

**APPENDIX E**  
**MITIGATION MONITORING AND REPORTING PLAN**

## MITIGATION, MONITORING AND REPORTING PLAN

Section 15097 of the California Environmental Quality Act (CEQA) requires all state and local agencies to establish monitoring or reporting programs for projects approved by a public agency whenever approval involves the adoption of either a “mitigated negative declaration” or specified environmental findings related to environmental impact reports. The following Mitigation, Monitoring and Reporting Plan (MMRP) summarizes environmental protection and mitigation measures, as described for the Proposed Action/Project: 1,520-Foot Rock Toe and Tree Revetment plus Dredging. This MMRP includes the environmental protection and design considerations incorporated into the proposed project as a means to avoid and/or reduce potentially significant impacts to the environment. A full description of each of these actions is provided in Sections 2.4, and 3.3 – 3.12 of the Proposed Action/Project EA/IS.

Environmental commitments are measures or practices adopted by a project proponent to reduce or avoid adverse effects that could result from project construction and operations. This MMRP describes the environmental commitments, including impact avoidance or mitigation measures, which will be implemented to ensure that no significant impacts result from the Proposed Action/Project. The lead and responsible agencies have adopted these measures and incorporated them as part of the Proposed Project/Action (i.e., Proposed Action/Project: 1,520-Foot Rock Toe and Tree Revetment plus Dredging) in compliance with applicable federal, state, and local policies or regulations that apply to the project activities. These measures will ensure that the Proposed Action/Project will minimize or avoid potentially significant environmental impacts, to the extent feasible. These measures include monitoring commitments that were developed during the planning and design phases of the Proposed Action/Project, and mitigation and monitoring commitments identified in the Final EA/IS.

A summary of the proposed environmental protection and mitigation measures described in this MMRP are provided in the following table.

### Summary of Environmental Commitments Incorporated into the Proposed Project/Action and Mitigation Measures

<b>Resource</b>	<b>Environmental Commitments / Mitigation Measures</b>	<b>Implementing Agencies</b>	<b>Timing</b>
<b>Aesthetics/Visual Resources</b>	The inclusion of tree clusters on the revetment will minimize the degradation of the visual character of the Action/Project Area	Construction contractor, M&T Chico Ranch and Llano Seco Rancho	During the construction period
	Restoration will occur on the river bank (.35 acres of SRA habitat within the Capay Unit) and on the Llano Seco Ranch property (3.46 acres of valley-foothill riparian habitat), to minimize degradation of the visual character of the Action/Project Area over time (see Appendix F)	M&T Chico Ranch, Llano Seco Rancho, CDFG and SNWRC	During the construction period

<b>Air Quality</b>	A water truck will be present in the project area and surrounding non-paved roads to water the roadways in order to minimize dust and other particulate matter	Construction contractor / M&T Chico Ranch and Llano Seco Rancho	During the construction period
	M&T Chico Ranch/Llano Seco Rancho will implement as many Standard Mitigation Measures and Best Available Mitigation Measures, including the development of a dust control plan into the construction plans as feasible in order to reduce the potential for significant effects. These minimization measures include but are not limited to the following: (1) cover all trucks hauling materials, or ensure the trucks have at least 2-feet of freeboard; (2) enclose, cover, or water exposed stockpiles twice daily, or have non-toxic binders applied; (3) replant disturbed areas with native, noninvasive vegetation as quickly as possible; (4) require injection timing retard of 2 degrees on all diesel vehicles, where applicable; (5) install high pressure injectors on all vehicles, where feasible; (6) encourage the use of reformulated diesel fuel; (7) electrify equipment, where feasible; (8) maintain equipment in tune with manufacturer's specifications; (9) install catalytic converters on gasoline-powered equipment; (10) substitute gasoline-powered for diesel-powered equipment where feasible; and (11) water access road and construction site as needed for dust control.	Construction contractor / M&T Chico Ranch and Llano Seco Rancho	During the construction period
<b>Drainage and Water Quality</b>	Implement an Erosion Control Plan and Post Construction Stormwater Management Plan (PCSWMP).	Construction contractor, M&T Chico Ranch and Llano Seco Rancho	During the construction period

<b>Drainage and Water Quality</b> (continued)	A Storm Water Pollution Prevention Plan (SWPPP) will be provided by the contractor prior to the onset of construction activities, and will be implemented as required by the conditions of a National Pollution Discharge Elimination System (NPDES) permit.	Construction contractor / M&T Chico Ranch and Llano Seco Rancho	During the construction period
	A Hazardous Materials Control, Spill Prevention, and Response Plan (HMCSRP) will be implemented by the contractor to reduce the potential effects of hazardous materials use and spills.	Construction contractor / M&T Chico Ranch and Llano Seco Rancho	During the construction period
	Best Management Practices, provided by the contractor will be implemented and will include:  (1) Preventing any substances that could be hazardous to aquatic life from contaminating the soil or entering watercourses, including ditches and canals; (2) establishing a HMCSRP before project construction that includes strict on-site handling rules to keep construction and maintenance materials out of drainage and waterways; (3) training all construction personnel in the proper use and cleanup of potentially hazardous materials; (4) cleaning up all spills immediately according to the HMCSRP, and notifying CDFG and the Central Valley RWQCB immediately of spills and cleanup procedures; and (5) providing staging and storage areas for equipment, materials, fuels, lubricants, solvents, and other possible contaminants away from watercourses and their watersheds.	Construction contractor / M&T Chico Ranch and Llano Seco Rancho	During the construction period

<b>Drainage and Water Quality</b> (continued)	Minimize the amount of in-water work. Increased turbidity levels and/or suspended sediments within the mainstem Sacramento River, and Big Chico Creek will also be minimized by adhering to the SWPPP, and RWQCB Section 401 certification requirements.	Construction contractor / M&T Chico Ranch and Llano Seco Rancho	During the construction period
<b>Fisheries and Aquatic Resources</b>	Project personnel will participate in an environmental awareness training program provided by the project biologist. Construction workers will be informed by a qualified environmental monitor about any sensitive biological resources associated with the project and that disturbance of sensitive habitat or special-status species is a violation of the federal Endangered Species Act (ESA) and Section 404 of the Clean Water Act.	USFWS / Construction contractor / M&T Chico Ranch and Llano Seco Rancho	Prior to construction
	Workers will be informed of the nearshore presence of juvenile listed fish species, including anadromous salmonids, and that actions causing injury or death to fish could result in civil or criminal penalties to the individuals who commit such actions.	USFWS / Construction contractor / M&T Chico Ranch and Llano Seco Rancho	Prior to construction
	Workers will be informed of the need to carefully place rock in order to avoid impacts to juvenile fish.	USFWS / Construction contractor / M&T Chico Ranch and Llano Seco Rancho	Prior to construction
	A qualified biological monitor will be present on site during construction.	USFWS / M&T Chico Ranch and Llano Seco Rancho	During the construction period
	During construction of the rock toe revetment, a “vener” of stone less than 8 inches in diameter or “pit run rock,” which consists of various sizes of rock	Construction contractor / M&T Chico Ranch and Llano Seco Rancho	During the construction period

<b>Fisheries and Aquatic Resources</b> (continued)	that lock together, will fill interstitial spaces created by the large quarry stone. These measures will reduce the presence of cavities that could be used as refuges for piscivorous fish species.		
	Tree/brush clusters will be included in the revetment to mitigate for decreased IWM recruitment, due to the removal of the Valley/Foothill Riparian habitat where the revetment will be placed.	Construction contractor / M&T Chico Ranch and Llano Seco Rancho	During the construction period
	Bank slope after revetment will be reduced from 1:1 to 10:1, which will increase juvenile salmonid rearing habitat.	Construction contractor / M&T Chico Ranch and Llano Seco Rancho	During the construction period
	Erosion Control Plan and Post Construction Stormwater Management Plan (PCSWMP) will be implemented.	Construction contractor / M&T Chico Ranch and Llano Seco Rancho	During the construction period
	A Storm Water Pollution Prevention Plan (SWPPP) will be implemented as required by the conditions of a National Pollution Discharge Elimination System (NPDES) permit	Construction contractor / M&T Chico Ranch and Llano Seco Rancho	During the construction period
	A Hazardous Materials Control, Spill Prevention and Response Plan will be implemented to reduce the potential effects of hazardous materials use and spills.	Construction contractor / M&T Chico Ranch and Llano Seco Rancho	During the construction period
	Construction Best Management Practices (BMPs) are incorporated as part of the Proposed Action/Project description, and include:  (1) Preventing any substances that could be hazardous to aquatic life from contaminating the soil or entering watercourses, including ditches and canals; (2) establishing a HMCSRP before	Construction contractor / M&T Chico Ranch and Llano Seco Rancho	During the construction period

<b>Fisheries and Aquatic Resources</b> (continued)	project construction that includes strict on-site handling rules to keep construction and maintenance materials out of drainage and waterways; (3) training all construction personnel in the proper use and cleanup of potentially hazardous materials; (4) cleaning up all spills immediately according to the HMCSRP, and notifying CDFG and the Central Valley RWQCB immediately of spills and cleanup procedures; and (5) providing staging and storage areas for equipment, materials, fuels, lubricants, solvents, and other possible contaminants away from watercourses and their watersheds.		
	Approximately 0.35 acres of cottonwood-willow-sycamore-alder shoreline habitat will be created immediately upstream of the revetment (on the Capay Unit of the SNRWR), which not only will provide some IWM recruitment over the 5-year planning period, but will be expected to provide additional IWM recruitment over time, as the restored habitat matures (see Appendix F for more information).	M&T Chico Ranch, Llano, Seco Rancho, CDFG and the SNWRC (USFWS) will oversee implementation of planting and monitoring of revegetation on the SRNWR and Llano Seco Rancho.	Phase 1 overstory and understory plants will be planted during Fall 2007 and Spring 2008. Phase 2 understory grass seed will be seeded during late fall of Year 2 (2009).
<b>Geomorphology and Soils</b>	A SWPPP will be implemented to control erosion and sedimentation. A water quality monitoring plan will be implemented, and construction activities will be slowed or stopped if turbidity levels reach those dictated by the RWQCB's 401 certification.	Construction contractor / M&T Chico Ranch and Llano Seco Rancho	During the construction period
<b>Terrestrial Resources – General Measures</b>	A soil erosion control plan will be implemented by M&T Chico Ranch/Llano Seco Rancho during dredging activities to minimize potential effects of silt entering the river and increasing	Construction contractor, M&T Chico Ranch and Llano Seco Rancho	During the construction period.

<b>Terrestrial Resources – General Measures (continued)</b>	river turbidity. The plan will be implemented before the construction phase begins. CDFG, RWQCB, and USFWS will review the plan to verify that physical BMPs have been incorporated to reduce erosion and sedimentation to the maximum extent possible and ensure compliance with this measure.		
	Pre-construction surveys for sensitive biological resources will be conducted by qualified biologists. Sensitive resources include species evaluated in Section 3.7.2.3 of the Proposed Action/Project EA/IS.	USFWS / M&T Chico Ranch and Llano Seco Rancho	Prior to construction
	Temporary construction netting (high-visibility plastic fencing) will be placed around nearby vegetation by the contractor to provide protection from construction activities.	Construction contractor / M&T Chico Ranch and Llano Seco Rancho	During the construction period
	Project personnel will participate in an environmental awareness training program provided by the project biologist. Construction workers will be informed by a qualified environmental monitor about any sensitive biological resources associated with the project and that disturbance of sensitive habitat or special-status species is a violation of the federal Endangered Species Act (ESA) and Section 404 of the Clean Water Act.	USFWS / Construction contractor / M&T Chico Ranch and Llano Seco Rancho	Prior to construction
	Implement a plan to avoid, compensate for, and enhance natural vegetation, including riparian habitats and IWM prior to, during, and subsequent to construction activities (see Appendix F)	M&T Chico Ranch/Llano Seco Rancho	During and subsequent to the construction period.
	Approximately 0.35 acres of cottonwood-willow-sycamore-	M&T Chico Ranch, Llano,	Phase 1 overstory and understory



<b>Terrestrial Resources –</b> General Measures (continued)	alder shoreline habitat will be planted immediately upstream of the revetment (on the Capay Unit of the SNRWR) and an additional 3.46 acres of valley-foothill riparian habitat (which will include plantings of valley oak, cottonwood, sycamore, ash, California grape, wild rose, buttonbush, and willow species) will be created on the Llano Seco Rancho (approximately 8 miles downstream of the Proposed Action/Project Area).	Seco Rancho , CDFG and the USFWS SNWRC will oversee implementation of planting and monitoring of re-vegetation on the SRNWR and Llano Seco Rancho.	plants will be planted during Fall 2007 and Spring 2008. Phase 2 understory grass seed will be seeded during late fall of Year 2 (2009).
	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 (cottonwood and willow saplings, 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. If re-planting removed individual saplings is infeasible, then similarly-sized individuals will be planted.	CDFG, State Parks, and construction contractor will identify the access route to minimize damage to riparian species. If necessary, M&T Chico Ranch will restore riparian habitat.	During and subsequent to the construction period.
	Avoid/minimize construction activities during the breeding period of evaluated plant species that could be affected.	Construction contractor / M&T Chico Ranch and Llano Seco Rancho	During the construction period
	Establish and protect additional populations of evaluated plant species in suitable nearby habitat areas before implementing construction activities.	Construction contractor / M&T Chico Ranch and Llano Seco Rancho	Prior to construction
	To the extent practicable, remove or exclude evaluated	Construction contractor / M&T	Prior to construction

	amphibian and reptile species from construction corridors before construction is initiated.	Chico Ranch and Llano Seco Rancho	
<b>Terrestrial Resources – Riparian Vegetation</b>	Prior to the planting of riparian vegetation associated with habitat restoration activities, all non-native vegetation within the restoration location will be removed.	M&T Chico Ranch, Llano Seco Rancho, CDFG and SRNWR (USFWS )	During and subsequent to the construction period
	After riparian planting occurs, weeds (rye grass, Johnson grass, morning glory, chickweed and other weeds) will be treated (sprayed with herbicides on the planting strips and mowed between the planting strips) prior to flowering, and should continue for three years. (See Appendix F)	M&T Chico Ranch, Llano Seco Rancho, CDFG and SRNWR (USFWS )	Weed control should continue for 3 years
	Subsequent to the first year of riparian planting, replanting of trees, shrubs, and herbaceous understory species will occur as needed, to reach a survival goal of 60% after 5 years for the shoreline community and 80% for the riparian floodplain community. If individual plants do not survive, larger individuals will be planted in their place. (See Appendix F)	M&T Chico Ranch, Llano Seco Rancho, CDFG and SRNWR (USFWS )	2008 – 2013
	All riparian plants to be used for restoration activities will be stored in a manner as to prevent damage from sunlight, moisture, or contact with vehicles, equipment and tools.	M&T Chico Ranch, Llano Seco Rancho, CDFG and SRNWR (USFWS )	During and subsequent to the construction period.
	Riparian planting sites will be irrigated using trucked watering, spray, flood or surface drip irrigation systems, depending on site-specific conditions.	M&T Chico Ranch, Llano Seco Rancho, CDFG and SRNWR (USFWS )	Irrigation will occur regularly (once a week to once every three weeks) through the first and second spring and summer following planting;

<b>Terrestrial Resources – Riparian Vegetation (continued)</b>			at least once every other week during year three; and at least once each month from April through August during years four and five.
	If riparian restoration occurs on levee slopes, irrigation will conform to the following State Reclamation Board criteria: (1) surface low pressure drip irrigation systems may be used on either the landside or waterside levee slope; and (2) any water applied to vegetation on the levee slope by any means must be controlled to prevent erosion of the levee slope.	M&T Chico Ranch, Llano Seco Rancho, CDFG and SRNWR (USFWS )	Irrigation will occur regularly (once a week to once every three weeks) through the first and second spring and summer following planting; at least once every other week during year three; and at least once each month from April through August during years four and five.
	Monitoring of riparian re-vegetation activities will use the following metrics: (1) percent survival during each of the five years of monitoring; (2) plant vigor (rated as excellent, good, fair or poor); (3) percent linear closure after fifth year of monitoring (2013); percent linear closure will be determined by the percent of drainage length that is beneath the riparian species canopy; and (4) photographic documentation, to provide for a visual record or plant growth and canopy closure after planting.	M&T Chico Ranch, Llano Seco Rancho, CDFG and SRNWR (USFWS )	2008 – 2013
<b>Terrestrial Resources – Grasslands</b>	Re-vegetation of removed grassland habitat will occur at a 1:1 ratio at an area within the Capay Unit and an additional 6.8 acres of native grassland will be restored at the Rio Vista Unit of the SRNWR. Species planted at	M&T Chico Ranch, Llano Seco Rancho and the SNWRC developed the Riparian Vegetation and	Grasses will be restored after completion of construction in the fall.

<b>Terrestrial Resources – Grasslands (continued)</b>	the Capay Unit and at the Rio Vista Unit will include local ecotypes of blue wildrye ( <i>Elymus glaucus</i> ), creeping wildrye ( <i>Leymus triticoides</i> ) and mugwort ( <i>Artemisia Douglasiana</i> ). Grassland restoration will utilize a combination of prescribed fire, mechanical treatments, approved herbicide applications, and native grass seeding to control invasive species (i.e. yellow star-thistle and Johnson-grass)	Native Grassland Mitigation Plan. Restoration at the Capay Unit will be implemented by the SNWRC. M&T Chico Ranch, Llano, Seco Rancho, CDFG and the USFWS will oversee implementation of the re-vegetation on the SRNWR and Llano Seco Rancho.	
	The following metrics will be used to monitor grassland restoration activities: (1) annual species composition and frequency; (2) percent linear closure (i.e. the percent of bare ground and non-native plants that are exposed beneath the native grass stand), to be determined after the fifth year of monitoring (2013); and (3) photographic documentation, to provide a visual record of plant growth and canopy closure after planting.	M&T Chico Ranch, Llano, Seco Rancho, CDFG and the USFWS will oversee implementation of monitoring of re-vegetation on the SRNWR and on Llano Seco Rancho.	2008 – 2013
<b>Terrestrial Resources - Valley elderberry longhorn beetle</b>	Shrubs directly affected (E05 and E07) will be transplanted under the supervision of the USFWS, complying with the VELB Conservation Guidelines (USFWS 1999) prior to the onset of construction activities. For each stem =1 inch in diameter at ground level that is transplanted, elderberry seedlings or cuttings will be planted in the Action Area at a ratio specified in the VELB Conservation Guidelines (USFWS 1999).	M&T Chico Ranch, Llano Seco Rancho, CDFG and USFWS	Prior to construction
	The following conditions will be	Construction	During the

<p><b>Terrestrial Resources -</b> Valley elderberry longhorn beetle (continued)</p>	<p>implemented to minimize impacts to the existing elderberry shrubs:</p> <p>(1) Orange barrier fencing will be placed 100 feet from the drip line, where practicable, or a minimum of 20 feet from the drip line with written USFWS concurrence, from elderberry shrubs with one or more stems measuring =1 inch in diameter at ground level, and construction personnel and activities will avoid fenced areas; (2) erosion and dust control measures will be implemented during all construction activities; (3) no insecticides, herbicides, fertilizers, or other chemicals will be applied within 100 ft of elderberry plants with one or more stems =1 inch in diameter at ground level during construction activities. All drainage water during and following construction will be diverted away from the bushes; (4) signs will be erected along the protective fence that describes the elderberry shrubs and the federally-listed beetle; (5) all construction personnel will receive environmental awareness training regarding the elderberry shrubs, the status of the beetle, and the need to avoid the elderberry shrubs; and (6) any damage done to areas within 100 feet of elderberry shrubs will be restored with native plant species and monitored by the project proponent.</p>	<p>contractor, USFWS, M&amp;T Chico Ranch and Llano Seco Rancho</p>	<p>construction period</p>
<p><b>Terrestrial Resources -</b> Northwestern pond turtle</p>	<p>Where proposed project actions will adversely affect occupied habitat, enhance or restore suitable habitat near affected areas for a restoration ratio of 1:1 for every acre of occupied</p>	<p>Construction contractor, M&amp;T Chico Ranch and Llano Seco Rancho</p>	<p>Subsequent to the construction period.</p>

	habitat affected.		
<b>Terrestrial Resources -</b> Northwestern pond turtle (continued)	To the extent practicable, capture individuals from habitat that will be affected by construction activities, and relocate them to nearby suitable existing, restored, or enhanced habitat.	USFWS	Prior to and during the construction period.
<b>Terrestrial Resources -</b> Bald eagle	Avoid or minimize construction- and recreation-related disturbances that could be associated with implementing construction activities within 0.5 mile of active nest sites during the nesting period (February-July).	Construction contractor, M&T Chico Ranch and Llano Seco Rancho	During the construction period
	Avoid proposed project actions that could result in the loss of traditional nesting trees or degradation of natural habitat within 0.5 mile of traditional nest trees.	Construction contractor, M&T Chico Ranch and Llano Seco Rancho	During the construction period
<b>Terrestrial Resources -</b> Western yellow-billed cuckoo	Avoid or minimize actions that could degrade or result in the loss of suitable nesting habitat within the species current and historical range.	Construction contractor, M&T Chico Ranch and Llano Seco Rancho	During the construction period
	Avoid construction activities near active nest sites that could result in disturbance during the breeding period (May-August).	Construction contractor, M&T Chico Ranch and Llano Seco Rancho	During the construction period
<b>Terrestrial Resources -</b> Bank swallow	The short-term loss of bank swallow habitat will be mitigated through the acquisition of a permanent 1,520-foot long by 600-foot wide USFWS conservation easement on the M&T Chico Ranch that has provided habitat for bank swallow nesting colonies since 1998. The conservation easement will be in place in perpetuity, which is expected to	M&T Chico Ranch, Llano Seco Rancho, and USFWS. USFWS will conduct the annual monitoring.	During or subsequent to the construction period

<b>Terrestrial Resources - Bank swallow</b> (continued)	be a period of a minimum of ten years. The conservation easement will be monitored annually.		
	Avoid actions near active colonies from April through August.	Construction contractor, M&T Chico Ranch and Llano Seco Rancho	During the construction period
	To the extent practicable, avoid actions that will create suitable, but temporary, nesting habitat that could create population sinks by attracting bank swallows, or implement additional actions to render such habitat unattractive to bank swallows.	Construction contractor, M&T Chico Ranch and Llano Seco Rancho	During the construction period
	Coordinate permanent protection and restoration of channel meander belts and existing bank swallow colonies with other Federal and State programs (e.g., the Senate Bill [SB] 1086 program and the COE Sacramento and San Joaquin Basin Comprehensive Study), Federal and State refuges, and private landowners via fee title or conservation easement in the affected reach (RM 169-199, Butte City to Hamilton City).	Involved entities could include M&T Chico Ranch, Llano Seco Rancho, Federal and State Agencies, and private landowners	Subsequent to the construction period.
<b>Terrestrial Resources - Swainson's Hawk</b>	Avoid or minimize actions near locations that support high densities of nesting pairs that could adversely affect high value foraging and nesting habitat.	Construction contractor, M&T Chico Ranch and Llano Seco Rancho	During the construction period
	Avoid or minimize actions within 5 miles of active nest sites that could result in disturbance during the breeding period (April-September).	Construction contractor, M&T Chico Ranch and Llano Seco Rancho	During the construction period
	To the extent consistent with proposed project objectives, adhere to CDFG Region II mitigation guidelines for avoiding or minimizing impacts	Construction contractor, M&T Chico Ranch and Llano Seco Rancho	During the construction period

	of actions on the Swainson's hawk.		
<b>Terrestrial Resources -</b> White-tailed Kite	Avoid or minimize disturbances to nesting pairs that could be associated with implementing proposed project actions within 0.25 mile of active nest sites during the nesting period (February-July).	Construction contractor, M&T Chico Ranch and Llano Seco Rancho	During the construction period
	Avoid or minimize proposed project actions that could result in the loss of traditional nesting trees.	Construction contractor, M&T Chico Ranch and Llano Seco Rancho	During the construction period
	If suitable habitat is determined to be present during field surveys, restore or enhance suitable nesting habitat near affected areas for occupied nesting habitat that is converted to unsuitable nesting habitat as a result of the proposed project actions for a 2:1 ratio of mitigation. Restored or enhanced compensation habitat should be located in areas that support nesting pairs near valley oak woodlands.	Construction contractor, USFWS, M&T Chico Ranch and Llano Seco Rancho	Subsequent to the construction period.
	To the extent consistent with CalFed ERP objectives, enhance and restore natural habitats and agricultural habitats adjacent to occupied nesting habitats to create a buffer zone of natural habitat. This buffer zone will protect nesting pairs from adverse effects that could be associated with future changes in land use on nearby lands and provide foraging and nesting habitat suitable for the natural expansion of populations.	USFWS and CDFG	Subsequent to the construction period.
	To the extent consistent with CalFed ERP objectives, manage restored or enhanced habitats under the ERP to maintain	USFWS and CDFG	Subsequent to the construction period.



	desirable rodent populations and minimize impacts associated with rodent control.		
<b>Terrestrial Resources - Osprey</b>	Before implementing proposed project actions that could result in the loss or degradation of occupied nesting habitat or disturbance to nesting pairs, conduct surveys in suitable nesting habitat within the breeding range of the osprey to locate active nest sites.	Construction contractor, M&T Chico Ranch and Llano Seco Rancho	Prior to the construction period.
	Avoid or minimize disturbances to nesting pairs that could be associated with implementing proposed project actions within 0.25 mile of active nest sites during the nesting period (March-July).	Construction contractor, M&T Chico Ranch and Llano Seco Rancho	During the construction period
	Avoid or minimize proposed project actions that could result in the loss of traditional nesting trees.	Construction contractor, M&T Chico Ranch and Llano Seco Rancho	During the construction period
<b>Cultural Resources</b>	Should any cultural resources, such as structural features, unusual amounts of bone or shell, artifacts, human remains, or architectural remains be encountered during any development activities, work will be suspended (within 100 feet of any find of buried cultural resources) and a qualified archaeologist will be consulted to develop, if necessary, further mitigation measures to reduce any archaeological impact to a less than significant level before construction continues. Such measures could include (but will not be limited to) researching and identifying the history of the resource(s), mapping the location, and photographing the resource. In addition, pursuant to Section 5097.98 of the State Public Resources Code, and	Construction contractor, M&T Chico Ranch and Llano Seco Rancho	During the construction period

<b>Cultural Resources</b> (continued)	Section 7050.5 of the State Health Code, in the event of the discovery of any human remains, all work will stop and the County Corner will be immediately notified. If the remains are determined to be Native American, guidelines of the Native American Heritage Commission will be adhered to in the treatment and disposition of the remains.		
	A qualified archeologist will be on-site to monitor earthmoving activities associated with the excavation of the six tie-back areas measuring 20' long, 20' deep, and 20' side at 300' intervals. If subsurface archaeological materials are observed, earthmoving activities in the vicinity will cease until the archeologist could document and evaluate the significance of the materials, in consultation with the Regional Archaeologist, the California State Historic Preservation Office, and Native American tribes, as appropriate.	Construction contractor, M&T Chico Ranch and Llano Seco Rancho	During the excavation of the six tie-back areas.
<b>Recreation and Navigation Safety</b>	Foot entrapment will be avoided in the proposed project by using relatively uniform gradation in rock sizes, including a full range of small, medium, and large rocks that will preclude the presence of large voids, through the use of "pit run rock" or a process known as "veneering".	Construction contractor/ M&T Chico Ranch and Llano Seco Rancho	During the construction period
	A program to ensure recreation safety will be developed. This program will include, but will not be limited to the following: Placement of signs both upstream and downstream of the site to alert recreationists to the presence of bank stabilization structures, altered bank conditions, dredging equipment, altered gravel bar conditions,	M&T Chico Ranch and Llano Seco Rancho	Prior to and during the construction period.

<b>Recreation and Navigation Safety</b> (continued)	and the altered access to Big Chico Creek from the Sacramento River.		
	<p>The temporary placement of IWM will incorporate the following design factors to minimize the risk to recreationists:</p> <p>(1) The design will ensure local approach visibility and will incorporate the use of natural indicators, such as a partially emergent portion of the IWM, in combination with vegetation on the low elevation areas, to act as a visual warning of the presence of shallowly submerged hardscape so as to reduce the hazard to power boaters and paddlers. This will ensure visual warning so that boaters, swimmers, and other recreationists will have adequate time to avoid the IWM and possible injury or damage to property; (2) IWM will be placed in a manner that will reduce its ability to act as a “strainer”, thus reducing the risk to recreationists flowing with the river current, especially swimmers and those in canoes. Specifically, the outboard portions of IWM will be oriented in a downstream direction or will be installed in the form of relatively compact rootwads that will tend to deflect watercraft and reduce the risk for entrapment or straining within the IWM.</p>	Construction contractor/ M&T Chico Ranch and Llano Seco Rancho	During the construction period
<b>Traffic and Circulation</b>	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	M&T Chico Ranch/Llano Seco Rancho will coordinate with CalTrans and/or county public	Prior to and during the construction period

<b>Traffic and Circulation</b> (continued)	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.	works or planning departments to implement a traffic control plan	
<b>Hazards and Hazardous Materials</b>	The HMCSRP and SWPPP will include provisions to ensure that potential impacts associated with hydrocarbon use will be less than significant.	Construction contractor, M&T Chico Ranch and Llano Seco Rancho	Prior to and during the construction period

**References:**

Federal Highway Administration. 2000. Manual On Uniform Traffic Control Devices. Washington, D.C.

USFWS. 1999. Conservation Guidelines for the Valley Elderberry Longhorn Beetle, 9 July 1999. Sacramento Fish and Wildlife Office, Sacramento, CA.