

# RECLAMATION

*Managing Water in the West*

## RECORD OF DECISION

# Madera Irrigation District Water Supply Enhancement Project

ROD 06-127

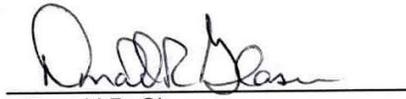
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## Introduction

Madera Irrigation District (MID) approved a Water Supply Enhancement Project (WSEP) located on the property known as Madera Ranch, west of the city of Madera, in Madera County, California in September 2005. MID adopted a Notice of Determination based on the Madera Irrigation District Water Supply Enhancement Project Final Environmental Impact Report (EIR) in compliance with the California Environmental Quality Act.

In 2006, MID approached The U.S. Department of the Interior, Bureau of Reclamation (Reclamation) to request the use of Central Valley Project (CVP) contract water outside of MID's current service area, modification of CVP facilities and federal funding for the WSEP. MID has been working toward securing federal funds to assist in the cost of purchasing Madera Ranch, as well as certain pre-construction, and construction activities associated with the WSEP.

In March 2009, the "Omnibus Public Land Management Act of 2009" (Public Law 111-11; H.R. 146-308) became law. Section 9102 of P.L. 111-11 includes authorization for the Secretary of the Interior to enter into a cooperative agreement through Reclamation with MID for the support of the final design and construction of the WSEP. Among other things, the cooperative agreement will address costs associated with the planning, design, permitting, and construction of the WSEP. Section 9102 limits the federal cost share to 25% of the total cost of the project or \$22.5 million, whichever is less. Though federal funding is authorized none has yet to be appropriated.

Reclamation, as lead federal agency, prepared an Environmental Impact Statement (EIS 06-127) to analyze the impacts of approving the banking of MID CVP water outside MID's service area in the proposed WSEP, the modification of Reclamation's 24.2 Canal, and any potential federal funding to assist in the cost of the project. The U.S. Army Corps of Engineers (USACE) and the U.S. Fish and Wildlife Service (USFWS) were cooperating agencies during preparation of the EIS.

The Draft EIS was made available for public review for 60 days ending September 25, 2009, during which time Reclamation held a public meeting. Reclamation prepared responses to comments received during the public review and those responses were included in the Final EIS noticed in the Federal Register on June 8, 2011.

This Record of Decision (ROD) documents Reclamation's decision to approve Reduced Alternative B which includes the banking of MID CVP water outside MID's service area in the proposed WSEP, modification of Reclamation's 24.2 canal and potential federal funding. This ROD was prepared in accordance with the National Environmental Policy Act [NEPA] (42 USC 4321 et seq.) and the Council on Environmental Quality's NEPA implementing regulations (40 CFR 1500-1508). The decision made herein is based on the information and analysis contained within the Final EIS for the *Madera Irrigation District Water Supply Enhancement Project*. Reclamation has considered all comments received on the Proposed Action in developing this ROD.

## Background

Currently, farmers in MID's service area use a combination of groundwater and surface water. During dry years there is not adequate surface water to meet the water demand and groundwater pumping increases substantially. The amount of groundwater pumped from the aquifer in the vicinity of Madera Ranch exceeds the amount of water recharged to the aquifer, resulting in groundwater overdraft. Even in wet years, the groundwater basin is in severe overdraft because groundwater pumping is steadily increasing for agricultural, municipal, and industrial use. This overdraft has caused the water table to decline resulting in degraded water quality and excess space in the aquifer that could be used to bank surface water.

The purpose of the proposed project is to:

- enhance water supply reliability and flexibility by using the excess aquifer space for surface water storage (water banking);
- reduce existing and future aquifer overdraft;
- reduce groundwater pumping costs;
- increase groundwater quality;
- encourage conjunctive use in the region as a means toward regional self-sufficiency.

The purpose of the proposed Federal action is to analyze the impacts of banking MID CVP water outside MID's service area, modifying of Reclamation's 24.2 Canal and potentially providing federal funding to assist in the cost of the project.

## Decision

Reduced Alternative B, identified in Section 1.2 of the Final EIS as the Preferred Alternative, has been chosen as the best overall alternative as it meets a portion of MID's current and future water storage needs; utilizes space underground for surface water storage; reduces aquifer overdraft; encourages conjunctive use as a means toward regional self-sufficiency; and is the environmentally preferable alternative.

Reduced Alternative B directs recharge activities in fewer swales than Alternative B on a priority basis to help avoid effects to vernal pools, and limits the number of recharge basins to the minimum needed to meet the purpose of the action. Reduced Alternative B also incorporates other best management practices and mitigation measures as described in Section 2.7 of the Final EIS. These measures are required to implement the preferred alternative.

Reduced Alternative B will complete the water bank in two phases. Phase 1 will involve constructing necessary delivery infrastructure improvements, selectively using 550 acres of natural swales for recharge, and installing approximately five soil berms to direct recharge flows. Phase 2 will involve constructing 323 acres of recharge basins and facilities for recovery of banked water. Reclamation would approve banking of CVP water outside the MID service area and alteration of Reclamation's 24.2 canal.

## Alternatives Considered in the Final EIS

Four Action Alternatives and a No Action Alternative were considered in the Final EIS. Each alternative other than the No Action Alternative met the purpose and need of the action however they varied in design features, cost and potential environmental impacts. The following is a brief description of project alternatives; specific details were published in the Final EIS.

### Alternative A

For Alternative A, the No Action Alternative, MID would not bank MID CVP water (MID Long-Term Water Service Contract supplies from both the Friant Division and Hidden Unit) on Madera Ranch and Reclamation's delivery canals would not be altered. MID could bank non-CVP water on the property, and other limited on-site water banking and recovery facilities may be constructed if MID is able to find participants and funding to support these efforts.

MID estimates they would be able to apply less than 5,000 acre-feet (AF) per year of their own non-CVP water. Recovery operations likewise would be limited if Reclamation-owned facilities were not altered. This Alternative would not satisfy the purpose and need, and groundwater overdraft would continue in Madera County.

### Alternative B

For Alternative B, Reclamation would approve a total banking capacity of 250,000 AF of MID CVP water outside the MID service area and the issuance of an MP-620 permit (a Reclamation Mid-Pacific Region permit issued for additions or alterations to Reclamation facilities) for modification to Reclamation's 24.2 canal and potential federal funding. After modification of the 24.2 canal and certain MID facilities, MID would be able to recharge and recover a maximum of 55,000 AF annually.

Alternative B will complete the water bank in two phases. Phase 1 will involve constructing necessary delivery infrastructure improvements using 700 acres of select natural swales for recharge, and will install approximately five soil berms to direct recharge flows. Phase 2 will involve constructing 1000 acres of recharge basins and facilities for recovery of banked water.

Alternative B met the purpose and need of the action, however, this Alternative could result in adverse effects to upland species and wetlands and as such resulted in the development of Reduced Alternative B.

### Reduced Alternative B

Reduced Alternative B has a smaller footprint than Alternative B. As with Alternative B, this alternative will complete the water bank in two phases. Phase 1 will involve constructing necessary delivery infrastructure improvements using select natural swales for recharge (550 acres versus 700 acres as proposed under Alternative B), and will install approximately five soil berms to direct recharge flows. As with Alternative B, Reduced Alternative B will require issuance of a MP-620 permit for modification to Reclamation's 24.2 canal. Phase 2 will involve constructing a limited number of recharge basins (323 acres versus up to 1,000 acres under

Alternative B) and facilities for recovery of banked water. Reclamation will approve banking of CVP water outside the MID service area, alteration of the canal and potential federal funding.

### **Alternative C**

Alternative C is a variation of Reduced Alternative B that would replace natural swale recharge solely with recharge basins. Phase 1 would involve recharge-related facilities only. Phase 2 would involve facilities for recovery of banked water. Reclamation would approve banking of CVP water outside the MID service area and alteration of Reclamation-owned facilities and potential federal funding.

This Alternative was considered financially infeasible for MID due to the construction costs for 1,000 acres of recharge basins during Phase 1.

### **Alternative D**

For Alternative D, MID would enter into an agreement with Gravelly Ford Water District (GFWD) to improve the Gravelly Ford (GF) Canal to allow water to be conveyed from the San Joaquin River through the GF Canal. The water would be banked at Madera Ranch for later recovery and delivery through the canal back to the San Joaquin River. The existing GFWD pumping plant would be enlarged; the existing, associated pipeline replaced with a larger-diameter line; the GF Canal re-graded to a flat-bottom configuration to allow two-way flow; a new connection to the river constructed to allow recovery water to reach the river without flowing through the pumps; and appropriate gate structures constructed. On-site improvements allowing water banking and extraction, including a pumping plant and pipeline to allow distribution of water uphill from the GF Canal, would be constructed.

Phase 1 would involve recharge-related facilities only. Phase 2 would involve supplemental recharge facilities and facilities for recovery of banked water. Reclamation would approve banking of CVP water outside the MID service area and potential federal funding but no alteration of Reclamation-owned facilities would occur.

Alternative D was eliminated from consideration because it would require that the bank operate solely through water exchanges along the San Joaquin River which would have made MID dependent on other agencies to receive water. In addition, this Alternative would rely on San Joaquin River restoration operations that have not yet been finalized and that may not occur within the desired implementation time frame.

## **Basis of Decision, Issues Evaluated, and Factors Considered**

Reclamation evaluated the potential direct, indirect and cumulative effects of the proposed alternatives. Resources evaluated include: aesthetics, agriculture, air quality, biological resources, cultural resources, environmental justice, geology, soils, seismicity and erosion, global climate change, growth inducing effects, hazards, public health and safety, land use, noise,

public services and utilities, socioeconomics, traffic and circulation, water resources, water supply and wetlands.

In addition, Reclamation's evaluation determined that none of the alternatives would affect Indian Trust Assets (ITA) as the nearest ITA to the WSEP is the Table Mountain Rancheria which is located approximately 28 miles east-northeast of the Action area. No tribes possess legal property interests held in trust by the United States in the area affected by any of the alternatives.

Public and public agency comments were considered by Reclamation and addressed in the Final EIS. Concerns included potential impacts on water quality, water supply, water rights issues, impacts on biological resources, determination of the least environmentally damaging practicable alternative (LEDPA), Fish and Wildlife Coordination Act compliance, impacts to wetlands, mitigation and monitoring, habitat loss, and socioeconomic concerns related to economic impacts on farmers.

### **Environmentally Preferable Alternative**

The President's Council on Environmental Quality Regulations Section 1505.2(b) states that where an EIS has been prepared, the Record of Decision shall "Identify all alternatives considered by the agency in reaching its decision, specifying the alternative or alternatives which were considered to be environmentally preferable".

Given the elimination of the Section 8 Canal Southwest Extension, reduction in the total number of swales used to minimize effects to wetlands, and identification of fewer basins to be constructed, Reclamation considers Reduced Alternative B the environmentally preferable alternative. In addition, it will have less adverse effects on both water quality and water supply in Madera Ranch and the surrounding area than Alternative A, the No Action Alternative; has less adverse effects to upland species and wetlands than Alternative B; is more financially feasible than Alternative C; and would not have to rely on San Joaquin River restoration operations as anticipated in Alternative D.

## **Implementing the Decision and Environmental Commitments**

Reclamation will serve as project lead for the implementation of laws to protect water quality, natural resources and cultural resources including but not limited to the:

- National Environmental Policy Act;
- Clean Water Act;
- Clean Air Act;
- Endangered Species Act;
- National Historic Preservation Act;

- Archaeological Resources Protection Act;
- Native American Graves Protection and Repatriation Act.

## **Environmental Commitments**

The following table describes the environmental commitments developed through a cooperative process involving Reclamation, USACE, USFWS, CDFG and MID. Each commitment will be implemented in accordance with the policies, guidance, and authorities of the agency having jurisdiction. Additional details on the environmental commitments are included in the Final EIS. The Final EIS also includes the Madera Ranch Mitigation, Grazing and Management Plan and the Monitoring and Operational Constraint Plan as appendices.

It should be noted that one of the planned locations (Section 5) for vernal pool creation discussed in the Final EIS is no longer suitable due to the July 2011 observation of blunt nosed leopard lizards (fully protected under the California Fish and Game Code). Additional environmental analysis and documentation would be required if the vernal pools are located outside of the area previously analyzed for potential impacts.

Identifier	Environmental Commitment	Commitment Specifications
<b>Agriculture</b>		
AG-1	Permanently Preserve Farmland by Establishing a Conservation Easement on Agricultural Land	MID will establish conservation easements on agricultural land at an effect-to-mitigation ratio of 2:1 to prevent permanent conversion of the land to urban uses and to increase farm viability. This mitigation will be in kind and used to mitigate the loss of farmland classified as prime farmland or farmland of statewide importance.
<b>Air Quality</b>		
AQ-1	Implement San Joaquin Valley Air Pollution Control District Regulation VIII Control Measures for construction emissions of PM10.	<ul style="list-style-type: none"> <li>All disturbed areas, including storage piles, that are not being actively used for construction purposes will be effectively stabilized against dust emissions using water, chemical stabilizer/suppressant, or vegetative ground cover. Chemical stabilizer/suppressants will not be used near waters of the United States.</li> <li>All on-site unpaved roads and off-site unpaved access roads used during construction will be effectively stabilized against dust emissions using water or chemical stabilizer/suppressant.</li> <li>All land-clearing, grubbing, scraping, excavating, land-leveling, grading, cut-and-fill, and demolition activities will be effectively controlled against fugitive dust emissions by applying water or presoaking.</li> <li>All operations will limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours during operations (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit visible dust emissions. The use of blower devices is expressly forbidden.). After materials are added to or removed from the surface of outdoor storage piles, the piles will be effectively stabilized against fugitive dust emissions using sufficient water or chemical stabilizer/suppressant.</li> </ul>
AQ-2	Reduce Emissions Associated with Idling Equipment	Per California Air Resources Board regulations (Title 13 of the California Code of Regulations, Sections 2480 and 2485), which limit idling of diesel-fueled commercial motor vehicles, MID will require that all diesel engines be shut off when not in use to reduce emissions from idling.
AQ-3	Use Electric Pumps	MID will use as many electric pumps as possible for recovery operations to reduce emissions associated with propane. If propane pumps are needed, MID will use engines with catalytic controls and that meet SJVAPCD best available control technology (BACT) requirement for engines over 50 hp.
<b>Biological Resources</b>		
BIO-1	Establish a Grasslands Conservation Easement	Mitigation for the loss of California annual grassland, alkali grassland, or Great Valley iodine brush scrub would consist of establishing a grasslands conservation easement at Madera Ranch over an area of habitat larger than the area subject to long-term degradation (2 acres conserved: 1 acre affected for swales) or permanent loss (3 acre conserved: 1 acre lost). MID also would implement a Madera Ranch Mitigation, Grazing, and Management Plan to improve existing on-site habitat through grazing management and species monitoring. This measure would compensate completely for the loss of these habitats.
BIO-2a	Preconstruction Surveys/Avoid Effects on Vernal Pools and Alkali Rain Pools	MID will minimize effects on species in this habitat by avoiding these wetlands to the extent practical. A buffer area will be established around suitable habitat for listed crustaceans in the action area, i.e., vernal pools. Buffer areas will be demarcated by installing fencing 250 feet from each occupied pool. A qualified biologist will flag the pools to be fenced, and temporary fences will be installed as the first order of work. Construction barrier fencing will be placed at the edge of the buffer areas. Temporary fences will be furnished, constructed, maintained, and later removed as shown on the construction plans, as specified in the special provisions, and as directed by the project engineer. Temporary fencing will be four feet high, orange, commercial-quality woven polypropylene. No construction activities will be permitted within the buffer zone (including staging or sidelaying of material) other than those activities necessary to erect the fencing. Erosion control measures will be employed adjacent to occupied listed crustacean habitat to prevent soil from eroding or falling into these areas. Natural/ biodegradable erosion control measures (e.g., straw wattles, hay bales) will be used. Plastic monofilament netting (erosion control matting) will not be allowed.
BIO-2b	Create, Restore, and/or Preserve Vernal Pools	MID will create, restore and/or preserve vernal pool habitat at Madera Ranch in an area protected under a conservation easement. Five acres of vernal habitat would be restored and/or preserved for each acre of vernal pool or alkali rain pool habitat lost as a result of activities associated with the Proposed Action (5 acre created: 1 acre lost). MID anticipates that the approximate split of these acreages will be 3:1 preservation and 2:1 creation/restoration. This ultimately will be determined based on wetland locations, soil conditions, and consultation with the Corps; soils, hydrology, vegetation, and species will be monitored. The performance standard for created vernal pools is to ensure the new vernal pools emulate the natural pools at Madera Ranch. Created vernal pools would have similar plant species composition and vegetation cover and invertebrate fauna as the vernal pools that are being removed by activities associated with the Proposed Action. Success of the vernal pool creation would be assessed by comparing the pools with undisturbed natural vernal pools at Madera Ranch. Restored vernal pools will have similar success criteria. This mitigation would compensate for the loss of vernal pool habitat. Restoration is more likely to be successful in areas with degraded habitat and where preservation is the most assured. In addition, MID will comply with Reclamation's wetlands mitigation and enhancement policy, which focuses on protecting, restoring, and enhancing wetlands and ensuring no overall net loss of wetlands. Wetland mitigation creation and restoration sites will be monitored until it is proven successful to the Corps, USFWS, and DFG. Mitigation sites must function for at least three years without human intervention.
BIO-3a	Avoid Effects on Iodine Bush Scrub	MID will locate the well and pipeline to avoid direct effects on iodine bush scrub habitat in the northern portion of Section 7 associated with construction activities. If wells and pipelines need to be constructed in this habitat, MID will conduct botanical surveys and mark plants to be avoided during construction.
BIO-3b	Survey for Sensitive Plants	During Phase 1, two botanists conducted visual surveys for palmate-bracted bird's beak ( <i>Cordylanthus palmatus</i> ) and other sensitive plant species along a 60-foot corridor (30 feet per side) along the proposed pipeline and canal alignments and in the swales east of Gravelly Ford Canal. The surveys were conducted in April and July and reference populations were visited. No listed species were found and sensitive <i>Atriplex</i> species were mapped to minimize future effects. The results of the botanical surveys will be used to determine which avoidance, minimization, and environmental commitments will be employed. During Phase 2, additional botanical surveys will be conducted in the area proposed for recharge basin creation. Complete visual surveys will be conducted in a similar manner in all areas proposed for permanent ground disturbance. If palmate-bracted bird's beak is found, the population will be delineated with highly visible flagging tape or plastic fencing and avoided. If other sensitive species are found, MID, DFG and USFWS will coordinate to determine the feasibility of avoiding the population.
BIO-4a	Preconstruction Surveys for California Tiger Salamander	A USFWS-approved biologist will conduct preconstruction surveys for California tiger salamander ( <i>Ambystoma californiense</i> [= <i>A. tigrinum</i> c.]) in suitable aquatic and upland habitat. Before the start of ground-disturbing activities or vegetation removal, the approved biologist or biological monitor will survey the area to be affected that day for California tiger salamanders. The biologist also will examine any open trenches, which will have ramps or be closed when unattended, for the presence of salamanders. If a salamander is found in the construction area, the approved biologist will remove the animal from the area and release it into a suitable burrow at least 300 feet outside the construction area. The biologist will document the results of surveys on preconstruction survey log sheets, which will be kept on file at MID.
BIO-4b	Restrict Construction Activity in Suitable Aquatic and Upland Habitat for California Tiger Salamander to the Dry Season (April 1–November 1)	To avoid and minimize potential mortality and injury of breeding and dispersing California tiger salamanders, construction will take place only during the dry season (between April 1 and November 1 or before the onset of the rainy season, whichever occurs first) in suitable aquatic and upland habitat for the species. Upland habitat is defined as all habitat within one mile of occupied or suitable aquatic habitat. Specifically, this measure applies to all pipeline construction on Madera Ranch and during work at all delivery canals. This measure does not apply to construction activities in gravel shoulders and heavily disturbed non-habitat areas where construction is confined entirely to areas devoid of upland grassland habitat.
BIO-4c	Fence the Construction Zone and Implement Erosion Control Measures in Areas Where Suitable Aquatic Habitat for California Tiger Salamander Is Present	The construction zone will be fenced in areas where suitable aquatic habitat for California tiger salamander is adjacent to the construction area. The purpose of the fence is to restrict construction equipment to the designated area only. Erosion control measures also will be implemented in these areas to prevent any soil or other materials from entering aquatic habitat. Locations of temporary fences and erosion control measures will be shown on the construction plans and will be reviewed by a qualified biologist. Construction barrier fencing will be installed along the edge of the work area as the first order of work. Temporary fences will be furnished, constructed, maintained, and later removed as shown on the plans, as specified in the special provisions, and as directed by the project engineer. No construction activities will be permitted outside the designated construction zone other than those activities necessary to erect the fencing. Erosion control measures will be installed

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		adjacent to suitable aquatic habitat to prevent soil from eroding or falling into these areas. Natural/biodegradable erosion control measures (e.g., straw wattles, hay bales) will be used. Plastic monofilament netting (erosion control matting) will not be allowed because salamanders can be caught in this type of material.
BIO-5	Pre-Activity Surveys for Blunt-Nosed Leopard Lizard	The objective of the blunt-nosed leopard lizard ( <i>Gambelia [=Crotaphytus] sila</i> ) (blunt-nosed leopard lizard) surveys is to avoid take of blunt-nosed leopard lizard during use of the swales for water banking and construction of water delivery canals and other facilities. Specific measures for linear facilities and swales are described below.
Bio-5a	Install exclusion fencing and conduct clearance surveys and construction monitoring for blunt-nosed leopard lizards	<p>Prior to construction of linear facilities in grassland and/or saltbush scrub/Valley sink scrub habitat and adjacent dirt roadways MID, in consultation and coordination with qualified wildlife biologists, shall create exclusion corridors based on habitat suitability and the need to create exclusion zones for burrows, scalds, and wetlands. Construction of linear facilities is restricted to May 1st through August 1st and may commence in areas only after Blunt-Nosed Leopard Lizard ("BNLL") pre-construction surveys are completed. Pre-activity BNLL surveys were coordinated with the USFWS and CDFG since California's Fish and Game Code does not allow take of this species. Pre-activity surveys shall consist of the following minimum parameters:</p> <ul style="list-style-type: none"> <li>• Surveys for adult BNLL shall be conducted between April 28th and July 1st and shall occur when the air temperature (as measured at 1-2 cm above the ground over a surface most representative of the area being surveyed) is between 25 °C - 35 °C (77 °F – 95 °F). Once the air temperature falls within the optimal range, surveys may begin after sunrise (once sun is high enough to shine directly on the ground surface being surveyed) and must end by 1400 hours or when the maximum air temperature is reached, whichever occurs first.</li> <li>• Time of day and air temperature shall be recorded at the start and end of each survey.</li> <li>• Surveys will not be conducted on overcast (cloud cover &gt; 90%) or rainy days or when sustained wind velocity exceeds 10 mph (&gt;3 on Beaufort wind scale).</li> <li>• Surveys shall be conducted on foot and transects shall be no larger than 10 meters wide, consist of a slow pace, and be conducted on a north-south orientation when possible.</li> <li>• Surveys shall be conducted for 12 days over the course of a 30 day period. Surveys shall be conducted for 4 consecutive days, weather permitting with at least one survey session consisting of a 4 consecutive day period.</li> <li>• The starting/ending locations of surveys should be modified/alternated to the extent practicable, but resulting in the same area surveyed. This is so that different portions of the site are surveyed at different time/temp periods.</li> <li>• Surveyors must be approved by the DFG and USFWS to conduct the BNLL reconnaissance surveys. The survey crew conducting focused BNLL surveys shall consist of no more than 3 Level I surveyors for every Level II surveyor. The names of every surveyor must be recorded for each survey day.</li> <li>• All herpetofauna observations shall be recorded/tallied. All BNLL observations shall be recorded with GPS, time of observation, name of observer, sex (if evident), and lifestage (adult, juvenile, hatchling). If BNLL is observed in association with or observed entering a particular burrow, burrow location (via GPS) should be recorded as well.</li> <li>• If a BNLL is observed within such areas, consultation with CDFG must immediately occur. However, if BNLL observations are made, BNLL surveys should not be halted; the entire survey should be completed for the entirety of the construction footprint; continuing the surveys is important to maximize detections and to best help inform where the lizards occur and may not occur. Partial surveys cannot be used to inform whether or not avoidance can or will occur.</li> <li>• (hereafter 1- 9 collectively referred to as, "BNLL Pre-Construction Survey Parameters".)</li> </ul> <p><u>Installation of Barrier</u> - Within 3 days after BNLL pre-construction surveys are completed, biologists shall oversee the creation an exclusion area by installing a non-gaping non-climbable barrier using a material approved by DFG and the USFWS along 3 sides of the planned linear facility construction perimeter. The barrier installation shall be overseen by biologists who have BNLL experience and who have been approved in advance by USFWS and DFG (hereafter, qualified BNLL biologists). The barrier fencing shall be installed perpendicular to the ground (vertical) and shall be sealed to ensure there are no gaps between segments or under the fencing. An example of possible suitable material can be found at <a href="http://www.ertecsystems.com/">http://www.ertecsystems.com/</a>. Small mammal burrows and burrow complexes shall be excluded from the liner facility construction areas to the maximum extent practicable and a no disturbance buffer zone shall be established and clearly delineated from any burrows / burrow complexes. The day following the installation of the fencing, the qualified BNLL biologists shall walk approximately 10 meter transects along the partially fenced linear facility construction area during the time of day when air temperatures fall within the optimum range for species detection, during the peak BNLL activity season, and as outlined above. If no BNLL are detected, the fourth side of fencing may be installed and MID may begin work within the fenced area. At least two DFG and USFWS approved biologists will be present within the construction area when construction and other activities within the exclusion area are in progress.</p> <p><u>Walking Surveys Throughout Construction</u> - Throughout construction, the biologists shall conduct walking surveys of the construction area, looking for BNLL. All open holes and trenches within habitat will be inspected at the beginning of the day, middle of the day, and end of day for trapped animals. If BNLL are detected at any time and within any area of the basin construction site, biologists will halt all work, open a section of the exclusion fencing, and allow the lizard to leave the area on its own (no chasing, following, etc. can occur).</p> <p><u>Inadvertent Entrapment Prevention</u>-- To prevent inadvertent entrapment of BNLL or any other wildlife during the construction phase of the linear facilities, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials or provided with one or more escape ramps (with no greater than a 3:1 slope) constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals by a qualified biologist. If BNLL are trapped, then it shall be allowed to escape on its own. In addition, all construction pipe, culverts, or similar structures with a diameter of 7.6 centimeters (3 inches) or greater that are stored at the construction site for one or more overnight periods will be thoroughly inspected for BNLL before the pipe is subsequently moved, buried, or capped. If during inspection one of these animals is discovered inside a pipe that section of pipe shall not be moved until the animal has escaped on its own.</p> <p><u>Construction Time</u> - The permitted construction time is from one hour after sunrise to one hour before sunset, and two biological monitors shall also be active at all times when construction or other activities are in progress. The biological monitors shall survey the construction area during construction, scanning the ground for BNLL and routinely checking excavated soils to ensure that BNLL are not present. The biological monitors shall stop work if a lizard is found within the construction area until the lizard has been excluded from the work area. <u>Multiple Construction Areas</u> More than one linear facility construction area may be established and under construction at the same time provided the minimum number of biologists and biological monitors are present at each of the sites at all times during construction or other related activities.</p> <p><u>Notification of Dead or Injured BNLL</u> - If any dead or injured BNLL are observed on or adjacent to the construction site, or along haul roads/travel routes for worker and/or equipment, regardless of assumed cause, DFG and USFWS shall be notified. The initial notification to DFG and USFWS shall include information regarding the location, species, and the number of animals injured or killed. Following initial notification, MID shall send DFG and USFWS a written report within 2 calendar days. The report shall include the date and time of the finding or incident, location of the carcass, and if possible provide a photograph, explanation as to cause of death, and any other pertinent information.</p> <p><u>Fully Protected Species</u> - These measures shall not be required if the species' fully protected status is rescinded and MID obtains incidental take authorization from DFG for this species for this project.</p>

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		<p><i>Recharge Basins</i> MID, in consultation and coordination with qualified wildlife biologists, shall create appropriately sized recharge basin construction areas before construction of recharge basins in grassland and/or saltbush scrub/Valley sink scrub habitat and adjacent dirt roadways within the former center pivot areas of Section 16, 17, and 18 on Madera Ranch. Construction areas shall be prioritized initially by reconnaissance surveys no more than 60 days prior to any basin construction activities or ground disturbance to identify areas with the fewest burrows and least suitable habitat for BNLL. Construction of basins will be restricted to May 1st through August 1st and may commence in areas identified through the above referenced reconnaissance surveys only after BNLL pre-construction surveys are completed by way of the BNLL Pre-Construction Survey Parameters (See paragraph I.A. above).</p> <p>The information gathered from these surveys will be used by DFG to determine which habitat is most likely occupied and to identify appropriate exclusion areas. (Basins shall initially be planned to be sited in the former center pivot areas of Section 16, 17, and 18.) If no BNLL is observed within 3 days after the completion of the BNLL pre-construction survey, biologists shall create an exclusion area by installing non-gaping non-climbable barrier. The installation for such barrier shall comply with the installation guidelines listed above under linear facilities, and must be supervised by a qualified BNLL biologist. (See paragraph I.B above.)</p> <p>Construction of the recharge basins is permitted from one hour after sunrise to one hour before sunset. (See I.E above.) More than one percolation basin construction area may be establish and under construction at the same time provided the minimum number of biologists and biological monitors are present at each of the sites at all times during construction or other related activities. Throughout construction, Biologists shall conduct walking surveys of the construction area to determine whether there is any detection of the BNLL. The survey procedures shall comply with paragraph I.C. listed above. Also during construction, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered as described under I.D above, to prevent inadvertent entrapment of BNLL or any other wildlife.</p> <p>Finally, if any dead or injured BNLL are observed on or adjacent to the construction site, then MID must notified DFG and USFWS in accordance with the outline procedures listed above under I.G. If the BNLL fully protected status is rescinded and an incidental take permit is granted, then these measures will not be required.</p> <p><i>On-Ranch Ground Disturbing Facility Maintenance</i> MID will have an agency approved biologist review future ground disturbing facility maintenance work locations and sizes to evaluate the potential for effects to BNLL. If the activity is in suitable habitat and could affect burrows, MID will conduct the work during the appropriate seasonal window and implement site-specific exclusion measures such as fencing and additional surveys as prescribed above for linear facilities.</p>
Bio-5b	Conduct blunt-nosed leopard lizard and burrow surveys of swales proposed for inundation	MID will conduct BNLL and burrow surveys of swales prior to inundation in swales. Those portions of swales that have been inundated annually for extended periods prior to Project approval will not be surveyed because potential burrows likely have been inundated and eroded, and BNLL are unlikely to aestivate in these areas. Pre-wetting BNLL surveys will be consistent with the <i>BNLL Pre-Construction Survey Parameters</i> listed above under I.A.. The information from these surveys will be used to determine which habitat is most likely occupied and to identify appropriate swale use areas. If no BNLL are found during the surveys, water may be applied throughout that following year. If a BNLL is sighted within the low point of a swale (i.e., the expected inundation area) it will be difficult to determine whether the burrows in the area are being used for nesting or refugia. Therefore, MID will delay using the swale for banking until the active season (April 28 to July 1); then MID will apply water to the swale slowly (i.e., approximately 12 inches per minute) to ensure lizards can escape burrows. These measures shall not be required if the species' fully protected status is rescinded and MID obtains incidental take authorization from DFG for this species for this project.
Bio-5c	Implement other protective measures for blunt-nosed leopard lizard	MID will implement other protective measures for blunt-nosed leopard lizard. MID would create at least three canal crossings along Gravelly Ford Canal and 6 canal crossings along the Section 8 Canal Northern Extension; the width of the crossings will vary from approximately 16 feet along Gravelly Ford Canal to approximately eight feet along the Section 8 Canal Northern Extension. While making Gravelly Ford Canal improvements and installing the Section 8 Canal Northern Extension, MID would excavate slightly below the bottom grade of the canal to install a culvert and provide for a crossing to connect the habitat units. The area would be backfilled, covering the crossing with soil from the canal improvement. A similar concept would be employed for the Section 8 Canal Northern Extension, though the length of the pipe segment would be four to eight feet and because of the flat hydraulic grade one larger pipe may be used. Additionally, on-ranch canal side slopes will be designed to allow BNLL to avoid entrapment.
BIO-6	Preconstruction Surveys and Avoidance Activities for Raptors	Preconstruction surveys would determine whether any sensitive raptors are nesting at Madera Ranch. If a tree is occupied at the time of construction, construction activities will be restricted to areas outside 0.5 mile of the tree. Setbacks will be marked with brightly colored temporary fencing.
BIO-7	Preconstruction Surveys for Western Burrowing Owl	The initial daytime burrow survey will help inform the Western burrowing owl ( <i>Athene cunicularia</i> ) survey. A qualified wildlife biologist will conduct a burrowing owl survey in accordance with DFG guidelines. The survey area will include the construction corridor and a 500-foot buffer. An initial survey will determine whether burrowing owls are present. Three additional surveys will be conducted to determine presence or absence of burrowing owls. In accordance with DFG survey guidelines, these surveys must be conducted on four separate days—two in the early morning and two in the late afternoon/early evening. Non-nesting owls may be passively relocated, also using DFG's guidelines.
BIO-8	Preconstruction Surveys for San Joaquin Kit Fox	Because of historical records and suitable San Joaquin kit fox ( <i>Vulpes macrotis mutica</i> ) habitat on or in the vicinity of Madera Ranch, it is assumed that kit foxes could be present at Madera Ranch. To avoid potential mortality of kit fox, agency approved (by USFWS and DFG) experienced biologists will survey to locate any natal dens, non-natal active dens, and/or potential dens in the Proposed Action area. Visual surveys will be conducted during meandering transects of the 1,000 foot corridor. If an active natal den is found, USFWS and DFG will be notified and MID will delay construction within 1,000 feet of the den until the pups have been weaned or moved to an off-site den, and/or reroute the construction corridor to avoid impacts on the kit foxes. Standard Kit fox provisions will be followed in accordance with U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance. Surveying will include meandering transect surveys for active dens (non-natal) out to 250 feet from the proposed facilities, which will involve simultaneous surveys for potential den sites out to 100 feet. If an active den is found, it will be avoided until the foxes have vacated the den. All potential dens will be flagged. Any potential den immediately in the construction corridor may need additional monitoring. Because construction is expected to proceed quickly—approximately 1,000 feet per day with trenches being open one to two nights—potential dens will not be collapsed. All surveys will be conducted within 30 days of site-specific construction by a qualified biologist. In addition, during construction, USFWS standard kit fox conservation measures such as speed limits, exit ramps, controlling toxic (oil or gas) spills from construction equipment, and covering pipes will be implemented to prevent harm or disturbance to kit foxes using the area. Any open pipes, newly dug pipeline trenches, and canals will be surveyed daily prior to construction to ensure kit foxes are not present.
BIO 9	Conduct Pre-Activity Surveys for Fresno Kangaroo Rat	The objective of the Fresno kangaroo rat ( <i>Dipodomys nitratoides exilis</i> ) surveys is to determine whether the Fresno kangaroo rat is present on the portion of Madera Ranch that could be affected by use of the swales for water banking and construction of water delivery canals. Initial trapping focused on the swales and canals east of GF Canal and determined the species was not present. Subsequent trapping will occur 1-year before use of swales or construction of facilities west of GF Canal. Surveys in swales will be conducted 1 to 2 years before the first wetting of the swale and will be valid for 5 years after the wetting of the swale. If the swale is re-wetted within the 5-year period, it will not need to be surveyed for another 5-year period. No additional survey efforts will be conducted of any swale

Identifier	Environmental Commitment	Commitment Specifications
		<p>areas that have been surveyed twice with neither survey resulting in a single trapping of the Fresno kangaroo rat. Kangaroo rat trapping efforts will be conducted by a surveyor holding a recovery permit for the Fresno kangaroo rat (10[a][1][A] permit). Meandering visual transect surveys for kangaroo rat burrow complexes and sign (e.g., tail drags, sand baths, seed caches) will be conducted by two to four biologists over all habitat within and out to 250 feet from the edge of the WSEP footprint, including swales, and within 100 feet of the top of GF Canal. All burrow complexes found will be recorded on a GPS unit, and data on the number of burrows, level of activity, and general suitability for kangaroo rats will be recorded in field notes (burrows suitable for kit fox also will be noted on GPS as part of this effort); information on vegetation type and percent cover also will be recorded.</p> <p>Following completion of the survey, potential trapping-sites will be prioritized based on a combination of the level of kangaroo rat activity (as evidenced by burrow density and/or the presence of other sign, though some areas without obvious sign may also be trapped) and project area coverage. Live trap stations and trap lines then will be established (staked and recorded with a GPS unit) by permitted biologists at the highest priority sites. Traps (Sherman live traps [Model XLKR: 13 inches x 3.5 inches x 3 inches]) will be set near active burrows, dust baths, or tracks, particularly along evident runways. Ten or more traps (or a number determined by the surveyor) will be set in relatively tight clusters (5-foot trap spacing) at high activity areas. Traps also will be set at 10 to 15 meter intervals (two traps per station) along evident movement corridors.</p> <p>Traps will be baited with a mixture of millet seed, crimped oats, wild birdseed, or other suitable seed. Bedding (crumpled unbleached paper towel) will be placed at the inside end of each trap and will not be allowed to contact the tripping mechanism. Paper towels will be replaced each time an animal is captured in the trap. Traps will be opened and baited at sunset and checked 1-2 times/evening as deemed appropriate by the lead biologist. All traps will be closed after they have been checked at dawn. Trapping will be conducted at each trap site for five consecutive nights. Trapping will not be conducted during the week of a full moon, unless the sky is overcast and moonlight is substantially reduced. Trapping will not be conducted in December or January or in periods of cold or inclement weather detrimental to kangaroo rats and as stipulated in the surveyor's recovery permit. Although Fresno kangaroo rats are active year round, their populations generally are lowest at this time.</p> <p>All non-Fresno kangaroo rats captured will be marked with a nontoxic semi-permanent ink marker on the belly to identify the re-trapping of the same animal(s). Trapping will cease with the capture of a Fresno kangaroo rat and MID, the USFWS, and DFG will be notified as soon as possible, if not the same day, then the next workday, or no later than the Monday following the capture should it occur on a Friday or Saturday night. Any measurements obtained to provide evidence that the animal captured is a Fresno kangaroo rat will be achieved with minimal and delicate handling fur and tissue samples will be taken only by a qualified, permitted biologist in accordance with their permit terms. A photo of the animal's hind legs (showing toes and including a ruler) will be taken and the animal will be immediately released; the animal's eyes will be shielded from the flash.</p> <p>The lead biologist will notify MID of the proposed trapping schedule and will inform MID weekly which trapping areas have been completed. Any capture of Fresno kangaroo rat will be reported immediately to MID, the USFWS, DFG, and Reclamation.</p>
BIO-10	Conduct Preconstruction Surveys for Sensitive Species along the Off-Ranch Portion of Gravelly Ford Canal	Proposed off-ranch work areas associated with GF Canal improvements will be evaluated by a USFWS-approved biologist to determine whether habitat suitable to support sensitive species is present. If suitable habitat is discovered, MID will evaluate work locations to determine which species could be present and whether additional surveys may be needed. Depending on the results of this survey, MID also may implement Environmental Commitment BIO-1: Establish a Grasslands Conservation Easement, Environmental Commitment BIO-5: Pre-Activity Surveys for Blunt-Nosed Leopard Lizard, Environmental Commitment BIO-6: Preconstruction Surveys and Avoidance Activities for Raptors, and Environmental Commitment BIO-7: Preconstruction Surveys for Western Burrowing Owl.
BIO-11	Implement Protective Measures for Anadromous Fish	MID would work with Reclamation and the National Marine Fisheries Service (NMFS) to determine appropriate protective measures for migratory fish once they are restored to the San Joaquin River, including seasonal restrictions on diversions or intake screening in the event water is moved to and from Madera Ranch via GF Canal (Alternative D). Inter-agency discussions would occur at least two years in advance of the reintroduction of these species to the San Joaquin River.

**Biological Opinion Commitments**

On April 26, 2011, the USFWS issued a Biological Opinion to Reclamation (File Number 81420-2008-F-0279-1) to address the impacts of Reduced Alternative B on Federally listed species. The Biological Opinion was included in the Final EIS as Appendix B. The following additional commitments (terms and conditions) are also imposed on Reduced Alternative B from the incidental take statement that was provided with the Biological Opinion.

Reasonable and Prudent Measures		Terms and Conditions
The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the effects of the proposed Madera Irrigation District Water Supply Enhancement Project on the San Joaquin kit fox, blunt-nosed leopard lizard, Fresno kangaroo rat, vernal pool fairy shrimp, vernal pool tadpole shrimp, Conservancy fairy shrimp, and California tiger salamander.		In order to be exempt from the prohibitions of section 9 of the Act, Reclamation must comply with the following terms and conditions, which implement the reasonable and prudent measures. These terms and conditions are non-discretionary.
1.	All Environmental Commitments as described in the Biological Assessment, and as restated here in the <i>Description of the Proposed Action</i> of this Biological Opinion, must be fully implemented and adhered to.	To implement Reasonable and Prudent Measure #1, Reclamation shall ensure through conditions in its approval letter or any funding for the proposed project that Madera Irrigation District fully implements and adheres to the Environmental Commitments presented in the Biological Assessment and restated here in this Biological Opinion. These Environmental Commitments must be adhered to, regardless of species status under the California Endangered Species Act.
2.	Land that is to be set aside as habitat compensation and managed for the primary purpose of benefitting those listed species impacted by the proposed project must be protected in perpetuity, and with the intent to provide optimum conditions for those species.	To implement Reasonable and Prudent Measure #2, Reclamation shall ensure through conditions in its approval letter for the proposed project the following Terms and Conditions: a) Reclamation shall ensure that Madera Irrigation District grants and records an appropriate, Service-approved Conservation Easement with a Service-approved Conservation Easement holder for the mitigation lands described in the Biological Assessment, prior to project implementation. b) Reclamation shall ensure that Madera Irrigation District incorporates by reference its Mitigation and Management Plan, developed for these mitigation lands, into said Conservation Easement. c) Reclamation shall ensure that Madera Irrigation District includes language in the Conservation Easement stating that the Mitigation and Management Plan created for this project is a living document, to be viewed and used as an adaptive management plan under the direction and approval of the Service, CDFG & Corps, with the goal of ensuring optimum habitat conditions for the species of concern. d) Reclamation shall ensure that Madera Irrigation District has in place prior to project implementation an adequate, Service-approved funding mechanism, such as a non-wasting endowment held by a Service-approved endowment holder to fund the long-term management activities on their mitigation lands.
3.	To ensure that the expected changes to ecological conditions resulting from swale inundation do not result in take of Fresno kangaroo rats and blunt-nosed leopard lizards beyond what is anticipated in this biological opinion, hydrological conditions must be maintained such that there is no more than a 20 percent increase in acreage of vegetative changes beyond the perimeter of water applications (footprint of swales and seasonal wetlands).	To implement Reasonable and Prudent Measure #3, Reclamation shall ensure through conditions in its approval letter or any funding instrument for the proposed project that MID develops and implements an appropriate Service-approved hydrological study or studies, designed to monitor and report on conditions related to changing ecosystem characteristics in and adjacent to the swales used for water banking purposes. Such studies, and the information obtained from them, shall be used to inform Reclamation and MID of the degree and nature of habitat modification from current conditions, and whether take resulting from vegetative changes beyond the perimeter of water applications (i.e., greater than 20 percent) is exceeded. The information gathered from these studies shall be provided to the Service and CDFG on thirty-day cycles or within thirty days of conclusion of a study cycle.
4.	The periodicity of swale inundation over the duration of this project must be monitored and adjusted, if necessary, to ensure that the time interval between swale flooding events does not result in a biological "sink" for Fresno kangaroo rats and blunt-nosed leopard lizards, whereby individuals of these species that may re-colonize burrows in or immediately adjacent to swales during dry periods are then taken by subsequent flooding. These adjustments could include repeated and/or more frequent wetting if the water supply is available, varying the priority/rotation of wetted swales, scaling back swale operations consistent with overall banking operational objectives, or other measures agreed to by MID, Reclamation, the Service, and CDFG.	To implement Reasonable and Prudent Measure #4, Reclamation shall ensure through conditions in its approval letter or any funding for the proposed project that Madera Irrigation District develop a Service-approved monitoring and reporting approach for the inundated swales and adjacent habitat sufficient to determine whether Fresno kangaroo rats and blunt-nosed leopard lizards re-colonize these areas during dry periods.

Identifier	Environmental Commitment	Commitment Specifications
<b>Cultural Resources</b>		
CR-1	Stop Construction If Cultural Resources Are Discovered	<p>In the event of any inadvertent cultural resources discovery, human or otherwise, uncovered during construction or other ground-disturbing activities, the construction contractor will immediately stop work in the immediate vicinity and a minimum 100-foot buffer area from the find. The contractor will notify MID immediately and MID will notify Reclamation of the inadvertent discovery. A professionally qualified archaeologist will be sent to evaluate the inadvertent discovery for National Register of Historic Places (NRHP) eligibility.</p> <p>If human remains are discovered during ground-disturbing activities, the party responsible for CEQA will comply with state laws<sup>[1]</sup> relating to the disposition of human remains pursuant to Public Resources Code (PRC) section 5097. Reclamation may have additional responsibilities under Section 106 of the NHPA and will follow the procedures in 36 CFR Part 800.13.</p>
<b>Geology, Soils, Seismicity and Erosion</b>		
GEO-1	Amend Soils as Required in Topsoiled Areas	Topsoiled areas with insufficient vegetation cover will be amended with gypsum and/or elemental sulfur in combination with high-quality irrigation water to reduce soil salinity, alkalinity, and exchangeable sodium to acceptable levels, such that acceptable vegetation cover is established in such areas within one year after topsoil is applied. All soil sampling and amendment recommendations will be conducted by, or under the supervision of, a certified professional soil scientist.
GEO-2	Stop Work in Event of Fossil Discovery	In the event that a fossil or material that could be a fossil is unexpectedly discovered during excavation operations, work will cease in the immediate vicinity of the find. A qualified paleontologist will be called to the site to evaluate the find and determine the sensitivity of the fossil. If the fossil is determined to be sensitive, the paleontologist will recover it from the site and submit it to an appropriate museum or other repository for curation.
<b>Hazards, Public Health and Safety</b>		
PHS-1a	Implement Necessary Emergency Preparedness Plan(s)	MID will work with the Madera County Department of Public Health and the local fire districts to coordinate the preparation of emergency preparedness plan(s) that may be required by federal, state, and County statutes and regulations.
PHS-1b	Comply with Local Fire District Requirements	MID will consult the local fire districts to ensure that all regulations are complied with during construction.
PHS-2	Implement an Agreement with the Madera County Mosquito and Vector Control District	<p>MID will enter into an agreement with the Madera County Mosquito Abatement &amp; Vector Control District (MCMAVCD) regarding a specific mosquito abatement program. The agreement will allow the MCMAVCD to access Madera Ranch and also will include quantitative abatement thresholds and financial compensation requirements for MCMAVCD activities, if necessary.</p> <p>The MCMAVCD will monitor mosquito larvae production in the recharge basins, drainages, and distribution canals at no cost to MID, given that the amount of monitoring required is not excessive. Larvae populations will be tracked using methods and thresholds approved by the MCMAVCD, and suppression measures will be employed when thresholds are exceeded. Suppression measures may include environmental and biological methods, such as stocking mosquitofish, controlling emergent vegetation, and applying insecticides. Insecticide controls will be used only as a last resort, and use of insecticides over open water will be minimized to the extent feasible, given the mosquito abatement mandate of the MCMAVCD. The insecticides that may be used are only those that are approved for such uses by the U.S. Environmental Protection Agency (EPA). Mosquitofish, if used, will need to be stocked annually by the MCMAVCD.</p> <p>If operations result in an increase in mosquito production such that an extensive monitoring program is needed, MID will hire a professional pest control service and will bear the cost of that service.</p>
<b>Noise</b>		
NOI-1	The construction contractor will employ noise-reducing construction practices so that noise from construction does not exceed County noise-level standards at adjacent residences.	<p>Measures to be implemented would include the following.</p> <ul style="list-style-type: none"> <li>• Restrict construction to beyond 3,900 feet from residences during nighttime hours (10 p.m. to 7 a.m.).</li> <li>• Provide construction equipment with sound-control devices no less effective than those provided on the original equipment. No equipment will have an unmuffled exhaust.</li> <li>• Implement appropriate additional noise environmental commitments, including (but not limited to) changing the location of stationary construction equipment, shutting off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources.</li> </ul>
NOI-2	The construction contractor will employ noise-reducing methods during well drilling operations	<p>The drilling contractor will employ noise-reducing construction practices so that noise from drilling does not exceed County noise-level standards at adjacent residences. Measures to be implemented may include those following.</p> <ul style="list-style-type: none"> <li>• Restrict well drilling to beyond 2,900 feet from residences during nighttime hours (10 p.m. to 7 a.m.), where feasible.</li> <li>• Use sound attenuation enclosures around noise-generating elements of the drilling operation.</li> </ul>
NOI-3	The construction contractor will employ noise-reducing practices so that noise from well operations does not exceed County noise-level standards at adjacent residences.	<p>Measures to be implemented may include:</p> <ul style="list-style-type: none"> <li>• restricting well installations to beyond 1,250 feet from residences, where feasible;</li> <li>• using electric pumps where well installations are within 1,250 feet of residences; and</li> <li>• using sound attenuation enclosures designed to achieve noise reductions sufficient to comply with County standards for noise-generating elements of the well operation when no other feasible control method is available.</li> </ul>
NOI-4	The construction contractor will employ noise-reducing practices so that noise from lift station operations does not exceed County noise-level standards at adjacent residences	<p>Measures to be implemented may include:</p> <ul style="list-style-type: none"> <li>• restricting lift station installations to beyond 1,600 feet from residences, where feasible;</li> <li>• using electric pumps where lift station installations are within 1,600 feet of residences; or</li> <li>• using sound attenuation enclosures designed to achieve noise reductions sufficient to comply with County standards for noise-generating elements of the lift station operation when no other feasible control method is available.</li> </ul>

<sup>[1]</sup> Madera Ranch does not include federal land, so only state human-remains laws apply.

Identifier	Environmental Commitment	Commitment Specifications
<b>Public Services</b>		
PSU-1a	Notify Emergency-Response Agencies of Proposed Traffic-Route Changes	Before beginning construction activities, MID or the construction contractor will contact local emergency-response agencies (law enforcement and fire protection) to provide information on the timing and location of any traffic control measures required during construction activities. Emergency-response agencies will be notified of any change to traffic control measures as the construction phases proceed so that emergency-response providers can modify their response routes to ensure that response time would not be affected.
PSU-1b	MID will require the construction contractor to prepare and implement a traffic safety plan (TSP) before the onset of construction activities.	<p>The TSP will address:</p> <ul style="list-style-type: none"> <li>• appropriate vehicle size and speed,</li> <li>• travel routes,</li> <li>• detour or lane-closure plans,</li> <li>• flag person requirements,</li> <li>• locations of turnouts to be constructed,</li> <li>• coordination with law enforcement and fire control agencies,</li> <li>• coordination with California Department of Transportation (Caltrans) personnel (for work affecting state road rights-of way),</li> <li>• emergency access to ensure public safety, and</li> <li>• traffic and speed-limit signs.</li> </ul>
<b>Traffic</b>		
TRAF-1	MID will require the construction contractor to prepare and implement a road improvement plan (RIP) before the onset of the construction phase.	The RIP will identify road segments, bridges, and culverts that need to be improved and turnout locations that need to be constructed (as applicable) to accommodate construction activities. The plan also will identify damage that is caused by construction vehicles and that needs to be repaired.
<b>Water Resources</b>		
WQ-1a	Comply with National Pollutant Discharge Elimination System General Construction Permit	<p>To reduce or eliminate construction-related water quality effects, before onset of any construction activities, MID or its contractor will obtain coverage under the National Pollutant Discharge Elimination System (NPDES) General Construction Permit. MID will be responsible to ensure that construction activities comply with the conditions in this permit, which will require development of a stormwater pollution prevention plan (SWPPP), implementation of best management practices (BMPs) identified in the SWPPP, and monitoring to ensure that effects on water quality are minimized. As part of this process, MID will implement multiple erosion and sediment control BMPs in areas with potential to drain to surface water (see Section 3.6, Geology, for a discussion of erosion and sediment control BMPs). These BMPs will be selected to achieve maximum sediment removal and represent the Best Available Technology (BAT) that is economically achievable. BMPs to be implemented as part of this environmental commitment may include, but are not limited to, the following measures.</p> <ul style="list-style-type: none"> <li>• Temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) would be employed to control erosion from disturbed areas.</li> <li>• Drainage facilities in downstream off-site areas would be protected from sediment using BMPs acceptable to the Regional Water Quality Control Board (RWQCB).</li> </ul> <p>MID or its agent will perform routine inspections of the construction area to verify that the BMPs specified in the SWPPP are properly implemented and maintained. MID will notify its contractors immediately if there is a noncompliance issue and will require compliance.</p>
WQ-1b	Implement a Spill Prevention and Control Program	<p>MID or its contractor will develop and implement a spill prevention control and countermeasures program (SPCCP) to minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during construction activities for all contractors. The program will be completed before any construction activities begin. Implementation of this measure will comply with state and federal water quality regulations and minimize the effects of the Proposed Action.</p> <p>MID will review and approve the SPCCP before the onset of construction activities. MID will routinely inspect the construction area to verify that the measures specified in the SPCCP are properly implemented and maintained. MID will notify its contractors immediately if there is a noncompliance issue and will require compliance.</p> <p>The federal reportable spill quantity for petroleum products, as defined in the EPA's CFR (40 CFR 110), is any oil spill that (1) violates applicable water quality standards, (2) causes a film or sheen upon or discoloration of the water surface or adjoining shoreline, or (3) causes a sludge or emulsion to be deposited beneath the surface of the water or on adjoining shorelines.</p> <p>If a spill is reportable, the contractor's superintendent will notify MID, and MID will need to contact the appropriate safety and clean-up crews to ensure the SPCCP is followed. A written description of reportable releases must be submitted to the RWQCB. This submittal must include a description of the release, including the type of material and an estimate of the amount spilled, the date of the release, an explanation of why the spill occurred, and a description of the steps taken to prevent and control future releases. The releases will be documented on a spill report form.</p> <p>If a spill has occurred, MID will coordinate with responsible regulatory agencies to implement measures to control and abate contamination.</p>
WQ-2	Implement Provisions for Dewatering	<p>Before discharging any water from dewatering operations to surface water, MID or its contractors will obtain an NPDES permit and Waste Discharge Requirements (WDRs) from the RWQCB. Depending on the volume and characteristics of the discharge, coverage under the RWQCB's General Construction Permit or General Dewatering Permit is possible. As part of the permit, the permittee would design and implement measures as necessary so that the discharge limits identified in the relevant permit are met. As a performance standard, these measures will be selected to achieve maximum sediment removal and represent the BAT that is economically achievable. Implemented measures may include retention of water from dewatering operations until particulate matter has settled before it is discharged, use of infiltration areas, and other BMPs. Final selection of water quality control measures will be subject to approval by the RWQCB.</p> <p>MID will verify that coverage under the appropriate NPDES permit has been obtained before allowing dewatering activities to begin. MID or its agent will perform routine inspections of the construction area to verify that the water quality control measures are properly implemented and maintained. MID will notify its contractors immediately if there is a noncompliance issue and will require compliance.</p>
<b>Wetlands</b>		
WET-1	Preservation of vernal pools and alkali rain pools.	Implementation of Environmental Commitments BIO-2a: Preconstruction Surveys/Avoid Effects on Vernal and Alkali Rain Pools and BIO-2b: Create, Restore, or Preserve Vernal Pools would minimize the extent of and compensate for adverse effects.
WET-2	Reduction of impacts to Waters of the United States from the discharge of fill	In GF Canal there are seasonal wetlands, including approximately 2 acres of freshwater marsh that would be affected. These effects would be offset by the development of freshwater marsh within GF Canal during operation and formation of seasonal wetlands within the swales during banking.

## Comments on the Final Environmental Impact Statement

Reclamation's Notice of Availability of the Final EIS was published June 8, 2011 and the U.S. Environmental Protection Agency's Notice of Availability was published June 17, 2011. Copies of the FEIS were distributed to those who requested a copy. A press release was issued June 9, 2011 and the Final EIS was made available on Reclamation's website:

[http://www.usbr.gov/mp/nepa/nepa\\_projdetails.cfm?Project\\_ID=3128](http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=3128)

One comment letter on the Final EIS was received from the Environmental Protection Agency during the 30-day waiting period. The issue raised and Reclamation's responses follow:

**Nature of Comment:** The Environmental Protection Agency recommended that the additional discretionary conservation recommendations identified in the Biological Opinion to Reclamation (File Number 81420-2008-F-0279-1) dated April 26, 2011 issued by USFWS be considered for inclusion in the Environmental Commitments.

**Agency Response:** As stated in the April 26, 2011 Biological Opinion: "Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to implement recovery actions, to help implement recovery plans, to develop information, or otherwise further the purposes of the Act". As such, Reclamation in cooperation with MID will continue to seek funding opportunities to implement the discretionary conservation recommendations described in the Biological Opinion.