has been moved to the west and at Lopes Road where the road alignment has changed. Additionally, the Options on SR 12 East were conceptual at the last meeting and those have been refined.

- **Question:** Where do the "options" begin and are they interchangeable?

Answer: The options start just east of the I-80/SR 12 East interchange and they are interchangeable. They have been paired (Alternative B/Option 2 and Alternative C/Option 1) for the purposes of analysis. Impacts will be separated out so that they can be easily paired differently at the end of the process, if a different pairing is determined to be preferred.

III. Sensitive Plant and Animal Species

Shahira Ashkar of ICF Jones and Stokes reviewed the potential sensitive plant and animal species habitat within the project area. She noted that habitat for the following species were located within the project area:

- California red-legged frog
- Valley elderberry longhorn beetle
- Fairy shrimp
- Steelhead/Chinook
- Contra Costa Goldfields

Habitat for salt marsh harvest mouse and Delta smelt was evaluated, but none was found.

Discussion Q and A:

- **Question:** What about tiger salamander and Delta green ground beetle? (Caltrans)

Answer: Tiger salamander was evaluated and no habitat was found. Unsure about Delta green ground beetle, but Caltrans and ICF J&S will follow up with the project biologist. *NOTE: J&S project management staff followed-up with the ICF J&S biologist after the NEPA/404 meeting and determined that no habitat for either species was located within the project area.*

IV. Aquatic Resources

Lisa Webber of ICF Jones & Stokes presented a summary of the wetland delineation efforts and results. She discussed the types of resources present within the project area and their locations and referenced the table provided in the hand out. Maggie Townsley summarized the acreages of jurisdictional and non-jurisdictional wetlands.

Discussion Q and A:

- **Question:** How will Alternative C affect traffic operations and how will phasing work?

Answer: Alternatives B and C generally provide the same level of traffic operational improvement and Alternative C allows for more effective phasing due to realigning the interchange.

- **Question:** What is the public's reaction to Alternative B?

Answer: The public expressed concern about possibly losing the freeway connection from I-680 to SR 12 west.

APPENDIX B

- **Question:** Do we have the total waters in the project area, as opposed to those affected, listed somewhere?

Answer: Lisa Webber stated that the total waters within the project area consisted of the temporary and permanent impacts, but would check with GIS. *Note: ICF J&S staff followed up with GIS staff and obtained the final acreages from the Wetland Delineation. The total jurisdictional waters delineated = 43.49 acres. The total non-jurisdictional waters delineated = 9.82 acres. The breakdown of the acreages is shown in Exhibit A of the Wetland Delineation.*

- **Question:** Is there a mitigation site for Business Center Drive that will be impacted by this project?

Answer: Yes.

- **Question:** Would the USACE jurisdiction have to be reviewed at later phases?

Answer: Yes, unless STA got a Preliminary Jurisdiction.

- **Question:** Have any adjacent properties been considered for mitigation?

Answer: To date, they have not been considered. There are USFWS approved banks in the area, but no USACE approved banks. On-site mitigation in the immediate watershed would be most desirable to the USACE and RWQCB. There are some good wetlands east of I-680 and also south of the existing eastbound truck scales that could be considered for on-site mitigation.

V. Summary of Project Approach

Dale Dennis of STA provided an overview of the project schedule and approach. He noted that the environmental document will analyze the ultimate alternatives even though they will not be constructed for years, so that all potential impacts will be identified and considered. Melanie Brent of Caltrans noted that Caltrans will be seeking a ROD for the fundable first phase.

Discussion Q and A:

- **Question:** USEPA asked about the relative time frame for construction?

Answer: Phase 1 is expected to be constructed in the next 5 to 10 years, with the full build well beyond that.

- **Question:** Are any portions of this project in the RTP or TIP?

Answer: The Phase 1 alternatives are in the RTP. The full build projects are expected to cost 1.5 to 2 billion dollars and will take time to finance. The Phase 1 alternatives cost in the neighborhood of \$650-700 million.

- **Question:** Would mitigation be for Phase 1 only?

Answer: The environmental document would look at the ultimate projects at the same level of detail as the fundable Phase 1 alternatives. All surveys cover the entire project area. Impacts would be analyzed for both ultimate alternatives and the Phase 1 alternatives. It would only be possible to mitigate for Phase 1 because the construction of the ultimate project is so far in the future. It would be necessary to do a revalidation or supplemental (depending on how much had changed) prior to the construction of future phases.

- **Question:** Would STA/Caltrans be seeking permits all at once or along the way? If along the way, does that rule out considering overall mitigation?

Answer: Permits would be sought along the way. Because of the size of the project and the availability of funding later phases may be years/decades away and conditions may change. Caltrans, STA, and the County have been looking at options for mitigating impacts for multiple projects in the area at a single site, so they are looking at large scale mitigation, but it would be necessary to do so in phases. The environmental document will disclose impacts of the total project and will have proposed mitigation for only the Phase 1 alternatives. It will also consider cumulative impacts and possible mitigation.

APPENDIX B

The BA will provide specific mitigation for the Initial Construction Phase of the Phase 1 alternative and conceptual mitigation for future phases. This approach could be used for other resource areas.

VI. Next Steps

Caltrans will send a letter to the signatory/participating agencies requesting agreement/disagreement on the Proposed Alternatives within 30 days

No further formal meetings will precede the circulation of the draft environmental document, but informal meetings can be scheduled if necessary or requested.

Other Discussion Q and A:

- **Question:** USACE noted structures in ROW. Are there any issues with condemnation?
Answer: There are displacements under both alternatives. Under Alternative B there are primarily commercial displacements in the Cordelia area and under Alternative C there are primarily industrial displacements in the area south of I-80. The only residential displacement that would occur under both alternatives is in the vicinity of the westbound truck scales. Property owners associated with the industrial displacements have been contacted and there has not been any significant opposition expressed to date. In fact, several property owners have indicated they see the merits of Alternative C. Both of these alternatives follow existing roads to a large extent, which minimizes other impacts.



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1398

AUG 6 - 2009

Regulatory Division

SUBJECT: File Number SPN-2007-400401 S

Ms. Melanie Brent
Office of Environmental Analysis
California Department of Transportation
Post Office Box 23660
Oakland, California 94623-0660

Dear Ms. Brent:

This letter is written in response to your request for comments following an interagency alternatives scoping meeting on February 10, 2009, for the Interstate 80/Interstate 680/State Route 12 Interchange Project. During that meeting, you requested that we consider two "build alternatives", impacts associated with the first phase, and to provide feedback on which alternative would likely result in the least impact to aquatic resources. You also requested that we provide direction on which alternative we believe warrants additional engineering design and development. In addition to responding to those requests, we would like to take this opportunity to outline the overall project purpose that we believe should be used in developing an alternatives analysis that satisfies the US EPA's Clean Water Act (CWA), Section 404(b)(1) Guidelines. We also will summarize what we recommend be included in the scope of analysis in the draft environmental impact statement (DEIS) to be prepared later this year.

Preliminary Alternatives Evaluation

We were unable to reach a determination on which on-site alternative we would select to be a preliminary preferred alternative based on the information we have available. The two combinations of west-end "alternatives" and east-end "options" do not appear to have comparable differences in impacts to waters of the U.S., therefore, we had difficulty in ranking those alternatives based on impacts to areas under our jurisdiction. We also did not have adequate information to balance impacts to waters of the U.S. with other factors such as impacts to water quality and endangered species. For instance, Alternative C, Option 1, appears to have the least permanent and temporary impacts to waters of the U.S., but it would have the most impacts to water quality amongst the other alternatives, based on information in the "I-80/I-680/SR-12 Interchange Project Alternatives Screening Matrix (Tier 2)", received in March 2007. We would also like to point out that now that the wetland delineation has been verified, there will likely be differences in the estimated impacts to waters of the U.S. for the "alternatives" and "options" presented.

Generally, we would expect to have a higher level of information on the environmental setting and impacts in order to make a preliminary selection of the preferred alternative under the SAFETEA-LU authority, National Environmental Policy Act (NEPA), and the CWA Section 404(b)(1) Guidelines. A draft environmental assessment or DEIS would generally provide the necessary information to determine what the effects are proposed to the human environment, including impacts to waters of the U.S. The information we have available at this time is limited to the Alternatives Screening Matrix and the project information presented to us in the February 10, 2009, meeting. We are unable to make any determinations of what proposed impacts may be significant or to make a determination of what we believe would be preliminarily the least environmentally damaging practicable alternative (LEDPA).

If you are still interested in having the Corps make a determination of a preliminary preferred alternative at this time, we would recommend that you update impact maps depicting waters of the U.S. for each “alternative” and “option”. Water quality impacts in the matrix should also include an assessment of increased runoff from impervious surfaces. We would also appreciate a clarification of the numbers presented in the Alternatives Screening Matrix for delays, cut-through traffic, truck volumes, and safety. Identifying a range of acceptable levels of service or “vehicle-hours”, would be very helpful. Also, explaining the significance of the numerical differences across alternatives in the various categories in the matrix would be helpful in determining the extent to which alternatives meet the project purpose and impact the environment.

Overall Project Purpose

The project purpose guides the scoping and determines the range of alternatives to be considered for impacts and alternatives analysis under NEPA and under the CWA Section 404(b)(1) Guidelines. Based on the information provided, the overall project purpose is to reduce congestion and improve circulation through the I-80/I-680/SR-12 corridor for local drivers, commercial traffic, and other travelers.

Scope of Analysis for Evaluating Impacts to Waters of the U.S. and Other Elements of the Human Environment

In general, the scope of analysis depends on the resource or element of the human environment being evaluated. The geographic scope of analysis for direct impacts to waters of the U.S., should include the project footprint, access roads, and staging areas. The geographic scope of analysis for indirect impacts should include the project area on the verified wetland delineation maps as well as environmentally sensitive areas, resources, and surrounding communities that may be impacted in part or in whole by the project. We encourage coordination with the Corps, the U.S. Environmental Protection Agency, and other resource

agencies as applicable, to determine the scope of the studies to be completed to evaluate the project's impacts in preparation of the DEIS.

Traffic congestion in the corridor has resulted from extensive regional population growth, a tripling of population locally since the 1960's, poorly planned local freeway access, and substantial increases in commercial truck traffic. Policy decisions related to land use patterns in Solano County and nearby areas like Yolo County, Sacramento County, and other parts of the north Bay Area also influence traffic conditions in the corridor. Also, economic and societal trends have impacted traffic in the corridor since it was first designed. These trends include increases in the number of cars per household, the decreasing affordability of housing near large employment centers in the Bay Area, the increasing average distance people are willing to travel for work, and the increased amount of discretionary time and income people have for recreational activities. Based on this information, the geographic scope of analysis for indirect and cumulative effects to traffic, circulation, land use, and economics, in the DEIS should a broader area than the I-80/I-680/SR-12 corridor. We recommend that the DEIS include a brief discussion of how these factors have contributed to traffic issues in the corridor and an evaluation of how these trends may further impact traffic in the corridor.

Traffic impacts from other large transportation projects in the region, such as the Jepson Parkway, North Connector Project, the high occupancy vehicle (HOV) lanes system that is currently under construction, and Fairfield Multi-modal Transportation Center, should also be considered in the cumulative impacts analysis. Even the California High-Speed Rail project may affect traffic in the Interstate 80 corridor, as noted in the Bay Area Council Economic Institute report, "California High-Speed Rail Economic Benefits and Impacts in the San Francisco Bay Area", dated October 2008. While Solano County will not be served by California High-Speed Rail, persons in the Sacramento Valley that commute via I-80 who would normally drive alone or in vanpools/carpools, could switch to the California High-Speed Rail. The Institute's report suggests that as many as 6 percent of Bay Area commuters would shift from cars to high-speed rail.

Other Recommendations

We recommend that an alternative should be included in the DEIS that includes implementing transportation demand management techniques, commute trip reduction techniques, coupled with aggressive local smart growth/sustainable communities land use policies. We would be interested in knowing whether a similar capital investment in various alternative modes of transportation, modifications in land use patterns in the area, and commute trip reduction measures, could result in the same level of service outcomes as the build alternatives. A more extensive and convenient bus system, redevelopment of existing housing and commercial stock, transit-oriented/smart growth developments, paid parking at destinations, and incentives for ridesharing and telecommuting could decrease local traffic substantially. In

combination with ongoing projects such as the HOV lanes, a multi-strategy transportation demand management program may meet the project purpose and result in fewer adverse environmental impacts than the build alternatives.

Should you have any questions regarding this matter, please call Andrea Meier of our Regulatory Division at 415-503-6798. Please address all correspondence to the Regulatory Division and refer to the File Number at the head of this letter.

Sincerely,



Jane M. Hicks
Chief, Regulatory Division

Copies Furnished:

US EPA, San Francisco, CA
US FWS, Sacramento, CA
US NMFS, Santa Rosa, CA
CA DFG, Yountville, CA
CA RWQCB, Oakland, CA
STA, Suisun City, CA

DEPARTMENT OF TRANSPORTATION

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*Flex your power!
Be energy efficient!*

13 August 2009

Ms. Carolyn Mulvihill, Environmental Review Office
U. S. Environmental Protection Agency, Region 9
75 Hawthorne Street, Mail Code CED-2
San Francisco, CA 94105

Dear Ms. Mulvihill,

In July, you left me a VoiceMail message inquiring about how the proposed I-80/I-680/State Route 12 Interchange Project would affect existing mitigation sites within the project area.

There is one existing mitigation site in the project area for the I-80/I-680/State Route 12 Interchange—the Green Valley Corporate Wetlands. The initial phase of Alternative B would result in 0.45 acres of permanent impacts and an additional 0.08 acres of temporary impacts. (Please see enclosed exhibit.) Neither the initial phase of Alternative C or the ultimate Alternative C project would affect the mitigation site.

This mitigation site provides habitat for Valley Elderberry Longhorn Beetle and California Red Legged Frog. The number and location of elderberry shrubs that will be affected is currently being determined. Mitigation ratios will be developed in consultation with the U. S. Army Corps of Engineers, the U. S. Fish and Wildlife Service and other regulatory agencies.

If you have additional questions about this project, please contact me at 510.286.5231, or Howell Chan of my staff at 510.286.5623.

Sincerely,

A handwritten signature in blue ink that reads "Melanie Brent".

MELANIE BRENT
District Office Chief
Office of Environmental Analysis



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street

San Francisco, CA 94105-3901

SEP 02 2009

Melanie Brent
California Department of Transportation
District 4
P.O. Box 23660
Oakland, California 94623-0660

Subject: Checkpoint on Range of Alternatives for Interstate 80/ Interstate 680/State Route 12 Interchange Project, Solano County, CA

Dear Ms. Brent:

This letter responds to your May 20, 2009 letter requesting agreement on the Range of Alternatives to be included in the draft environmental impact statement (DEIS) for the Interstate 80 (I-80)/Interstate 680 (I-680)/State Route 12 (SR-12) Interchange Project. The request is in accordance with the 2006 National Environmental Policy Act/Clean Water Act Section 404 Integration Process Memorandum of Understanding (NEPA/404 MOU).

The California Department of Transportation (Caltrans) and the Solano Transportation Authority (STA) propose improvements to freeway-to-freeway connections between I-80, I-680, and SR-12 in Fairfield, Solano County. The U.S. Environmental Protection Agency (EPA) previously provided comments on the Purpose and Need Statement at a March 15, 2007 interagency checkpoint meeting, and subsequently agreed with an updated Purpose and Need Statement and with the Range of Alternatives presented at the meeting in a June 12, 2007 letter. At that time, the project alternatives consisted of Alternatives B and C, with SR-12 Options 1 or 2 possible with either alternative.

Subsequent to your May 2009 letter, EPA requested additional information on the project's potential impacts to the existing Green Valley Corporate Wetlands mitigation site. Your response on August 13, 2009 indicated that Alternative B would result in 0.45 acre of permanent impacts and 0.08 acre of temporary impacts to the site, but that Alternative C would not impact the site.

EPA understands that the identified alternatives have not changed substantively since the 2007 agreement point. Based on this, and the additional information we've received since then, we agree with the range of alternatives as Alternatives B and C, with Options 1 or 2. We also support the recommendations of the U.S. Army Corps of Engineers in their July 28, 2009 letter

to include transportation demand management and trip reduction methods in the project alternatives.

As a next step for this project and as described in the NEPA/404 MOU, EPA will review the DEIS. We are available to continue working with the Interagency Group to further refine the design of project alternatives to avoid and minimize impacts to resources. In addition, we would like to be involved in conceptual mitigation discussions.

Thank you for requesting our agreement on the Range of Alternatives. We look forward to continued participation in this project through the NEPA/404 MOU process. If you have any questions or comments, please contact Carolyn Mulvihill at (415) 947-3554 (mulvihill.carolyn@epa.gov) or Jason Brush at 415-972-3483 (brush.jason@epa.gov), the lead reviewers for this project.

Sincerely,

FOR


Kathleen M. Goforth, Manager
Environmental Review Office (CED-2)

cc: Janet Adams, Solano Transportation Authority
Andrea Meier, U.S. Army Corps of Engineers
Jacqueline Pearson-Meyer, National Marine Fisheries Service
Cay Goude, U.S. Fish and Wildlife Service
Brian Wines, Regional Water Quality Control Board
Greg Martinelli, California Department of Fish and Game



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

January 14, 2011

In response, refer to:
2010/06180

James Richards, Deputy District Director
Department of Transportation
Caltrans District 4
Office of Environmental Analysis
111 Grand Avenue
Oakland, California 94610

Dear Mr. Richards:

Thank you for your letter of December 8, 2010, requesting initiation of consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Effective July 1, 2007, the Federal Highway Administration assigned, and the California Department of Transportation (Caltrans) has assumed all responsibilities for consultation and approval on most highway projects in California. Therefore, Caltrans is now considered the Federal action agency for ESA consultations with NMFS for Federally funded projects. This letter also serves as consultation under the authority of, and in accordance with, the Essential Fish Habitat (EFH) provisions of the Magnuson Stevens Fishery Conservation and Management Act (MSA), and the provisions of the Fish and Wildlife Coordination Act of 1934 (FWCA), as amended. These consultations pertain to Caltrans' proposed Interstate-80/Interstate-680/State Route 12 Interchange Improvement Project in Solano County, California.

The Interstate-80/Interstate-680/State Route 12 (I-80/I-680/SR 12) Interchange Improvement Project covers several miles of roadway around the City of Fairfield in Solano County, California. The western boundary of the Project is the Red Top Road crossings of I-680, I-80, and SR 12; the eastern boundary of the Project is the Suisun Valley Road crossing on I-80 and the Ledgewood Creek road crossing on SR 12. Surface water in the action area includes Green Valley Creek and Ledgewood Creek. The purpose of the project is to improve the I-80/I-680/SR 12 interchange complex to meet traffic demands and alleviate cut-through traffic on local roads. The project consists of construction or realignment of the following interchanges: 1) I-80/I-680/SR 12 West; 2) I-680 and Red Top Road; 3) I-80 and Green Valley Road; 4) I-80/Red Top Road and Business Center Drive; and 5) and SR 12 West and Red Top Road. Construction will also involve widening of I-80 and a new lane on eastbound SR 12, which will require a new bridge and off-ramp over Green Valley Creek, and widening of the culvert over Ledgewood Creek. All proposed in-stream work will occur during the dry season (June 1 through October 15).



Green Valley Creek originates in Green Valley, northwest of Rockville Hills Regional Park, and flow south to Cordelia Slough which is a tributary of Grizzly Bay. At the existing I-80 and I-680/I-80 West Interchange overcrossing, Green Valley Creek flows in a concrete-lined, trapezoidal channel approximately 670 feet long and 70 feet wide. The proposed action will remove the existing I-80 West bridge and replace it with a single span structure measuring approximately 103 feet long and 133 feet wide. Additionally, a single span structure to carry the Green Valley Road off-ramp over the creek will replace the existing I-680/I-80 West interchange.

In-stream construction at Green Valley Creek is proposed to occur between June 1st and October 15th, over approximately four construction seasons. Construction at Green Valley Creek will occur within a 10-20 year time frame. The first phase will involve construction of the outside (northernmost) westbound lanes on I-80 while maintaining traffic flow on the existing structure. Demolition of the existing I-80 West bridge, and completion of the new I-80 West bridge and the new off-ramp structure will follow.

Piles for the new free-spanning structures will be located at the top of the creek bank and are anticipated to be 12-inch square piles driven to a depth of approximately 70 feet. Approximately 40 piles per abutment will be installed for the westbound I-80 bridge, and approximately 24 piles per abutment will be installed for the new off-ramp structure. Vibratory hammers will be used for pile driving to the maximum practicable extent. Pile driving will only occur during low precipitation periods (June 1 to October 15) and any work occurring before June 1 or after October 15 will be restricted to road or bridge surface only, with water quality control measures in place.

Ledgewood Creek originates in the Vaca Mountains, north of the Solano/Napa County line, and flows south to Paytonia Slough which is a tributary of Grizzly Bay. In the vicinity of the existing SR 12 overcrossing, Ledgewood Creek is confined to a levee-lined trapezoidal channel. Beneath the five-span bridge at SR 12, Ledgewood Creek is conveyed through concrete-lined box culverts. Within the action area, riparian and riverine cover is limited to areas downstream of these culverts. The culverts at SR 12 and Ledgewood Creek is proposed to be extended 15 feet to the south (downstream) to accommodate an additional lane on SR 12; this would permanently impact 15 linear feet of the existing earthen channel. Construction associated with the culvert is expected to last only one season from June 1 to October 15.

Dewatering of both Ledgewood Creek and Green Valley Creek will involve construction of the following in-channel features: 1) temporary cofferdams (made of gravel and fabric) constructed 20-50 feet beyond the limit of bridge/culvert widening; and a pipe diversion to facilitate dewatering of the channel and bypass creek flow; 2) cofferdams constructed utilizing the same methods to facilitate excavation of existing bridge/culvert footings; and 3) falsework placed within the banks and channel to support construction of the cast-in-place concrete box girder structures of the new bridges/culverts. No construction related material (including dewatering and bypass structures) will remain in the channel between October 15 and June 1. When construction is completed, falsework will be removed and any disturbed portions of the creek bed and bank temporarily affected during construction will be restored to pre-project conditions. Additionally, the channel under the new bridges at Green Valley Creek will be restored to an

earthen channel; and a concrete fish passage structure involving a low flow channel and possibly baffles will be constructed in the culvert at SR 12 and Ledgewood Creek.

Standard best management practices (BMPs) for construction site and sediment and stormwater runoff control will be utilized on this project. Biofiltration swales and biostrips will be used when possible to control runoff. Vegetation will be trimmed rather than removed when possible. Temporarily disturbed riparian areas will be replanted with the native species prior to October 15 to minimize erosion and creek sedimentation, and revegetation will be monitored annually for 3 years.

Endangered Species Act

In its December 8, 2010, letter Caltrans asked for concurrence with a finding that the project is not likely to adversely affect Central California Coast (CCC) steelhead (*Oncorhynchus mykiss*). Reaches of Green Valley Creek and Ledgewood Creek within the project area are not designated critical habitat for CCC steelhead. Available information indicates the following DPS may occur in the project area:

Central California Coast steelhead Distinct Population Segment (*O. mykiss*) DPS Threatened (January 5, 2006; 71 FR 834).

The life history of steelhead is summarized in Busby *et al.* (1996). Steelhead typically immigrate to tributaries of San Francisco Bay between November and April, peaking in January and February (Fukushima and Lesh 1998). Adult CCC steelhead are generally not present in streams between May and October; warm summer water temperature and poor habitat quality within the project area further reduce the likelihood of adult steelhead presence during summer months. Juvenile steelhead emigrate episodically from natal streams during fall, winter, and spring high flows. Emigrating CCC steelhead use Green Valley Creek and portions of the San Francisco Bay for rearing and as a migration corridor to the ocean. In summer months, reaches of Green Valley Creek and Ledgewood Creek within the action area are unsuitable for salmonid rearing due to poor water and habitat quality. Although data regarding the emigration timing of steelhead smolts from Green Valley Creek and Ledgewood Creek is lacking, steelhead from other streams draining to San Francisco Bay typically emigrate from March through June (Fukushima and Lesh 1998). NMFS assumes that steelhead from Green Valley Creek and Ledgewood Creek emigrate at the same time and smolting steelhead should be absent during the in-channel construction window of June 1 through October 15.

O. mykiss have been collected in Green Valley Creek from the 1950s to the present, and unpublished data indicates *O. mykiss* were collected 1 mile upstream of I-80 in January 1997 (Leidy *et al.* 2005). Therefore, it is likely that steelhead spawning and rearing occur above the I-80 crossing of Green Valley Creek. Beneath I-80 and the I-680/I-80 West interchange Green Valley Creek passes through a 670 foot long, concrete-lined trapezoidal channel and primarily provides a migration corridor for salmonids at this location. This crossing contains an engineered low-flow channel and concrete weirs to enhance fish passage, but lacks significant riparian canopy and natural instream cover due to the concrete channel invert.

Caltrans proposes to restore approximately 300 feet of Green Valley Creek to natural earthen channel and in the process enhance habitat at the site. Proposed actions will not inhibit fish passage at the site, and could provide additional rearing habitat for juvenile salmonids. Salmonids are not likely to be present during summer in-channel construction and pile driving work windows. Construction activities that are proposed to occur when migratory steelhead are likely to be present will be restricted to road or bridge surfaces only, with water quality control measures in place. Therefore, CCC steelhead are not likely to be adversely affected by the proposed actions at Green Valley Creek.

In the vicinity of the SR 12 crossing, levees line both banks of Ledgewood Creek and the channel has a trapezoidal cross section. SR 12 crosses Ledgewood Creek over a five-span bridge. At low flows Ledgewood Creek passes through the second culvert from the east bank, which forms a V-shaped channel to maximize water depths at low flows. No observations of steelhead have been reported in Ledgewood Creek. The Ledgewood Creek drainage, however, is adjacent to the Suisun Creek Watershed which is known to support steelhead populations. Furthermore, Chinook salmon have been observed spawning in Ledgewood Creek above the project site, indicating that Ledgewood Creek supports migratory habitat for anadromous salmonids (NMFS 2011).

Proposed activities at Ledgewood Creek involve widening the SR 12 crossing by 15 linear feet to the south. This will permanently impact 15 linear feet of the existing earthen channel by converting it to a concrete invert slab. This action will exacerbate the existing shallow water depth issues at low flows; and concrete low-flow walls and potentially baffles will be constructed to enhance low-flow fish passage of the culvert. Ledgewood Creek is not designated critical habitat for CCC steelhead, and there is no confirmed documentation of *O. mykiss* within the drainage. The proximity of Ledgewood Creek to the Suisun Creek watershed, however, indicates migratory steelhead could be present during periods of higher flows. All construction activities associated with the culvert will occur over one dry season, from June 1 to October 15. Therefore, the presence of CCC steelhead is unlikely during proposed construction activities, and CCC steelhead are not likely to be adversely affected by the proposed actions at Ledgewood Creek. Proposed passage improvements at Ledgewood Creek will address the addition of 15 linear feet of hardened creek bottom, and potentially make higher quality habitat above the culvert more accessible to CCC steelhead.

Based on the best available information, NMFS concurs with Caltran's determination that threatened CCC steelhead are not likely to be adversely affected by the I-80/I-680/SR 12 Interchange Improvement Project. This concludes informal consultation in accordance with 50 CFR 402.13(a) for the proposed I-80/I-680/SR 12 Interchange Improvement Project in Solano County, California. However, further consultation may be required if: (1) new information becomes available indicating that listed species or critical habitat may be affected by the project in a manner or to an extent not previously considered; (2) current project plans change in a manner that causes an effect to listed species or critical habitat in a manner not previously considered; or (3) a new species is listed or critical habitat designated that may be affected by the action.

Magnuson-Stevens Fishery Conservation and Management Act

The project area is located within an area identified as EFH for Central Valley fall/late fall-run Chinook salmon, managed with the Pacific Coast Salmon Fishery Management Plan under the MSA. As discussed in the above ESA section, no in-water construction will take place when Chinook salmon are likely to be present. However, adverse effects to EFH could occur from increased sedimentation and turbidity following construction activities. While these impacts are considered minor and temporary, NMFS has made the determination that the proposed action would adversely affect EFH for this species. However, the proposed action contains adequate measures to avoid, minimize, mitigate, or otherwise offset any adverse effects to EFH. Therefore, NMFS has no additional EFH Conservation Recommendations to provide.

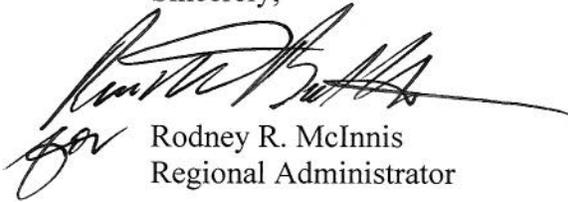
This concludes EFH consultation for Caltrans' proposed I-80/I-680/SR 12 Interchange Improvement Project, Solano County, California. Pursuant to 50 CFR 600.920(l) of the EFH regulations, Caltrans must reinitiate EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH Conservation Recommendations.

Fish and Wildlife Coordination Act

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)]. Consistent with this consultation requirement, NMFS provides recommendations and comments to Federal action agencies for the purpose of conserving fish and wildlife resources. With implementation of the previously-referenced EFH conservation recommendations, NMFS has no further comments to provide.

Please contact Mr. Joseph Heublein at (707) 575-1251, or via e-mail at joe.heublein@noaa.gov should you have any questions.

Sincerely,



Rodney R. McInnis
Regional Administrator

cc: Chris Yates, NMFS, Long Beach
Bob Hoffman, NMFS, Long Beach
Bryant Chesney, NMFS, Long Beach
Ahmad Hashemi, Caltrans District 4
Copy to File ARN: 151422-SWR-2010-SR00524

Literature Cited

- Busby, P.J., T.C. Wainwright, G.J. Bryant, L. Lierheimer, R.S. Waples, F.W. Waknitz and I.V. Lagomarsino. 1996. Status Review of West Coast Steelhead from Washington, Idaho, Oregon, and California. United States Department of Commerce, National Oceanic and Atmospheric Administration Technical Memorandum NMFS-NWFSC-27. 261 pages.
- Fukushima L., and E.W. Lesh. 1998. Adult and juvenile anadromous salmonid migration timing in California streams. California Department of Fish and Game 84(3):133-145.
- Leidy, R.A., G.S. Becker, B.N. Harvey. 2005. Historical Distribution and Current Status of Steelhead/Rainbow Trout (*Oncorhynchus mykiss*) in Streams of the San Francisco Estuary, California. Oakland, CA: Center of Ecosystem Management and Restoration.
- National Marine Fisheries Service (NMFS). Central Valley Chinook Salmon, Current Stream Habitat Distribution Table. <http://swr.nmfs.noaa.gov/hcd/dist2.htm>. Accessed January, 2011.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

March 8, 2011

Howell Chan
California Department of Transportation
District 4
P.O. Box 23660
Oakland, California 94623-0660

Subject: Preliminary Least Environmentally Damaging Practicable Alternative for the Interstate 80/Interstate 680/State Route 12 Interchange Project, Solano County, California

Dear Mr. Chan:

The California Department of Transportation (Caltrans) has asked the Environmental Protection Agency (EPA) whether we have enough information to agree upon a preliminary least environmentally damaging practicable alternative (LEDPA) for the Interstate 80/Interstate 680/State Route 12 Interchange Project. Caltrans' request was made pursuant to the process outlined in the *National Environmental Policy Act/Clean Water Act (CWA) Section 404 Integration Memorandum of Understanding (NEPA/404 MOU)* of April 2006. We appreciate the interagency coordination efforts by Caltrans to identify the preliminary LEDPA.

Based on meetings with Caltrans and other resources agencies (including a Checkpoint 3 meeting on November 29, 2010 and a follow-up meeting on February 9, 2011), EPA recommends that Caltrans/Solano Transportation Authority (STA) request concurrence/agreement on Phase 1 of the proposed project, rather than the entire project. We believe that given the uncertainty, both about environmental conditions and about design options for Phase 2 construction, it would be most prudent to identify the preliminary LEDPA for Phase 1 of the project, with an understanding that additional environmental analysis and design work will be completed for the remainder of the project at a future date. Based on information provided by Caltrans/STA, we acknowledge that Phase 1 has independent utility since: 1) its function is not dependent on Phase 2 implementation, and 2) Phase 1 construction would not restrict consideration or refinement of alternatives for the future phase of the project. Also, since the NEPA Record of Decision, Clean Water Act Section 404 permit application, and U.S. Fish and Wildlife Service Biological Opinion will cover Phase 1 of the project, it is consistent that the preliminary LEDPA request be for Phase 1.

In accordance with this recommendation, we request that Caltrans/STA include a discussion of avoidance and minimization measures that will be incorporated in design and construction of Phase 1. As Phase 1 of Alternative C would impact a higher acreage of waters than Phase 1 of Alternative B (even if that difference in impacts is temporal in nature, with regard to the potential impacts of the overall alternatives), the resource agencies will need evidence that potential impacts of Alternative C, Phase 1, have been minimized to the maximum extent practicable, and that the benefits of Alternative C, Phase 1 justify the greater impacts, in order to justify identification of this alternative as the LEDPA.

We appreciate and support the analysis of the entire project in the environmental document so that the potential impacts of future phases can be thoroughly considered in the decisionmaking process.

If you have any questions about the recommendations we've provided, please contact Carolyn Mulvihill of my staff at (415) 947-3554 or mulvihill.carolyn@epa.gov, or Melissa Sciannia of EPA's Wetlands Regulatory Office at 415-972-3821 or scianni.melissa@epa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Susan Dunning for". The signature is fluid and cursive, with a long horizontal stroke at the end.

Connell Dunning, Transportation Team Supervisor
Environmental Review Office

cc: Andrea Meier, Army Corps of Engineers
Brendan Thompson, Regional Water Quality Control Board
John Cleckler, U.S. Fish and Wildlife Service
Melissa Escaron, California Department of Fish and Game



DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1398

APR 05 2011

REPLY TO
ATTENTION OF

Regulatory Division

SUBJECT: File Number SPN-2007-400401 S

Mr. Howell Chan
Office of Environmental Review
California Department of Transportation, District 4
P.O. Box 23660
Oakland, California 94623-0660

Dear Mr. Chan:

We are writing in response to your request for a preliminary determination of a least environmentally damaging practicable alternative (LEDPA) for the Interstate 80/Interstate 680/State Route 12 Interchange Project in Solano County, California. Your office asked for concurrence on the applicant's preliminary LEDPA, Alternative C, on December 31, 2010. We stated in several meetings that we would wait for the other resource agencies to flush out their concerns and if necessary, we would ask for additional information prior to making an LEDPA concurrence at checkpoint 3 for this project. The two agencies that have had the most disagreement on the preliminary LEDPA and concerns about project impacts, the U.S. Environmental Protection Agency and the San Francisco Bay Regional Water Quality Control Board, have made it clear that they will not concur or agree on a preliminary LEDPA at this point.

The Corps understands that the purpose of determining a preliminary LEDPA in the NEPA/404 Integration Process is to move forward with the environmental document. The NEPA/404 MOU ("National Environmental Policy Act and Clean Water Act, Section 404 Integration Process for Federal Aid Surface Transportation Projects in California", dated November 2005), states "[the NEPA/404 integration] process does not include all [the] environmental review and permitting requirements" and that "regulatory and resource agency participation in the process does not imply endorsement of all aspects of a transportation plan or project". The request to make a preliminary LEDPA determination in our opinion is equivalent to requesting a good-faith, early review of project alternatives. For the Corps, a preliminary LEDPA determination is not binding since projects may be refined further to avoid and minimize impacts to aquatic resource prior to or during the Corps permit evaluation process.

As such, the Corps is *considering* concurrence that the general footprint of Alternative C, Phase 1, is the preliminary LEDPA for a fundable Phase 1 of the Interstate 80/Interstate 680/State Route 12 Interchange Project. However, your office has requested a preliminary

LEDPA concurrence which also requires a concurrence on a conceptual mitigation plan (CMP) at the same time (see section III.12.c). We agree that you are headed in the right direction with the compensatory mitigation approach discussed in the December 6, 2011, interagency meeting, but additional information is required to round out a CMP. At this point, we are concerned the mitigation approach may not adequately replace the functions and values of the aquatic resources that would be lost.

A conceptual mitigation plan sufficient to concur on a preliminary LEDPA should include your objectives; site selection criteria; site protection instruments to be used; a brief description of the site; aquatic resources are to be created, restored, enhanced, or preserved on the site; a work plan; a monitoring plan; performance standards and suitable reference sites. We also recommend providing aerial photos of proposed sites that are used to illustrate where mitigation would occur. Preparation of a conceptual mitigation plan can be done concurrently with providing additional information to the San Francisco Bay Regional Water Quality Control Board and the U.S. Environmental Protection Agency requested in their March 8, 2011 letters. We would encourage you to focus your attention on areas within the Suisun Marsh Management area, east of Interstate 680 and south of State Route 12. We would also like to respond to your suggestion of the use of mitigation bank credits as compensatory mitigation for seasonal wetlands. While the project is within the Elsie-Gridley Mitigation Bank service area, due to the scale of the impacts (Alternative C proposed 16.83 acres of permanent impacts to waters of the U.S.), this district may not authorize the purchase of credits from that bank to compensate for aquatic resources impacted.

One of the requirements in the March 8 letter from the SF Bay RWQCB is the preparation of a Clean Water Act Section 404(b)(1) alternatives analysis. While this information may be useful in determining whether alternatives have avoided and minimized impacts to waters of the U.S. to the maximum extent practicable (a major concern of the RWQCB and U.S. EPA), that request for alternatives information is generally made by the U.S. EPA or the Corps of Engineers who use that information in their alternatives analysis process prior to issuing a permit. In order to prevent unnecessary duplication, I would recommend involving the Corps and EPA in defining the information that should be provided and the framing of the alternatives analysis so that the analysis can be used for all three agencies. The level of detail required in a CWA Section 404(b)(1) alternatives analysis is not required in making a preliminary LEDPA determination, however, the other agencies have requested additional information on avoidance and minimization and we would encourage you to provide that information prior to requesting conclusion of checkpoint #3.

Should you have any questions regarding this matter, please call Andrea Meier at (415) 503-6798 or Cameron Johnson at (415) 503-6773. Please address all correspondence to the Regulatory Division and refer to the File Number at the head of this letter.

Sincerely,

A handwritten signature in cursive script that reads "Jane M. Hicks".

Jane M. Hicks
Chief, Regulatory Division

Copies Furnished:

US EPA, San Francisco, CA
US FWS, Sacramento, CA
US NMFS, Santa Rosa, CA
CA DFG, Yountville, CA
CA RWQCB, Oakland, CA

DEPARTMENT OF TRANSPORTATION

P.O. BOX 23660, MS 8-B
OAKLAND, CA 94623-0660
PHONE (510) 286-5231
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23 January 2012

Paula Gill, U. S. Army Corps of Engineers
Carolyn Mulvihill, U. S. Environmental Protection Agency
Melissa Scianni, U. S. Environmental Protection Agency
John Cleckler, U. S. Fish and Wildlife Service
Chris Nagano, U. S. Fish and Wildlife Service
Joe Heublein, NOAA's National Marine Fisheries Service
Brendan Thompson, San Francisco Bay Regional Water Quality Control Board
Dale Bowyer, San Francisco Bay Regional Water Quality Control Board
Brenda Blinn, California Department of Fish and Game

Due to the complexity of the issue surrounding the Conceptual Mitigation Plan (CMP) for the I-80/I-680/State Route 12 Interchange Project, we request for this project, that Checkpoint #3 under the NEPA/Section 404 Memorandum of Understanding (2006 MOU) be split into two separate actions: concurrence on the Least Environmentally Damaging Practicable Alternative (LEDPA); and concurrence on the CMP. This will enable the project to move forward with completion of the Final Environmental Impact Report/Environmental Impact Statement (FEIR/EIS) and the Record of Decision (ROD).

While the FEIR/EIS and ROD are moving forward, we will commit to working with all the agencies to obtain concurrence/agreement on the CMP. If the agencies are unable to concur/agree on the CMP, the dispute resolution procedures outlined in the 2006 MOU will be invoked. A Section 404 permit application will be submitted to the USACE only after concurrence/agreement on the CMP. Any location considered for mitigation will only be acquired after studies and after approvals of the location by the signatory agencies.

Please let us know when we can expect your written concurrence/agreement on the LEDPA.

If you have any questions, please contact me at 510.286.5231, or melanie_brent@dot.ca.gov, or Howell Chan of my staff at 510.286.5623, or howell_chan@dot.ca.gov.

Sincerely,

A handwritten signature in blue ink that reads "Melanie Brent".

MELANIE BRENT
District Office Chief



<Ryan_Olah@fws.gov>
03/07/2012 08:07 AM

To Howell Chan <howell_chan@dot.ca.gov>
cc <john_cleckler@fws.gov>
bcc
Subject Re: I-80/I-680/SR 12 Interchange Project in Solano County:
Splitting Checkpoint 3 in the NEPA/404 Integration Process

History: This message has been forwarded.

The Service is fine with splitting Checkpoint 3. Thanks.

Ryan

Ryan Olah
Coast Bay/Forest Foothill Division Chief
U.S. Fish and Wildlife Service
Sacramento Fish and Wildlife Office
2800 Cottage Way
Sacramento, CA 95825
(916) 414-6623

Howell Chan
<howell_chan@dot.ca.gov>

02/28/2012 08:55 AM

<ryan_olah@fws.gov>

<john_cleckler@fws.gov>

To
cc
Subject
I-80/I-680/SR 12 Interchange
Project in Solano County:
Splitting Checkpoint 3 in the
NEPA/404 Integration Process

Hi Ryan,

Because there is no consensus yet on the Conceptual Mitigation Plan for the I-80/I-680/SR 12 Interchange Project, the USEPA suggested splitting Checkpoint 3 in the NEPA/Section 404 Integration Process and proceeding now with a decision on the Least Environmentally Damaging Practicable Alternative (LEDPA). This would allow the Final EIR/EIS to proceed to approval while providing time to come up with more locations for the Conceptual Mitigation Plan, which will be completed prior to the submittal of permit applications. The USACE is willing to use this approach. The NOAA's NMFS doesn't have any problems with it either. If you/USFWS also agree, then the USEPA and USACE will send Caltrans letters that they have decided to split Checkpoint 3 and provide a go-ahead to proceed with Alternative C, Phase 1 as the LEDPA.

If you have any questions about this matter, please contact me, or my boss (Melanie Brent, 510.286.5231, melanie_brent@dot.ca.gov), or Zachary Gifford (510.286.5610, zachary_gifford@dot.ca.gov) who works for me.

Thank you for your assistance.

Howell Chan
California Department of Transportation
District 4, Office of Environmental Analysis
510.286.5623



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

March 15, 2012

Melanie Brent
California Department of Transportation
District 4
P.O. Box 23660
Oakland, California 94623-0660

Subject: Preliminary Least Environmentally Damaging Practicable Alternative for the Interstate 80/Interstate 680/State Route 12 Interchange Project, Solano County, California

Dear Ms. Brent:

The Environmental Protection Agency (EPA) has reviewed the California Department of Transportation's (Caltrans') January 23, 2012 letter requesting that Checkpoint #3 under the *National Environmental Policy Act/Clean Water Act (CWA) Section 404 Integration Memorandum of Understanding (NEPA/404 MOU)* of April 2006 be split into two separate checkpoints: (1) agreement on the preliminary least environmentally damaging practicable alternative (LEDPA) and (2) agreement on the Conceptual Mitigation Plan (CMP). EPA agrees to this amendment of the NEPA/404 MOU process for this project, and agrees that Alternative C Phase 1 is the preliminary LEDPA. Our agreement is based on information received from Caltrans, up to and including the package sent on December 19, 2011.

While Alternative C Phase 1 would impact a higher acreage of waters than Alternative B Phase 1, we recognize Caltrans' assertion that due to engineering and operational issues, Alternative B Phase 1 is not practicable. We also recognize that Caltrans has identified avoidance and minimization measures that can lower overall impacts, as noted in the information sent on December 19, 2011.

As we proposed in my January 17, 2012 email to you (attached), we agree to this amendment to the NEPA/404 MOU process with the following caveats:

- The CMP checkpoint will be completed prior to Caltrans' submission of a Clean Water Act Section 404 permit application to the Army Corps of Engineers;
- If the NEPA/404 signatory resource agencies are unable to concur/agree on the CMP, the dispute resolution procedures outlined in the NEPA/404 MOU will be applicable.

If you have any questions about the recommendations we've provided, please contact Carolyn Mulvihill of my staff at (415) 947-3554 or mulvihill.carolyn@epa.gov, or Melissa Scianni of EPA's Wetlands Office at 415-972-3821 or scianni.melissa@epa.gov. If you prepare any additional materials in response to requests from other resource agencies, please provide a copy of those materials to EPA.

Sincerely,



Connell Dunning, Transportation Team Supervisor
Environmental Review Office

Attachment: January 17, 2012 email from Connell Dunning to Melanie Brent on Proposed strategy for moving forward on LEDPA agreement/concurrence on I-80/680

cc: Paula Gill, Army Corps of Engineers
Brendan Thompson, Regional Water Quality Control Board
John Cleckler, U.S. Fish and Wildlife Service
Melissa Escaron, California Department of Fish and Game



Proposed strategy for moving forward on LEDPA agreement /concurrence on I80/680

Connell Dunning to: melanie_brent, howell_chan

01/17/2012 04:42 PM

Cc: Paula.C.Gill, Melissa Scianni, bthompson, Jason Brush, dale_jones, Carolyn Mulvihill

Hi Melanie,

I'm following up on my call to you this morning in regard to the LEDPA/CMP checkpoint for the I-80/680/SR12. Based on conversations that we've had with the Corps and the Regional Board, we would like to propose that for this project, Checkpoint #3 in the NEPA/404 MOU, which includes concurrence/agreement on both the preliminary LEDPA and the CMP, be split into two separate checkpoints.

This is based on the fact that at this time, EPA, the Corps, and the Regional Board are able to concur/agree on the preliminary LEDPA, but are not able to concur/agree on the CMP. Splitting the checkpoint would allow Caltrans to continue the NEPA/404 process once the formal concurrence/agreement on the LEDPA has been completed. Our proposal is that the CMP checkpoint be completed prior to submission of a 404 CWA permit application to the Corps.

Changing the requirements of Checkpoint #3 is allowed under the Modification Procedures in the MOU, but requires approval by all signatory agencies. If Caltrans agrees with this proposal, we recommend the following:

- 1) Caltrans should request in writing that Checkpoint #3 be split. The letter should be submitted to all signatory agencies for their approval. (One letter written to all parties would be sufficient, with a copy to the Regional Board per their involvement.)
- 2) The request letter must include Caltrans' commitments 1) to submit a CMP prior to submission of a 404 CWA permit application to the Corps and 2) to present any proposed mitigation site to the agencies prior to completing any studies or purchasing any proposed site.
- 3) The letter should also acknowledge CT understanding that no 404 CWA permit application will be processed until the agencies concur/agree with the CMP. If the resource agencies are unable to concur/agree on the CMP the dispute resolution procedures outlined in the 2006 MOU will be applicable.

Please let me know if you have any questions about this proposed course of action.

Thanks,
Connell

Connell Dunning, U.S. EPA Region IX
Environmental Review Office/Transportation Lead
75 Hawthorne Street, CED-2, San Francisco, CA 94105
415-947-4161
dunning.connell@epa.gov

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DEPARTMENT OF TRANSPORTATION

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TTY 711
www.dot.ca.gov



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14 March 2012

Reference: USACE File No. 400401S

Paula Gill, U. S. Army Corps of Engineers
Carolyn Mulvihill, U. S. Environmental Protection Agency
Melissa Scianni, U. S. Environmental Protection Agency
John Cleckler, U. S. Fish and Wildlife Service
Chris Nagano, U. S. Fish and Wildlife Service
Joe Heublein, NOAA's National Marine Fisheries Service
Brendan Thompson, San Francisco Bay Regional Water Quality Control Board
Dale Bowyer, San Francisco Bay Regional Water Quality Control Board
Brenda Blinn, California Department of Fish and Game

Subject: Consolidating Checkpoint #3 Materials into a Stand Alone Document

Please find accompanying this letter, a compilation of the materials and supplements that have been submitted in the process to achieve LEDPA concurrence at Checkpoint #3 for the I-80/I-680/SR 12 Interchange Project. The request for this compilation was from the U. S. Army Corps of Engineers in their letter dated 30 January 2012.

If you have any questions, please contact me at 510.286.5231, or melanie_brent@dot.ca.gov, or Howell Chan of my staff at 510.286.5623, or howell_chan@dot.ca.gov.

Sincerely,

A handwritten signature in blue ink that reads "Melanie Brent".

MELANIE BRENT
District Office Chief

enclosures



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1398

APR 10 2012

Regulatory Division

SUBJECT: File No. 400401S

Ms. Melanie Brent, District Office Chief
California Department of Transportation (Caltrans)
P.O. Box 23660, MS8-B
Oakland, California 94623

Dear Ms. Brent:

This letter serves to respond to information provided on your behalf on March 22, 2012. You have requested that Checkpoint #3 under the NEPA/Section 404 Memorandum of Understanding (2006 MOU) be split into two separate actions: 1) concurrence on the preliminary Least Environmentally Damaging Practicable Alternative (LEDPA) and 2) concurrence on the Conceptual Mitigation Plan (CMP) for the I-80/I-680/State Route 12 Interchange project.

Based on the information provided, USACE agrees that Alternative C, Phase 1 is the preliminary LEDPA. As an application for a Department of the Army permit has not been submitted at this time, further analysis may be required. We also concur with the modification of the 2006 MOU for this project which will split checkpoint #3 into two steps. Prior to any processing of a CWA Section 404 permit application for this project, USACE must also concur with a CMP. If the NEPA/404 signatory resource agencies are unable to concur/agree on the CMP then the dispute resolution procedures outlined in the 2006 MOU will be followed. Included in the provided information is document titled "*Waters of the U.S. Avoidance and Minimization Assessment*" dated December 14, 2011. We request that these avoidance and minimization measures be fully utilized and incorporated into subsequent 404 CWA applications for this project.

Should you have any questions regarding this matter, please call Paula Gill of our Regulatory Division at 415-503-6776. Please address all correspondence to the Regulatory Division and refer to the File Number at the head of this letter.

Sincerely,

Torrey A. DiCiro, P.E., PMP
Lieutenant Colonel, U.S. Army
Commanding

Enclosures

Copies Furnished:

US EPA, San Francisco, CA
US FWS, Sacramento, CA
US NMFS, Santa Rosa, CA
CA DFG, Yountville, CA
CA RWQCB, Oakland, CA

Federal Clean Air Act Conformity Requirement



U.S. Department
of Transportation
**Federal Highway
Administration**

California Division

April 13, 2011

650 Capitol Mall, Suite 4-100
Sacramento, CA 95814
(916) 498-5001

In Reply Refer To:
HDA-CA
04-0A5300

Bijan Sartipi, District Director
California Department of Transportation
111 Grand Avenue
P.O. Box 23360
Oakland, CA 94612

Attention: Allen Baradar, Office Chief, Chief of Environmental Engineering

Dear Mr. Baradar:

SUBJECT: FHWA Project Level Conformity Determination for the I-80/ I-680/ SR-12
Interchange Project, Solano County

On March 8, 2011, the California Department of Transportation (Caltrans) submitted to the Federal Highway Administration (FHWA) a request for a project level conformity determination for the I-80/ I-680/ SR-12 Interchange Project in Solano County. The project is in an area that is designated Nonattainment for Ozone and PM_{2.5} and Maintenance for Carbon Monoxide (CO).

The project level conformity analysis submitted by Caltrans indicates that the transportation conformity requirements of 40 C.F.R. Part 93 have been met. The project is included in the Metropolitan Transportation Commission's (MTC) currently conforming *Transportation 2035 Plan (RTP)* and the *2011 Regional Transportation Improvement Program (RTIP)*. The current conformity determinations for the RTP and RTIP were approved by FHWA and the Federal Transit Administration (FTA) on December 14, 2010. The design concept and scope of the preferred alternative have not changed significantly from those assumed in the regional emissions analysis.

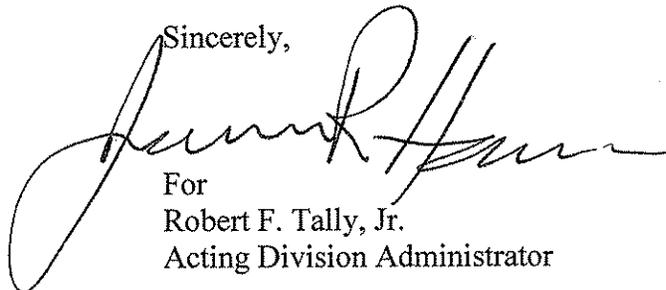
As required by 40 C.F.R. 93.116 and 93.123, the localized CO and PM_{2.5} analyses are included in the documentation. The CO hotspot analysis was conducted using the *Transportation Project-Level Carbon Monoxide Protocol*. The analyses demonstrate that the project will not create any new violation of the standards or increase the severity or number of existing violations.

Based on the information provided, FHWA finds that the Conformity Determination for the I-80/ I-680/ SR-12 Interchange Project in Solano County conforms to the State Implementation Plan (SIP) in accordance with 40 C.F.R. Part 93.



If you have any questions pertaining to this conformity finding, please contact Stew Sonnenberg, FHWA Air Quality Specialist, at (916) 498-5889 or by email at Stew.Sonnenberg@dot.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert F. Tally, Jr.", written in a cursive style. The signature is positioned above the typed name and title.

For
Robert F. Tally, Jr.
Acting Division Administrator

cc: (email)

Mike Brady, Caltrans HQ

Glenn Kinoshita, D-4

Jermaine Hannon, FHWA

SSonnenberg/km

