APPENDIX H
MODIFICATIONS TO THE DRAFT ENVIRONMENTAL ASSESSMENT/INITIAL STUDY AND RESPONSE TO COMMENTS
INTRODUCTION

This Appendix contains the comment letters received on the Draft EA/IS followed by individual responses to those comments.

LIST OF COMMENTS RECEIVED

A total of ten comment letters were received on the Draft EA/IS. Commentors and their associated agencies are listed below in Table 1.

Table 1. Agencies, organizations, and individuals that provided comments on the Draft EA/IS.

<table>
<thead>
<tr>
<th>Commenter</th>
<th>Associated Agency</th>
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</thead>
<tbody>
<tr>
<td>Robert Foster</td>
<td>State of California – Department of Parks and Recreation</td>
</tr>
<tr>
<td>Bruce E. Ross</td>
<td>State of California – Department of Water Resources</td>
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<tr>
<td>Christopher Huitt</td>
<td>State of California – Department of Water Resources</td>
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<tr>
<td>Sukhvinder (Sue) Takhar</td>
<td>State of California – Department of Transportation</td>
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<tr>
<td>Jim Dwyer</td>
<td>Chico Paddleheads</td>
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<tr>
<td>Dawn Garcia</td>
<td>Altacal Audubon Society</td>
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<tr>
<td>John Merz</td>
<td>Sacramento River Preservation Trust</td>
</tr>
<tr>
<td>Keith Wagner</td>
<td>Law Office of J. William Yeates</td>
</tr>
<tr>
<td>Gregg Werner</td>
<td>The Nature Conservancy</td>
</tr>
</tbody>
</table>

FORMAT OF COMMENTS AND RESPONSES

The responses that have been prepared to address issues and concerns raised in the comments on the Draft EA/IS are presented following the full suite of comments letters. Responses are numbered so that they correspond to the appropriate comment. Where a comment could be responded to with a response to an earlier comment, reference to that response is provided.

Modifications to the text of the Draft EA/IS occur in the document itself. The changes to the Draft EA/IS are intended to provide additional clarification regarding proposed project elements and/or analyses, incorporate additional detail regarding proposed project features or mitigation measures and make minor corrections. The changes to the document do not alter the impact conclusions that were presented in the Draft EA/IS.
Dear Tracy:

Review of the Draft Environmental Assessment/Initial Study for subject Draft Environmental Assessment/Initial Study dated August 2007 has prompted the following comments.

"Proposed Boundary of 2007 Gravel Bar Removal", Figure 2-2, correctly shows the proposed excavation boundary on its eastern side in red line nearly overlapping the eastern boundary of the excavation done in year 2001 shown in blue line. The boundary is at or below the ordinary low water elevation of the Sacramento River as defined by the area below permanently growing riparian vegetation on the gravel bar. The ordinary low water elevation is the lower limit to the area of Bidwell-Sacramento River State Park.

The correct extent of the area proposal for excavation shown in Figure 2-2 is not the "Dredging Area" shown in Figure 2-8 which is above the ordinary low water line and within Bidwell-Sacramento River State Park. The location of the dredging area in Figure 2-2 is the shallows and gravel bar to the west of the gravel bar in the State Park.

"Habitat Characterization in the Action/Project Area", Figure 3-1, omits a thin, 1,500 foot strip of two to three year old Valley Foothill Riparian habitat on the western side of the gravel bar that is shown on the attached map and photos. This area is referenced at the bottom of page 3-119: Some early successional riparian vegetation (i.e., young willows) on the gravel bar will be removed during bar excavation. This strip of willows and cottonwoods within the State Park must be avoided by equipment during the excavation.
of gravel whenever possible. Orange plastic fencing should delineate this protected area to prevent incursions of earth moving equipment. The route across the gravel bar to the gravel storage site should be located to minimize damage to these species. If their removal or damage occurs, then they need to be replanted at that location as mentioned on Page 3-134: *However, riparian habitat would be restored by the M&T Chico Ranch and Llano Seco Rancho at the location where shrubs were removed.... This restoration could involve removing and setting aside the impacted plants and surrounding soil for replanting at the site(s) of their removal upon completion of the gravel operation. The above protective and restorative measures should be contained in Appendix F: “Riparian Vegetation and Native Grassland Mitigation Plan”.*

“Impacted habitats associated with the Dredging Only Alternative”, Figure 3-3 and “Impacted habitats associated with the Proposed Action/Project”, Figure 3-4, incorrectly shows the portion of the gravel bar administered by State Parks above the ordinary low water elevation as having Direct Impacts. The area to be mined of gravel and directly impacted by the alternative and proposed action/project is the gravel bar to the west of the ordinary low water elevation.

Obtaining a new State Parks Right of Entry Permit will be required of the project proponent as stated on page 5-3. Since the area to be mined of gravel is outside of the State Park, no appraisal or payments for lost recreational opportunities will be necessary as in the Right of Entry Permit for the previous gravel removal project.

Thank you for the opportunity to comment on this document. Please contact Woody Elliott at (530) 538-2212 or welli@parks.ca.gov if you need more information.

Sincerely,

Robert Foster Superintendent

Enclosures

Willows and cottonwoods on gravel Bar at mouth of Big Chico Creek looking down Sacramento River, Aug. 20, 2007
Willows and cottonwoods on gravel bar at mouth of Big Chico looking up Sacramento River, August 20, 2007
August 23, 2007

Kevin Foerster
U.S. Fish and Wildlife Service
752 County Road 99
Willows, California 94988

M&T Chico Ranch / Llano Seco Rancho Pumping Plant Maintenance of Channel Alignment Sacramento River Mile 192.5
State Clearinghouse (SCH) Number: 2007082036

The project corresponding to the subject SCH identification number has come to our attention. The limited project description suggests your project may be an encroachment on the State Adopted Plan of Flood Control. You may refer to the California Code of Regulations, Title 23 and Designated Floodway maps at http://reced.ca.gov/. Please be advised that your county office also has copies of the Board’s designated floodways for your review. If indeed your project encroaches on an adopted food control plan, you will need to obtain an encroachment permit from the Reclamation Board prior to initiating any activities. The attached Fact Sheet explains the permitting process. Please note that the permitting process may take as much as 45 to 60 days to process. Also note that a condition of the permit requires the securing of the appropriate additional permits before initiating work. This information is provided so that you may plan accordingly.

If after careful evaluation, it is your assessment that your project is not within the authority of the Reclamation Board, you may disregard this notice. For further information, please contact me at (916) 574-1249.

Sincerely,

Christopher Huitit
Staff Environmental Scientist
Floodway Protection Section

Enclosure

cc: Governor's Office of Planning and Research
State Clearinghouse
1400 Tenth Street, Room 121
Sacramento, CA 95814
Encroachment Permits Fact Sheet

Basis for Authority
State law (Water Code Sections 8534, 8608, 8609, and 8710 - 8723) tasks the Reclamation Board with enforcing appropriate standards for the construction, maintenance, and protection of adopted flood control plans. Regulations implementing these directives are found in California Code of Regulations (CCR) Title 23, Division 1.

Area of Reclamation Board Jurisdiction
The adopted plan of flood control under the jurisdiction and authority of the Reclamation Board includes the Sacramento and San Joaquin Rivers and their tributaries and distributaries and the designated floodways.

Streams regulated by the Reclamation Board can be found in Title 23 Section 112. Information on designated floodways can be found on the Reclamation Board's website at http://recbd.ca.gov/designated_floodway/ and CCR Title 23 Sections 101 - 107.

Regulatory Process
The Reclamation Board ensures the integrity of the flood control system through a permit process (Water Code Section 8710). A permit must be obtained prior to initiating any activity, including excavation and construction, removal or planting of landscaping within floodways, levees, and 10 feet landward of the landside levee toes. Additionally, activities located outside of the adopted plan of flood control but which may foreseeable interfere with the functioning or operation of the plan of flood control is also subject to a permit of the Reclamation Board.

Details regarding the permitting process and the regulations can be found on the Reclamation Board’s website at http://recbd.ca.gov/ under “Frequently Asked Questions” and “Regulations,” respectively. The application form and the accompanying environmental questionnaire can be found on the Reclamation Board’s website at http://recbd.ca.gov/forms.cfm.

Application Review Process
Applications when deemed complete will undergo technical and environmental review by Reclamation Board and/or Department of Water Resources staff.

Technical Review
A technical review is conducted of the application to ensure consistency with the regulatory standards designed to ensure the function and structural integrity of the adopted plan of flood control for the protection of public welfare and safety. Standards and permitted uses of designated floodways are found in CCR Title 23 Sections 107 and Article 8 (Sections 111 to 137). The permit contains 12 standard conditions and additional special conditions may be placed on the permit as the situation warrants. Special conditions, for example, may include mitigation for the hydraulic impacts of the project by reducing or eliminating the additional flood risk to third parties that may caused by the project.

Additional information may be requested in support of the technical review of
your application pursuant to CCR Title 23 Section 8(b)(4). This information may include but not limited to geotechnical exploration, soil testing, hydraulic or sediment transport studies, and other analyses may be required at any time prior to a determination on the application.

Environmental Review
A determination on an encroachment application is a discretionary action by the Reclamation Board and its staff subject to the provisions of the California Environmental Quality Act (CEQA) (Public Resources Code 21000 et seq.). Additional environmental considerations are placed on the issuance of the encroachment permit by Water Code Section 8608 and the corresponding implementing regulations (California Code of Regulations – CCR Title 23 Sections 10 and 16).

In most cases, the Reclamation Board will be assuming the role of a "responsible agency" within the meaning of CEQA. In these situations, the application must include a certified CEQA document by the "lead agency" [CCR Title 23 Section 8(b)(2)]. We emphasize that such a document must include within its project description and environmental assessment of the activities for which are being considered under the permit.

Encroachment applications will also undergo a review by an interagency Environmental Review Committee (ERC) pursuant to CCR Title 23 Section 10. Review of your application will be facilitated by providing as much additional environmental information as pertinent and available to the applicant at the time of submission of the encroachment application.

These additional documentations may include the following documentation:

- California Department of Fish and Game Streambed Alteration Notification (http://www.dfg.ca.gov/1600/),
- Clean Water Act Section 404 applications, and Rivers and Harbors Section 10 application (US Army Corp of Engineers),
- Clean Water Act Section 401 Water Quality Certification, and
- corresponding determinations by the respective regulatory agencies to the aforementioned applications, including Biological Opinions, if available at the time of submission of your application.

The submission of this information, if pertinent to your application, will expedite review and prevent overlapping requirements. This information should be made available as a supplement to your application as it becomes available. Transmittal information should reference the application number provided by the Reclamation Board.

In some limited situations, such as for minor projects, there may be no other agency with approval authority over the project, other than the encroachment permit by Reclamation Board. In these limited instances, the Reclamation Board
may choose to serve as the "lead agency" within the meaning of CEQA and in most cases the projects are of such a nature that a categorical or statutory exemption will apply. The Reclamation Board cannot invest staff resources to prepare complex environmental documentation.

Additional information may be requested in support of the environmental review of your application pursuant to CCR Title 23 Section 8(b)(4). This information may include biological surveys or other environmental surveys and may be required at anytime prior to a determination on the application.
Appendix H

State of California

Memorandum

Date: September 6, 2007
To: Tracy McReynolds
Department of Fish and Game
2545 Zanella Way, Suite F
Chico, California  95928

From: Department of Water Resources

Subject: Draft Environmental Assessment / Initial Study-Mitigated Negative Declaration for the M&T Chico Ranch/Llano Seco Rancho Pumping Plant Temporary Maintenance Project

The Department of Water Resources has reviewed selected sections of the Draft Environmental Assessment / Initial Study-Mitigated Negative Declaration for the M&T Pumps interim project. The sections reviewed included the Description of Alternatives, Geomorphology and Soils, and Cumulative and Growth Inducing Effects. Our comments are on two levels: first, document completeness, and second, factual discrepancies.

First, while the document adequately addresses construction effects of the project related to Geomorphology and Soils, there appears to be no analysis of the actual effects of the project on the geomorphology and river dynamics in the project vicinity. A discussion of the project’s hydrologic and geomorphic effects needs to be included in the document. And at the same level, the Cumulative Effects section needs to consider the combined effects of all the bank stabilization projects in the reach being analyzed, past as well as future. This would include a discussion of the amount of stabilization of outside bends and the overall effect this has had on river dynamics and meander migration throughout this reach.

The second level comments are provided in the attached sheet by paragraph and line item. These items should assist in clarifying the geomorphic conditions in the vicinity of the project.

We hope these comments will assist you in making a more complete document and lead to a successful project. If you have questions or need additional information, you may contact me at (530) 528-7407.

Bruce E. Ross, Chief
Geologic Investigations Section

Attachment

DWR 9045 (Rev. 4/02)
### Appendix H

#### M&T Chico Ranch/Llano Seco Rancho Pumping Plant

**Final EA/IS**

**Temporary Maintenance Project**

### Comments on the M&T Ranch EAIS

<table>
<thead>
<tr>
<th>TEXT</th>
<th>COMMENT</th>
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<tbody>
<tr>
<td><strong>Section 3.6 Geomorphology and Soils</strong></td>
<td></td>
</tr>
<tr>
<td><strong>3.6.1 Existing conditions pg 3-92</strong></td>
<td>The Natural Resources Conservation Service produced a new soils map of Butte County in 2005. Columbia Soils are not present in the project vicinity. It is recommended that you use the most recent information to describe the soils present.</td>
</tr>
<tr>
<td><strong>3.6.1.1 River Meander pg 3-93 PP3</strong></td>
<td>The river is increasing sinuosity through this reach.</td>
</tr>
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<td>The right descending bank between about RM 198 and RM 197 was revetted by the USACE under the Chico Landing to Red Bluff project in 1975. The downstream end of the revetment was flanked in the 1983 flood, and the river achieved its current configuration at the mouth of Pine Creek. The revetment, provided it is properly maintained, ensures that the river will remain along the line of the Modesto Formation outcrop between RM 196 and the M&amp;T pumping facility.</td>
<td>The revetment at RM 197-198 is not currently being maintained and the lower end is subject to a major scour hole that is continuing to erode the rip-rap. The river is not currently located along the line of Modesto Formation between RM 194 and RM 195.8 and is free to move across its historic flood plain deposits. Substantial movement to the east is occurring at RM 195 to 195.4 as the river is increasing sinuosity through this reach.</td>
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<tr>
<td>The location of the river further ensures that the revetment installed on the left descending bank at about RM 194 in 1973 to protect River Road will be required in the foreseeable future.</td>
<td>The upper end of the revetment protecting River Road above RM 194 is now off channel and substantial deposition is occurring in front of the upstream half of the revetment as the gravel bar and bend upstream migrate down river. The apex of the bend that was impinging on River Road has migrated to the downstream end of the rip-rapped section and is beginning to erode to the east. As this apex migrates downstream there will be less erosive force directed against the rip-rapped section of River Road.</td>
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<tr>
<td>Erosion of the right bank immediately upstream of the pumps is due to flow deflection off the upstream revetment. With the revetment in place, bank erosion will continue to occur opposite the pumps unless the bank itself is revetted.</td>
<td>Erosion of the right bank upstream of the pumps is caused by the apex of a slight meander bend encountering erodible floodplain deposits as it migrates downstream along with all the other bends in this reach. The current geometry of this bend and the bend upstream along River Road are such that the flow off the River Road rip-rap is directed toward the right bank thus enhancing the erosion. Eastward and downstream migration of the River Road bend apex and westward and downstream migration of the river right bend apex upstream of the pumps will continue regardless of the presence of the River Road revetment.</td>
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### 3.6.1.3 Bank Erosion pg 3-94 bottom

Bank erosion is not occurring on the eastern bank of the site, but rather a gravel bar is forming, thus pushing the erosional force of the river further to the west. Bank erosion on the western bank of the site is typical of sites along this reach of the river where loose sands dominate the embankment. Shear stresses caused during higher winter flows tend to rapidly erode unprotected banks. Once erosion starts, it tends to proceed rapidly. During large hydrologic years the bank has eroded as much as 60-feet in one year. Bank erosion is continuous all along the site with pockets of erosion, some deeper than others.

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<tr>
<th>3.6.3 Effects</th>
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Cause and effect are reversed here. Flow mechanics in rivers are such that erosive forces are present on the outside of bends, with the highest erosive force located in the area just downstream of the bend apex. As the erosive forces encounter erodible material erosion occurs and the bank migrates across and downstream. The channel cross section widens decreasing shear stress on the inside of the bend and allowing for the deposition of a point bar on the inside of the bend. The point bar migrates across and downstream following the nexus of erosion and maintaining channel width as the bend migrates. Removal of the point bar only reduces the erosive forces on the outside of the bend through increasing the cross sectional area and thus decreasing the flow velocity and shear stress. It does not remove the “pushing of the erosional force”. Recent bank erosion is concentrated from the apex of the bend, about the area of heavy vegetation on the bank, downstream. Very little erosion has occurred in the upstream portion of the bend since 1999.

### 3.6.3.4 pg 3-96

The vegetation clearing and placement of construction materials that would be conducted during the construction would result in ground and soil disturbance. These disturbances would increase the hazard of erosion and could temporarily increase erosion and sedimentation rates above existing levels. Most of the earthwork would be conducted on and immediately adjacent to the top of the western river bank. The dredging component of this alternative would remove only the inside portion of the gravel bar, leaving a ring of gravel around the outside of the bar. During winter flows the outside edge will be eroded and therefore increased turbidity would not be significant, as this event would be masked by high flow conditions. Therefore accelerated erosion and sedimentation resulting from construction-related ground and vegetation disturbance would not result in substantial effects. However, construction related to the project could result in substantial soil erosion which would be deposited in the Sacramento River and receiving waters. This effect is potentially significant.

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<th>3.6.3.4 Effects</th>
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The only effects addressed in this section are the possible construction impacts. There needs to be a discussion of the geomorphic effects of restricting the natural migration of the river across the flood plain and the hydrologic effects on this site of the construction of a toe revetment. Potential effects could include incision of the channel, leading to formation of a nick point that would migrate upstream removing the upstream riffle. (This is one of the known consequences of rip-rapped banks.) Another potential consequence is the “fossilization” of the opposite bar with the formation of a riparian berm and subsequent loss of graded edge habitat. Another set of effects that needs to be addressed are those of potential failure of the structure. These could include the formation of a scour hole at the downstream end of the structure leading to an increase in the rate of erosion toward the west, opposite the pumps and reducing the life span of the pumping plant. Or accelerated flood flow velocities across the top of the structure leading to increased erosion of the bank and scour behind the revetment. Locking bends in place with are also known to increase the erosion of the downstream opposite bank by focusing flow energy through time. All these potential impacts need to be addressed. Somehow this last sentence got deleted from the current version???
### 3.6.4.3 Mitigation pg 172

A SWPPP would be prepared and implemented to control erosion and sedimentation. A water quality monitoring plan would be implemented, and construction activities would be slowed or stopped when turbidity levels reach those dictated by the RWQCB’s 401 certification.

| The only mitigation suggested here is for construction effects only. Mitigation for the geomorphic and hydrologic effects of the structure itself needs to be included. |

<table>
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<tr>
<th><strong>4.1 Cumulative effects</strong></th>
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<tr>
<th><strong>4.1.1 Other Local projects</strong></th>
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| One of the project proponents of this project is currently advocating for additional rock to be placed at RM 192.4. This potential project needs to be included in the assessment of cumulative impacts. |

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<th><strong>4.1.2.5 Cumulative Effects</strong></th>
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| Section 3.6 identifies the effects of the proposed action on geomorphology and soils. The disturbances associated with the preferred alternative would increase the hazard of erosion and could temporarily increase erosion and sedimentation rates above existing levels. Most of the earthwork would be conducted on and immediately adjacent to the top of the western riverbank. The dredging component of this alternative would remove only the inside portion of the gravel bar, leaving a ring of gravel around the outside of the bar. During winter flows the outside edge will be eroded and therefore increased turbidity over no project conditions would not be significant, as this event would be masked by high flow conditions. Therefore accelerated erosion and sedimentation resulting from construction-related ground and vegetation disturbance would not result in substantial effects. However, construction related to the project could result in soil erosion which would be deposited in the Sacramento River and receiving waters in a similar scope and effect as previous project in the vicinity. The incremental effect of the proposed action is not cumulatively considerable and therefore less than significant. |

| The cumulative effects that need to be considered for this project are those of the combined effect of all the bank protection measures that have occurred or may occur in the future for this reach of the river. Address the cumulative effects in terms of the amount of outside bend that has revetment as this is the only measure that has geomorphic meaning (Nobody revets inside bends). Cumulative effects should include not only the geomorphic effects of restriction of natural bend migration but also the subsequent effects on the entire riparian ecosystem. There is wide recognition that bank stabilization projects throughout the Sacramento River system have adversely affected the underlying geomorphology and the aquatic and riparian ecosystems that depend on continued migration of the channel. Some how none of these effects have been considered in this discussion of cumulative impacts. The discussion is incomplete without such information being included. This section only discusses construction effects. |
August 31, 2007

07GLE0023
03GLE45, PM17.191
03BUT32, PM08.62
M and T Chico Ranch/ Llano Seco Rancho Pumping Plant Maintenance of Channel Alignment River Mile 192.5
SCH 2007082036
Joint Document
Initial Study (IS) Mitigated Negative Declaration (MND)
Environmental Assessment (EA)

Mr. Kevin Foerster
U.S. Fish and Wildlife Service (USFWS)
752 County Road 99
Willows, CA 94988

Dear Mr. Foerster,

Thank you for the opportunity to review and provide comments regarding the Initial Study (IS)/ Mitigated Negative Declaration (MND)/ Environmental Assessment (EA) for the M and T Chico Ranch/ Llano Seco Rancho Pumping Plant Maintenance of Channel Alignment project. The preferred project proposal is for the placement of a 1,500 foot rock and tree revetment on the west side of the Sacramento River and the removal of gravel from the east side of the river. The location of the project is at River Mile (RM) 192.5. During the 5-year period of the project, approximately 156,000 tons of material will be excavated. The environmental document reviews three project alternatives, no action, dredging only and the preferred project. Our comments are as follows:

Transportation/ Circulation (Section 3.12)

- Section 3.12.4.3 (pages 3-194 to 195). The Traffic Management Plan described in this section is appropriate. Any placement of signs, flaggers, or other items within the right of way of a state highway will require an encroachment permit as described below.
Mr. Kevin Foerster  
August 31, 2007  
Page 2

Water Resources and Quality (Section 3.8)

- The Hydraulics Branch of the Office of Engineering services is in concurrence with the statements of this document and requests that it be informed of the final design choice. Please forward the final design to Mr. Cameron Knudson of Caltrans Hydraulics Branch at the above address for review when complete.

Encroachment Permit required:

An Encroachment Permit will be required for any work conducted in the State’s Right-of-Way. To secure an application, please contact Caltrans District 3 Office of Permits, at 530-741-4403.

If you have any questions regarding these comments, please contact Matt Friedman, Local Development/Inter-Governmental Review Coordinator, at (530) 741-4004.

Sincerely,

[Signature]

SUHKVINDER (SUE) TAKHAR, CHIEF
Office of Transportation Planning-North

"Caltrans improves mobility across California"
Dear Mr. Foerster and Ms. McReynolds:

Chico Paddleheads is a local organization of kayakers, canoeists, and rafters with extensive experience paddling the Sacramento River and other waterways in Northern California. Over the years we have observed many changes, both natural and unnatural, along the river. One thing that is quite obvious is the expansion of riprap, both legal and illegal, along the river. This is a source of very great concern among our members.

As Secretary of the Board of the Sacramento River Preservation Trust I have closely followed the issue of the river realignments proposed for the M&T Ranch pumping plant. As a Paddleheads member I have apprised our membership of various developments over time. We discussed this issue at our meeting on Wednesday, September fifth and strongly in agreement with the position taken by the Trust. Please add the name of our organization as endorsing the points made by John Merz in the letter below and the electronic file he sent you.

Thank you for the opportunity to comment on this issue, and best wishes.

Sincerely,

Jim Dwyer

For Chico Paddleheads
Dear Mr. McReynolds,

On behalf of the Board of Directors of the Altacal Audubon Society, I, the Conservation Chairperson, am submitting comments in response to the M & T Chico Ranch/Llano Seco Rancho Pumping Plant Draft EA/IS Draft, opened for public review in August 2007. Altacal Audubon is an active birding and conservation group consisting of over 700 members. We disagree with the findings of “no significant impact with mitigation” that this project will have on biological resources, specifically regarding the Bank Swallow (Riparia riparia) and other special status birds and their habitats. Please consider our comments carefully.

Bank Swallows CESA- threatened, 2007 petition for status change to endangered

Consider status change petition before removing additional habitat

- As noted in the EA/IS (3-107) Bank Swallow habitat will be directly impacted by removing previous nesting habitat and future nesting habitat (due to the continuous erosion of the site) in subsequent years. It is well documented and stated in the EA that an estimated 75% of the CA Bank Swallow population nests along the Sacramento and Feather River with a significant portion on stretch from Red Bluff to Colusa. Due to the pervasive decline of the swallow from its baseline high in 1986 of 13,000 pairs the species was listed as threatened in 1989 (CDGF website 2006) and a recovery plan was published in 1992 (Schlorff 1993). This summer the legal status of the Bank Swallow was petitioned to be changed from threatened to endangered by DFG wildlife biologist Ron Schlorff, in the summer of 2007 (pers. comm. July 2007), based on documented decline of the species during 21 years of annual surveys. We request that the petition of status change be considered, and what those consequences would be when eliminating Bank Swallow habitat.

No Specific Mitigation Proposal

Write a specific mitigation plan for loss of Bank Swallow habitat

- Other than mention of a 2:1 ratio replacement of Bank Swallow habitat, the mitigation plan for removal of existing habitat is ambiguous and dubious, with no specific properties identified for purchase and protection in perpetuity (3-149). How can the public review and comment, and be assured sufficient mitigation will ensue if nothing specific is proposed? We request a mitigation proposal that includes a specific site location, an assessment of the site which discusses its values/history and potential as Bank Swallow habitat, and the conservation of the property.
Referenced Mitigation Inadequate

Consider additional mitigation measures for a goal of no net loss of Bank Swallow habitat

- While the recovery plan discusses purchase of Bank Swallow habitat as a recovery action it also states that impact avoidance must be considered (Schlorff 1993). More recent research concluded that at least 10 percent of existing rock be removed to restore nesting habitat and stabilize the Sacramento River population of Bank Swallows (Moffatt et al. 2005). Removing rock has proven successful for swallows. In 1999, a private levee and rip-rap was removed at River mile 233. The following spring an estimated 2,770 burrows, the most counted that year, were documented at this site (Golet et al. 2003) We request that you consider removing rock at a retired site as an additional mitigation measure, to result in no net loss of habitat. As over 48% of the Sacramento River is already armored by the Department of Water Resources (DWR), Army Corp of Engineers and private property (unpublished poster data Silveira et al. 2007), no net loss of habitat is crucial to the species.

Cumulative Revetment Impacts

Consider the well documented consequences of cumulative revetment to Bank Swallow habitat

- Remsen faults bank armoring for the extirpation of Bank Swallows from Southern California (1978) stating that the channelization of rivers is the most insidious long-term threat to the Bank Swallow; most all colonies in the Sacramento Valley will be destroyed by planned bank construction projects (Schlorff 1997).

- An example of egregious killing of Bank Swallows from armoring projects occurs in 1985 when bank protection installed by the US Army Corps of Engineers (ACOE) destroyed at least three large Bank Swallow colonies on the Sacramento River during the breeding season. This results in the probable loss of thousands of eggs and nestlings (Schlorff 1995), and the potential loss of future use of these sites. This practice is stopped due to legal protection of the swallow under the Migratory Bird Treaty Act.

- Garrison and Humphrey (1986) state that proposed bank stabilization, flood and erosion control projects represent the greatest threat to Bank Swallow colonies and habitat on the Sacramento River. Their study finds that proposed projects threatened 53% of Sacramento River colonies where 58% of nesting pairs were found.

- The recovery plan for the Bank Swallow identifies state and federally funded rip-rapping along eroding banks as the primary reasons for decline of the species and loss of habitat (Schlorff 1993).

- Department of Water Resources (DWR), Army Corp of Engineers and private property owners are responsible for armoring 48% of the Sacramento River with riprap and rubble for bank stabilization projects since the 1930's (Figure 2).

- A total of 7 miles of riprap are added between Red Bluff and Colusa since the Bank Swallow was listed as threatened in 1989 (unpublished poster data Silveira et al. 2007)

- A 2006 “levy repair project” at RM 182 armored a stretch of bank in prime nesting habitat from Red Bluff to Colusa, with no mitigation yet in place. Prior to the armoring of RM 182, surveys conducted during 1986-2005 documented active Bank Swallow colonies 15 out of the 19 years (80%), with an average of 300 burrows and a high of 1,390 nesting pairs in 2004. Rocking of this stretch has resulted in a huge net loss of successful Bank Swallow nesting habitat (unpublished poster data Silveira et al. 2007).
In August 2007, M&T Ranch releases a Mitigated Negative Declaration inferring that provision of a 2:1 ratio replacement of existing Bank Swallow habitat will have “no significant impact” on the Sacramento River and California Bank Swallow populations. In June 2007, I was on the official USFWS/DFG survey party; **we estimated 200 pairs of Bank Swallows** at this “3 colony site.” Although 2006 surveys were not conducted due to boat engine failure, the EA (3-107) states that “nesting individuals were not observed during 2006.” **Please provide a reference for this observation.** As noted in the EA (3-107), based on official survey data, from 1999-2005 estimates of 50 nesting pairs in 202 to 340 in 2001, were observed in the proposed project area (HDR/SWRI 2007).

Based on the abbreviated summary of California Bank Swallow research, it is obvious that armoring of 0.3 miles of successful Bank Swallow habitat as proposed by the M&T Ranch (HDR/SWRI 2007), without removal of armor from elsewhere along the Sacramento River, will reduce Bank Swallow habitat. This action will add to the cumulative loss of habitat, and likely continued decline of the threatened/proposed endangered California Bank Swallow population. **We urge you to consider other methods to protect the M&T pump other than armoring Bank Swallow habitat.**

**Additional Avian Concerns and Impacts**

No bird surveys other than NESTING raptor surveys were conducted (page 3-103 and see Table 3-6). Without conducting field surveys it is impossible to say if, and to what extent, Yellow-billed Cuckoos (*Coccyzus americanus occidentalis*) and other special status species use the site and to thereby “dismiss” special-status species from project impact.

**Conduct seasonal surveys to document presence/absence of special-status species**

- CSU Chico State university student conducting research on Yellow-billed Cuckoos (WYCU) surveyed two riparian forests proximate to this site in summer 2007. She detected cuckoos and concludes that WYCU could use the riparian forest in the action zone (J. Hammond pers. comm. August 2007). This project could remove 33.8 acres of mature riparian forest (HDR/SWRI 2007) where Cuckoos forage or nest.

- Yellow-breasted Chat (*Icteria virens*) and Yellow Warbler (*Dendroica petechia*) should not be dismissed from your assessment. Without songbird surveys conducted during the summer, it is impossible to “dismiss” riparian forest nesting species from this site based on CNDDB review. The website disclaimer states that the CNDDB should not be used “as an exhaustive and comprehensive inventory of all rare species and natural communities statewide. Field verification for the presence or absence of sensitive species will always be an important obligation of our customers.input into this database” (CNDDB website 2007). Although no formal surveys have been formerly conducted in the action area by our members, both Chat and Yellow Warbler have been documented nearby and on site in the riparian habitat, from spring through fall (M. Skram, M. Fisher, and J. Shedd pers. comm. Aug 2007). Additionally, both warbler species are documented to breed in similar riparian habitat in the proposed project, along Big Chico Creek and Butte Creek. Adults and fledglings of both species have been recorded during point count surveys and mist-netting efforts for the last two years at these study sites (pers. obs. 2006-2007).

- Willow Flycatchers (*Empidonax traillii*) likely use the riparian habitat (including willows) along the east bank during migration. In similar habitat at the sites noted above, Willow Flycatchers have been detected and banded during spring and fall migration (pers. obs. 2006-2007).
Referenced Mitigation Inadequate

Consider additional mitigation measures for a goal of no net loss of riparian habitat and fragmentation that will occur with loss of habitat

- Mitigation solely requiring 2:1 creation of mature riparian forest is inadequate as it does not provide the in-kind structure, foraging or nesting habitat that characterizes mature forest. We recommend the purchase of in-kind mature riparian forest conserved in perpetuity, in addition to the proposed 2:1 restoration, as the required mitigation. Purchase of existing riparian habitat will result in a no net loss of riparian habitat.

- The fragmentation of riparian habitat, which will occur if the proposed project is permitted, increases birds’ potential for predation as well as parasitism by brown-headed cowbirds (*Molothrus ater*). If implemented, our mitigation recommendations will help ensure the survivorship and productivity of the Yellow Warblers and Yellow-breasted Chats as well as other nesting songbirds.

We urge you to consider our recommendations to better protect the species under your jurisdiction.

Sincerely,

Dawn Garcia  
Conservation Chair  
Altacal Audubon Society  
From: tiffany@sacrivertrust.org  
Sent: Friday, September 07, 2007 3:55 PM  
To: Kevin Foerster; Tracy McReynolds  
Cc: Keith Wagner; Tom Kraemer; Scott Ferris; Russ Philbrick; Nora Todenhagen (E-mail); Kate Foley; John Merz (E-mail); Jim Dwyer (E-mail); Jeanne Hansen; Eric Ginney; Denny Latimer (E-mail); Debbie Work Chakarun  
Subject: Draft EA/Initial Study-Mitigated Negative Declaration for the M&T Chico Ranch/Llano Seco Rancho Pumping Plant Maintenance of Channel Alignment Sacramento River Mile 192.5

Attachments: Comments on MT.doc; M T bank erosion3 09-29-06 df.pdf

September 7, 2007

Kevin Foerster  
Sacramento National Wildlife Refuge Complex US Fish and Wildlife Service (FWS)  
752 County Road 99W  
Willows, CA  95988

Tracy McReynolds  
California Department of Fish and Game (DFG)  
2545 Zanella Way, Suite F  
Chico, CA  95928

Dear Kevin and Tracy,

The Sacramento River Preservation Trust (Trust) has reviewed the Draft EA/Initial Study-Mitigated Negative Declaration for the M&T Chico Ranch/Llano Seco Rancho Pumping Plant Maintenance of Channel Alignment Sacramento River Mile 192.5 (Project) dated August 2007 and wishes to make the following comments in addition to the attached documents.

* In the Draft Mitigated Negative Declaration document drafted by DFG, it is stated, "A detailed mitigation monitoring plan...will be developed" (page 4). Appendices E and F of the Draft EA/Initial Study (Draft EA/IS) are labeled as such. Is there more coming or is something missing?  

* In the Draft EA/IS, under Description of the Alternatives, Table 2-1 (page 2-1), it is stated, shown that the No Action Alternative has a "high" degree of public controversy, while the Dredging/Material Removal and 1520-feet Rock Toe and Tree Plus Dredging/Material Removal Alternatives are shown as having "moderate" degrees of public controversy. No justification appears to be made for any of these judgments and the Trust, among others, definitely regards the latter two alternatives as highly controversial.
Please justify your characterization of each alternative in this regard.

* Under section 2.2.2 Dredging Only Alternative (page 2-3) of the Draft EA/IS it is stated, "The spoils site is located within the floodplain of the river, at an existing gravel storage area. The storage site would not significantly alter floodplain capacity." Please justify this statement.

* Under the same section as above, it is stated "The gravel and sand would be made available only for river and floodplain restoration activities at a future date." The original gravel bar removal project that created the spoils site was done in 2001 and there was no provision at that time for the future use of that material. Please clarify who owns all of this material and verify that the proposed dredging of additional materials will be limited to the current configuration of the 2001 spoils site. In addition, please identify who will have the authority to make future decisions concerning the use of this material.

Related to the above, the Trust would like to know why the 2001 project is not referenced in the Draft EA/IS in a more complete fashion, including an update on any and all mitigation requirements that were required of that project.

* Under the same section as above (page 2-5), it is stated "As mitigation for loss of riparian bar and aquatic backwater habitat, M&T Chico Ranch/Llano Seco Rancho would restore degraded habitat at or near the affected area." No details are given concerning how much habitat will be impacted and the mitigation required to address this issue. In fact, the Trust is unable to determine if the impacts from the dredging portion of the Project are addressed anywhere in the proposed Mitigation Monitoring and Reporting Plan (MMRP). Please provide further details as required by law.

* Concerning Appendix E, MMRP, the Trust believes that there are a number of problems with proposed mitigations:

  o Under Biological Resources: Valley Riverine Aquatic (page E-2) it is stated that, "As a sub-component of VRA habitat, 1520 linear feet of SRA habitat will be restored or enhanced through the incorporation of tree clusters in the design of the stone toe and tree revetment." Please identify which agency/agencies agree with this evaluation, as the Trust finds it difficult to believe. Appropriate scientific references would be appreciated.

  o Under Biological Resources: VRA, Valley/Foothill Riparian and Grassland (pages E-2&3) it is stated that "The M&T Chico Ranch/Llano Seco Rancho and the Sacramento River National Wildlife Refuge will work cooperatively to develop a plan of planting, maintenance, and management" for each of the restoration areas associated with these habitat types. It appears that Appendix F, Riparian Vegetation and Native Grassland Mitigation Plan, speaks to this issue. Is there more coming or is something missing?

  o Under Biological Resources: Valley Elderberry Longhorn Beetle (page E-3) it is stated that EO5 & EO7 are to be transplanted as necessary. Where are these plants going to be transplanted? What is going to happen to EO4?
o Under Biological Resources: Bald Eagle (page E-4), it appears there may be an impact to winter roosting sites if the construction season runs into November. In addition, the Trust believes that there may well be impacts to other raptor species in addition to the Bald Eagle and Swainson's Hawk. In fact, there are any number of avian species that are dependent on the riparian and aquatic habitats of the Sacramento River. A more thorough discussion in this regard is hereby request.

o Under Biological Resources: Bank Swallow (page E-4) the problem is simply put - a legally defensible mitigation monitoring plan has yet to be developed. This is unacceptable.

o Under Biological Resources: Northwestern Pond Turtle (page E-5) it is stated that "impacts to suitable habitat will be compensated for at a greater than 1:1 ratio." How much greater? In addition, there is a statement made in Appendix F (page F-2) that states "To the extent practicable, remove or exclude evaluated amphibian and reptile species from construction corridors before construction is initiated." What species are being referred to and who will make the determination of what is "practical"? More importantly, where is this referenced in the MMRP?

o Under Recreation and Navigational Safety (page E-5) it is stated that "IWM would be placed in a manner that reduces its ability to act as a "strainer", thus reducing the risk to recreationists flowing with the river current, especially swimmers and those in canoes." Reduction is not elimination. Who is going to be liable if someone gets hurt or killed as a consequence of this Project?

* Concerning Appendix F, MMRP, the Trust believes that there are a number of problems with proposed mitigations:

o It is stated that the restoration of valley foothill riparian habitat as part of Project mitigation "will be implemented by the M&T Chico Ranch and the Llano Seco Rancho". What does that mean exactly in terms of responsibilities?

o Specific to the Valley Oak/Mixed Riparian Forest Mitigation Site referenced on page F-6 (shown in Figure 3, page F-7), the location is on the Llano Seco Rancho approximately 8 miles downstream of the Proposed Action Area. Why is this mitigation not occurring closer to the area of impact? For instance, why isn't a suitable location available on the adjacent M&T Chico Ranch?

o Of similar concern is the Grassland Restoration Site located within the Rio Vista Unit of the Sacramento River National Wildlife Refuge. This site is 24 miles upstream, which leaves a lot to be desired in terms of habitat continuity in the Proposed Action Area. Please justify.

Related to the above is a statement on page F-17 that "Various phases of the Rio Vista project implementation have already occurred." Since the Project has yet to be approved, how does that work?
o The budgets found on pages F-11 and F-17 seem hard to believe. Do the figures shown cover the entire mitigation period and who is responsible for paying the bills?

* Under Other Alternatives Considered But Rejected (page 2-19), the Trust finds it interesting that 17 days after we submitted our comments concerning the October 2006 Draft EA/IS for this project, the Steering Committee "determined the need to increase the length of the rock toe revetment . . . from 700 feet to 1520 feet to ensure that the rock toe and brush revetment would not become 'flanked'." The Trust believes that our November 13, 2006 comments still have value in the current conversation and hereby incorporate them as part of this submittal (see attached Comments on MT).

Related to the above, on page 3-10 it is stated "the State Reclamation Board and State Lands Commission issued letters authorizing the construction of the rock and brush revetment." The Trust hereby requests copies of said letters.

Also related to the above, on page 2-1 it states "Each of the alternatives was identified by the Steering Committee as a temporary solution (emphasis added) to the bank erosion and gravel deposition occurring in the Action/Project Area until a permanent solution (emphasis added) can be identified and implemented." This is reinforced by the comment on page 2-10 stating "subsequent discussions among the Action/Project Proponents and the resource agencies indicated that the proposed Action/Project may be included as part of the permanent, long-term solution." This Project is clearly part of a larger effort and must be evaluated as such.

The Trust finds that the Draft EA/IS is deficient in a number of areas, with the treatment of aesthetics and cumulative impacts of particular note. The Trust also finds it interesting that the discussion of potential impacts to fish species is one-sided in most regards and that the dynamics of the river have not been adequately addressed and respected. In short, the vision of CALFED relative to a meandering river system is being seriously challenged by the Project and should be rejected.

Once again, the Trust believes that an Environmental Impact Report /Statement must be required for this project. In addition, the Trust requests that at least one public hearing be held concerning this Project before any further action is taken.

The Trust appreciates having had the opportunity to comment. We look forward to your timely response to our concerns.

John Merz
President
Sacramento River Preservation Trust
(530) 345-1865
General Comments

General Comment A:
Overall, the proposed action limits the migration of the channel, eliminates bank erosion, and ultimately—by simple definition of the actions proposed—limits channel migration. While the document evaluates numerous resource areas, it fails in its analysis to expand its scope to include the obvious effects on macro-scale river and ecological processes. For example, while Section 3.7, Geomorphology and Soils\(^1\) includes mention of “channel meander” in the Affected Environment subsection, it fails to include any “significance criteria” that evaluate the proposed projects adverse effects on river channel meander. Further, the analysis neglects to examine other important criteria that are significant, such as changes to bed elevation and ecological processes that are driven by physical river process.

General Comment B:
This project is part of a larger project called the M&T/Llano Seco Fish Screen Facility, Short-term/Long-term Protection Project. A full description of the larger project can be found on the Ducks Unlimited website and is summarized in a “Technical Memorandum: Workshop 4 Summary” and PowerPoint, which was presented at the October 3, 2006 Technical Advisory Committee meeting of the Sacramento River Conservation Area Forum (SRCAF) and is hereby incorporated by reference. It is also worth noting that the document being analyzed uses the word “interim” in a number of locations (i.e. Figures 2-3 and 3-1). As a consequence, this document is only a piece of a larger picture (project) and is therefore in violation of both CEQA and NEPA.

General Comment C:
Despite the fact that this project has a long history, the document consistently ignores existing, relevant, readily available information regarding conditions on the river at the time the decision document was made available for comment. Specifically, the document ignores information on bank retreat from the 2005-2006 high-water season which is in distinct contradiction to information and trends presented in the document. Furthermore, this information was available over one month prior to release of the document. This information must be integrated into the NEPA/CEQA analysis.

General Comment D:
Throughout the document, resource analysis sections simply treat the effects of Alternative D as the same as Alternative C, “except that an additional 500-feet of rock toe and tree would be installed on the western bank of the Sacramento River.” While this citation is clearly the only difference between the two actions, the effects of the two alternatives must be analyzed individually. This is particularly the case when examining visual and aesthetic resources. This environmental decision document is deficient without complete analysis of all alternatives.

\(^1\) This section is also titled “Geology and Soils” inconsistently in the document.
General Comment E:
While the document clearly covers every applicable special status species potentially occurring on site, the analysis of potential project affects falls far short of adequate. While the analysis covers each impact mechanism for the project, missing from the analysis is the most crucial aspect of the document: accurately describing and evaluating all of the actual affects (short term and long-term) that accompany each of these impact mechanisms. For example, take spawning gravel recruitment. For five years in a row (should conditions merit) the project could remove from the river approximately 189,000 tons of sediment; however, the project never describes or discusses the potential adverse effects on spawning gravel recruitment. Similarly, with over 700 feet of revetment proposed, the analysis fails to examine the effects of bank revetment on inhibiting bank erosion and subsequent spawning gravel recruitment. This omission is particularly important when the document itself points out that “Reduction in the availability and quality of spawning gravel downstream of dams has also been identified as a factor affecting the species [Chinook salmon].” Other omissions of impact abound in the document and we comment on some outstanding ones herein. However, given the 30-day period to comment and the broad list of species at the site, the omissions go beyond our ability to comment in detail.

General Comment F:
A considerable amount of effort and disagreement appears to be included in the history of the Expert Panel and Steering Committee. Despite the fact that criteria were established to inform a decision on finding a final recommendation, the decision was made to abandon those goals, and evaluate a “non-goal alternative” in the decision matrix. Aside from the fact that your process essentially cast aside what was a legitimate process (instead a solution was decided upon that met all but the ecological goal of meeting river meander criteria) we are curious about how the costs of the project can be justified, and ultimately, how they were found to be cost-effective—particularly after 5 years when additional dredging and/or redesign or configuration of revetment is required.

In short, the decision to begin down the path of any of the alternatives (A-E) proposed in the document, leads to what will undoubtedly be a perpetual fight to control the river. The cost of these sorts of river-control efforts is only now beginning to be totaled by researchers, and if the costs to society (i.e. the loss of habitat and ongoing cost of design, modeling, engineering, human energy in meetings, etc.) are factored in, the total sum is staggering. Cumulatively, it is not at all clear that the economic analysis that was conducted in the working group is accurate or robust enough to support decisions made to go toward the suite of proposed actions. Should we find that in 5 years the “long-term solution” is actually as costly as the total sum of a Ranney collector or other diversion wells, then we’ve sold ourselves short by committing to the wrong path up front.
Specific Comments

Comment # 1:
(Section 1.1) The text describes that “…actions evaluated in this document would occur on Federal property, would be fully or partially funded by Federal agencies…” and that “the project is funded by the California Bay-Delta Authority (CBDA).” It is unclear if “the project” is the preparation of the environmental document, the proposed action, or both. Please clarify. Additionally, please describe the amount and nature of public and private funds used for the project.

Comment # 2:
(Section 1.4) This section of the document uses the terms “study area” and “project area” interchangeably, ostensibly to describe the area of the proposed action. Please clarify the specific area examined for environmental effects (including cumulative effects) in relation the project footprint as outlined in Figure 1-3.

Comment #3:
(Section 2.2.1) The document states definitively that “The No-Action alternative would result in continued erosion of the right (west) bank, and growth of the in-channel gravel bar upstream of the diversion.” While perhaps based on modeling results and expert opinion, this statement is clearly speculative and inaccurate. For instance, channel migration monitoring this past water year illustrates that channel migration as a function of water year type is not entirely clear-cut: this past year was wet, yet bank retreat was minimal (see attached information from DWR, Northern District). A more accurate characterization of the no action alternative would be that natural channel processes would occur, with the exact outcome of channel migration and sediment dynamics unknown.

Comment #4:
(Section 2.2.1) Alternative A describes the “No-Action alternative” for the project. As is stated in the document the No-Action alternative was developed to “meet the requirements of NEPA and to serve as a baseline for assessing the impacts of proposed actions.” (our emphasis). Yet the document goes on to suggest that “The No Action Alternative includes the actions, practices, and land uses that would be assumed to occur at the project site without Federal funding authorized by the CALFED Program.” Alternate sources of funding would need to be acquired before M&T Chico Ranch/Llano Seco Rancho could implement the activities to maintain pumping capabilities without impacting salmonids in the Sacramento River or Big Chico Creek.” (our emphasis).

This language entirely confuses the nature of the evaluation of the proposed action and the no-action alternatives. Firstly, if, as is written in the document, similar activities to maintain pumping capabilities (albeit via alternative funding, as noted in the document) is to constitute “no action,” then it is quite unclear what analysis is actually being conducted if the No-Action alternative is essentially the same as the proposed actions.

2 It seems clear from our review of this document that the preparers did not include all up-to-date and reasonably available information regarding river conditions.
3 (sic). We note that a period is missing in the document, causing some confusion. We’ve added one here and assume that was the intent of the preparers.
Secondly, because Section 2.2.1, Paragraph 1, Sentences 3 & 4 (assuming the missing period is included) implies that No-Action would be comprised of “activities to maintain pumping capabilities,” we find noteworthy that section 2.2.1 goes on to only describe what would occur should no such activities take place. Because the No-Action “activities to maintain pumping capabilities” are not described, an adequate baseline has not been established and environmental analysis is deficient. This suggests that conducting analysis against this “no action” baseline is not consistent with the NEPA because it is at best a comparison against an unspecified, undefined “baseline” action that has yet to occur, and at worst actually constitutes a comparison of action alternatives (activity to maintain pumping capabilities, either Federally funded or funded via an alternate source).

Finally, if the only difference between No-Action (which would consist of activities to maintain pumping capabilities similar to proposed actions, but funded by “alternate sources”) and the proposed actions is the fact that the proposed action would utilize Federal funding via the CALFED Program, isn’t this less an analysis of alternatives than an evaluation of a Federally funded action versus some other, unspecified action?

It is our contention that language describing and discussing funding (or alternative funding) is entirely inappropriate, confusing, and misleading.

Comment #5:
(Section 2.2.1) The document states that “The time frame used to analyze all alternatives is 5-years (Steering Committee conference call, August 25, 2005).” It is entirely unclear why this statement is made within the description of the No-Action alternative. Furthermore, if analysis performed for this NEPA/CEQA analysis was done on a timeframe of 5 years, this entire environmental document is invalid as this does not meet the definition of “reasonably foreseeable” for determining cumulative effects, and other aspects of environmental analysis.

Comment #6
(Section 2.2.2) The statement that “As mitigation for loss of riparian bar and aquatic backwater habitat, M&T Chico Ranch/Llano Seco Rancho would restore degraded habitat at or near the affected area. Proposed restoration activities would include the removal of non-native vegetation and provide Shaded Riverine Aquatic (SRA) and/or riparian habitat” does not specifically state the timing of implementation, quantity or location of mitigation, nor a timetable for implementation. This is appears to be in violation of CEQA.

Comment #7:
(Section 2.2.2) Please provide modeling results to substantiate the claim that “The storage site would not significantly alter floodplain capacity.” Based on our experience, the placement of approximately 189,000 tons of sediment in a floodway can have an adverse effect on capacity and nearby infrastructure (ie bridges, levees, etc). Further, a Reclamation Board permit is required to place fill material in a floodway. The document appears deficient because it contains no information or analysis of the affects of the proposed action on the floodway from this fill placement.
Appendix H

Comment #8:
(Section 2.2.2, Figure 2-2) While the lack of scale is irrelevant, the diagram depicting “proposed ground” (shown as a dashed line in the section view of the figure) is inconsistent with the description of a 5-10 foot berm being left to isolate the river from the excavation area.

Comment #9:
(Section 2.2.3, and others) The information in Paragraph 2 should be revised to include bank retreat data from water year 2005—a wet year which breaks the trend of strong bank retreat in wet years (see DWR attachment referenced above).

All sections of the document (of note, details in Section 2.2.5) that describe and lay out generalizations regarding bank retreat must be revised, integrating the relevant information for years beyond 2003. Given the timing of the data collected by DWR, it is clear that this information exists, is relevant, readily available, and should be integrated into the NEPA/CEQA analysis.

Comment #10
(Figure 2-6) Figure 2-6 is an important figure in describing a key aspect of the proposed action. Unfortunately, the drawings do not include existing and proposed land surface lines. A dashed line is included that, based on the scale of the drawings, does not appear to match conditions on site. Further, while the figure notes that some fill will be undertaken in the conspicuous void behind the rock in section B-B’, it is unclear what the finished grade will look like, and if any contouring of the banks will be undertaken.

Comment #11
(Section 2.2.3) The document states that an advantage of the 1:10 slope is that “The outboard edges of the trees/brush will “drape” over the rock at an elevation that is less than 119 feet, thereby creating Shaded Riverine Aquatic [SRA] Habitat” (our emphasis). By definition, wood (and brush\(^4\)) that functions in-stream—as is proposed in the document—cannot fulfill the function of SRA as it is instead functioning as instream large woody debris. Because of this mischaracterization, the document is flawed in its analysis of mitigation measures because it evaluates the proposed action (with the falsely labeled benefits of SRA creation) against its effects on the environment, which include actions that eliminate the potential for SRA creation—e.g. bank revetment and the elimination of channel migration. Quite simply, the type of mitigation described does not fulfill the ecological function that is asserted in the document, and analysis is therefore deficient.

Comment #12

\(^4\) The document inconsistently states that trees, brush, and, alternatively, trees and brush, will be placed atop the rock. We do not see any information in the drawings to indicate that brush is to be used, and it certainly fails the diameter specifications for wood to be cabled in place. Therefore, it seems that if brush is a part of the proposal, it needs to be evaluated separately for its potential to be scoured from the site.
(Section 2.2.3) The document states that “…the trees/brush will be inundated for longer than 38 days at 42% exceedence flow. The entire structure will be inundated for 23 days at 25% exceedence flow.” Given the stated design specifications of the woody material of the revetment, it is clear that the woody material will not be placed in a saturated environment, instead being inundated from just a few days (no high flows in an extremely dry year) to perhaps as many as 40 to 50 days in an exceptionally wet year. This leaves the woody material subject to setting and drying the vast majority of the time. While saturated woody material can remain intact for hundreds of years, woody material that is subjected to wetting and drying (particularly the harsh Mediterranean climate of California summers) is likely to begin to weaken, decay and become susceptible to breakage and removal by higher flows. Maintenance of the revetment structure (particularly wood replacement or clearing) is not discussed in the document. This needs to be included for a complete analysis to be undertaken. Without descriptions of maintenance activities, environmental documentation is deficient.

Comment #13
(Section 2.2.4) The document states that:
“This alternative would be implemented if it is determined Alternative C is ineffective in maintaining bank stabilization….Permitting requirements and mitigation under this alternative would be increased compared to those required under Alternative C (H. Brown, NOAA, 2005 pers comm.). Alternative D would be the same as Alternative C except that an additional 500- linear feet of toe and bank protection would be installed upstream of the 700-foot section, bringing the total length of bank revetment under this alternative to 1,200-feet.”

First, while the document points out earlier that implementing Alternative D (should Alternative C prove ineffective) “would require a new decision document”, the wording in the section cited above indicates that Alternative D (and ostensibly Alternative E) would be the default action should Alternative C prove ineffective. This is inconsistent with conversation between the Trust and Paul Ward, Tracy McReynolds, Olen Zirkle, and Kevin Foerster on October 19, 2006 in Chico, CA. At that time, the Trust was told that additional steps beyond the proposed action were not yet decided. In fact, the above individuals maintained that because future actions were not yet determined, cumulative effects analysis could not include any discussion of future events because they were not yet decided. At the time of the meeting we’d not yet fully reviewed the document, but were subsequently quite surprised to read the above-referenced text. Clearly, as the cited text makes clear, at least one, or more, options are under consideration for future work at this site. Because of this, it is clear that the document is deficient for not including reasonably foreseeable future actions in its cumulative effects analysis.

Second, no substantiation is offered to support the claim that “Alternative D would be the same as Alternative C,” with the exception of the differing lengths of bank revetment. In actuality, there are likely to be substantial differences in channel migration, bank revetment, and loss of SRA and other habitat types. Because no threshold for what is and is not significant is established, the variations in alternatives are not addressed.
Comment # 14
(Section 2.2.5) The document states that “The length of the revetment was based on a review of banklines from 1996 to 2005. Since 1996, the average annual rate of retreat varies from 20 to 60 feet, with some years loosing 100-feet of bank.” While it is unclear if the reference is to calendar year or water year, it is clear that data from DWR (provided in the aforementioned DWR attachment) is not included in the analysis used to derive the gross generalizations in the text cited above. In actuality, bank erosion rates at the site, as averaged by year, are much lower than stated in the document. Furthermore, the correlation between wet years and large amounts of bank retreat, oft referenced in the document, is also proved false by inclusion of the latest relevant and available information. As is usually the case, reality is more complex than the document describes.

Comment #15
(Section 2.2.5) Given the design criteria stated in the text (21 foot footprint, etc.) and the assumption of launch of the entire windrow, the expectation stated in the text that “launched rock can be expected to extend 10 feet up from the toe of the bank” is an underestimate.

Comment #16
(Section 2.3) The document states that project actions on USFWS property “…would impact resources at a CALFED Project site that has already undergone NEPA/CEQA EA/EIR review known as the “Final EIR – Sacramento River- Chico Landing Sub-reach Habitat Restoration Planning”.” This provides another example where the document fails to undertake sufficient cumulative effects analysis. The site has undergone environmental analysis for another project, not this project. The fact that the previous project was undertaken by the same funder as is proposed for this potential action is entirely irrelevant; however, the document insinuates that this somehow alleviates the impetus for analysis of the actions of this proposed action. The document’s cumulative effects analysis also fails to analyze the effects of this project in conjunction with, or upon, other projects and actions in the area.

Comment #17
(Sections 2.4 and Appendix D) The “Project Commitments” listed in Section 2.4 are different from those in the section of the document labeled as Appendix D. Our comments on Project Commitments are based on those listed in Section 2.4; however, this inconsistency leads us to believe that a clear understanding and commitment of BMPs and mitigation measures is lacking on the part of the project proponents.

Comment #18
(Section 2.4) The document states that “M&T Chico Ranch/Llano Seco Rancho would apply for certification from the Central Valley Regional Water Quality Control Board (RWQCB) under section 401 of the Clean Water Act, and implement an Erosion Control Plan and Post Construction Stormwater Management Plan (PCSWMP).” It is unclear to us why M&T Chico Ranch/Llano Seco Rancho would make application for said certification. This is entirely inappropriate, as the project sponsors are the USFWS and the CDFG. These public agencies should apply for said certification, not M&T Chico Ranch/Llano Seco Rancho.
Comment #19
(Section 2.4) Apart from a series of what are essentially construction site BMPs, applicable to almost any project along a waterway, only the self-mitigating aspects of the woody material placed atop the revetment structure (which, as we mentioned in Comment # 11, is invalid) and the “development of] a plan to avoid, compensate and enhance natural vegetation, including riparian habitats and Instream Woody Material (IWM) prior to, during and post construction activities” are offered as mitigation to affected resources. As we mention in comments later in this review, analysis conducted in various resource areas is deficient in accurately analyzing the mitigating nature of the woody material atop the rock. Furthermore, “the plan” mentioned in the citation above is not provided. Therefore, because the “project commitments” offer no additional mitigating actions for the direct adverse affects the project has on potential channel migration, incision, and aggradation, critical habitat for bank swallow, and SRA, the analysis is incorrect as the project as proposed has actual unmitigated effects that remain to be addressed.

Comment #20
(Section 2.5) The document dismisses the alternative of a 1,200-feet long tree revetment placed along the toe of the bank. First, the analysis should have also considered the use of shorter sections of woody revetment as other projects, on rivers of similar size to the Sacramento (i.e. the Hoh River in Washington state\(^5\)), are using engineered log jams (far shorter than the 700-foot preferred rock alternative) to effectively control channel processes. We also question why this alternative was rejected from further consideration because of the “high potential to fail in rivers with high embankments and high flow rates (Harvey, 2005); and removal difficult\(^6\) and potential for tree material to escape from site is high (Harvey, 2005)” if “the tree material would be secured with cables tied into the embankment.” Given the parameters described in Section 2.2.5, we would disagree with the characterization of this area as having “high embankments.” Further, because the wood to be placed atop the revetment is to be attached with cables, we see an inconsistency in the logic of the documents analysis to find this alternatives wood structure to be inappropriate. Quite simply, if cabled wood in one alternative has a high potential to escape from the site, then other alternatives with cabled wood should be applied the same critique.

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5 The Hoh River Engineered Logjam Highway 101 Protection Project is the largest engineered logjam (ELJ) project in the Pacific Northwest, and possibly the world. It establishes a new level of engineering design standard for ELJ structures and advances the state of the art for these innovative structures that provide cost effective infrastructure protection and riverine ecosystem enhancement. The design life of the engineered logjam structures is expected to be a minimum of 50 years. They provide stable hard points that deflect river flow and provide a medium for growth of native vegetation on logjam islands in the channel emulating natural logjams in many pristine river reaches in the Pacific Northwest. This design represents a cost effective and sustainable means of infrastructure protection using native materials that will complement and enhance aquatic and riparian habitat. (see also [http://www.herrerainc.com/services/geomorphology.htm](http://www.herrerainc.com/services/geomorphology.htm) for more information).

6 Sic.
Comment # 21
(Section 3.2.2) The document states that “This project would not result in any changes in land use. Specifically, there would be no change to the adjacent land uses including recreation.” Clearly, a rock revetment structure (albeit topped with cabled woody material) located on USFWS property, and within a wildlife refuge, changes the character and potential for use of the land at that site. Therefore, the document is deficient because it fails to address changes in land use. Furthermore, the document uses conclusions drawn for land use to dismiss any effects on other resource areas, specifically recreation (as the above citation states) and socioeconomics and environmental justice. Failure to analyze socioeconomics and environmental justice on the faulty conclusion that there is no effect on land use, is an “if-then fallacy”. Specifically, there is no description to substantiate the false assumption that “if one thing, then another.” Other analysis also uses this false pretext to dismiss effects or bypass analysis altogether.

Comment #22
(Section 3) Several sections of analysis state that the mitigation for various alternatives would be “same mitigation for vegetation and wildlife as Alternative B; however the scope and scale of the re-vegetation and monitoring plan would be commensurate to the effects associated with this alternative.” Because the various alternatives are significantly different (ranging from differences in length of rock revetment, to type of revetment placement an disposition on the landscape), this sort of deferred analysis is clearly in violation of CEQA and NEPA. Specific actions must be described and any differences evaluated.

Comment #23
(Section 3.4.3) The effects analysis for protected species includes the following impact mechanisms for the project: 1) Placement of revetment materials and associated access improvements; 2) Dredging; and 3) Spoils deposition and associated access improvements. While at first glance such a list appears comprehensive, missing from the analysis is the most crucial aspect of the document: accurately describing the actual affects (short term and long-term) that accompany each of these impact mechanisms. For example, while the document examines the “loss of habitat” as a subsection for each species or group of species, it limits its scope to the direct loss at the site of rock and woody material placement. The analysis fails to examine more-complex “cause and effect” type issues such as the affect of the revetment on water velocities within the channel (which could affect green surgeon mobility), the affect of revetment on spawning gravel recruitment from the bed and banks, etc. In short, the analysis puts on blinders and charges ahead. The analysis of dredging focuses solely on the direct potential affects on the fish (e.g. water quality form the generation of turbidity, etc) and fully ignores the removal of almost 200,000 tons of sediment from the river. The disruption of sediment transport continuity in the river is totally ignored in this document. While comprehensive in the list of species covered, the analysis falls short on examining the true scope, depth, and complexity of impacts to special status species.

Comment # 24
(Section 3.5.2.2) While actually the creation of void space (rather than placement of a structure) the analysis of dredging neglects to analyze the potential to impede or redirect flood flows within the 100-year floodplain. Further, this highlights the fact that the significance criteria in this section are inadequate.
Comment # 25
(Section 3.5.2.3) This section entirely negates an analysis of the significance criteria to analyze effects on the “Placement of structures that would impede or redirect flood flows within a 100-year floodplain.” In fact, this section fails to analyze all of the alternatives relative to affects that meet this significance requirement. Clearly a channel manipulation project involving revetment and major removal of sediment should describe the results of analysis on the impediment or redirection of flood flows. This should be done even if the results of the analysis find there are no adverse effects: the analysis needs to be presented to substantiate whether or not there is an affect, adverse or otherwise.

Comment # 26
(Section 3.7.1) Missing from the description of the affected environment is the fact that, coupled with Shasta Dam, private and Federal revetment and levee projects have altered sediment transport capacity upstream and downstream of the project site. Additionally, this section fails to describe how, at the very location of the project, overland flood flows from the Bosqueo Basin—coming from out-of-bank floodwaters of the Sacramento River, Pine Creek, Kusal Slough, Mud Creek, etc.—re-enter the Sacramento River at roughly the confluence of Big Chico Creek. The Nature Conservancy has undertaken hydraulic modeling of this reach, and at least one formal publication (TNC. 2001. Restoration Opportunities at Tributary Confluences: Critical Habitat Assessment of the Big Chico Creek-Mud Creek-Sacramento River Confluence Area. http://www.watershedportal.org/viewDoc_html?did=64) has highlighted the hydraulic and ecologic significance of this location.

Comment # 27
(Section 3.7.2) Again, the Significance Criteria used in the document to conduct analysis is sorely remiss for not including obvious and potentially significant effects on things such as channel migration, bank erosion, sediment transport capacity, channel incision, or aggradation. Clearly, any project aiming to control a river’s thalweg and velocity should examine the very aspects of the alteration that is proposed.

For instance, a major aspect of the affects of the project has been ignored—that of vertical changes in the river channel profile in response to proposed actions. The meander model (Larsen) used by the expert panel is focused solely on bank erosion and channel migration rates and does not explicitly examine changes to the river bed in response to a constriction such as a groin field or revetted bank. Both the meander model (Larsen) and the 2-D model (Musseter) do not take into account vertical bed movement (aggradation or degradation) because of river constriction (groins or revetment) or sediment removal (dredging). Further, neither model accounts for well-known concepts proposed for describing how a river will evolve in response to perturbations such as constriction or channelization (i.e. as described in Simon and Rinaldi, 20067). Quite clearly, sediment dynamics will be altered by the project: excavation of the gravel bar and protection of banks by revetment both serve to decrease sediment available to the river at that location.

Finally, the 2-D modeling conducted by Musseter and Harvey (page 18 of Workshop 4 summary) clearly shows that the project would transfer energy off the right bank and onto the bed. That is in fact the purpose of the project. The full effects of this—in terms of river form and function upstream and downstream of the project area, are not fully described or analyzed. Indeed, the Workshop 4 summary notes that “Details of the channel adjustment due to the presence of the dikes will need to be quantified with a mobile-boundary physical model,” clearly indicating that channel adjustment is anticipated. To our knowledge, a mobile-boundary model has not been assembled and run to address the proposals evaluated in the document.

Comment #28
(Section 4) The cumulative effects section of this document is deficient for several reasons. First, because, as has been demonstrated earlier in our review (see Comment #13), the document clearly indicates that should one alternative not be successful, another alternative would be implemented. This clearly indicates that other future actions are both being considered, but have also undergone planning—which means there is sufficient information at hand to analyze this reasonably foreseeable future action(s).

Second, while Section 4.1.1 does an adequate job of listing local projects in the area, the subsequent analysis omits examination of both the effects on these projects, but also the effects of the two (or more) individual projects which, when considered together are considerable. In short, it is not enough to list the Sacramento River Bank Protection Project (SRBPP) as a project in the area—the analysis needs to assess how this bank revetment project works in conjunction with the (SRBPP) to adversely affect aquatic habitat. In fact, the document mentions the SRBPP, but then never again references it or provides a cumulative effects analysis of the project relative to it.

Third, the scope of the cumulative effects analysis—spatially, temporally, and in terms of the types of effects—is far too narrow to meet the letter and intent of the NEPA and CEQA. To again use the example of the SRBPP, the project is functionally equivalent to the practices of the SRBPP, and therefore the cumulative effect of the proposed action must be evaluated cumulatively for all resource areas.

Finally, as we have discussed in our general comments, because this project is being proposed in a piecemeal fashion, it negates a truly complete cumulative effects analysis.
September 5, 2007

Ms. Tracy McReynolds                                 Mr. Kevin Foerster
Associate Fishery Biologist                         Refuge Manager
California Department of Fish & Game, Region 2     Sacramento National Wildlife Refuge
2545 Zanella Way, Suite F                            752 County Road 99 West
Chico, CA 95928                                      Willows, CA 95988

Re: Proposed Mitigated Negative Declaration for M&T Chico Ranch/Llano Seco Rancho Pumping Plant Maintenance of Channel Alignment Sacramento River Mile 192.5.

Dear Ms. McReynolds and Mr. Foerster:

Mr. John Merz, President of the Sacramento River Preservation Trust, has contacted me to request my review of the mitigated negative declaration and supporting documents that are presently being circulated for public review and comment. I have reviewed the draft mitigated negative declaration and its accompanying initial study. In my opinion, these documents do not meet CEQA’s requirements for at least the following reasons:

**THE MITIGATED NEGATIVE DECLARATION INAPPROPRIATELY CITES THE ANTICIPATED ADVERSE ENVIRONMENTAL EFFECTS OF NOT APPROVING THE PROJECT TO JUSTIFY ITS FINDING THAT APPROVING THE PROJECT WILL NOT RESULT IN SIGNIFICANT, ADVERSE ENVIRONMENTAL EFFECTS.**

The draft mitigated negative declaration states that the project will not have a significant effect on the environment because a failure to implement the project might result in impairment of the existing M&T pumping facility, including impacts associated with reduced efficiency of the existing fish screens, and impacts associated with M&T potentially resuming its diversion of 40cfs from Butte Creek.

The reasoning in the mitigated negative declaration is flawed. The question that CEQA asks is whether implementing a proposed project (regardless of the salutary purposes it is intended to serve) may have significant, adverse effects on the existing environment.

In this case, the question at issue is whether armorring a 1,520 foot length of the west bank of the Sacramento River with 9,120 tons of rock, and dredging gravel from the east side of the River for the purposes of preventing the river from naturally meandering, may have significant, adverse effects on the environment. The consequences of not implementing the project do not address impacts to the environment that may occur from implementing the proposed project, and therefore, do not constitute substantial evidence that implementation of the project will not have significant, adverse effects on the environment.
THE ANALYSIS AND PROPOSED MITIGATION MEASURES IN THE MITIGATED NEGATIVE DECLARATION AND SUPPORTING DOCUMENTS DO NOT MEET CEQA’S REQUIREMENTS.

The mitigated negative declaration’s other ground for declaring that the project will not have significant, adverse environmental effects, is that a long list of mitigation measures were identified in the Initial Study and will be incorporated into the project. Unfortunately, on closer examination, several of the proposed “mitigation measures” do not meet CEQA’s procedural or substantive requirements, or will not otherwise clearly mitigate the project’s impacts to less than significant levels. These defects lead to a range of CEQA violations, including 1) failure to accurately describe the “whole” of the project (especially related to impacts and activities at undisclosed off-site mitigation areas), 2) failure to describe the affected environment (again, especially with regard to undisclosed off-site areas that will be required for mitigation activities), 3) piecemealing of environmental review, and 4) deferral of the formulation and adoption of mitigation.

By way of example, this letter presents a few critical defects in the mitigated negative declaration and initial study regarding 1) deferral of the development and adoption of a mitigation monitoring plan, 2) failure to properly describe, analyze or mitigate impacts to bank swallow habitat; 3) failure to properly analyze the loss of existing, meandering river conditions and impacts to downstream geomorphology, and 4) piecemealing of this revetment project from other interconnected flood control and channel alignment activities that are anticipated for the Sacramento River. Similar defects appear to be present for a range of other project impacts.

1. UNLAWFUL DEFERRAL OF DEVELOPMENT AND ADOPTION OF MITIGATION MONITORING PLAN UNTIL AFTER PROJECT APPROVAL.

The mitigated negative declaration’s most obvious defect is its conclusion that the project will not have significant adverse effects, because “[a] detailed mitigation monitoring plan describing habitat protection activities and setting forth specific reporting activities aimed at determining the level of success of mitigation measures will be developed.”

CEQA’s procedures mandate that the required mitigation monitoring plan be developed and adopted prior to, not after, project approval. As a matter of law, a project that requires the incorporation of mitigation measures to reduce or avoid the project’s potentially significant, adverse effects (as this one admittedly does) cannot be approved based on a non-existent mitigation monitoring plan. The mitigated negative declaration’s conclusion that project impacts have been mitigated through the implementation of an as-yet undeveloped mitigation monitoring plan is not supported by substantial evidence.
2. **UNLAWFUL DEFERRAL OF ANALYSIS AND MITIGATION OF IMPACTS TO BANK SWALLOWS AND THEIR HABITAT.**

The Initial Study for the project notes that the proposed project will destroy nesting habitat for bank swallows, which are listed as threatened under the California Endangered Species Act:

A bank swallow colony of approximately 110 nesting pairs was reported using the eroded bank at the proposed revetment location during 2005 by USFWS biologists (Figure 3-2) (Kevin Foerster, pers.comm. September 23, 2005). Nesting individuals were not observed during 2006. However, on May 1, 2007 3 nesting colonies were identified on the site. Additionally results of the Annual Bank Swallow Survey indicate that from 1999 through 2005 estimates ranging from 50 (during 2002) to 340 (during 2001) nesting pairs were observed on the west bank of the Proposed Action Area.²

The mitigated negative declaration states that mitigation for impacts to bank swallow habitat “will be based on assessment of the quality of habitat being lost (including its potential to support nesting bank swallows over time) and the quality of the proposed mitigation site or sites.” According to the Initial Study:

The Project Proponents shall prepare a detailed Mitigation Plan, to be approved by the CDFG. Such plan shall include, at a minimum, the following:

- The specific location of the mitigation site or sites;
- A description of the existing habitat values at the site(s) and of the values that will be protected and/or restored;
- A detailed description of the proposed conservation/restoration activities to be carried out on the site(s);
- A detailed description of ongoing management activities to be carried out to ensure that bank swallow habitat is maintained over time.

This proposed “mitigation measure” violates CEQA on numerous grounds. First, the identification of potential sites where mitigation might occur is not included in the initial study, but instead has been unlawfully deferred until after project approval. For this reason, both the description of the “project” and the description of the affected “environment” are informationally inadequate. The unidentified off-site mitigation activities constitute an integral part of the project itself, and thus must be included as part of the project description. The Initial Study is also inadequate, because the activities involved in restoring off site habitat (e.g., grading, removal of rock, and other activities that change the landscape) themselves may have short-term construction, and long-term impacts on unique resources at the unidentified, off-site mitigation

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² Initial Study, at p. 3-107.
areas. The failure to describe or mitigate such impacts constitutes a piecemealing of environmental review, and deferral of mitigation.

The mitigation measure for loss of bank swallow habitat is also inadequate, because it fails to describe the “ongoing management activities” that will actually be implemented at the off site locations “to ensure that bank swallow habitat is maintained over time.” Accordingly, there is no substantial evidence that supports the Initial Study and the mitigated negative declaration’s conclusions that impacts to bank swallows and their habitat has actually been mitigated.

In sum, it is far from clear that the project’s destruction of bank swallow habitat has, in fact, been mitigated where the Initial Study 1) fails to describe any actual off-site mitigation location; 2) fails to describe the existing habitat values at the undisclosed off site locations; 3) fails to describe the conservation/restoration activities that will have to be carried out at the undisclosed off-site locations, or any impacts that might result from those activities; and 4) fails to describe the management activities that will be carried out to supposedly ensure that the off-site mitigation locations will actually support bank swallow populations over time.

3. FAILURE TO DISCUSS DOWNSTREAM IMPACTS AND LOSS OF MEANDERING RIVER CHANNEL.

The Initial Study for the project is also inadequate because it fails to actually disclose the impacts of preventing the Sacramento River from naturally meandering at this location, and instead locking the channel into place with a revetment. In general, the mitigated negative declaration breaks the project up into a series of small, disconnected impacts and mitigation measures (e.g., loss of bank swallow habitat, loss of trees, loss of valley elderberry bushes). But the mitigated negative declaration and its initial study never meaningfully tackle the overall and most significant impact of the project: straightjacketing yet another stretch of the Sacramento River.

The Initial Study notes that the Sacramento River’s natural tendency at this location is to be farther to the west, and that the sinuosity of the river, if left alone, would naturally increase over time. Thus the existing environment consists of a dynamic hydrogeomorphological system, which, itself, is becoming increasingly rare over time as flood control and other projects (such as this one) straightjacket the State’s rivers.

In addition, the Initial Study states that this project is needed because a past, upstream revetment project has led to the bank erosion near the M&T pumping facility. Since the placement of a revetment upstream from the proposed project has resulted in bank erosion at the project site, it can be reasonably inferred that, once this project is completed, these erosional forces will simply be transported to the next vulnerable downstream segment of the River. Yet, the Initial Study does not disclose or discuss the likely downstream location where future erosion might migrate, after this proposed project is completed. The EIR’s entire discussion on this point reads as follows:

The potential for future bank erosion and resultant lateral migration of the river at the M&T site also is related to the history of emplacement of riprap in the reach between Hamilton City and the M&T pumping facility. The right descending
bank between about RM 198 and RM 197 was revetted by the USACE under the Chico Landing to Red Bluff project in 1975. The downstream end of the revetment was flanked in the 1983 flood, and the river achieved its current configuration at the mouth of Pine Creek. This location of the river further ensures that the revetment installed on the left descending bank at about RM 194 in 1973 to protect River Road will be required in the foreseeable future. Erosion of the right bank immediately upstream of the pumps is due to flow deflection off the upstream revetment. With the revetment in place, bank erosion will continue to occur opposite the pumps unless the bank itself is revetted. The left descending bank from the mouth of Big Chico Creek is revetted for a distance of about 2,800 ft, the revetment protecting the Phelan levee and the present location of the M&T pumping facility.⁵

On this point, it would also appear that the Initial Study is inadequate because it treats the gravel dredging operation on the east side of the river as if it were a one time activity. However, once the western bank of the river is locked into place with the proposed revetment, it is foreseeable that gravel deposition will continue to occur in the dredged channel, and will have to be periodically removed to keep the channel maintained. The Initial Study fails to discuss or mitigate this ongoing, operational impact of implementing the project.

4. IMPROPER PIECEMEALING OF LARGER FLOOD CONTROL AND CHANNEL ALIGNMENT ACTIVITIES ANTICIPATED FOR THE SACRAMENTO RIVER.

In speaking with Mr. Merz and reviewing materials from a series of public workshops that were held in 2005 and 2006 regarding this project and several related activities, I have also been left with the impression that this revetment project is not, actually, a “stand alone” project or activity but rather is, itself, just one part of a larger, coordinated set of flood control and channel alignment activities being planned for this area of the Sacramento River. To the extent that my understanding is correct, it would appear that the mitigated negative declaration and Initial Study also violate CEQA because either 1) this “project” is actually just one smaller part of a larger, overall “project” that is being unlawfully piecemealed; or 2) if these other activities do qualify as separate CEQA and/or NEPA projects, then these activities are not adequately accounted for in terms of considering and mitigating the cumulative effects that might result from the proposed M&T project combined with such other activities.

CONCLUSION

At the request of the Sacramento River Preservation Trust, I have reviewed the Initial Study and proposed mitigated negative declaration for the proposed M&T Pumping Plant Channel Alignment project.

Continued operation of the M&T pumps may, in fact, serve a significant number of environmentally beneficial purposes. However, such benefits of implementing the project do no
Ms. Tracy McReynolds & Mr. Kevin Foerster – re: M&T-Channel Maintenance Project  
Sept. 5, 2007  
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excuse CDFG or any other agency from fully and fairly analyzing, disclosing and mitigating the adverse environmental effects of straight jacketing yet another segment of the Sacramento River.

For the reasons stated in this letter, the environmental documents that have been prepared and circulated for the project do not meet CEQA’s requirements, and must be revised and recirculated before any decision is made on whether to approve the proposed project.

Sincerely,

[Signature]

Keith Wagner

cc: John Merz, President, Sacramento River Preservation Trust
September 7, 2007

Ms. Tracy McReynolds  
California Department of Fish and Game  
2545 Zanella Way, Suite F  
Chico, CA 95928

Mr. Kevin Foerster  
Sacramento National Wildlife Refuge Complex  
752 County Road 99W  
Willows, CA 95988

Subject: Draft Environmental Assessment/Initial Study-Mitigated Negative Declaration for the M&T Chico Ranch/Llano Seco Rancho Pumping Plant Maintenance of Channel Alignment Sacramento River Mile 192.5

Dear Ms. McReynolds and Mr. Foerster,

Please find our comments to the draft Environmental Assessment/Initial Study-Mitigated Negative Declaration for the M&T Chico Ranch/Llano Seco Rancho Pumping Plant Maintenance of Channel Alignment Sacramento River Mile 192.5 below.

We question both the scope and project lifespan as described in the draft Environmental Assessment/Initial Study. We also believe that the project will have clearly significant impacts to bank swallows, a State Threatened species, that have not been definitively mitigated and that a Mitigated Negative Declaration or a Finding of No Significant Impact is not supported by the draft Environmental Assessment/Initial Study. As proposed, the project does not mitigate the potentially significant impacts and it requires an Environmental Impact Statement and an Environmental Impact Report.

Our specific comments are as follows:

Project Term Inconsistency

References to the scope and lifespan of the project are contradictory. The purpose and need statement in the draft EA states:

“The M&T Chico Ranch and Llano Seco Rancho proposes to implement measures to maintain viability of the M&T Chico Ranch/Llano Seco Rancho pumping facility to pump and deliver water to agricultural lands, USFWS Refuge and easement lands, and CDFG Wildlife Areas, while meeting all current fish screen criteria and obligations over a 5 year period.” (italics added)

The document later states:

“The Proposed Action/Project was one of the alternatives identified by the Steering Committee as a temporary solution to the bank erosion and gravel deposition occurring in the Action/Project Area until a permanent solution can be identified and implemented. The lifespan of the temporary solution (i.e., the Proposed Action/Project) was intended to be five years (See sections 1.4, and 2.1, above). However, subsequent discussions among the Action/Project Proponents and the resource agencies indicated that the Proposed Action/Project may be included as part of the permanent, long-term solution. Because the Proposed
Action/Project may be a temporary solution to the bank erosion and gravel deposition occurring in the Action/Project Area, the rock toe and brush revetment could be removed in the future.” (italics added)

The draft analyses and mitigation actions repeatedly refer to a 5 year project lifespan. For the existing analyses to be relevant, the document should clearly state that rock revetment will be removed and dredging activities will cease at the end of this stand-alone project’s 5 year lifespan. Additionally, there should be some reasonable demonstration that there is a plan and funding for such removal. Environmental analyses of rock removal, as well as the associated costs of those activities, should also be included as part of this stand-alone, 5 year project for public review.

If the lifespan of the project is not, in fact, 5 years, then existing analyses are not adequate and impacts must be re-analyzed for a longer time period.

**Bank Swallow Impacts**

There are clearly significant impacts to bank swallows, a State Threatened species under consideration for Endangered status, that have not been adequately addressed. The draft Environmental Assessment/Initial Study document states:

“...it is unlikely that direct impacts on individuals or noise-related impacts would occur because construction of the Proposed Action/Project would occur during October, outside the reported Bank Swallow migration and nesting periods (mid-March through mid-September).”

Required analyses beyond the construction period are absent. Construction activities would destroy the location and habitat of an actively nesting colony of bank swallows. Other such projects along the Sacramento River are negatively and significantly impacting bank swallow populations. For example, the first attached figure shows accumulated bank protection over time on the Sacramento River. The second attached figure, titled 7-12 from a recent analysis, shows an example reach of the Sacramento River containing bank armoring. The figure shows that bank protection disproportionately affects bank swallow habitat and is typically installed on cutbanks that provide prime habitat. The third attached figure, titled figure 7-8 from a recent analysis, displays a strong relationship between the rate of over channel migration and the average number of bank swallow colonies. The figure shows that reductions in the rate of channel migration, resulting from additional bank protection measures, will result in a decrease in the number of colonies. The fourth attached figure, titled Figure 7-15 from a recent analysis, depicts both decreases in the number of breeding pairs as well as decreases in nesting colonies from 1986 to 2005.

The evidence presented by these data suggests that the proposed project will have a significant impact on bank swallows. The document should also include an analysis of this proposed project's impacts within the context of cumulative impacts from existing bank revetment on the Sacramento River's meandering reach.

In addition, no site specific or project specific mitigation actions are proposed for impacts to bank swallows. The draft Environmental Assessment/Initial Study document contains only a description of a future planning process that will develop appropriate mitigation actions, not the actions themselves as required under CEQA. A mitigation action suggested as a possible outcome of this vague future planning process is the “acquisition of fee title or a conservation easement on riverfront property.” Acquisition of property containing an active colony, or potential colony, combined with the destruction of the subject nesting site will still result in a net loss to bank swallow populations. We do not believe that this is demonstrated, adequate mitigation. As recent actions at River Mile 182 have shown, placing property under conservation ownership is no guarantee of protection for bank swallow habitat.

Mitigation to a level of insignificance for the proposed project would be removal of bank protection and the resultant creation of appropriate habitat elsewhere where this removal allows for long-term meander at least comparable to the subject site. The draft Environmental Assessment/Initial Study
meander at least comparable to the subject site. The draft Environmental Assessment/Initial Study states that these mitigation actions “may” be the outcome of this future planning process and be included as mitigation measures. We do not believe that this vague allusion to an unresolved future action can credibly be considered to be a mitigation measure for the Proposed Action/Project that mitigates the significant impact to the point of insignificance.

Gravel Removal

In addition, the document states that dredged gravel will be used only for future restoration projects. The combined amount of previously dredged, and still unmitigated, gravel and newly proposed dredged gravel is approximately 285,000 tons. Recent analyses show that gravel limitations are likely impacting salmonid populations on the Sacramento River. Therefore, it is critical that resource agencies ensure that this gravel resource is in fact only used for restoration projects, it does not go to any other use, and is recycled back into the Sacramento River channel. The Environmental Assessment/Initial Study should clearly explain the plan for recycling the gravel back to the River.

Hydraulic Impact Analysis

Hydraulic impact analysis has become standard practice in order to disclose the affects of a proposed project on flow velocities and levels. This analysis is absent from the document. The placement of revetment along the river results in disruption to the natural flow patterns and commonly results in the creation of eddies that act to unnaturally accelerate or otherwise modify erosion effects on downstream property. Potential effects on downstream properties should be determined through hydraulic analyses. In addition, the placement of substantial material within the channel, dredging elsewhere, and placement of spoil piles within the floodplain will alter channel conveyance patterns. Potential affects of these actions should be identified through hydraulic analysis.

Public Review and Input

The document also states that the mitigation action as well as funding for these actions will be identified prior to the construction date of October 1, 2007. We believe that this information should be shared with the public as part of the draft Environmental Assessment/Initial Study so that public input can be received in accordance with the objectives of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). Without this information, there can be no reasonable and adequate public input.

We are disappointed that many of the issues raised in comments to the previous, draft Environmental Assessment/Initial Study in 2006 were not addressed in this current document. The proposed revetment is undoubtedly a project with unmitigated significant impacts that has attracted a great deal of public interest and attention. We expect that any approval of environmental assessments under NEPA and CEQA will be postponed until a full and adequate assessment is provided for public response.

Thank you for the opportunity to comment on this document.

Sincerely,

Gregg Werner, Project Director
The Nature Conservancy
Figure #1

Data provided by Adam Henderson, California Department of Water Resources, Northern District Office, Red Bluff, CA.

Photo provided by R. Scholl & B. Garrison, California Department of Fish and Game, Sacramento, CA.
Figure 7-12. Map of riprap extent along the Sacramento River from the confluence of Mill Creek downstream to Woodson Bridge (RM 229-218) (adapted from unpublished map from Julie Cunningham, California Department of Water Resources, Red Bluff). Source: Figure 2.2-2 from Kondolf et al. 2000. Note that riprap is typically placed in locations most likely to provide bank swallow habitat (i.e., actively eroding meander bends), resulting in a disproportionately higher loss of swallow habitat (e.g., riprap on 50% of bank length is likely to remove substantially more than 50% of suitable bank swallow nesting habitat).
Figure 7.8. Average number of bank swallow colonies (left plot) and bank swallow burrows (right plot) per km of 1997 centerline channel length plotted against average meander migration rates for the Sacramento River. The densities of colonies and burrows both increase with increasing meander migration rates. Banks swallow data are averaged by reach for 15 active and stable reaches (as defined by Constantine et al. *in press*) using data from the 1998-2004 colony surveys (Schlorff, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004). Meander migration rates are averaged over the post-dam interval (1946-1997) for each of the 15 reaches (Constantine et al. *in press*).
Ms. Sandra Dunn
Sonach, Simmons and Dunn
813 Sixth Street, Third Floor
Sacramento, CA 95814-2403

Subject: M&T Chico Ranch, Llano Seco Ranch, City of Chico, Butte County

Dear Ms. Dunn:

This responds to your August 13, 2007 letter regarding the proposed modification to the proposed stone toe revetment within the banks of the Sacramento River at River Mile 192.5R, Butte County. The project is associated with the M&T Chico Ranch and the Llano Seco Rancho pumping facility and is being implemented in order to maintain the integrity of the pumping facility which provides fresh water for wetlands owned and managed by the U.S. Fish and Wildlife Service and the Department of Fish and Game.

As staff understands, the project has been modified and now involves the placement of 1,520 feet of rock revetment on the west side of the Sacramento River. A gravel bar would also be excavated and be relocated to an existing spoil area within the floodplain of the River.

The State of California acquired sovereign ownership of all tidelands and submerged lands and beds of navigable waterways upon its admission to the United States in 1850. The State holds these lands for the benefit of all people of the State for statewide Public Trust purposes, which include waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation and open space. The boundaries of these State-owned lands generally are based upon the last naturally occurring location of the ordinary high or low water marks prior to artificial influences that may have altered or modified the river or shoreline characteristics. On navigable non-tidal waterways, the State holds fee ownership of the bed landward to the ordinary low water mark and a Public Trust easement landward to the ordinary high water mark, as they last naturally existed. Such boundaries may not be readily apparent from present day site inspections. The State's sovereign interests are under the jurisdiction of the California State Lands Commission (Commission).

The bed of the Sacramento River is State-owned sovereign land and at the subject location, would extend landward to the ordinary low water mark as it last naturally existed. At this time, we do not have sufficient information to determine
Ms. Sandra Dunn
September 7, 2007
Page 2

whether the proposed project will extend below the ordinary low water mark, therefore, no Commission authorization will be required at this time.

Even if it were determined that the project extended below the ordinary low water mark, pursuant to Section 6327 of the Public Resources Code, if a facility is for the procurement of fresh water from and construction of drainage facilities into navigable rivers, streams, lakes, and bays, and if a permit is obtained from the local reclamation district, State Reclamation Board, the U.S. Army Corps of Engineers, or the Department of Water Resources, then a lease from the Commission is not required.

This conclusion is without prejudice to any future assertion of State ownership or public rights, should circumstances change, or should additional information come to our attention. This letter is not intended, nor should it be construed as, a waiver or limitation of any right, title, or interest of the State of California in any lands under its jurisdiction.

If you have any questions regarding the above, please contact Barbara Dugal, Chief, Land Management Division at (916) 574-1940.

Sincerely,

[Signature]

PAUL D. THAYER
Executive Officer

cc: Barbara Dugal
RESPONSES TO COMMENTS ON THE DRAFT EA/IS

Changes to the text of the Draft EA/IS that are made in response to comments are shown with a line through the text that has been deleted (strikeout) or italics where new text has been added.

Responses to Comments received from the California Department of Parks and Recreation

Response to Comment 1: The following discussion was added to Paragraph 2 on Page 2-5:
   The entire excavation will occur within the Sacramento River channel. Specifically, the eastern boundary of the proposed excavation will overlap with the eastern boundary of the excavation conducted during 2001 (CDFG and City of Chico 2001), which is at or below the ordinary low water elevation of the Sacramento River as defined by the area below permanently growing riparian vegetation. The ordinary low water elevation is the extent of lands administered by the Bidwell-Sacramento River State Park.

Response to Comment 2: The “Dredging Area” label on Figure 2-8 was moved to indicate that dredging would occur only below the ordinary low water elevation of the Sacramento River outside of the boundary of the Bidwell-Sacramento River State Park.

Response to Comment 3: A thin strip of riparian vegetation was added to Figure 3-1.

The text in Paragraph 1 on Page 3-119 was changed to read:
   Figure 3-3 illustrates the 33.6 acres of Valley/Foothill riparian habitat that have been identified within the Action/Project Area. The dredging/material removal activities involve the removal of a portion of the gravel bar, which is also a part of the Sacramento River and Big Chico Creek banks. To the extent possible riparian vegetation will be avoided during gravel bar access and excavation. However, this action would involve the limited removal of vegetation on the bank of Big Chico Creek. Additionally, some early successional riparian vegetation (i.e., young willows) on the gravel bar will be removed during bar excavation. No mature riparian vegetation will be removed as a result of implementing this alternative.

The following paragraph was added following Paragraph 1 (above) on Page 3-119:
   CDFG, State Parks, and the contractor for the gravel bar removal have had discussions regarding the location and quantity of riparian vegetation that will be impacted during the project. Prior to gravel bar excavation, the contractor, and CDFG and State Parks representatives will visit the site to identify an access and regress route that will be located and clearly marked to minimize damage to the riparian species. At the identified crossing site, if impacts to established vegetation (2-3 years+) is unavoidable restoration will involve removing and setting aside the impacted plants and surrounding soil for replanting at the site(s) of their removal upon completion of the gravel operation. For unavoidable loss of riparian saplings, mitigation will occur at the site of impact. Riparian habitat will be restored by the M&T Chico Ranch. Riparian habitat
restoration activities are described in detail in Appendix F, Riparian Vegetation and Native Grassland Mitigation Plan.

Paragraph 1 on Page 3-143 under the 6th level heading “Valley/Foothill Riparian Habitat” was changed to read.

The dredging/material removal activities involve the removal of a portion of the gravel bar, which is also a part of the Sacramento River and Big Chico Creek banks. To the extent possible riparian vegetation will be avoided during gravel bar access and excavation. However, this action would involve the limited removal of vegetation on the bank of Big Chico Creek. Additionally, some early successional riparian vegetation (i.e., young willows) on the gravel bar will be removed during bar excavation.

The following paragraph was added following Paragraph 1 on Page 3-143:

CDFG, State Parks, and the contractor for the gravel bar removal have had discussions regarding the location and quantity of riparian vegetation that will be impacted during the project. Prior to gravel bar excavation, the contractor, and CDFG and State Parks representatives will visit the site to identify an access and regress route that will be located and clearly marked to minimize damage to the riparian species. At the identified crossing site, if impacts to established vegetation (2-3 years+) is unavoidable restoration will involve removing and setting aside the impacted plants and surrounding soil for replanting at the site(s) of their removal upon completion of the gravel operation. For unavoidable loss of riparian saplings, mitigation will occur at the site of impact. Riparian habitat will be restored by the M&T Chico Ranch.

The following text was added to Appendix F, “Riparian Vegetation and Native Grassland Mitigation Plan” at the end of Paragraph 2 on Page F-2:

Riparian vegetation also occurs adjacent to access routes used to access the dredging site, and adjacent to the dredging site. Vegetation that could be impacted by dredging activities is limited to relatively young (2 to 3 year-old) cottonwood and willow saplings at the stream crossing on Big Chico Creek and adjacent to the dredging site on the bank of the Sacramento River.

The following section was added to Appendix F, “Riparian Vegetation and Native Grassland Mitigation Plan” on Page F-1 and F-2:

Project Effects - Dredging

The dredging/material removal activities involve the removal of a portion of the gravel bar, which is also a part of the Sacramento River and Big Chico Creek banks. To the extent possible riparian vegetation will be avoided during gravel bar access and excavation. However, this action would involve the limited removal of vegetation on the bank of Big Chico Creek. Additionally, some early successional riparian vegetation (i.e., young willows) on the gravel bar will be removed during bar excavation.

CDFG, State Parks, and the contractor for the gravel bar removal have had discussions regarding the location and quantity of riparian vegetation that will be impacted during the project. Prior to gravel bar excavation, the contractor, and CDFG and State Parks representatives will visit the site to identify an access and regress route that will be
located and clearly marked to minimize damage to the riparian species. At the identified crossing site, if impacts to established vegetation (2-3 years+) is unavoidable restoration will involve removing and setting aside the impacted plants and surrounding soil for replanting at the site(s) of their removal upon completion of the gravel operation. For unavoidable loss of riparian saplings, replacement at a ratio of 1:5 (i.e., 5 similarly sized saplings replanted for each sapling removed) will occur at the site of impact immediately following completion of dredging activities.

The following paragraph was added to Appendix F, “Riparian Vegetation and Native Grassland Mitigation Plan” following the 4th level heading “Restoration in the Proposed Action Area” on Page F-4:

*Cottonwood and willow saplings removed from the bank of Big Chico Creek as a result of stream crossing or along the bank of the Sacramento River as a result of dredging activities will be replanted in the area of removal immediately following the cessation of construction activities. If re-planting removed individual saplings is infeasible (i.e., plants were destroyed or rendered unviable during removal), then similarly sized individuals will be planted.*

**Response to Comment 4:** The GIS layers and associated acreages were not amended. However, the impacted area associated with dredging is described correctly in Section 2.2.2 – “Dredging Only Alternative.” Specifically, in response to Comment 1, above, text was added to Page 2-5 to more thoroughly define the area that will be dredged. Additionally, in response to Comment 3, above, detail was provided on pages 3-119 and 3-143, and in Appendix F describing potential impacts on riparian vegetation associated with dredging and access to the dredging site, and avoidance, minimization, and mitigation measures associated with those potential impacts.

**Response to Comment 5:** Permit application was filed with State Parks.

**Comments received from the California Department of Water Resources Floodway Protection Section**

**Response to Comment 6:** Permit application was filed with the Reclamation Board.

**Comments received from the California Department of Water Resources Geologic Investigations Section**

**Response to Comment 7:** The potential effects of the Proposed Action/Project on the geomorphology and river dynamics in the project vicinity are addressed by evaluating the potential effects on the biological and ecological functions provided by natural geomorphologic processes. Specifically, the primary importance of geomorphologic processes and river dynamics are to provide habitat for aquatic and terrestrial species. For
example, river meander creates steep banks in erodable soils that provide habitat for bank swallows and creates the opportunity for riparian vegetation to provide shaded riverine aquatic (SRA) habitat for rearing anadromous salmonids. The potential impacts on aquatic and terrestrial habitats and habitat functions resulting from geomorphologic processes are evaluated in detail in Section 3.4 – “Fisheries and Aquatic Resources,” and Section 3.7 – “Terrestrial Resources.”

It is acknowledged that rip-rapping and channelization of the Sacramento River could create potential combined impacts on sensitive resources and should be addressed by state and federal policy makers, and resource agencies on a landscape level. Section 4.1 – “Cumulative Effects” provides a discussion of known projects that have occurred in the area of the Proposed Action/Project and projects that are reasonably foreseeable. In addition discussion of two additional programs, California State Proposition 84 and the DWR and U.S. Army Corps of Engineers Levee Protection Program, was added to the text (see below). However, the Proposed Project/Action is a temporary, short-term project. The rock and tree revetment will be removed at the end of the five-year planning period unless it is incorporated into the long-term project, at which time potential impacts associated with long-term habitat removal will be addressed in subsequent environmental documentation (see Page 2-1, Section 2.1.1 – “Project Alternatives and Assumptions”). Therefore, the cumulative effects analysis in the Draft EA/IS is appropriate.

The following paragraphs were added as section 4.1.1.7 and 4.1.1.8 on Page 4-3

4.1.1.7. Proposition 84
Proposition 84 funds projects relating to safe drinking water, water quality and supply, flood control, waterway and natural resource protection, water pollution and containment control, state and local park improvements, public access to natural resources, and water conservation efforts. Proposition 84 allocates $130 million to the Department of Water Resources for the implementation of Delta water quality improvement projects that protect drinking water supplies. One of the eligible projects under this grant will be to reduce or eliminate discharges of bromide, dissolved organic carbon, salt, pesticides and pathogens from discharges to the Sacramento River. Proposition 84 also allocates $100 million for San Joaquin River restoration activities, and $90 million for land use planning, in addition to another $90 million for urban water and energy conservation projects (DWR webpage 2007).

4.1.1.8. DWR and Army Corps Levee Protection Program
On February 24, 2006, Governor Arnold Schwarzenegger declared California’s Levee System in a State of Emergency and commissioned up to $500 million to repair and evaluate State/federal project levees. In September 2006, USACE and DWR identified 71 new damaged levee sites in need of immediate repair. More than 300 sites have been deferred for future repairs. DWR and USACE will share the repair work of critical erosion sites. Two DWR sites on the Sacramento River (RM 99.5 and RM 182.0) received the highest priority for repair. Two meetings between USFWS, NMFS, DFG, USACE, and DWR was held in October 2006 to discuss permitting procedures for the repair work (DWR 2006). An Action Plan for Alternative Endangered Species Consultation Procedures for State-Federal Expedited Repair was prepared winter of
DWR reports that the repair will be approximately 5,000 feet (subject to change) on the right (west) bank of RM 182.0, and will be composed of rock repair material (DWR news releases 2007).

**Response to Comment 8:** The soils survey maps of Butte County (2005) and Glenn County (2005) were reviewed to identify soils located on the project site. It is reported that the following soil types are found on the west bank of the Action/Project site: (1) Columbia fine sandy loam, 0 to 2 percent slopes; (2) Columbia loamy fine sand, coarse variant, 0 to 2 percent slopes; (3) Columbia silt loam, 0 to 2 percent slopes; (4) Columbia silt loam, 2 to 8 percent slopes; (5) Columbia soils, channeled, 0 to 10 percent slopes; and (6) river wash. On the east bank of the Action/Project site the following soil types are reported: (1) Bosquejo Clay, 0 to 1 percent slopes; (2) Gianella fine sandy loam, 0 to 1 percent slopes, frequently flooded; (3) Gianella fine sandy loam, 0 to 1 percent slopes, frequently flooded; (4) Farwell clay loam, 0 to 1 percent slopes; (5) Ignord fine sandy loam, 0 to 2 percent slopes; and (6) river wash. A soil survey map of the general vicinity of the M&T Chico Ranch/Llano Seco Rancho Pumping Plant Maintenance Channel Alignment Study Area is displayed in Appendix G – Bank Swallow Mitigation Plan, attached to the Draft EA/IS as part of the response to public comments.

**Response to Comment 9:** Localized loss of the lower part of the revetment at RM 198R is indeed occurring and text was added to Section 6.3.1.1 to indicate such loss, but there is no indication in the historical data that this is linked to eastward migration of the river in the section RM 195L and RM 195.4R where the river bank is composed of alluvium. Long-term (50-yr) meander modeling projections of exiting conditions in the reach between RM 197 and RM 189 (scenario n1) by Larsen (2006) supports the eastward migration of the river between about RM 195.4 and RM 194.5 and the concurrent westward migration of the river between RM 194.5 and RM 194. Sinuosity of the reach will indeed increase over time as the result of the eastward and westward migration of the river, but Larsen’s modeling results indicate that the reach between about RM 194 and RM 196 that bounds the area under discussion will remain a fairly low sinuosity reach 50 years into the future.

**Response to Comment 10:** Meander modeling of existing conditions by Larsen (2006) does suggest that the river will migrate to some extent to the east below the RM 194L River Road revetment. This will cause erosion of the State Park and the existing gravel bar upstream of the M&T pumps. However, the extent of the projected 50-year migration is relatively minor and would be prevented from moving farther east by the existing rock revetment that extends from Big Chico Creek to about RM 192.7L.

**Response to Comment 11:** The statement that there will be downstream migration of the River Road bend apex regardless of the presence of the River Road revetment is an unsubstantiated hypothesis that was discussed and rejected by the M&T technical experts who are part of the Steering Committee for the long-term solution. Meander modeling by Larsen
(2006) that includes the presence of the River Road revetment indicates that future migration of the river downstream of the revetment will be to the east towards the mouth of Big Chico Creek and to the west downstream of the M&T pumps.

**Response to Comment 12:** The general statement of meander bend dynamics is correct, but incomplete. The direction of bend migration is also tied to the radius of curvature of the bend (Knighton, 1984) and the relative erodibility of the bank materials. Where the radius of curvature to channel width ratio (R/W) of the bend is high (>2.5) the general direction of bend migration is transverse to the valley axis. When the ratio is about 2, the bend geometry is optimally configured for downstream migration of the bend (Bagnold, 1960). The bend opposite the M&T pumps has a high R/W ratio value (~4.5) and thus is tending to migrate westward rather than down-valley, and the location of maximum erosion correlates with the location of the most erodible bank materials. Larsen’s (2006) meander modeling of existing conditions suggests that sinuosity of this portion of the river will remain low into the future.

**Response to Comment 13:** The toe rock revetment will indeed prevent lateral migration of the river and this will have local and possibly wider-field effects. At a local level, the intent of the project is to prevent further lateral erosion and migration of the river. The wider-field impacts were assessed by Larsen’s (2006) meander modeling. Comparison of the existing conditions 50-year projection (Scenario n1) with that with a west bank revetment in place (Scenario n2) shows little if any difference either upstream or downstream of the project.

Additional discussion of potential direct and cumulative effects associated with the Proposed Action/Project is presented in response to Comment 7, above.

**Response to Comment 14:** Potential geomorphic effects associated with this project are identified in response to Comment 13, above.

Additional discussion of potential direct and cumulative effects associated with the Proposed Action/Project is presented in response to Comment 7, above.

The portion of the comment indicating that a sentence got deleted from the current version refers to a prior version of the document circulated during 2006 and is not relevant to the Draft EA/IS circulated for public review on August 7, 2007.

**Response to Comment 15:** Given the relative magnitude of the toe rock project with respect to the cross section area of the river at the project site as well as upstream and downstream of the site, there are no potentially significant hydrologic (overbank) impacts that require mitigation. On a unit length basis, the rock toe revetment occupies approximately 1 percent of the cross sectional area, and is inundated at a flow of about 20,000 cfs which is approximately 22 percent of the bankfull discharge (90,000 cfs).
The potential effects of the Proposed Action/Project on the geomorphology and river dynamics in the project vicinity are addressed by evaluating the potential effects on the biological and ecological functions provided by natural geomorphologic processes. The potential impacts on aquatic and terrestrial habitats and habitat functions resulting from geomorphologic processes are fully evaluated in the EA/IS (see also response to comment 7).

**Response to Comment 16:** The Phelan levee at RM 192.4 reportedly is eroding at a rate that could critically endanger the existing levee in the near future. Failure of this private levee could result in substantial flooding in the Butte Basin and could endanger Sacramento River Flood Control Project levees. The loss of the berm between the actively eroding river bank and the Phelan levee has been brought to the attention of state and federal agencies but no action to address the issue has been proposed. Reduction of the risk of levee failure could be accomplished by installation of a windrow rock revetment along the toe of the levee from the downstream end of the current rock revetment at about RM 192.6L for a distance of about 1,200 feet by the private landowner. The downstream limit of the windrow revetment would be located about 1,200 feet upstream of the proposed bank swallow mitigation project, and would not result in a change in the rate of erosion nor have any impact on the mitigation area.

Section 4.1 – “Cumulative Effects” provides a discussion of known projects that have occurred in the area of the Proposed Action/Project and projects that are reasonably foreseeable. An additional discussion of the Phelan levee was added to section 4.1 of the EA/IS. However, no known plans or permits have been submitted to the appropriate agencies for the Phelan levee project. The potential cumulative effects of this project in concert with implementation of the Proposed Project/Action are unknown at this time. Therefore, the cumulative effects analysis in the Draft EA/IS is appropriate.

The following paragraph was added as section 4.1.1.9 on Page 4-3

4.1.1.9 Phelan Levee at River Mile 192.4

The Phelan levee at RM 192.4 is a failing levee on private land immediately downstream of the Proposed Action/Project. The land owners are reportedly proposing to place windrow rock on top of the levee which, with continued erosion of the existing bank, will launch to stabilize the river bank. Although preliminary conceptual ideas regarding this potential project exist, no specific proposals, plans or permits have been filed.

**Response to Comment 17:** The potential cumulative effects of the Proposed Action/Project on the geomorphology and river dynamics in the project vicinity are addressed by evaluating the potential effects on the biological and ecological functions provided by channel migration. Specifically, the primary importance of geomorphologic processes and river dynamics are to provide habitat for aquatic and terrestrial species.

It is acknowledged that rip-rapping and channelization of the Sacramento River could create potential combined impacts on sensitive resources and should be addressed by state and federal policy makers, and resource agencies on a landscape level. Section 4.1 –
“Cumulative Effects” provides a discussion of known projects that have occurred in the area of the Proposed Action/Project and projects that are reasonably foreseeable. In addition discussion of two additional programs, California State Proposition 84 and the DWR and US Army Corps of Engineers Levee Protection Program, was added to the text (see below). However, the Proposed Project/Action is a temporary, short-term project. The rock and tree revetment will be removed at the end of the five-year planning period unless it is incorporated into the long-term project, at which time potential impacts associated with long-term habitat removal will be addressed in subsequent environmental documentation (see Page 2-1, Section 2.1.1, “Project Alternatives and Assumptions”). Therefore, the cumulative effects analysis in the Draft EA/IS is appropriate.

The following paragraphs were added as section 4.1.1.7 and 4.1.1.8 on Page 4-3

4.1.1.7. Proposition 84

Proposition 84 funds projects relating to safe drinking water, water quality and supply, flood control, waterway and natural resource protection, water pollution and containment control, state and local park improvements, public access to natural resources, and water conservation efforts. Proposition 84 allocates $130 million to the Department of Water Resources for the implementation of Delta water quality improvement projects that protect drinking water supplies. One of the eligible projects under this grant will be to reduce or eliminate discharges of bromide, dissolved organic carbon, salt, pesticides and pathogens from discharges to the Sacramento River. Proposition 84 also allocates $100 million for San Joaquin River restoration activities, and $90 million for land use planning, in addition to another $90 million for urban water and energy conservation projects (DWR webpage 2007).

4.1.1.8. DWR and Army Corps Levee Protection Program

On February 24, 2006, Governor Arnold Schwarzenegger declared California’s Levee System in a State of Emergency and commissioned up to $500 million to repair and evaluate State/federal project levees. In September 2006, USACE and DWR identified 71 new damages levee sites in need of immediate repair. More than 300 sites have been deferred for future repairs. DWR and USACE will share the repair work of critical erosion sites. Two DWR sites on the Sacramento River (RM 99.5 and RM 182.0) received the highest priority for repair. Two meetings between USFWS, NMFS, DFG, USACE, and DWR was held in October 2006 to discuss permitting procedures for the repair work (DWR 2006). An Action Plan for Alternative Endangered Species Consultation Procedures for State-Federal Expedited Repair was prepared winter of 2006 (DWR 2006). DWR reports that the repair will be approximately 5,000 feet (subject to change) on the right (west) bank of RM 182.0, and will be composed of rock repair material (DWR news releases 2007).

Comments received from the California Department of Transportation

Response to Comment 18: An encroachment permit will not be sought for this project because no signs, flaggers, or other items will be placed in a right of way of a state highway. While SR 45 will be used to access County Road 23, it is not anticipated that traffic controls
would be required because no construction is occurring on the state highway and the amount of construction traffic allowed to access the site will be limited. A minimal number of vehicles will be used to limit potential impacts on biological resources adjacent to the access road on the Capay Unit of the Sacramento National Wildlife Refuge (SNWR). Therefore a minimal number of vehicles associated with the project will be utilizing SR 45.

Additionally, mitigation measures/environmental commitments to avoid potential impacts to traffic and circulation are included in the Mitigation, Monitoring and Reporting Plan (Appendix E of the Final EA/IS). To avoid any potential delays or safety issues on SR45, River Road or other haul routes, a traffic control plan will be developed and implemented. M&T Chico Ranch/Llano Seco Rancho will coordinate with CalTrans and/or county public works or planning departments and develop a traffic control plan during the final stage of project design. The traffic control plan will include a traffic management plan with specific measures to manage traffic in the project area and along haul routes.

Response to Comment 19: Final design of the Proposed Action/Project will be provided to the CalTrans Hydraulics Branch, as requested.

Response to Comment 20: Please see response to comment 18.

Comments received from Chico Paddleheads

Response to Comment 21: It is acknowledged that Chico Paddleheads endorses the comments submitted by John Merz of the Sacramento River Preservation Trust. The comments submitted by the Sacramento River Preservation Trust are addressed in responses to comments 33 through 98, below.

Comments received from AltaCal Audubon Society – Dawn Garcia, Conservation Chair

Response to Comment 22: CDFG as the state lead agency for this project under CEQA, as well as the regulatory agency tasked with protecting state listed species under CESA have determined that the mitigation proposed in the Bank Swallow Mitigation Plan submitted as part of body of information constituting the Final EA/IS and attached to the EA/IS as Appendix G is appropriate to mitigate for the short-term impacts of the Proposed Action/Project on bank swallow habitat. Additionally, potential impacts associated with implementation of the Proposed Action/Project on state listed species were evaluated in the Action Specific Implementation Plan. A conservation easement on the M&T Chico Ranch of 1,520 feet in length and 600 feet in width from the current bank location will be permanently set aside for the purposes of providing bank swallow nesting habitat. The easement consists of eroding bank that contains bank swallow nesting colonies. Since 1998 40 to 870 nesting pairs have utilized the site. During 2005 approximately 110 pairs were estimated to be
nesting on the site. The site currently contains suitable habitat to accommodate additional nesting pairs, which is anticipated to increase in length as the bank continues to erode.

CESA affords the same protection for threatened and endangered species. Because CDFG has determined that this mitigation is appropriate for the short-term removal of bank swallow habitat from the Capay Unit of the SNWR, this mitigation would therefore also be appropriate if the species was listed as endangered under CESA.

**Response to Comment 23:** The 2:1 mitigation ratio for bank swallow habitat was included on two pages (3-140, 3-157) of the Draft EA/IS as a result of a clerical error. The correct Draft EA/IS text was included under the impact assessment conducted for potential impacts resulting from short-term construction-related activities (TR-26, pages 3-148 through 3-150). Additionally, the correct text was included in the Draft EA/IS as part of the discussion of mitigation measures on pages 3-166 and 3-167 under the 5th level heading “Bank Swallow” in Section 3.7.7.2, “Proposed Action/Project.”

However, as part of identifying the appropriate mitigation (described generally in the Draft EA/IS on pages 3-148-150, and 3-166-167) a bank swallow mitigation plan was developed that identified the acquisition of a 1,520-foot long by 600-foot wide conservation easement on the M&T Ranch that has contained nesting colonies since 1998 and subsequent donation of the conservation easement to USFWS. The easement is a permanent easement would be in place in perpetuity. The bank swallow mitigation plan provides a detailed description of the habitat on the revetment site, and on the easement. Appendix G, attached to Final EA/IS contains the bank swallow mitigation plan.

CDFG determined that the permanent 1,520-foot long and 600-foot wide easement described in the bank swallow mitigation plan is appropriate for the short-term loss of bank swallow habitat associated with implementation of the Proposed Action/Project. Specifically, because the rock revetment will be removed in five years unless incorporated into the long-term project, and additional mitigation will be required if the revetment is incorporated into the long-term solution, the permanent conservation of an equal length of existing bank swallow habitat in perpetuity is appropriate.

It should be noted that erosion rates at the easement site are not known. However it is expected that the easement land would not erode completely prior to 2018, thereby conserving bank swallow habitat for twice the life span of the Proposed Action/Project.

Paragraph 3 under the 6th level heading “Bank Revetment” in Section 3.7.5.4, “Proposed Action/Project” on Page 3-140 was changed to read:

> The Proposed Action/Project would remove 1,520 feet of known and potential bank swallow habitat, which would result in a potentially permanent temporary loss of bank swallow habitat if no mitigation measures were implemented. However, the Project/Action Proponents shall mitigate for the short-term loss of bank swallow habitat through the acquisition and subsequent donation to USFWS of fee title or a permanent 1,520-foot long by 600-foot wide conservation easement on riverfront property at a ratio
of 2:1 the M&T Chico Ranch that has provided habitat for bank swallow nesting bank colonies since 1998. The permanent easement will be in place in perpetuity. The conservation easement will mitigate for potential impacts to bank swallow at a rate of 2:1 due to the depth of the easement. The conservation easement is expected to remain (e.g., continue to erode) for a minimum of ten years. Therefore, the conservation easement will potentially be in place for several years after the revetment is removed from the Proposed Action/Project Area (assuming that the revetment is not incorporated into the long-term solution).

The 6th level heading “Rock and Brush Revetment” under TR-26, “Potential impacts on bank swallow resulting from short-term, construction-related activities” in Section 3.7.5.4, “Proposed Action/Project Relative to Existing Conditions” beginning on Page 3-150 was revised as follows:

Potential impacts associated with rock and brush revetment include potential direct impacts on nesting individuals, removal of potentially suitable nesting habitat, and noise-related disturbance. Nesting individuals and suitable nesting habitat could potentially be directly impacted (i.e., killed) by construction activities because the nesting colony observed during 2005 is located in a portion of proposed bank revetment location. Noise-related impacts also could occur because construction is proposed to occur at the bank swallow nesting colony location. However, it is unlikely that direct impacts on individuals or noise-related impacts would occur because construction of the Proposed Action/Project would occur during October, outside the reported bank swallow migration and nesting periods (mid-march through mid-September). In addition, as a precautionary measure incorporated into the Proposed Action/Project pre-construction surveys would be conducted. If nesting bank swallows are observed, CDFG would be contacted and remedial measures implemented, as necessary.

Impacts on bank swallow habitat would occur because 1,520 feet of known and potentially suitable habitat would be removed in order to place the rock and brush revetment on the bank. However, the Action/Project Proponents shall mitigate for the loss of bank swallow habitat through the acquisition of fee title or a conservation easement on riverfront property. The specific mitigation site or sites, and the entity holding title or easement shall be approved by the CDFG. Such sites shall not be on existing lands owned by, or under easement to the CDFG, for the short-term loss of bank swallow habitat through the acquisition and subsequent donation to USFWS of a permanent 1,520-foot long by 600-foot wide conservation easement on the M&T Chico Ranch that has provided habitat for bank swallow nesting colonies since 1998. The permanent easement would be in place in perpetuity. The conservation easement will mitigate for potential impacts to bank swallow at a rate of 2:1 due to the depth of the easement. The conservation easement is expected to remain (e.g., continue to erode) for a minimum of ten years. Therefore, the conservation easement will potentially be in place for several years after the revetment is removed from the Proposed Action/Project Area (assuming that the revetment is not incorporated into the long-term solution). A detailed description of the bank swallow mitigation habitat quality and location is provided in Appendix G, Bank Swallow Mitigation Plan.
Mitigation shall occur as close as is reasonably possible to the project site, and may be applied through the protection of existing bank swallow habitat, through restoration of habitat (including removal of rock at historic sites), or through a combination of these measures. Mitigation shall be based on an assessment of the quality of the habitat being lost (including its potential to support nesting bank swallows over time) and the quality of the proposed mitigation site or sites, and shall result in the protection through permanent conservation easement of a site or sites that represent equal or greater habitat quality and equal or greater linear footage than the site being impacted. The Project Proponents shall prepare a detailed Mitigation Plan, to be approved by the CDFG. Such plan shall include, at a minimum, the following:

- The specific location of the mitigation site or sites;
- A description of the existing habitat values at the site(s) and of the values that will be protected and/or restored;
- A detailed description of the proposed conservation/restoration activities to be carried out on the site(s);
- A detailed description of ongoing management activities to be carried out to ensure that bank swallow habitat is maintained over time.

Prior to the onset of construction activities, Action/Project Proponents shall secure both the rights to the specified mitigation property, and the funding necessary to complete the acquisition of the property.

TR-36, “Potential impacts on bank swallow resulting from habitat alterations over a 5-year period.” in Section 3.7.5.4, “Proposed Action/Project Relative to Existing Conditions” beginning on Page 3-159 was revised as follows:

Implementation of the Proposed Action/Project would temporarily remove approximately 1,520 feet of known and potential bank swallow habitat from the Action/Project Area. Nesting individuals were not observed during 2006. However, on May 1, 2007 3 nesting colonies were identified on the site. Additionally results of the Annual Bank Swallow Survey indicate that from 1999 through 2007 estimates ranging from 50 (during 2002) to 340 (during 2001) nesting pairs were observed on the west bank of the Proposed Action Area.

Construction of the revetment would reduce the suitability of the habitat above the revetment and remove the opportunity for recolonization during the five-year planning period, potentially resulting in a permanent short-term loss of bank swallow habitat in the Action/Project Area. Permanent habitat loss in the Action/Project Area would result in a reduction of habitat within the region, which also would result in a reduction of habitat for the species (i.e., a large proportion of remaining suitable bank swallow habitat exists on the banks of the Sacramento River north of Colusa).

Because the Proposed Action/Project may be is a temporary feature identified by the Steering Committee as having a five-year lifespan, if the revetment is removed following
the five-year period, the bank could potentially _likely would_ become suitable for recolonization. However, the potential for the bank to again become suitable for bank swallow recolonization after the five-year planning period would depend on the type of permanent solution implemented by the Steering Committee. _The long-term solution will undergo independent environmental review._ If the revetment is incorporated into the long-term solution or the long-term solution results in permanent loss of bank swallow habitat, additional mitigation measures above those implemented for the Proposed Action/Project will be identified and implemented.

Because the west bank of the Sacramento River is suitable habitat for bank swallows, and nesting colonies often (almost annually) have been observed using the site, the Proposed Action/Project includes measures to _restore, replace, or conserve in perpetuity_ bank swallow habitat in the reach from Butte City to Hamilton City (RM 169-199) at a ratio of 2:1 for removed habitat (i.e., two linear feet of habitat will be restored, replaced, or conserved in perpetuity for every linear foot of suitable habitat removed). _Mitigate for the short-term loss of bank swallow habitat through the acquisition and subsequent donation to USFWS of a permanent 1,520-foot long by 600-foot wide conservation easement on the M&T Chico Ranch that has provided habitat for bank swallow nesting colonies since 1998._ The permanent easement would be in place in perpetuity. The conservation easement will mitigate for potential impacts to bank swallow at a rate of 2:1 due to the depth of the easement. The conservation easement is expected to remain (e.g., continue to erode) for a minimum of ten years. Therefore, the conservation easement will potentially be in place for several years after the revetment is removed from the Proposed Action/Project Area (assuming that the revetment is not incorporated into the long-term solution). _A detailed description of the bank swallow mitigation habitat quality and location is provided in Appendix G, Bank Swallow Mitigation Plan._

_CDFG determined that the easement described in the Bank Swallow Mitigation Plan (Appendix G) is appropriate for the short-term loss of bank swallow habitat associated with implementation of the Proposed Action/Project._ Specifically, because the rock revetment will be removed in five years unless incorporated into the long-term project, and additional mitigation will be required if the revetment is incorporated into the long-term solution, _the permanent conservation of an equal length of existing bank swallow habitat in perpetuity is appropriate._

_The Action/Project Proponents shall mitigate for the loss of bank swallow habitat through the acquisition of fee title or a conservation easement on riverfront property. The specific mitigation site or sites, and the entity holding title or easement shall be approved by the CDFG. Such sites shall not be on existing lands owned by, or under easement to the CDFG._

_Mitigation shall occur as close as is reasonably possible to the project site, and may be applied through the protection of existing bank swallow habitat, through restoration of habitat (including removal of rock at historic sites), or through a combination of these measures. Mitigation shall be based on an assessment of the quality of the habitat being lost (including its potential to support nesting bank swallows over time) and the quality_
of the proposed mitigation site or sites, and shall be at a minimum of 2:1. The Project Proponents shall prepare a detailed Mitigation Plan, to be approved by the CDFG. Such plan shall include, at a minimum, the following:

- The specific location of the mitigation site or sites;
- A description of the existing habitat values at the site(s) and of the values that will be protected and/or restored;
- A detailed description of the proposed conservation/restoration activities to be carried out on the site(s);
- A detailed description of ongoing management activities to be carried out to ensure that bank swallow habitat is maintained over time.

Prior to the onset of construction activities, Action/Project Proponents shall secure both the rights to the specified mitigation property, and the funding necessary to complete the acquisition of the property.

Therefore, potential impacts on bank swallow resulting from habitat alteration over a 5-year period are less than significant.

Mitigation measures described in the 4th level heading “Bank Swallow” in Section 3.7.6.3, “Proposed Action/Project Alternative” on Page 3-170 were changed as follows:

In addition to the Conservation Prescriptions and Guidelines for bank swallow as outlined in the MSCS, the Project/Action Proponents shall mitigate for the temporary loss of bank swallow habitat through the acquisition and subsequent donation to USFWS of a fee title or a conservation easement on riverfront property. The specific mitigation site or sites, and the entity holding title or easement shall be approved by the CDFG. Such sites shall not be on existing lands owned by, or under easement to the CDFG. A permanent 1,520-foot long by 600-foot wide conservation easement on the M&T Chico Ranch that has provided habitat for bank swallow nesting colonies since 1998. The permanent easement would be in place in perpetuity. The conservation easement will mitigate for potential impacts to bank swallow at a rate of 2:1 due to the depth of the easement. The conservation easement is expected to remain (e.g., continue to erode) for a minimum of ten years. Therefore, the conservation easement will potentially be in place for several years after the revetment is removed from the Proposed Action/Project Area (assuming that the revetment is not incorporated into the long-term solution). A detailed description of the bank swallow mitigation habitat quality and location is provided in Appendix G, Bank Swallow Mitigation Plan.

Mitigation shall occur as close as is reasonably possible to the project site, and may be applied through the protection of existing bank swallow habitat, through restoration of habitat (including removal of rock at historic sites), or through a combination of these measures. Mitigation shall be based on an assessment of the quality of the habitat being lost (including its potential to support nesting bank swallows over time) and the quality of the proposed mitigation site or sites, and shall result in the protection through
permanent conservation easement of a site or sites that represent equal or greater habitat quality and equal or greater linear footage than the site being impacted. The Project/Action Proponents shall prepare a detailed Mitigation Plan, to be approved by the CDFG. Such plan shall include, at a minimum, the following:

- The specific location of the mitigation site or sites;
- A description of the existing habitat values at the site(s) and of the values that will be protected and/or restored;
- A detailed description of the proposed conservation/restoration activities to be carried out on the site(s);
- A detailed description of ongoing management activities to be carried out to ensure that bank swallow habitat is maintained over time.

Prior to the onset of construction activities, Project Proponents shall secure both the rights to the specified mitigation property, and the funding necessary to complete the acquisition of the property.

CDFG determined that the permanent easement described in the Bank Swallow Mitigation Plan (Appendix G) is appropriate for the short-term loss of bank swallow habitat associated with implementation of the Proposed Action/Project. Specifically, because the rock revetment will be removed in five years unless incorporated into the long-term project, and additional mitigation will be required if the revetment is incorporated into the long-term solution, the permanent conservation of an equal length of existing bank swallow habitat in perpetuity is appropriate.

Response to Comment 24: It is acknowledged by the Action/Project Proponents and CDFG that rock removal at retired sites is a successful measure to restore bank swallow habitat. In fact, the short-term nature of the Proposed Action/Project ensures that rock will be removed from the site unless it is required for the long-term project. If it is determined that the rock revetment would be included as part of the long-term project, additional mitigation will be required and rock removal at other sites will be considered. However, because the Proposed Action/Project is temporary maintenance project that will remove bank swallow habitat in the short-term, CDFG has determined that the permanent 1,520-foot long and 600-foot wide easement described in response to Comment 23, above, and in the bank swallow mitigation plan (attached to the Final EA/IS as Appendix G) is appropriate for the short-term loss of bank swallow habitat associated with implementation of the Proposed Action/Project. Specifically, because the rock revetment will be removed in five years unless incorporated into the long-term project, and additional mitigation will be required if the revetment is incorporated into the long-term solution, the permanent conservation of an equal length of existing bank swallow habitat in perpetuity is appropriate.

Response to Comment 25: The reference requested is provided in Paragraph 1 under TR-6 on Page 3-129. The paragraph describes the bank swallow occupancy of the Capay Unit. Specifically, the sentence 4 reads:
However, the colony was not found nesting during additional surveys conducted on June 27, 2006 by Gallaway Consulting, Inc. biologists.

Additionally, on Page 3-106, Paragraph 4 of the Bank Swallow species account was changed to read as follows:

A bank swallow colony of approximately 110 nesting pairs was reported using the eroded bank at the proposed revetment location during 2005 and 220 in 2007 by USFWS biologists (Figure 3-2) (Kevin Foerster, pers.comm. 2007). Nesting individuals were not observed during 2006 during surveys conducted on June 27, 2006 by Gallaway Consulting, Inc. biologists. However, on May 1, 2007 3 nesting colonies were identified on the site. Additional results of the Annual Bank Swallow Survey indicate that from 1999 through 2005 estimates ranging from 50 (during 2002) to 340 (during 2001) nesting pairs were observed on the west bank of the Proposed Action Area.

**Response to Comment 26:** It is acknowledged by the Action/Project Proponents, CDFG, and USFWS that revetment of bank swallow habitat would result in impacts on the species. However, because the Proposed Action/Project is temporary maintenance project (5-years) that will remove bank swallow habitat in the short-term, CDFG has determined that the permanent 1,520-foot long and 600-foot wide easement described in response to Comment 23, above, and in the bank swallow mitigation plan (attached to the Final EA/IS as Appendix G) is appropriate for the short-term loss of bank swallow habitat associated with implementation of the Proposed Action/Project.

The Proposed Action/Project was identified by the steering committee as an immediate measure required to protect the water supply provided by the M&T Chico Ranch pumping facility and to ensure the viability of alternatives under evaluation as part of the investigation of a long-term solution. It should be noted that the pumping facility supplies water to a variety of downstream users including wildlife refuges, which provide habitat to many species in the region. The Action/Project Proponents, CDFG, and USFWS recognize that revetment of the eroding bank on the Capay Unit of the SRNWR would result in short-term impacts on bank swallows. However, protecting the water supply to downstream wildlife refuges also maintains habitat for other species.

The revetment portion of the Proposed Action/Project will be removed following five years unless it is incorporated into the long-term project. The steering committee is committed to examining all potential long-term protections of the pumping facility and will consider methods of protection other than revetment. All potential long-term protection alternatives will undergo independent environmental review prior to implementation. If the steering committee determines that including the revetment portion of the Proposed Action/Project is required for the long-term solution, additional mitigation will be required.

**Response to Comment 27:** It is acknowledged that focused songbird surveys were not conducted in the Action/Project Area. However, based on evaluation of species life history and habitat requirements, habitat within the study area, and the construction activities and timelines associated with implementation of the Proposed Action/Project, the species
presented in Section 3.7.2.4, “Species Considered but Dismissed” were dismissed from further analysis. It also is acknowledged that it is not known whether bird species presented in Section 3.7.2.4, “Species Considered but Dismissed” could utilize or have utilized the site. Therefore, precautionary pre-construction surveys have been included in the project commitments as described in Section 2.4.3, “Biological Resources” to avoid impacts should migratory songbirds be observed in the Action/Project Area prior to the onset of construction activities. Additionally, impact analyses TR-10 and TR-30 discuss potential construction-related impacts on “other migratory birds,” which could include species that were not anticipated to utilize the Action/Project Area. These impact analyses state that pre-construction surveys will be conducted prior to the initiation of construction activities, and that CDFG will be contacted and remedial measures implemented if migratory birds are observed.

Potential impacts on riparian habitats that could potentially be utilized by species presented in Section 3.7.2.4, “Species Considered but Dismissed” are described in impact analyses TR-1, TR-11, TR-21, and TR-31. However, these habitats will be restored at a ratio of 2:1 for riparian habitat and 1:1 or greater for grassland habitat. Therefore, potential impacts on species not anticipated to utilize the site, or be impacted by the Proposed Action/Project or Dredging Only Alternative would be less than significant if they were utilizing the site.

The following text was changed in Paragraph 2 under the 6th level heading “Dredging” under TR-10 in Section 3.7.5.2:
The Action/Project area does not provide habitat for nesting migratory waterfowl. Thus, dredging-related habitat removal could only potentially impact riparian nesting species. However, impacts would be temporary. Specifically, riparian habitat would be restored following construction at a ratio of two acres for every acre removed. Additionally, no mature riparian habitat would be removed as a result of implementing this alternative. However, young willow and other shrub riparian habitat may be temporarily removed by the Dredging Only Alternative and would be restored at the M&T Chico Ranch at the location where shrubs were removed immediately following construction. Potential impacts on nesting special status bird species not anticipated to utilize the site but that could occur in the region (i.e., species were dismissed from detailed analysis – Section 3.7.2.4) would be similar to those described for the Western yellow-billed cuckoo (see discussion under TR-5). Therefore, potential impacts associated with riparian habitat removal would be insignificant.

The following text was changed in Paragraph 1 under TR-20 in Section 3.7.5.2 Implementation of the Proposed Action/Project Dredging Only Alternative would result in temporary riparian habitat removal, which would result in migratory bird habitat alteration. However, potential impacts would be temporary because riparian vegetation removed would consist of young willows and potentially other young shrub and vine species (i.e., willow shrub habitat) and would be restored at a ratio of 2:1 (see discussion under TR-11), and monitored for success after construction activities are completed. Therefore, it is anticipated that, over a 5-year period, riparian habitat area within the Action/Project Area would be greater with implementation of the Dredging Only Alternative than without. Potential impacts on nesting special status bird species...
not anticipated to utilize the site but that could occur in the region (i.e., species were dismissed from detailed analysis – Section 3.7.2.4) would be similar to those described for the western yellow-billed cuckoo (see discussion under TR-15). Additionally, no migratory waterfowl nesting habitat exists within the Action/Project Area.

The following text was changed in Paragraph 2 under the 6th level heading “Rock and Brush Revetment” under TR-30 in Section 3.7.5.4.

The Action/Project area does not provide habitat for nesting migratory waterfowl. Thus, construction-related habitat removal could only potentially impact riparian, burrowing, and grassland nesting species. However, riparian habitat would be restored at a ratio of two acres for every acre removed, while grassland habitat would be restored at a ratio of one acre for every acre removed. Therefore, it is anticipated that long-term availability of nesting habitat would be greater than pre-project levels, while grassland habitat would be equivalent to pre-project levels. Additionally, mitigation for removal of bank swallow habitat also would mitigate for other burrow nesting species. Therefore, potential impacts to migratory bird species associated with temporary habitat removal would be less than significant.

The following paragraph was added to TR-40 in Section 3.7.5.4.

*Potential impacts on other migratory birds, including raptor and songbird species, associated with the dredging component of the Proposed Action/Project are the same as those described for the Dredging Only Alternative, relative to Existing Conditions and are described in TR-20 above.*

The following text was changed under the 5th level heading “Riparian Restoration” in Section 3.7.6.3, “Proposed Action/Project Alternative”

As mitigation for loss of valley-foothill riparian habitat, M&T Chico Ranch/Llano Seco Rancho would restore and monitor riparian habitat at a ratio of 2:1 (i.e., two acres restored for every acre removed). The restoration activities are detailed in the vegetation restoration plan presented in Appendix F and include riparian habitat restoration on the Capay Unit of the SNRWR and on the Llano Seco Rancho. Specifically, approximately 0.35 acres of cottonwood-willow-sycamore-alder shoreline habitat will be planted immediately on the landward side upstream of the revetment and an additional 3.46 acres of valley oak-elderberry riparian woodland habitat would be created on the Llano Seco Rancho. *The small amount of habitat removed would not result in substantial fragmentation because it is mitigated at a ratio of 2:1, which would increase riparian habitat in the region upon reaching maturity. Additionally, the creation of twice the amount of removed habitat offsets the temporal loss of habitat while trees and shrubs are growing to maturity.* Riparian habitat restoration locations are shown in Figure 3-5 and Figure 3-6.

**Response to Comment 28:** It is acknowledged that focused songbird surveys were not conducted in the Action/Project Area. However, based on detection of the species at proximate locations and the presence of suitable habitat in the Action/Project Area, it was
determined that western yellow-billed cuckoo could potentially use the Proposed Action/Project Area for nesting and foraging. Therefore, the Proposed Action/Project incorporated commitments listed in Section 2.4.3, “Biological Resources” to minimize potential impacts on special-status species, including western yellow-billed cuckoo. Specifically, construction activities will occur outside the western yellow-billed cuckoo nesting season and will remove the minimum amount of riparian habitat necessary. Additionally, removed riparian habitat will be replaced at a ratio of 2 acres replaced for every acre removed. Detailed analyses of potential impacts of the Dredging Only Alternative on western yellow-billed cuckoo are provided in impact analyses TR-5 and TR-15. Potential impacts associated with the Proposed Action/Project are provided in impact analyses TR-25 and TR-35. Mitigation measures to avoid or minimize potential impacts on biological resources including special-status species including western yellow-billed cuckoo, and special status habitats including riparian habitat are described in Section 3.7.6.2, “Dredging Only Alternative” and Section 3.7.6.3, “Proposed Action/Project.” In addition, as a precautionary measure, pre-construction surveys for the presence or absence of migratory birds, including western yellow-billed cuckoo will be conducted. Please see response to Comment 27 for edits made to the Draft EA/IS that also address this comment.

It should be noted that Figure 3-4 on page 3-144 of the Draft EA/IS identifies 33.6 acres of Valley/Foothill Riparian habitat in the Proposed Action/Project Area and identifies 1.7 acres of riparian habitat that could potentially be impacted by the dredging and revetment activities, of which 0.8 acres are early successional (i.e., young willows and cottonwoods) riparian habitat on the east bank of the Sacramento River and the north bank of Big Chico Creek. The comment incorrectly states that 33.8 acres of mature riparian habitat could be removed.

Response to Comment 29: It is acknowledged that focused songbird surveys were not conducted in the Action/Project Area. Discussion was added to impact analyses TR-10, TR-20, TR-30, and TR-40 in Sections 3.7.6 to clarify that pre-construction surveys will be conducted to determine the presence/absence of migratory birds, including migratory songbirds. Please see the response to Comment 27 and Comment 28 for additional detail and further clarification.

Response to Comment 30: It is acknowledged that focused songbird surveys were not conducted in the Action/Project Area. However, project commitments described in Section 2.4.3 and mitigation measures described in Section 3.7.6 would also protect migratory songbirds, including willow flycatcher that were not analyzed in detail. Responses to comments 27, 28, and 29 provide additional detail and clarification to accompany the response to this comment.

Response to Comment 31: The Proposed Action/Projects is a temporary 5-year solution to the bank erosion and gravel deposition in the Action/Project Area and will be removed in the future. It is acknowledged that young riparian habitat does not fulfill all of the same
functions as mature riparian forest. However, CDFG and USFWS determined that creation of riparian habitat in perpetuity at a ratio of 2:1 for a short-term project is appropriate. Specifically, creating two acres of habitat for every acre removed increases overall amount of riparian habitat in the region in the long-term while offsetting the temporal loss of mature riparian habitat. Please see Appendix F for a detailed riparian and grassland habitat mitigation plan, which describes restoration and mitigation activities in detail.

Response to Comment 32: Disturbance or removal of riparian habitat within the Action/Project will be avoided to the extent possible. CDFG and State Parks representatives will meet to identify the access and egress route that minimally impacts riparian habitat on the east bank of the Sacramento River. Additionally, no mature riparian habitat will be removed from the east bank of the Sacramento River or adjacent to Big Chico Creek. Young willows and cottonwoods that cannot be avoided by dredging activities or associated site access will be removed prior to the onset of construction activities and replanted in the same areas after construction.

The riparian habitat removed on the Capay Unit of the SRNWR will be the minimum amount necessary to conduct construction activities. Additionally riparian habitat fragmentation on the site also will be minimal because removal will occur on a single strip of riparian habitat that is not currently contiguous with riparian habitat upstream or downstream. However, to minimize long-term fragmentation and loss of riparian habitat in the region, 3.46 acres of riparian habitat will be created resulting in a mitigation ratio of 2:1 (i.e., 1.73 acres will be removed) on the Llano Seco Rancho adjacent to existing riparian habitat. The created habitat will be irrigated and will be monitored by Ducks Unlimited and the Central Valley Land Trust to ensure that at least 80 percent of the habitat remains, resulting in an overall, long-term increase in riparian habitat acreage and decrease in habitat fragmentation in the region.

In addition, the mitigation area located on the Llano Seco Rancho has been selected to increase continuity of riparian habitat and therefore increase usable interior forest area. The designated area for mitigation on Llano Seco is adjacent to an existing riparian forest, which will reduce fragmentation and create habitat contiguous with existing riparian habitat.

Comments Received from the Sacramento River Trust – John Merz, President

Response to Comment 33: The mitigation and monitoring plan was updated in response to comments received to provide greater detail regarding mitigation measures. Additionally, as stated in the Draft EA/IS and as required under NEPA and CEQA, specific details regarding bank swallow mitigation were identified after circulation of the Draft EA/IS and prior to project approval. Therefore, a bank swallow mitigation plan has been provided as Appendix G of the Final EA/IS. Additionally, mitigation for removal of young willows and other riparian shrubs on the Sacramento-Bidwell State Park has been added to Appendix F, “Riparian Vegetation and Native Grassland Mitigation Plan.”
Response to Comment 34: Table 2-1 was changed to reflect that some individuals and organizations regard the Dredging Only Alternative and the Proposed Action/Project as highly controversial.

Response to Comment 35: The additional dredge material disposal will be above the floodplain elevation, and therefore, it will have no significant hydraulic impact on floodplain capacity.

Response to Comment 36: CDFG will be the owner of any gravel removed as part of this project. CDFG currently is in the process of identifying restoration efforts in the region that could utilize the gravel. If a suitable restoration project is not identified prior to project approval, CDFG would have the authority to identify and make decisions regarding the use of the gravel. It should be noted that CDFG, USFWS, and the National Marine Fisheries Service (NMFS) are committed to utilizing the removed gravel for future restoration activities.

Response to Comment 37: Because the 2001 project was independent of this project and underwent independent environmental review, it is not required to be referenced in greater detail in this EA/IS. Reference to the 2001 project is for illustrative purposes only to allow readers of this document to understand the scope of this project, relative to other projects of similar nature and to allow for a less voluminous document for this project.

During December 2002 or early 2003 the M&T Chico Ranch fulfilled its mitigation monitoring responsibility for the 2001 gravel bar excavation by submitting the M&T Chico Ranch Mitigation and Monitoring Report to CDFG. The mitigation and monitoring report describes the restoration efforts conducted by the M&T Ranch and its contractors, and the monitoring of restoration undertaken by CDFG biologists.

Response to Comment 38: Additional discussion has been added to the Draft EA/IS, the Mitigation Monitoring Plan, and the Riparian Vegetation and Native Grassland Mitigation Plan to add specificity regarding the mitigation for the Dredging Only Alternative and the dredging portion of the Proposed Action/Project. Please refer to the responses to comments 1 through 3 for additional detail.

Paragraph 1 on Page 2-5 incorrectly stated “loss of aquatic backwater habitat.” This statement was not removed from the Draft EA/IS prior to circulation as a result of a clerical error. Potential impacts on aquatic backwater habitat were not identified during the impact analyses described in Section 3.4. Therefore, the statement was removed from the paragraph.

Paragraph 1 on Page 2-5 identified mitigation measures for removal of early successional riparian species on the gravel bar and at the stream crossing in insufficient detail because
specific mitigation had not yet been identified. Specific mitigation has been identified by CDFG and the paragraph was changed as follows:

As mitigation for loss of riparian bar and aquatic backwater habitat, M&T Chico Ranch/Llano Seco Rancho would restore degraded habitat or near the affected area. CDFG, State Parks, and the contractor for the gravel bar removal have had discussions regarding the location and quantity of riparian vegetation that will be impacted during the project. Prior to gravel bar excavation, the contractor, and CDFG and State Parks representatives will visit the site to identify an access and regress route that will be located and clearly marked to minimize damage to the riparian species. At the identified crossing site, if impacts to established vegetation (2-3 years+) is unavoidable restoration will involve removing and setting aside the impacted plants and surrounding soil for replanting at the site(s) of their removal upon completion of the gravel operation. For unavoidable loss of riparian saplings, mitigation will occur at the site of impact. Proposed restoration activities would include the removal of non-native vegetation and re-vegetation with native riparian species to provide shaded riverine aquatic (SRA) and/or riparian habitat. As a component of SRA habitat, riparian tree species such as alders, cottonwoods and willows, will be planted on the bench between the Instream Woody Material (IWM) and the riverbank.

Response to Comment 39: Appendix E, the Mitigation Monitoring Plan has been updated to incorporate recently identified mitigation measures (i.e., those described in responses to comments 1 through 4 and 38) and to identify recent changes in mitigation. Specifically, the tree clusters were incorrectly identified as mitigation for SRA habitat, but should have been identified as mitigation for lost instream woody material recruitment (IWM). Additionally, the Riparian Vegetation and Native Grassland Mitigation Plan (Appendix F) and the MMP (Appendix E) identified the 0.35-acre strip of riparian vegetation planted between the rock toe and the bank as additional mitigation for loss of SRA habitat. Recently, it has been noted that because the rock to revetment would be removed after the five-year planning period, the SRA habitat restoration behind the rock toe should be located such that it is not also removed with the rock. Therefore, the 0.35 acres of riparian and SRA habitat will be created immediately upstream of the rock toe revetment, rather than immediately behind it.

It should be noted that the Steering Committee identified several potential options for revetment, one of which incorporated tree clusters in the revetment. Subsequent discussions with NMFS representatives indicated that incorporating tree clusters into only one elevation of the revetment would be insufficient to mitigate for lost instream woody material (IWM) recruitment. Therefore, tree clusters were incorporated into the revetment at intermediate levels and atop the revetment to ensure that IWM would be present at a range of flows. The Proposed Action/Project method of IWM placement is standard practice on other rivers and is widely accepted as an appropriate way to stabilize eroding river banks. NMFS is recommending integration of similar IWM placement methods into proposed projects on the Sacramento River. Currently, the SAFCA Sand Cove Park Emergency Streambank Protection Project and the DWR and Army Corps Levee Protection Program are utilizing IWM design elements similar to those described for the Proposed Action/Project.
The MMP should have identified the tree clusters as mitigation for loss of IWM recruitment and the 0.35 acres of riparian habitat creation as mitigation for lost SRA habitat.

**Response to Comment 40:** The Riparian Vegetation and Native Grassland Mitigation Plan satisfies the requirement of the M&T Chico Ranch/Llano Seco Rancho and the SRNWR to develop a plan to mitigate for lost habitat. The plan was updated as part of response to comments from the California Department of Parks and Recreation (comments 1 through 4, above).

**Response to Comment 41:** Appendix E, the Mitigation Monitoring Plan has been updated to reflect current understanding of the Action/Project Area. Specifically, the MMP has been updated to reflect the text in impact analysis TR-22 on page 3-145 of the Draft EA/IS. The statement regarding transplantation of elderberry shrubs E05 and E07 was not updated prior to circulation of the Draft EA/IS as a result of a clerical error. A site visit conducted by Assistant SRNWR Manager Kelly Moroney during July 2007 indicated that elderberry shrubs E05 and E07 had either eroded into the river or had been overgrown by dense riparian vegetation. A biologist will be on-site during the vegetation clearing in the proximity of the previously identified Elderberries (05-07), if in fact they are still present; they will be transplanted on site (Capay Unit) following FWS protocol for transplants. Elderberry shrub E04 was not present on the site during a site visit conducted by the project team during April 2007. Elderberry 04 was actually observed in the River following erosion that occurred in June 2007 (K. Moroney, personal observation).

**Response to Comment 42:** Appendix E, the Mitigation Monitoring Plan is required to contain mitigation measures for impacts identified in the EA/IS. The MMP contains appropriate mitigation measures to protect species for which potential impacts are identified. Additionally, complete discussion of potential impacts on avian species identified with the potential to be impacted by implementation of the Proposed Action/Project is provided in Section 3.7.5, “Impact Analysis.”

Impacts on bald eagle winter roosting sites would not occur because construction is required to be complete prior to November 1 based on the terms and conditions presented in the NMFS Biological Opinion (BO) issued for this Action/Project for protection of winter-run Chinook salmon.

It is acknowledged that raptor and bird species other than bald eagle and Swainson’s hawk could potentially be impacted by implementation of the Proposed Action/Project. However, project commitments presented in Section 2.4.3, “Biological Resources” and measures presented in Section 3.7.6, “Mitigation” provide measures that will reduce potential impacts to less than significant levels. Additionally, as discussed impact analyses TR-10 and TR-30, pre-construction surveys for migratory birds, including raptors, will be conducted. If migratory birds or raptors are observed, CDFG will be contacted and remedial measures
implemented prior to the onset of construction activities. Discussion presented in response to comments 22 through 30 provides additional detail regarding mitigation measures to protect avian species.

**Response to Comment 43:** It is acknowledged that bank swallow mitigation was not identified prior to circulation of the Draft EA/IS. A bank swallow mitigation plan is included as Appendix G of the Final EA/IS. Additional detail regarding bank swallow mitigation is provided in response to comments 23 through 26, above.

**Response to Comment 44:** Appendix E, the Mitigation Monitoring Plan has been updated to reflect the mitigation measures included in the Draft EA/IS. The statement regarding SRA provided as mitigation for potential impacts on northwestern pond turtle was not updated prior to circulation of the Draft EA/IS as a result of a clerical error. Specifically, mitigation measures included in the Draft EA/IS in Section 3.7.7.1 on Page 3-162 should have been included in the MMP. Mitigation measures for northwestern pond turtle include:

- Where proposed project actions would adversely affect occupied habitat, enhance or restore suitable habitat near affected areas for a restoration ratio of 1:1 for every acre of occupied habitat affected.
- To the extent practicable, capture individuals from habitat that would be affected by proposed project actions, and relocate them to nearby suitable existing, restored, or enhanced habitat.

Pre-construction surveys for northwestern pond turtles will be conducted to determine if habitat is occupied.

Evaluated species referenced in conservation measures provided in Appendix F, Riparian Vegetation and Native Grassland Mitigation Plan are those evaluated in the Multi-Species Conservation Strategy and Natural Community Conservation Plan for CALFED. The conservation measures listed in Appendix F pertain only to the riparian and grassland habitat restoration activities. The sites selected for restoration provide low quality habitat for special status species including reptiles and amphibians. However, USFWS and CDFG biologists will survey the sites prior to ground disturbing activities to determine if focused special-status species surveys are required. If focused reptile and amphibian surveys are required, they will be conducted prior to ground disturbing work, and CDFG will be contacted to provide remedial measures if special-status reptiles and amphibians are detected.

**Response to Comment 45:** To reduce the potential impacts of the Proposed Action/Project to recreationists, especially swimmers, boaters, and those using canoes, signs will be placed both upstream and downstream of the site to alert recreationists to the presence of bank stabilizing structures. Additionally, the design of IWM would ensure local approach visibility and would incorporate the use of natural indicators such as partially emergent IWM. The outboard portions of IWM would be oriented in a downstream direction or would be installed in the form of relatively compact rootwads that would tend to deflect watercraft.
and reduce the risk for entrapment or straining. This avoidance measure has been included in as part of the Proposed Action/Project and described in the document in order to maintain a minimum degree of risk. The Proposed Action/Project method of IWM placement is standard practice on other rivers and is widely accepted as an appropriate way to stabilize eroding river banks. NMFS is recommending integration of similar IWM placement methods for projects on the Sacramento River. Currently, the SAFCA Sand Cove Park Emergency Streambank Protection Project and the DWR and Army Corps Levee Protection Program are utilizing IWM design elements similar to those described for the Proposed Action/Project.

Response to Comment 46: Details regarding the individual parties and oversight responsibilities for implementation of the mitigation and conservation measures discussed in the EA/IS, including valley/foothill riparian habitat mitigation, are included in the revised MMP (Appendix E of the Final EA/IS). Riparian habitat restoration/mitigation will be planted by Llano Seco Rancho. Monitoring will be contracted to the Central Valley Land Trust, with contract administration by Ducks Unlimited and with funding supplied by the CALFED Grant. The Central Valley Land Trust will be responsible for providing an annual report to CDFG and USFWS.

Response to Comment 47: The mitigation area located on the Llano Seco Rancho has been selected to increase continuity of riparian habitat and therefore increase usable interior forest area. The land available for restoration on the M&T Chico Ranch is not adjacent to the existing riparian habitat. Riparian restoration on M&T Ranch property would be isolated and would therefore have limited utility. The mitigation location on Llano Seco is adjacent to an existing riparian forest, which will reduce fragmentation and create habitat contiguous with existing riparian habitat.

Response to Comment 48: Grassland restoration will occur on the Rio Vista Unit in addition to restoration on the Capay Unit. The Capay Unit will be revegetated at a ratio of one acre restored for every one acre removed, while the Rio Vista Unit will be revegetated at a ratio of approximately 3.9 acres restored for every acre removed. The additional restoration on the Rio Vista Unit is an effort to increase native grasslands in the region.

Response to Comment 49: Restoration on the Rio Vista Unit is occurring independent of the M&T Chico Ranch Temporary Maintenance Project. This restoration, in its entirety, is referred to as the Rio Vista Project, a portion of which satisfies the mitigation requirements associated with the M&T Chico Ranch Temporary Maintenance Project. Additional detail is provided in response to comment 48 and in Appendix F - Riparian Vegetation and Native Grassland Mitigation Plan.

Response to Comment 50: As indicated in the EA/IS, the funding covers the entire mitigation period. Ducks Unlimited will be responsible for all associated payments.

Response to Comment 51: Water year 2006 was a wet year with high levels and durations of flow within the Action/Project Area. Once water levels receded in June, the project team visited the site and became concerned that the 700-foot revetment would not be sufficient to
protect the bank from eroding and subsequently not protect the M&T pumps downstream. Accordingly, the decision was made to extend the length of the rock-toe revetment structure to ensure bank stabilization during high water years. Comments to the 2006 Draft EA/IS are acknowledged but will not be addressed unless relevant to the current project.

**Response to Comment 52:** The comment letters submitted by the State Reclamation Board and State Lands Commission are included in this Appendix in the Comments on the Draft EA/IS section, above. No letters authorizing the construction of the rock and brush revetment will be issued. However, as stated above in response to comment 6, a permit application was filed with the Reclamation Board. Additionally, in response to the State Lands Commissions’ comment letter, the Project Proponents are in the process of obtaining a Clean Water Act Section 404 permit from the USACE (see also response to comment 117).

**Response to Comment 53:** The long-term solution has not been identified, and therefore, cannot be evaluated. However, once identified, the long-term solution will be subject to separate environmental review including NEPA and CEQA, and federal and state Endangered Species Acts. An additional section, Section 2.2.3.2 Action/Project Lifespan was added to Chapter 2 to provide clarification on the duration of the Proposed Action/Project.

**Response to Comment 54:** Aesthetic resources were evaluated appropriately based on the significance criteria identified under CEQA. The significance criteria were taken directly from the CEQA checklist. Additional discussion of projects in the region was added to Section 4.1 of the EA/IS (also see response to comment 7). Additionally, the cumulative effects discussions in the EA/IS are appropriate because of the short-duration of the project and the rock toe will be removed following the 5-year planning period. When the long-term project is identified and proposed, it will undergo environmental review which will include the identification and analysis of associated potential cumulative effects.

**Response to Comment 55:** One of the actions promoted in the CALFED record of decision is the implementation of a comprehensive Ecosystem Restoration Program. Actions include the protection and restoration of the Sacramento River meander corridor as part of the Sacramento River Conservation Area/SB 1086 program, including easement or purchase of an additional 15,000 acres, revegation and restoration of stream meander function by the end of State 1. (Record of Decision, Volume 1, page 36.

The Ecosystem Restoration Program Plan-Strategic Plan for Ecosystem Restoration; Final Programmatic EIS/EIS Technical Appendix July 2000 identifies Stage 1 Actions for the Ecosystem Restoration Program. At page D-17, action 1 is identified as: “Protect, enhance and restore the meander belt between Red Bluff and Chico Landing.” In setting forth the rationale, the document refers to the SB 1086 program as a source of guidance for implementing this action.

On page 1-6 of the Basic Principles and Management Guidelines of the Sacramento River Conservation Area Handbook, 2003 (rev) it provides Inner River Zone Guidelines. It states:
“[a] restriction of the Sacramento River’s meander patterns may be necessary where studies indicate unobstructed meander, as defined, could impair the operational viability of public and private facilities considered to be protected hard points.”

Chapter 9 of the SB 1086 Handbook includes a paragraph on Bank Protection at page 9-6. It acknowledges that part of the incentive for landowners to enroll land in the Conservation Area may be the provision of effective bank protection at locations indicated in site specific management plans.

Finally, in the CALFED Bay-Delta Program Strategic Plan for Ecosystem Restoration in Chapter 1, Introduction at page 5, the plan acknowledges that there existing constraints to ecosystem restoration. It expressing states: “Several human activities in the Bay-Delta watershed have irreversibly altered important ecological processes. Nevertheless, these activities provide important public benefits and ecosystem restoration must occur within the parameters established by these human activities.” It also says that “[e]cosystem restoration must balance the need to provide resources for future consumptive use [of water] with the need to provide high-quality environments that fulfill the needs of plant, animal and human communities.”

In addition, the fisheries analysis and findings of “may affect, but not likely to adversely affect” which were evaluated in the EA/IS and ASIP and were concurred upon by NMFS under their Endangered Species Act administering authority and are therefore satisfactorily addressed in the EA/IS.

**Response to Comment 56:** An EIS/EIR is required if potentially significant effects are not mitigated to less than significant levels. The potential effects identified in this document are mitigated to less than significant levels. Proposed mitigation measures for both biotic and abiotic resources are summarized in Appendix E Mitigation and Monitoring Plan (MMP). Appendix E designates the responsible party for the implementation of each mitigation action, in addition to the methods under which any identified potentially significant impacts will be reduced to a less than significant level. Detailed mitigation and monitoring plans have been developed to avoid any potentially significant impacts to bank swallows and riparian vegetation and native grasslands, which are included as Appendix F, Riparian Vegetation and Native Grassland Mitigation Plan and Appendix G, Bank Swallow Mitigation and Monitoring Plan.

**Response to Comment 57:** Several opportunities have been made available for the public to provide input or pose questions concerning the Draft EA/IS. Although public meetings are not required under NEPA or CEQA during the preparation of an EA/IS, an informational/early scoping meeting was held on July 27, 2005 at the Glenn Pheasant Hall to discuss the interim Action/Project. The Sacramento River Preservation Trust was invited but did not attend.
**Response to Comment 58:** Although the significance criteria described in Section 3.6-Geomorphology and Soils of the Draft EA/IS do not address river meander, potential effects of the Proposed Action/Project on the geomorphology and river processes in the project vicinity are addressed by evaluating the potential effects on the biological and ecological functions provided by natural geomorphic processes. Specifically, the primary importance of geomorphic processes and river dynamics are to provide habitat for aquatic and terrestrial species. For example, river meander creates steep banks in erodible soils that provide habitat for bank swallows and creates the opportunity for riparian vegetation to provide shaded riverine aquatic (SRA) habitat for rearing anadromous salmonids. The potential impacts on aquatic and terrestrial habitats and habitat functions resulting from geomorphic processes are evaluated in detail in Section 3.4 – “Fisheries and Aquatic Resources,” and Section 3.7 – “Terrestrial Resources.”

Additionally, long-term (50-yr) meander modeling projections of existing conditions in the reach between RM 197 and RM 189 (scenario n1) by Larsen (2006) supports the eastward migration of the river between about RM 195.4 and RM 194.5 and the concurrent westward migration of the river between about RM 194.5 and RM 194 with no net increase in the sinuosity of the river in the reach between RM 196 and RM 194. However, modeling of existing conditions by Larsen (2006) does suggest that the river will migrate to some extent to the east below the RM 194L River Road revetment. This will cause erosion of the State Park and the existing gravel bar upstream of the M&T pumps. However, the extent of the projected 50-year migration is relatively minor and would be prevented from moving farther east by the existing rock revetment that extends from Big Chico Creek to about RM 192.7L. Therefore, including significance criteria for the Proposed Action/Project relating to river meander is not necessary.

Additional discussion of potential river meandering within the Action/Project Area is presented in response to comments 7, and 9 through 14, above.

**Response to Comment 59:** The long-term project cannot be analyzed by the EA/IS because the description provided in the Technical Memorandum referenced in the comment has not been adopted by the Technical Advisory Committee, and the long-term project is currently unknown. Additionally, the revetment portion of the temporary maintenance project analyzed in the EA/IS will be removed unless incorporated into the long-term project. Analyses of potential effects associated with removing the revetment are included in the EA/IS. If the future long-term project incorporates the Proposed Action/Project, the effects of permanent revetment and associated mitigation measures will be included in the environmental review of the long-term project.

**Response to Comment 60:** This comment was submitted on the previously circulated EA/IS. The current EA/IS includes Figure 2-4, which illustrates the 2005 and 2006 bank migration information.
Additional discussion of the analysis of bank migration is presented in response to comments 66 and 74.

**Response to Comment 61:** This comment was submitted on the previously circulated EA/IS, however, this comment is addressed in the current EA/IS. The current EA/IS contains two Action/Project alternatives and fully analyzes both alternatives.

**Response to Comment 62:** This comment was submitted on the previously circulated EA/IS. The current EA/IS contains two Action/Project alternatives and fully analyzes both alternatives. Additionally, the current EA/IS explains that adult and juvenile winter-run, spring-run, fall-run, and late fall-run Chinook salmon primarily utilize the Sacramento River in the Action/Project Area as a migration corridor and are not known to spawn in the vicinity of the Action/Project Area (see pages 3-14, 3-17 and 3-18 of the EA/IS). A site visit conducted by the project team during April 2007 indicated that little spawning gravel recruitment could occur due to the lack of suitably sized gravels at the site. However, gravel removed from the Action/Project Area may be used for the restoration of spawning habitat at suitable locations.

Additional discussion of potential use of removed gravel for spawning habitat restoration is presented in the response to comment 36.

**Response to Comment 63:** This project is an interim project intended to allow for opportunity to select the appropriate long-term project. The long-term solution has not been identified, and therefore, cannot be evaluated. However, once identified, the long-term solution will be subject to environmental review including NEPA and CEQA, and federal and state Endangered Species Acts. An additional section, Section 2.2.3.2 Action/Project Lifespan was added to Chapter 2 to provide clarification on the duration of the Proposed Action/Project. The EA/IS does not represent an attempt to control the river, and there is no such goal associated with the project. The steering committee will examine all options for long-term protection of the pumping facility.

**Response to Comment 64:** The Action/Project is funded by CALFED and is analyzed in compliance with NEPA and CEQA and presented in the EA/IS. The preparation of the environmental document is not “the project” and is not referred to as such in the EA/IS. Funding supplied by CALFED Environmental Restoration Program will support the total project which includes planning, document preparation, permits, construction, mitigation, and post-construction monitoring. The total amount of funding supplied by Proposition 204 funds is $2,305,858. USFWS, M&T Chico Ranch and Llano Seco Ranch have donated various portions of the project including brush for the Rock Toe, mitigation lands and restoration, the gravel storage site, have sponsored numerous meetings, and have supplied photos and supporting information and reports that have been used in the preparation of the environmental documentation.
Response to Comment 65: “Study area” and “project area” are terms used interchangeably to describe the area in which potential effects of all project alternatives were analyzed. The study/project area has been identified by a red border in Figures 1-2, 1-3, 2-2, 2-3, 2-8, 3-1, 3-2, 3-3, and 3-4.

Response to Comment 66: The west bank of the Sacramento River within the Action/Project area has eroded over time and is currently observed to be eroding. There is no evidence to suggest that, without the project, the bank would stop eroding. The range of assumed erosion over five years in based on annual erosion rated observed from 1996 to 2006. The statement that erosion occurs "up to 100-feet per year during wet winters" does not imply that erosion of 100-feet would occur during all years. According to the material attached with comments received from Sacramento River Preservation Trust, the comment is accurate that bank retreat was "minimal" during the wet winter of 2005/2006 in some areas. The comment failed, however, to include all information. Specifically, the information provided by the commenter indicated that the bank retreated a maximum of 70 feet in one portion of the displayed area. Additionally, the document provides a range of 100 feet to 500 feet of potential erosion occurring over the five-year planning period, which indicates that the exact outcome of channel migration is not known.

Response to Comment 67: This comment was submitted on the previously circulated EA/IS, however, this comment is addressed in the current EA/IS. Section 2.2.1 was rewritten prior to re-circulation and issuance of the current Draft EA/IS.

Response to Comment 68: The last sentence of the first paragraph under Section 2.2.1, “No Action/Project Alternative” on Page 2-2 was revised as follows:

Under the No Action/Project Alternative alternate sources of funding would be acquired necessary before M&T Chico Ranch/Llano Seco Rancho could implement the removal of accumulated gravel upstream of their diversion facilities maintenance activities required to ensure that fish screening criteria continue to be met.

Further, the evaluation conducted for the No Action/Project Alternative relative to the Existing Conditions included an analysis of reduced or no pumping capabilities in the Sacramento River and increased pumping capabilities in Butte Creek. Although the analysis in the current Draft EA/IS did consider the various pumping capability scenarios, the description of the No Action/Project Alternative was not updated in the Draft EA/IS. The appropriate characterization of the No Action/Project Alternative has been updated and is included in the Final EA/IS.

Response to Comment 69: As summarized in the response to comment 68 above, the appropriate characterization of the No Action/Project Alternative has been updated and is included in the Final EA/IS (see page 2-2 of the EA/IS).
**Response to Comment 70:** Because the Proposed Action/Project is a temporary project and the revetment will be removed after five years if it is not incorporated into the long-term project, the time frame for analysis of effects for all alternatives, including the No Action/Project Alternative, is five years. A long-term solution has not yet been identified, however, when identified, the long-term action/project will be implemented only after completion of separate environmental analyses.

The cumulative analysis includes a discussion of reasonably foreseeable future actions/projects in the Action/Project Area, which may occur outside of the five year project time frame or have impacts which last beyond five years. Please also refer to response to comment 53 for additional discussion of the short-term duration of the Action/Project.

**Response to Comment 71:** As detailed in the Final EA/IS (see Appendix F –Riparian Vegetation and Native Grassland Mitigation Plan), the location, timing, and quantity of mitigation includes the following: 3.46 acres of valley-foothill riparian habitat will be restored on the Llano Seco Rancho during spring (March through May) 2008, or during fall (late September through November) while plants are still dormant; and 0.35 acres of SRA will be created on the Capay Unit between the toe revetment and the river bank during spring 2008. Additionally, potential effects to aquatic backwater habitat are discussed in response to comment 38.

**Response to Comment 72:** Please see response to comment 35.

**Response to Comment 73:** Figure 2-2 in the EA/IS delineates the proposed gravel removal area with a red line, which for illustrative purposes and ease of reading only, corresponds to approximately 18 feet wide based on the scale associated with the figure. The description of a 5 to 10-foot berm in the EA/IS is accurate.

**Response to Comment 74:** Figure 2-4 includes bank retreat information through October 2006. The range of assumed erosion over five years is based on annual erosion rated observed from 1996 to 2006. According to the material attached with the comments received from Sacramento River Preservation Trust, the comment is accurate that bank retreat was "minimal" during the wet winter of 2005/2006 in some areas.

Additional discussion of bank erosion analysis in the EA/IS is presented in response to Comment 66.

**Response to Comment 75:** Sections of the EA/IS, including but not exclusive to Sections 2.2.3 and 2.2.5 and Figure 2-4 include information pertaining to bank retreat through October
2006. Figure 2-4 includes bank retreat information through October 2006, and the range of assumed erosion over five years is based on annual erosion rates observed from 1996 to 2006.

Additional discussion of bank erosion analysis in the EA/IS is presented in response to Comment 66 and 74.

**Response to Comment 76:** Figure 2-7 provides a schematic representation of the rock toe and selected flow exceedance probabilities for illustrating the flows at which the anchored trees atop the revetment would be inundated. The figures were not intended to represent the backfill and final grade of the specific project. Details provided in the description of the rock toe revetment and project environmental commitments (sections 2.2.3, 2.2.3.1, and 2.4.2) describe the final grade. Paragraph 2 of Section 2.2.3.1 indicates that backfilling behind the stone toe is commonly performed to create a relatively smooth alignment that contours with conditions of the site. As described in the document, backfilling the stone toe may reduce the erosive energy along the toe.

**Response to Comment 77:** Section 2.2.3.1 was re-written after circulation of the 2006 Draft EA/IS to clarify the functions of the tree clusters within and atop the revetment. Additionally, "at some flows" was added to the bullet to which the comment refers. In addition to tree clusters embedded in and placed atop the revetment, live willow, alder, and cottonwood trees would be planted upstream of the revetment to provide additional SRA habitat. Section 2.4.3 provides project environmental commitments for biological resources to minimize potential impacts on aquatic and terrestrial biological resources, and Appendix F-Riparian Vegetation and Native Grassland Mitigation Plan provides details regarding riparian and SRA habitat mitigation.

**Response to Comment 78:** The rock toe revetment is part of the Proposed Action/Project, and will therefore be removed after 5 years if not incorporated into the long-term project. Therefore, maintenance activities are not required for tree clusters (i.e., they will persist for at least 5 years of wetting and drying). Additionally, two levels of tree clusters are incorporated into the design of the revetment, as described in Section 2.2.3.1, to ensure a greater duration of wetted woody material. Finally, incorporation of the temporary rock toe revetment into the long-term solution would require independent environmental review (maintenance requirements would be determined at that time). The site currently contains very little instream woody material. Therefore the Proposed Action/Project actually creates instream woody material, and associated benefits of IWM, within the Action/Project Area.

**Response to Comment 79:** This comment was submitted on the previously circulated EA/IS. The current Draft EA/IS contains two Action/Project Alternatives and fully analyses both alternatives.
**Response to Comment 80:** The Draft EA/IS describes that banklines were analyzed from 1996 through 2006. Dates of the surveys or aerial photographs are provided in Figure 2-4. According to the material attached with the comments received from Sacramento River Preservation Trust, bank retreat was relatively small during the wet winter of 2005/2006 in some areas while the bank retreated a maximum of 70 feet in one portion of the displayed area. Additionally, the document provides a range of 100 feet to 500 feet of potential erosion occurring over the five-year planning period, which indicates that the exact outcome of channel migration is not known. However, meander modeling by Larsen (2006) provided similar bank retreat information.

Additional discussion of bank erosion analysis in the EA/IS is presented in response to Comment 66 and 74.

**Response to Comment 81:** This comment was submitted on the previously circulated EA/IS, and thus, the section of the EA/IS indicated by this comment could not be located. Launchable windrow rock was not an alternative considered for evaluation in this analysis. The current EA/IS contains two Action/Project Alternatives and fully analyses both alternatives.

**Response to Comment 82:** The information provided regarding the Final EIR was for informational purposes only. The discussion describing the previous CALFED restoration site and the environmental documentation does not indicate that effects of the temporary maintenance project are not analyzed, but rather to inform the reader that other CALFED actions and environmental review have been undertaken at the site. Additionally, because the long-term solution has not been identified, the effects of the long-term solution on the previous CALFED restoration site can not be analyzed (see also response to comment 53). The effects of the temporary maintenance project on native grasslands are analyzed in Section 3.7.5.4 and are further detailed in Appendix F—Riparian Vegetation and Native Grassland Mitigation Plan. Cumulative effects of the temporary project are analyzed in Section 4.1.2. Additionally, this project does not impact the project to which the Final EIR refers.

**Response to Comment 83:** This comment was submitted on the previously circulated EA/IS. Appendix E—Mitigation and Monitoring Plan has been revised and incorporated into the Final EA/IS and is consistent with the project commitments described in Section 2.4, as well as with the mitigation measures described in each of the resource category sections in Chapter 3 of the EA/IS.

**Response to Comment 84:** USFWS and the CDFG are lead agencies for the proposed project since both agencies obtain water through the M&T Chico Ranch/Llano Seco Rancho Pumping Plant. Furthermore, USFWS will be issuing a special use permit and CDFG will be issuing a 1601 Streambed Alteration Agreement prior to implementation of the proposed
Ducks Unlimited, however, is the project manager under the funding agreements for the proposed project and is responsible for obtaining all necessary permits. Ducks Unlimited subcontracted with M&T Chico Ranch to make application for and acquire all permits needed for construction. Accordingly, M&T Chico Ranch submitted an application for a 401 Water Quality Certification along with all other necessary permits.

**Response to Comment 85:** This comment was submitted on the previously circulated EA/IS, however, this comment is addressed in the current EA/IS. The EA/IS fully analyzes the effects of revetment and inclusion of tree clusters in and atop the revetment. Additionally, a *Riparian Vegetation and Native Grassland mitigation plan* was provided with the Draft EA/IS, and a bank swallow mitigation plan (Appendix G) and an updated MMP (Appendix E) are provided in response to public comments and are included in the Final EA/IS.

Additional discussion regarding channel migration, incision, and bank erosion analysis in the EA/IS is presented in response to comments 7, 9 through 14, and 66.

**Response to Comment 86:** This comment was submitted on the previously circulated EA/IS, and thus, Section 2.2.5 referenced in the Sacramento River Preservation Trust comment could not be located in the current Draft EA/IS. The alternative was dismissed from further consideration in the EA/IS because of the reasons described in Section 2.5.3, including the high potential of that type of revetment to fail in rivers with high flow rates and the difficulty of removal. The wood that is incorporated in the Proposed Action/Project is inherently not the same as a strictly wood revetment. The purpose of the revetment portion of the Proposed Action/Project is to protect the bank. A revetment with a high potential to fail, such as a wood revetment, was determined to be an inappropriate bank protection measure at this location and for this action/project. The Proposed Action/Project protects the bank with rock, but incorporates wood elements, affixed with cable, as IWM for fisheries purposes. The cables are not utilized as a stabilizing mechanism for bank protection, which is unlike some wood revetments which might. Therefore, it is logical to conclude that a rock revetment would function more appropriately as a bank protection measure than a wood revetment. If the cables attaching the IWM fail, neither the stabilization of the bank, or the bank itself, will be compromised.

**Response to Comment 87:** The project would not alter land uses at or adjacent to the project site. Therefore, no further analysis of land use is required under NEPA or CEQA. The project may alter the potential for use as bank swallow habitat, but that is analyzed in Section 3.7, Terrestrial Resources, and is mitigated appropriately. Similarly, potential changes in recreation opportunities are analyzed in Section 3.11, Recreation and Navigational Safety. No changes in the socioeconomics of the area would occur as a result of the project because the project would not impact local commerce or employment opportunities (Section 3.2.5). Similarly, there would be no effect on environmental justice because there are no environmental justice communities in the project area (Section 3.2.5).
Response to Comment 88: The Draft EA/IS does not refer to an Alternative B as an Action Alternative. Alternative B was analyzed as a preferred alternative in the Draft EA/IS published in October 2006 and is thus referred to as the October 2006 Preferred Alternative in the current EA/IS. The Steering Committee determined the need to increase the length of the rock toe revetment and decrease the volume of gravel dredged. The October 2006 Preferred Alternative did not satisfy the Action/Project purpose and need and was therefore removed from further consideration as a reasonable alternative in the current EA/IS. Additional detail is provided in Section 2.5.1 of the EA/IS. The Draft EA/IS contains two Action/Project alternatives referred to as the Dredging Only Alternative and the Proposed Action/Project: 1,520-Foot Rock Toe and Tree Revetment plus Dredging. The Draft EA/IS describes these alternatives in Sections 2.2.2 and 2.2.3 respectively. Additional detail describing mitigation measures for identified potential impacts related to these two alternatives are presented in Appendix E-Mitigation and Monitoring Plan, Appendix F-Riparian Vegetation and Native Grassland Mitigation Plan, and Appendix G-Bank Swallow Mitigation Plan.

Response to Comment 89: This comment was submitted on the previously circulated EA/IS. The Draft EA/IS contains two Action/Project alternatives and fully analyzes both alternatives. The analysis in the current document is substantially more in depth than the previously circulated EA/IS. Fisheries analyses were conducted utilizing the principles of the Standard Assessment Methodology to account for potential temporal effects of several habitat characteristics associated with revetment. A site visit conducted during April 2007 indicated that spawning gravel recruitment potential at the site was low. Therefore it was not analyzed in great detail because the west bank contains few suitably sized gravels and it is well document that relatively little spawning occurs in the region downstream of the project site. Potential effects on spawning gravel recruitment associated with dredging would be minimal because limited recruitment from the site is occurring (i.e., deposition is occurring at the site) and anadromous salmonid spawning does not occur at the site.

Additional explanation of the two alternatives is provided in response to comment 88. Additional discussion of potential use of removed gravel for spawning habitat restoration is presented in the response to comments 36 and 62.

Response to Comment 90: The removal of the gravel bar has little if any ability to significantly impede or re-direct flood flows (by definition greater than bankfull) within the 100-year floodplain. Detailed analysis of river meandering within the 100-year floodplain, based on a 50-year projection, is relatively minor and does not indicate any mechanism for a reduction or increase in flood events in the Action/Project Area.

Additional detail of geomorphology and river dynamics in the Action/Project Area are presented in response to comments 7, 9 through 15, 35, and 72.
Response to Comment 91: The toe rock revetment that occupies about one percent of the channel cross section and is inundated at a flow of about 12,000 cfs (about 13 percent of the bankfull capacity of the channel) has little if any ability to significantly impede or re-direct flood flows (by definition greater than bankfull) within the 100-year floodplain (Mussetter Engineering).

Response to Comment 92: There is no scientific basis for the statement that the combined impacts of Shasta Dam, private and Federal revetments and levee projects have altered sediment transport capacity upstream and downstream of the project. The combined effects of the projects have probably affected the supply of sediment, but the net effect of the levee projects is to actually increase the transport capacity since more flows are confined to the channel and the floodplain widths have been reduced. Sediment transport analyses of the project reach indicate that annual bed material loads are highly dependent on the volume of flow in the river and range from about 2,300 tons in a very dry year (1979) to about 188,000 tons in a very wet year (1974).

Analysis of the concurrence of flood flows on Big Chico Creek and the Sacramento River at the location of the project indicate that the tributary flows have little impact on the hydraulics of the site during flood flows on the Sacramento River. During high flood flows the Big Chico Creek – Sacramento River confluence area is ponded and has very low velocities and shear stress.

Response to Comment 93: Toe scour analysis conducted by Mussetter Engineering, Inc. for design of the toe rock revetment indicated that local bed scour due to the revetment will be on the order of 4 feet. Removal of the gravel bar by dredging will result in subsequent re-filling of the dredged area and a resulting reduction in downstream sediment delivery that could range from about 50 tons per year to 30,800 tons per year based on sediment transport analyses conducted for the M&T project by Mussetter and Cui (2004). Reduction in the downstream sediment supply could have a limited impact on local bank erosion rates downstream of the project reach.

Response to Comment 94: Localized toe scour along the toe-rock project is likely to be on the order of 4 ft based on scour analyses conducted by Mussetter Engineering, Inc. for design of the project. Since the toe-rock project will not substantially change the hydraulics of the reach, there is no reason to believe that the project will cause anything but local scour along the toe of the revetment.

Response to Comment 95: This comment was submitted on the previously circulated EA/IS. The Draft EA/IS contains two Action/Project alternatives and fully analyzes both alternatives. A detailed response pertaining to the discussion of local projects in the area,
including the DWR and Corps Levee Protection Program and Proposition 84, and subsequent analysis associated with them is provided in response to comment 7.

Because the Proposed Action/Project is a temporary project and the revetment will be removed after five years if it is not incorporated into the long-term project, the time frame for analysis of effects for all alternatives, including the No Action/Project Alternative, is five years. Although a long-term solution has not yet been developed, the long-term action/project will be implemented only after completion of separate environmental analyses.

The cumulative analysis includes a discussion of reasonably foreseeable future actions/projects in the Action/Project Area, which may occur outside of the five year project time frame or have impacts which last beyond five years. Please also refer to responses to the comments 53 and 70 for additional discussion of the short-term duration of the Action/Project.

**Response to Comment 96:** A detailed response pertaining to the discussion of local projects in the area and subsequent analysis associated with them is provided in responses to comments 7 and 95, above.

Additional details regarding the analysis of the cumulative effects and a discussion of the considerations necessary to implement a long-term solution are presented in responses to comments 16, 53, 59, and 70.

**Response to Comment 97:** The Draft EA/IS includes a cumulative effects section, which provides a discussion of known projects that have occurred in the area of the Proposed Action/Project and projects that are reasonably foreseeable. In addition, discussions for two additional programs, California State Proposition 84 and the DWR and US Army Corps of Engineers Levee Protection Program, were added to the text (see also response to comment 7). Additionally, the cumulative effects discussions in the EA/IS are appropriate because of the short-duration of the project and the rock toe will be removed following the 5-year planning period. When the long-term project is identified and proposed, it will undergo environmental review which will include the identification and analysis of associated potential cumulative effects. Therefore, cumulative effects have been appropriately addressed due to the temporary nature of the project (see responses to comments 7 and 53).

**Response to Comment 98:** The long-term solution has not been identified, and therefore, cannot be evaluated. However, once identified, the long-term solution will be subject to separate environmental review including NEPA and CEQA, and federal and state Endangered Species Acts. A detailed response pertaining to the analysis of the long-term solution is presented in response to Comments 16, 53, 59, and 63.

**Response to Comment 99:** All potential effects identified in this document are mitigated to less than significant levels. Proposed mitigation measures for both biotic and abiotic
resources are summarized in Appendix E Mitigation and Monitoring Plan (MMP). A description of proposed mitigation measures for riparian vegetation and native grasses is presented in Appendix F, Riparian Vegetation and Native Grassland Mitigation Plan. A detailed description of habitat conservation activities and reporting requirements to protect bank swallows and bank swallow habitat are presented in Appendix G, Bank Swallow Mitigation and Monitoring Plan. Additionally, the commentor incorrectly characterizes the Mitigated Negative Declaration. The purpose of the Proposed Action/Project is to prevent the potential effects of allowing the river to continue to meander and sediments to deposit, which could negatively impact the ability of the projects to comply with the fish screen criteria and result in reduced flows in Butte Creek.

Response to Comment 100: Mitigation locations are described in the riparian vegetation and grassland mitigation plan (Appendix F in the Final EA/IS), the bank swallow mitigation plan (Appendix G in the Final EA/IS), and the MMP, which has been revised in response to public comment (Appendix E of the Final EA/IS). The Final EA/IS, including these appendices, fully discloses and discusses the potential impacts and activities related to off-site mitigation.

Additionally, the long-term solution has not been identified, and therefore, cannot be evaluated. However, once identified, the long-term solution will be subject to separate environmental review including NEPA and CEQA, and federal and state Endangered Species Acts. Detailed responses pertaining to the analysis of the long-term solution are presented in responses to comments 16, 53, 59, and 63.

Response to Comment 101: An MMP was provided with the Draft EA/IS. The appropriate mitigation measures and final mitigation plans have been developed and are included in the Final EA/IS (Appendix F, Riparian Vegetation and Native Grassland Mitigation Plan; Appendix G, Bank Swallow Mitigation Plan; and Appendix E Mitigation and Monitoring Plan). Development of Appendix E Mitigation and Monitoring Plan (MMP) was not deferred until after project approval. Specific mitigation locations could not be identified prior to circulation of the Draft EA/IS, but are now fully identified and evaluated in the Final EA/IS.

Response to Comment 102: Development of a bank swallow mitigation plan was not deferred until after project approval. Mitigation locations could not be identified prior to circulation of the Draft EA/IS. A detailed bank swallow mitigation plan is provided in response to public comments and is included as Appendix G to the Final EA/IS.

Response to Comment 103: Potential impacts due to implementation of the Proposed Action/Project would not be expected to occur due to the nature of the proposed mitigation sites. As described in Appendix F - Riparian Vegetation and Native Grassland Mitigation Plan, mitigation for potential effects of the Proposed Action/Project would be occur on disturbed and agricultural lands. Therefore, no impacts would occur to these sites due to
project mitigation. Further, as described in detail in Appendix G – Bank Swallow Mitigation Plan, no active mitigation measures would be implemented. The bank swallow mitigation is a permanent conservation easement only, which would not have any physical or land disturbing impacts that in turn would require any mitigation.

**Response to Comment 104:** A detailed Bank Swallow Mitigation Plan provided in response to public comments and is included as Appendix G to the Final EA/IS.

Additional information pertaining to bank swallow mitigation is presented in response to comments 22 through 26.

**Response to Comment 105:** Detailed responses pertaining to the analysis of river meandering and bank erosion are presented in responses to comments 7, 9 through 14, 35, 66, 72, and 74.

**Response to Comment 106:** The project is a temporary project that includes dredging as a one-time event. The long-term project will undergo environmental review irrespective of whether the temporary project (i.e., revetment) is included in the long-term project. However, if additional periodic dredging activities are included as part of the long-term project, these actions would be included in the environmental assessment and documentation related to the long-term solution.

Additional detail regarding the analysis of the long-term solution is presented in responses to comments 16, 53, 59, and 63.

**Response to Comment 107:** Details related to the analysis of the long-term solution are presented in responses to comments 7, 16, 53, 59, and 63. Cumulative effects have been appropriately addressed due to the temporary nature of the project (see responses to comments 7 and 53).

**Response to Comment 108:** Details related to the analysis of the long-term solution are presented in responses to comments 7, 16, 53, 59, and 63. Additional clarification and description of the analyses of the effects of revetment removal has been incorporated into the fisheries and aquatic resources, and terrestrial resources impact assessments in the Final EA/IS. Adequate funds exist to support the removal of the rock toe revetment at the end of the five year duration anticipated for the Proposed Action/Project. A funding source has been identified that contains adequate funds. The estimate for rock removal is $60,700. That amount should be increased at a rate of 5% for each year after January 1, 2008.
Response to Comment 109: A detailed Bank Swallow Mitigation Plan provided in response to public comments and is included in the Final EA/IS as Appendix G.

Additional information pertaining to bank swallow mitigation is presented in response to comments 22 through 26.

Response to Comment 110: As described above in response to comment 109, a detailed Bank Swallow Mitigation Plan provided in response to public comments and is included in the Final EA/IS as Appendix G (see also responses to comments 22 through 26).

Response to Comment 111: A detailed response regarding the discussion of local projects in the area and subsequent analysis associated with them is provided in response to Comment 7.

Additional details regarding the analysis of the cumulative effects of long-term solution are presented in response to Comments 16, 53, 59, and 63.

Response to Comment 112: The bank swallow recovery plan identifies conservation easements as a recovery action, which CDFG has also deemed as an appropriate conservation/mitigation measure to protect bank swallows for the Proposed Action/Project. As described above in response to comment 109, a detailed Bank Swallow Mitigation Plan provided in response to public comments and is included in the Final EA/IS as Appendix G (see also responses to comments 22 through 26).

Response to Comment 113: As described above in response to comment 109, a detailed Bank Swallow Mitigation Plan provided in response to public comments and is included in the Final EA/IS as Appendix G (see also responses to comments 22 through 26).

Response to Comment 114: CDFG currently is in the process of identifying restoration efforts in the region that could utilize the gravel. Although a site visit conducted by the project team during April 2007 indicated that little spawning gravel recruitment could occur in the Action/Project Area portion of the Sacramento River due to the lack of suitably sized gravels at the site, gravel removed from the Action/Project Area may be used for the restoration of spawning habitat at suitable locations. If a suitable restoration project is not identified prior to project approval, CDFG would have the authority to identify and make decisions regarding the use of the gravel. It should be noted that CDFG, USFWS, and the National Marine Fisheries Service (NMFS) are committed to utilizing the removed gravel for future restoration activities.

Response to Comment 115: The hydraulic impacts of the toe-rock revetment were modeled with a 1-dimensional HEC-RAS hydraulic model. The toe revetment, because of its limited
impact on the in-channel conveyance capacity of the river, has no detectable impact on water-surface elevations through the project reach. Local scour, the result of locally increased shear stress and velocity at the toe of the revetment will cause about 4 ft of localized scour. Design of the revetment includes additional rock that will launch into the scoured area to protect the toe of the revetment. Dredging of the bank-attached bar will locally increase the cross section area of the reach but this will be reduced as sediment is re-deposited in the future. Increase in the cross section area will locally reduce the sediment transport capacity of the reach and increase the probability of future deposition. Dredge materials are to be disposed of above the floodplain elevation and will therefore have no hydraulic impact on floodplain capacity in the project reach.

**Response to Comment 116:** Mitigation measures are detailed and available to the public as Appendices E-Mitigation and Monitoring Plan, F-Riparian Vegetation and Native Grassland Mitigation Plan, and G-Bank Swallow Mitigation Plan.

Additional discussion related to specific and detailed mitigation measures are presented in responses to comments 22 through 26, 46 through 49, 71, 77, 83, 85, and 101.

A discussion related to identifying appropriate mitigation funding for implementing the Proposed Action/Project is discussed in responses to comments 50, 64, and 108.

**Response to Comment 117:** The Project Proponents are in the process of obtaining a Clean Water Act Section 404 permit from the USACE. Therefore, a lease from the State Lands Commission is not required and will not be sought for the Proposed Action/Project.