

# RECLAMATION

*Managing Water in the West*

## **Buena Vista Water Storage District Draft Environmental Assessment**

**2014 WaterSMART Grant for Section One of the Northern Area  
Project, California**

15-06-MP



**U.S. Department of the Interior  
Bureau of Reclamation  
Mid-Pacific Region**

**June 2015**

## **Mission Statements**

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

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The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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# 1.0 Introduction

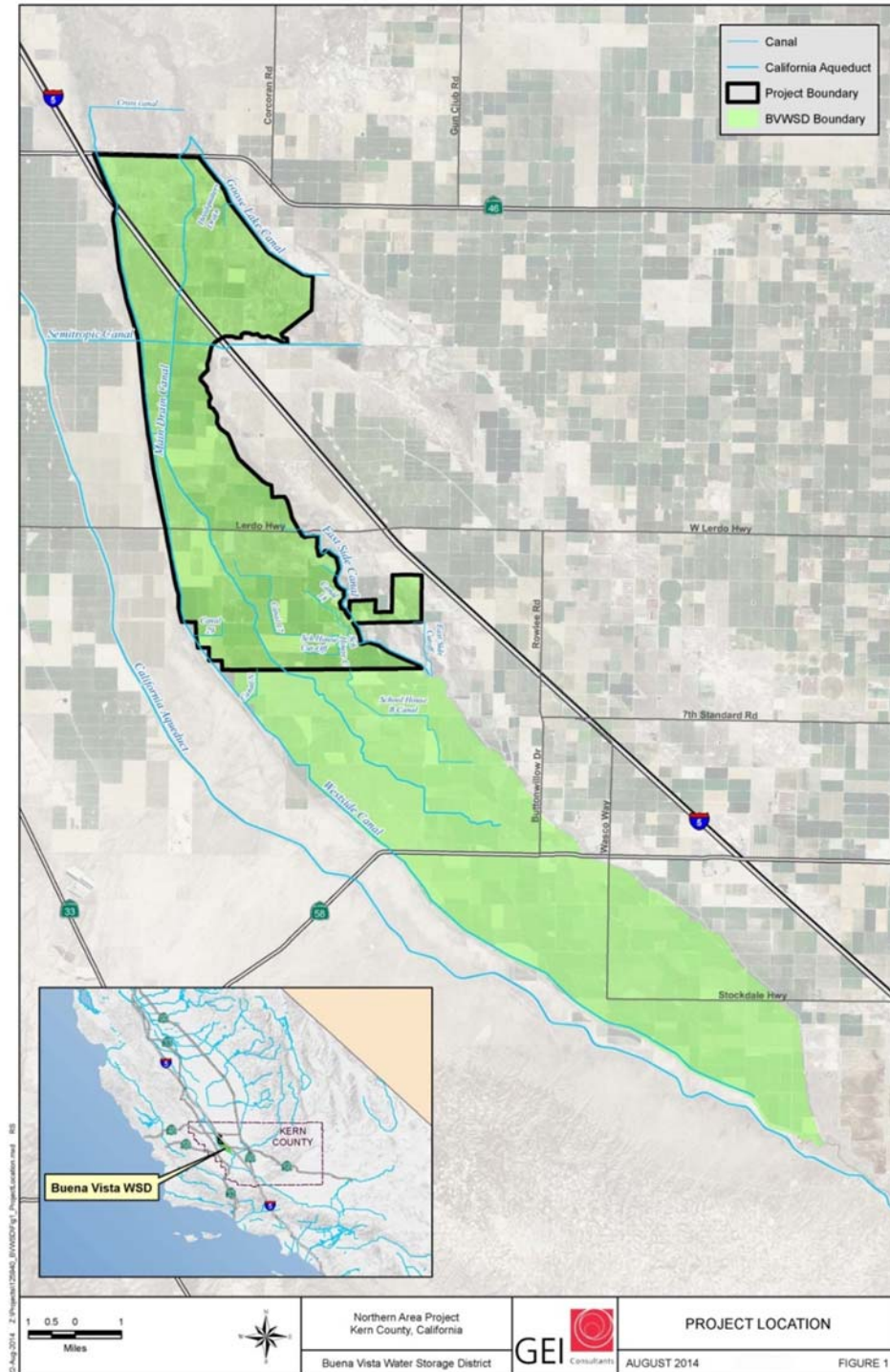
In accordance with Section 102 of the National Environmental Policy Act of 1969 (42 U.S.C. 4321, et seq.), as amended, this Environmental Assessment (EA) has been prepared to examine the potential direct, indirect, and cumulative impacts to the affected environment associated with awarding a WaterSMART grant to Buena Vista Water Storage District (BVWSD). BVWSD would use the funding to purchase and install equipment for Section One of their Northern Area Project (NAP). Section One of the NAP primarily involves the installation of approximately 10 miles of buried pipeline to move water through the district and service agricultural production. The BVWSD lies in the trough of California's southern San Joaquin Valley, approximately 16 miles west of the City of Bakersfield (Figure 1).

## 1.1 Background

The United States Department of the Interior's (DOI) WaterSMART (Sustain and Manage America's Resources for Tomorrow) Program establishes a framework to provide Federal leadership and assistance on the efficient use of water, integrating water and energy policies to support the sustainable use of all natural resources, and coordinating the water conservation activities of various DOI bureaus and offices. Through WaterSMART grants, the Bureau of Reclamation (Reclamation) provides cost-shared funding assistance on a competitive basis for projects that seek to conserve and use water more efficiently, increase the use of renewable energy and improve energy efficiency, benefit endangered and threatened species, facilitate water markets, or carry out other activities to address climate-related impacts on water or prevent any water-related crisis or conflict. In March of 2014, BVWSD applied for a WaterSMART grant, Reclamation's Funding Opportunity Announcement No. R11AF20006, to help fund Section One of the NAP. The BVWSD developed an Initial Study and Proposed Mitigated Negative Declaration for Buena Vista Water Storage District, Northern Area Project (IS/MND). On September 17, 2014, BVWSD issued the *Notice of Intent to Adopt a Mitigated Negative Declaration (MND) for Buena Vista Water Storage District, Northern Area Project*. The MND was adopted by the BVWSD on November 19, 2014. The environmental commitments within this EA are a product of the IS/MND.

The BVWSD's Service Area comprises approximately 50,000 acres within the lower Kern River watershed, and can be divided into two distinct areas: the Buttonwillow Service Area and the Maples Service Area. The Buttonwillow Service Area comprises approximately 45,000 acres situated northwesterly of the Buena Vista Lake Bed. The Maples Service Area of BVWSD comprises approximately 5,000 acres situated easterly of the Buena Vista Lake Bed. The Henry Miller Water District (HMWD) is geographically located within the

BVWSD boundaries; however, HMWD is not a part of BVWSD's Service Area and possesses its own water contracts with the Kern County Water Agency.



**Figure 1: BVWSD's Service Area, Kern River watershed.**

## **1.2 Need for the Proposal**

The District's average transport and delivery losses of water are approximately 37,000 AF/y. Construction of Section One of the NAP would reduce this amount by approximately 4,737 AF/y and provide an overall estimated conservation of 15,427 AF/y when Sections Two and Three of the NAP are connected and fully operational. The goals of the Project are to capture additional water that is lost through canal seepage, reduce operational costs, and to allow for more irrigation water to be delivered to district agricultural users.

## **1.3 Potential Resource Issues**

Due to the potential for impacts, the following resources are analyzed in this EA: Groundwater, Biological, Cultural Resources and Air Quality.

Impacts on the following resources were considered and found to be minor or non-existing, and as a result were eliminated from further discussion. Brief explanations are provided below:

### **Indian Trust Assets**

There are no tribes possessing legal property interests held in trust by the U.S. within the proposed project area.

### **Indian Sacred Sites**

No Indian sacred sites have been identified within the proposed project area.

### **Environmental Justice**

There are no economically disadvantaged or minority populations within the Proposed Action area. There are none within the vicinity of the project area that would be subject to disproportionate impacts.

### **Wetlands**

No wetland habitat, perennial, or intermittent streams occur in the proposed project site. The proposed project area is located in disturbed areas adjacent to existing canals and the project site is mainly surrounded by active agriculture. Therefore, the proposed project would not have any substantial adverse effect on sensitive natural wetland communities.

## **2.0 Alternatives Including the Proposed Action**

This EA considers two possible actions: the No Action Alternative and the Proposed Action. The No Action Alternative reflects future conditions without the Proposed Action and serves as a basis of comparison for determining potential effects to the environment.

### **2.1 No Action Alternative**

For the No Action Alternative, Reclamation would not award BVWSD with a WaterSMART grant to help fund the Project, and BVWSD would continue to operate and maintain their existing canal system until funding became available to construct Section One of the NAP.

### **2.2 Proposed Action**

Reclamation proposes to award BVWSD with a WaterSMART grant that would help fund construction of Section One of the district's NAP. The Proposed Action would consist of approximately 10 miles of buried pipeline, varying in size, between 21 and 63 inches, and be primarily buried adjacent to the Main Drain Canal, in the existing ROW, and other district facilities (Figure 2). Laterals that deviate from the Main Drain Canal ROW would be located adjacent to field roads or other geographical features that minimize impacts to conservation and farming. Easements would be obtained from landowners to accommodate the new pipeline. The Project construction would include activities consistent with digging, trenching, and excavation of soil to install the new pipeline. The pipeline would be constructed in a manner to minimize disturbance, avoid the perched aquifer, and built as three separate sections, as finances become available.

Each section of the pipeline would operate as a discreet unit, providing water to specific locations within the BVWSD. As illustrated in Figure 2, pipeline Section One is indicated in red, which will serve agricultural lands shaded in red. Pipeline Section Two (green) will serve lands shaded in green. Pipeline Section Three (blue) serves lands shaded in blue. The three sections of the pipeline can be built and operated independently of each other.

The Proposed Action involves the construction of Section One of the pipeline. Section One would be connected to the Semitropic 120-inch line and run south, along the Main Drain Canal ROW, for 8 miles and terminate at Lerdo Highway. The Section One pipeline is designed to operate by gravity flow. Two lateral

pipeline sections would be constructed, running east and west, which would be approximately 1 mile and 0.25-mile in length respectively. Two pumping stations would be retrofitted to allow water to be pumped from the existing Main Drain Canal into the pipeline (Figure 2).

BVWSD will use two areas for the temporary deposition of excavated soil and construction materials: One just north of the Semitropic canal, adjacent to the proposed pipeline route, and the other at the intersection of the Main Drain Canal and Carmel Road. Each laydown area would be approximately 5 acres in size (Figure 2, 3 and 4).

Although the three sections can be built and operated as separate projects, when Sections One and Two are completed they can be connected to allow water from the California Aqueduct to flow into Section Two.

Upon completion of the project, the use of the existing West Side and East Side Canals would be minimized. The East and West Side Canals would be left intact and would continue to be maintained, but would remain dry except during flood conditions. The Main Drain Canal would continue to function as a transportation and drainage facility for irrigation and storm water.

### **2.2.1 Environmental Commitments**

As part of the Proposed Action, BVWSD staff and its contractors will implement the following Avoidance and Minimization Measures prior to and during construction activities. These measures were included in the IS/MND as mitigation measures to reduce potential Project impacts to a less than significant level.

#### ***Air Quality***

AQ-1: The BVWSD will develop a Dust Control Plan as prescribed and approved by the San Joaquin Valley Air Pollution Control Board (SJVAPCB) to minimize and control fugitive dust during construction.

#### ***Biological***

BIO 1 - An Environmental Awareness Program will be presented to all personnel working in the field on the proposed project site. The program will consist of a brief presentation in which biologists knowledgeable of endangered species biology and legislative protection explain endangered species concerns. The program will include a discussion of special status plants and sensitive wildlife species. Species biology, habitat needs, status under the Endangered Species Act, and measures being incorporated for the protection of these species and their habitats will also be discussed.

BIO 2- Project activities will occur during daylight hours (30 minutes after sunrise to 30 minutes prior to sunset).

BIO 3 - As close to the beginning of project activities as possible, but not more than 14 days prior, a qualified biologist will conduct a final pre-construction biological survey of the proposed project site and buffer areas to verify that no special status species have become established in the project site or buffer areas.

- a. If no burrows, dens, or nests are identified within the boundaries of the proposed project or within 50 feet of the project sites, then construction activities may proceed.
- b. If potential burrows, dens, or nests are identified within the boundaries of the proposed project or within 50 feet of the project sites, the FWS and CDFW will be contacted and efforts to determine species and activity will be initiated.

BIO 4 – Project site boundaries will be clearly delineated by stakes and/or flagging. Project activities are restricted to the project site to minimize inadvertent degradation or loss of adjacent lands during project construction.

BIO 5 - All small mammal burrows that may serve as potential refugia for special status species will be marked for avoidance by construction activities.

BIO 6 - Project equipment traffic will be limited to the action area.

BIO 7 - Project-related traffic will observe a 10 mph speed limit in the project site except on county roads and state and federal highways to avoid impacts to special status and common wildlife species.

BIO 8 - When possible project activities will be scheduled to avoid evening hours to minimize potential impacts to special status wildlife species that are active in the nighttime.

BIO 9 - Hazardous materials, fuels, lubricants, and solvents that spill accidentally during project-related activities will be cleaned up and removed from the project as soon as possible according to applicable federal, state and local regulations.

BIO 10 - All excavated steep-walled holes or trenches in excess of three (3) feet in depth will be provided with one or more escape ramps constructed of earth fill to prevent entrapment of endangered species or other animals. Ramps will be located at no greater than 500-foot intervals (for pipelines etc.)

and at not less than 45-degree angles. Trenches will be inspected for entrapped wildlife each morning prior to onset of project activities and immediately prior to the end of each working day. Before such holes or trenches are filled they will be inspected thoroughly for entrapped animals. Any animals discovered will be allowed to escape voluntarily without harassment before project activities related to the trench resume, or removed from the trench or hole by a qualified biologist and allowed to escape unimpeded.

BIO 11 - All pipes, culverts, or similar structures stored at the proposed project site overnight having a diameter of four inches or greater will be inspected thoroughly for wildlife species before being buried, capped, or otherwise used or moved in any way. Pipes laid in trenches overnight will be capped. If during project implementation a wildlife species is discovered inside a pipe, that section of pipe will not be moved or, if necessary, moved only once to remove it from the path of project activity, until the wildlife species has escaped.

BIO 12 - All food-related trash items such as wrappers, cans, bottles or food scraps generated during project activities will be disposed of only in closed containers and regularly removed from the proposed project site. Food items may attract wildlife species onto the proposed project site, consequently exposing such animals to increased risk of injury or mortality. No deliberate feeding of wildlife will be allowed.

BIO 13 - To prevent harassment or mortality of wildlife species via predation, or destruction of their dens or nests, no domestic pets will be permitted on the project site.

BIO 14 - The following measures (a-g) will be implemented by BVWSD to ensure protection and avoid take of blunt-nosed leopard lizards during periods that are optimal for blunt-nosed leopard lizard activity (mid-April through mid-October):

- a. A final clearance survey will be conducted to ensure that no blunt-nosed leopard lizards are present and no burrows have become established in the project site and a 50-foot avoidance buffer.
- b. If suitable burrows that may serve as potential refugia for blunt-nosed leopard lizard cannot be avoided within the project site and a minimum 50-foot avoidance buffer cannot be maintained, then additional surveys to detect the species will be completed in accordance with California Department of Fish and Wildlife's

(CDFW) Approved Survey Methodology For The Blunt-Nosed Leopard Lizard.

- c. If no individual blunt-nosed leopard lizards are observed and no burrows are identified within the project site and a 50-foot avoidance buffer during the final clearance survey, then project activities may proceed.
- d. When possible, conduct project activities when lizards are inactive (generally when temperatures are below 77° F and/or above 95° F).
- e. All vehicle operators will check under vehicles and equipment prior to operation, or if left idle.
- f. If a blunt-nosed leopard lizard is observed during project pre-construction or clearance surveys, the US Fish and Wildlife Service (USFWS) and CDFW will be notified for further guidance.
- g. Measures to protect blunt-nosed leopard lizards during their active season may be discontinued upon determination by the biological monitor that temperature patterns at the project site no longer support blunt-nosed leopard lizard activity for the season, or once pipeline installation complete.

BIO 15 - The following measures (a-b) will be implemented by BVWSD to ensure protection and no take of blunt-nosed leopard lizards during periods of inactivity for the species (late October through early spring):

- a. If the project is conducted during the blunt-nosed leopard lizard inactive period (late October through early spring) and no burrows are identified within the boundaries of or within 50 feet of the project site during pre-construction surveys, then construction activities may proceed.
- b. If suitable burrows that may serve as potential refugia for blunt-nosed leopard lizard cannot be avoided within the project site and a minimum 50-foot avoidance buffer cannot be maintained, then additional surveys to detect the species will be completed in accordance with the CDFW Approved Survey Methodology For The Blunt-Nosed Leopard Lizard.

BIO 16 - If San Joaquin kit foxes become established within the proposed project site prior to project implementation, BVWSD will implement the following measures contained in the USFWS's Standardized Recommendations

for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS 2011):

- a. For kit fox dens within 200 feet of proposed construction area(s), protective exclusion zones will be established prior to construction by a qualified biologist. Exclusion zones will be roughly circular with a radius of the following distances measured outward from the entrance:

Potential den	50 feet
Atypical den	50 feet
Known den	100 feet
Natal/pupping den (occupied and unoccupied)	USFWS must be contacted

- b. Exclusion zones will be fenced to protect the den in such a manner that kit fox's access to the den is not restricted. Acceptable fencing includes untreated wood particle-board, silt fencing, or orange construction fencing, as long as it has opening for kit fox ingress/egress and keeps humans and equipment out.
- c. Exclusion zone barriers will be maintained until all construction related or operational disturbances have been terminated. At that time all fencing will be removed to avoid attracting subsequent attention to the dens.
- d. For potential and/or atypical dens, placement of 4 to 5 flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be required, but the exclusion zone must be observed.
- e. Project activities are not allowed within exclusion zones.
- f. Project activities will occur during daylight hours (30 minutes after sunrise to 30 minutes prior to sunset).

BIO 17 - If a natal/pupping den is discovered within the project site or within 200 feet of the project boundaries, the USFWS will be immediately notified and under no circumstances should the den be disturbed or destroyed without prior authorization. If the pre-construction biological surveys reveal an active natal pupping den or new information, BVWSD will contact the USFWS immediately to discuss requirements to proceed with project activities. The following measures will be observed:

- a. Potential dens occurring within the footprint of the project must be

monitored for three (3) consecutive days with tracking medium or an infra-red camera beam to determine the current use. If no kit fox activity is observed during this period, the den(s) should be destroyed immediately to preclude subsequent use.

- b. If kit fox activity is observed at the den(s) during this period, no project activities will occur and the FWS and CDFW will be notified. The den(s) should be monitored for at least five (5) consecutive nights from the time of the observation to allow any resident animal to move to another den during its normal activity. Only when the den(s) are determined unoccupied may the den(s) be excavated with FWS approval.
- c. Destruction of the den(s) should be accomplished by careful excavation until it is certain that no kit foxes are inside. The den(s) should be fully excavated, filled with dirt and compacted to ensure that kit foxes cannot reenter to use the den(s) during the construction period. If at any point during excavation, a kit fox is discovered inside the den(s), the excavation activity will cease immediately and monitoring the den as described above should resume. Destruction of the den(s) may be completed when in the judgment of the biologist, the animal has escaped, without further disturbance, from the partially destroyed den(s).

BIO 18 - Potential dens occurring within the footprint of the project or within 50 feet must be monitored for three (3) consecutive days with tracking medium or an infra-red camera beam to determine the current use. If no kit fox activity is observed during this period, the den(s) should be destroyed immediately to preclude subsequent use.

BIO 19 - If any kit fox den is considered to be a potential den, but is later determined during monitoring or destruction to be currently, or previously used by kit fox (e.g., if kit fox sign is found inside), then all construction activities will cease and the USFWS will be notified immediately.

BIO 20 - If ground disturbing activities occur during the breeding season of migratory avian or raptor species (February through mid-September), surveys for active nests will be conducted by a qualified biologist no more than 10 days prior to start of activities. Pre-construction nesting surveys will be conducted for nesting migratory avian and raptor species in the project site and buffer areas. Pre-construction biological surveys will occur prior to the proposed project implementation, and during the appropriate survey periods for nesting activities for individual avian species. Surveys will follow required CDFW and USFWS

protocols, where applicable. A qualified biologist will survey suitable habitat for the presence of these species. If a migratory avian or raptor species is observed and suspected to be nesting, a buffer area will be established to avoid impacts to the active nest site. Identified nests should be continuously surveyed for the first 24 hours prior to any construction-related activities to establish a behavioral baseline. If no nesting avian species are found, project activities may proceed and no further mitigation measures will be required. If active nesting sites are found, the following exclusion buffers will be established, and no project activities will occur within these buffer zones until young birds have fledged and are no longer reliant upon the nest and parental care for survival:

- Minimum no disturbance of 250 feet around active nest of non-listed bird species and 250-foot no disturbance buffer around migratory birds;
- Minimum no disturbance of 500 feet around active nest of non-listed raptor species;
- and 0.5-mile no disturbance buffer from listed species and fully protected species until breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival;
- Once work commences, all nests should be continuously monitored to detect any behavioral changes as a result of project activities. If behavioral changes are observed, the work causing that change should cease and the appropriate regulatory agencies (i.e., CDFW, USFWS, etc.) will be consulted for additional avoidance and minimization measures; and
- A variance from these no disturbance buffers may be implemented when there is compelling biological or ecological reason to do so, such as when the project area would be concealed from a nest site by topography. Any variance from these buffers is advised to be supported by a qualified wildlife biologist and is recommended that CDFW and USFWS be notified in advance of implementation of a no disturbance buffer variance.

BIO 21 - The following measures included in the CDFW's Staff Report on Burrowing Owl Mitigation (2012) will be implemented by BVWSD for the proposed project:

- a. If pre-construction biological surveys determine that burrowing

owls are present in the project site and buffer areas, a burrowing owl mitigation plan will be prepared by a qualified biologist describing recommended site specific shelter-in-place measures, worker training, and/or other measures to ensure that project construction does not result in adverse impacts to the burrowing owls.

- b. Occupied burrows will not be disturbed during the burrowing owl nesting season (February 1 through August 31) unless a qualified biologist approved by the CDFW verifies through non-invasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.
- c. Burrowing owls present in the project site or within 500 feet (as identified during pre-construction biological surveys) will be moved away from the disturbance area using passive relocation techniques. Prior to commencement of relocation, a management plan will be prepared and approved by CDFW. Relocation will be completed between September 1 and January 31 (outside of breeding season). A minimum of one or more weeks is required to relocate the owls and allow them to acclimate to alternate burrows. Passive relocation techniques will follow the CDFW Staff Report on Burrowing Owl Mitigation Guidelines (2012) and include the following measures:
  - i. Install one-way doors in burrow entrances. Leave doors in place for 48 hours to ensure owls have left the burrow.
  - ii. Allow one or more weeks for owls to acclimate to off-site burrows. Daily monitoring will be required for the passive relocation period.
  - iii. Once owls have relocated off-site, collapse existing burrows to prevent reoccupation. Prior to burrow excavation, flexible plastic pipe will be inserted into the tunnels to allow escape of any remaining owls during excavation. Excavation will be conducted by hand whenever possible.
  - iv. Destruction of burrows will occur only pursuant to a management plan approved by CDFW.
  - v. As an alternative (if approved by CDFW), all occupied burrows identified off-site within 500 feet of construction activities outside of nesting season (September through

January) and during nesting season (February 1 through August 31) could be buffered by hay bales, fencing (e.g. sheltering in place) or as directed by a qualified biologist and the CDFW.

BIO 22 - In order to avoid or reduce potential impacts to the special status plant species, the BVWSD will implement the following avoidance and minimization measures:

- a. If any special status plant species are identified during pre-construction surveys adjacent to the proposed disturbance zone, a qualified biologist retained by BVWSD will clearly delineate the location of the plant population. If the plant population(s) is directly adjacent to the proposed disturbance zone, BVWSD will install protective fencing between the disturbance zone and the plant population to ensure that special status plants are avoided or adequately protected.
- b. Avoid travel and impact to sensitive habitats near the project site.

## **2.2.2 Best Management Practices**

In addition to the Avoidance and Minimization Measures specific to listed species identified in Section 3.2.1, the following Best Management Practices (BMPs) will be implemented by BVWSD and contractors working on the Project to further minimize and avoid effects to sensitive species and air quality during construction activities:

- A biological monitor(s) shall be present while ground-disturbing activities are occurring based on the sensitivity of the habitat in which construction is occurring. In addition to conducting preconstruction surveys for the project, the biological monitors shall aid crews in satisfying take avoidance criteria and implementing project mitigation measures, document pertinent information concerning project effects on sensitive species, and shall assist in minimizing the effects of project activities on sensitive species.
- Biological monitors may order work to cease if take avoidance and/or mitigation measures are violated and would notify the BVWSD representative and Reclamation.
- Unless biological monitors allow alterations to routes, all project vehicles shall be confined to existing roads or prominently staked and/or flagged access routes that are surveyed prior to use. All observed sensitive species and their habitat features such as dens, burrows or specific habitats shall

be flagged as necessary to alert project personnel to their presence. All project-related flagging shall be collected and removed after completion of the project.

- All spills of hazardous materials shall be cleaned up immediately.
- Pets and firearms are prohibited on the construction site.
- All food-related trash, such as wrappers, cans, bottles, bags, and food scraps shall be disposed of daily in containers with secure covers and regularly removed from project sites.
- BVWSD shall appoint a representative who will be the point of contact; the representative will be identified during the preconstruction educational briefing.
- All project-related vehicles shall observe a speed limit of 10 miles per hour or less on all routes except as posted on State and County highway/roads or paved facility roads.
- Appropriate measures (i.e. signage) shall be undertaken to prevent unauthorized vehicle entry to off-road survey routes in sensitive habitat areas.
- Work boundaries will be delineated with flagging, temporary exclusionary fencing or other marking to minimize surface disturbance associated with project activities.
- The area of disturbance will be reduced to the smallest practical area, considering topography, placement of facilities, location of burrows, nesting sites or dens, public safety, and other limiting factors.
- Laydown areas, existing access roads, and areas within the NAP corridor that are disturbed through construction, will be used to stockpile excavated materials, storage of equipment, trailer placement, and vehicle parking..
- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or covered with a tarp or other suitable cover or vegetative ground cover.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.

- When materials are transported offsite, all material shall be covered or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, the piles will be effectively stabilized of fugitive dust emissions utilizing sufficient water stabilizer/suppressant.
- In the unlikely event that archaeological resources are discovered during the construction or use of the pipeline, an archeologist will be consulted.

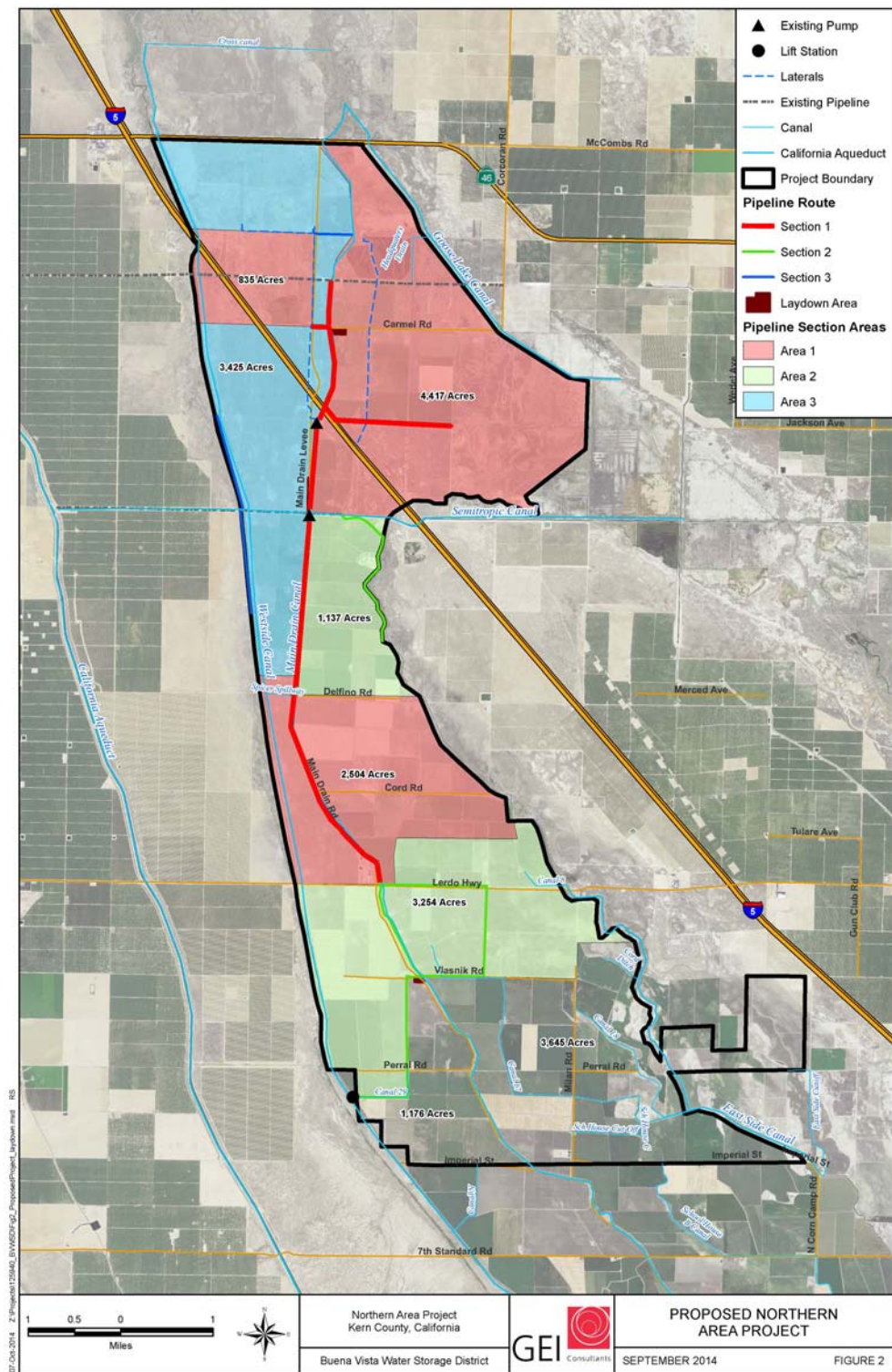


Figure 2: BVWSD Proposed Section One of the NAP.



**Figure 3: BVWSD laydown area for Section One of the NAP.**



**Figure 4: BVWSD laydown area for Section One of the NAP**

## **3.0 Affected Environment and Environmental Consequences**

This section of the EA provides the analysis of impacts from implementing the alternatives.

The No Action Alternative reflects future conditions without the Proposed Action and serves as a basis of comparison for determining potential effects to the human environment. In the No Action Alternative, Sections 2 and 3 of the NAP are still constructed and operated.

### **3.1 Groundwater Resources**

The BVWSD manages an average water supply of approximately 164,000 acre-feet per year (AF/y) from State Water Project (SWP) allocations, groundwater pumping, and Kern River diversions.

#### **3.1.1 Affected Environment**

BVWSD is located in the southwestern portion of the San Joaquin Valley and the western edge of the Kern County groundwater subbasin (California Department of Water Resources [DWR] 2004). The southern portion of the valley is internally drained by the Kings, Kaweah, Tule, and Kern rivers that flow into the Tulare drainage basin including the beds of the former Tulare, Buena Vista, and Kern lakes.

The subbasin is bounded on the north by the Kern County line and the Pleasant Valley, Tulare Lake, and Tule groundwater subbasins, on the east and southeast by the Sierra Nevada foothills and Tehachapi Mountains, and on the southwest and west by the San Emigdio Mountains and Coast Ranges. There are no streams or rivers within the project area. The project area is primarily flat and developed with a water conveyance system to deliver water to crops.

About 40,000 acres of land are used for growing crops in the BVWSD. The crop water demand is met by the delivery of surface water from seasonally regulated flows of the Kern River, schedulable deliveries of SWP water through the California Aqueduct, and occasional purchases or exchanges for water from the federal Central Valley Project. Irrigation demand that cannot be met by surface water deliveries must be satisfied by groundwater pumping. There are primarily three groundwater sources within the Project area: the perched, shallow, and deep aquifers. The perched aquifer extends from near ground surface to approximately 20 to 30 feet below ground surface. The shallow aquifer extends to a depth of approximately 200

feet and the deep aquifer extends from approximately 200 to 400 feet. For purposes of the analysis, the shallow and deep aquifers are consolidated and referred to as the main aquifer.

Groundwater recharge occurs from precipitation, subsurface inflow from aquifers west of the district, seepage from district and private canals, and deep percolation from applied water. Groundwater quality varies by location and depth. A groundwater study was conducted to ascertain the impacts associated with the implementation of all three sections of the NAP (Appendix A). Groundwater storage in the Proposed Action area is estimated at approximately 70,380 AF in the perched aquifer and 1,162,800 AF in the main aquifer (Appendix A). The District's average transport and delivery losses of water are approximately 37,000 AF/y. Construction of Section One of the NAP would reduce this amount by approximately 4,737 AF/y and provide an overall estimated conservation of 15,427 AF/y when Sections Two and Three of the NAP are connected and fully operational. The salt balance is a summation of salts into and out of the perched and main aquifers. Baseline Total Dissolved Solids (TDS) levels were estimated at 1,772 and 3,965 mg/L for the perched and main aquifers, respectively. Salt concentrations are influenced by the amount of precipitation, quantity and quality of surface water, and evaporation.

### **3.1.2 Environmental Consequences**

#### **3.1.2.1 No Action Alternative**

For the No Action Alternative, Reclamation would not award BVWSD with a WaterSMART grant to help fund the Project, and BVWSD would continue to operate and maintain their existing canal system until funding became available to construct Section One of the NAP.

Under the No Action Alternative, water would continue to leak through the portions of the BVWSD canals that would remain in service because Section One of the NAP would not be funded. The loss of irrigation water to the groundwater system would continue. Water levels in the main aquifer would decline less than under the Proposed Action Alternative because portions of the BVWSD canals would continue to leak.

Salinity levels in the perched aquifer would not increase as much as under the Proposed Action Alternative because portions of the BVWSD canals would continue to leak relatively low TDS water into the perched aquifer. Therefore, impacts to water quality would be less than under the Proposed Action Alternative.

### **3.1.2.2. Proposed Action**

The Proposed Action is to fund the construction of Section One of the NAP. Construction of Section One will have approximately 1/3 to half the impact as construction of all three sections.

### **Groundwater Quality**

A groundwater study (Appendix A) was conducted to assess the impacts from implementation of all three Sections of the NAP as the intent of the district is to replace leaking canals with a pipeline system to conserve water.

Table 3.1 displays the potential impact of construction of Sections One, Two, and Three of the NAP on salt concentrations in both the perched aquifer and the main aquifer. If all three sections of the NAP are constructed, salinity of the perched aquifer would gradually increase from baseline conditions. The increase is mainly due to the decrease in recharge of low TDS water into the aquifer. Salinity levels are expected to increase in the main aquifer as well, although not as much as the perched aquifer. Although the perched water salt concentrations are lower than in the main aquifer, the perched water is not the only source of recharge to the main aquifer. Water enters the main aquifer in the subsurface from the west and north and has higher salt concentrations than the perched water. During dry years the underflow is greater than from the perched water, due to increased gradients due to pumping within the District. As a result, the salts in the main aquifer increase during these years due subsurface inflow bringing in more salt. During the 16 projected baseline periods, six dry years occurred. In normal or wet years recharge from the perched aquifer is greater than inflow from the north and south and has a lower salt concentration. Over the base period the combination of salts from these two different recharge sources leads to the main aquifer having a slight increase in salt concentrations from before and after the project implementation.

**Table 3.1: BVWSD Perched and Main Aquifer salt concentrations before and after (projected) implementation of Sections 1, 2 and 3 of the NAP.**

Analysis	Salt Concentrations (mg/L)		
	Start 2014	Finish 2027	Change
Perched Aquifer			
Baseline	1,772	1,662	-110
With Project	1,772	3,407	1,635
Main Aquifer			
Baseline	3,965	4,217	252
With Project	3,965	4,387	422

## Groundwater Levels

If all three sections of the NAP are constructed, groundwater levels are projected to decrease in the main aquifer by 2 feet over a period of 13 years as leakage to the perched aquifer is reduced. There would be a slight increase in groundwater levels of the perched aquifer (Table 3.2). The potential effect is small due to the reduction in evaporation and a reduction in outflow to the Main Drain Canal.

Construction of the NAP is projected to result in no change in the groundwater level of the perched aquifer and a very small decrease (less than 2 feet) in the groundwater level of the main aquifer over a period of 13 years. Section One will account for approximately 1/3 of the change.

**Table 3.2: BVWSD Perched and Main Aquifer groundwater levels baseline and after implementation (projected) of Sections 1, 2, and 3 of the NAP.**

Analysis	Groundwater Level (in feet msl)		
	Start 2014	Finish 2027	Change
Perched Aquifer			
Baseline	232.5	234.2	1.6
With Project	232.5	234.2	1.6
Main Aquifer			
Baseline	199.3	186.1	-13.1
With Project	199.3	183.8	-15.4

## 3.2 Biological Resources

Special-status species are those taxa that are legally protected under the State or Federal Endangered Species Act (ESA) or other regulations and considered sufficiently rare by the scientific community to qualify for such listing. Special-status plants and animals generally fall into one or more of the following categories:

- Plants or animals listed or proposed for listing as Threatened or Endangered under the Federal ESA (50 Code of Federal Regulations [CFR] 17.12 [listed plants], 1711 [listed animal] and various notices in the Federal Register [FR][proposed species]);

- Plants or animals that are candidates for possible future listing as Threatened or Endangered under the Federal ESA (61 FR 40, February 28, 1996);
- Plants or animals listed or proposed for listing by the State of California as Threatened or Endangered under the California ESA (14 California Code of Regulations [CCR] 670.5);
- Animal Species of Special Concern to the CDFW (Remsen 1978 [birds], Williams 1986 [mammals], Jennings and Hayes 1994 [reptiles and amphibians], Moyle et al. 1989 [fish]);
- Animals Fully Protected in California (California Fish and Game Code, Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]);
- Plants listed as California Rare Plant Rank (CRPR) 1A are presumed extinct in California (California Native Plant Society [CNPS] 2001, 2014);
- Plants listed as CRPR 1B are considered rare, threatened, or endangered in California or elsewhere (CNPS 2001, 2014);
- Plants listed as CRPR 2 are considered rare or endangered in California, but more common elsewhere (CNPS 2001, 2014);
- Plants identified as California Rare Plant Rank 3 (CNPS List 3) are those for which more information is needed; a review list (CNPS 2001, 2014); and
- Plants listed as CRPR 4 are of limited distribution, on a watch list (CNPS 2001, 2014). These taxa may be included as special-status species on the basis of local significance or recent biological information.
- Species protected by other Federal or State statutes such as the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

The ESA of 1973, as amended, establishes a national program for the conservation of threatened and endangered species of fish, wildlife, and plants and the preservation of the ecosystems upon which they depend. Section 7 of the ESA requires Federal agencies to consult with the United States Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service on activities that may affect any species listed as threatened or endangered to ensure that their action(s) do not jeopardize the continued existence of those species, or result in the destruction or adverse modification of their critical habitat.

The Migratory Bird Treaty Act (MBTA) implements various treaties and conventions between the U.S. and Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the MBTA provides that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Subject to limitations in the MBTA, the Secretary of the Interior may adopt regulations determining the extent to which, if at all, hunting, taking, capturing, killing, possessing, selling, purchasing, shipping, transporting or exporting of any migratory bird, part, nest or egg will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits and migratory flight patterns.

### **3.2.1 Affected Environment**

Through a literature review and an electronic search of the California Natural Diversity Database (CNDDB), CNPS, and USFWS databases, a total of 36 special-status species were identified that occur in or may be affected by projects in the Semitropic, Lost Hills, and Lokern quadrangles (an area measuring approximately 210 square miles). A total of 15 species, ten (10) special-status wildlife species and five (5) special-status plants have been documented in areas of habitat that occur in proximity to the Proposed Action area. Special-status wildlife species that have been recorded in proximity to the proposed project sites include San Joaquin kit fox, Western burrowing owl, San Joaquin antelope squirrel, Tipton kangaroo rat, short-nosed kangaroo rat, blunt-nosed leopard lizard, Coast horned lizard, Western pond turtle, Western mastiff bat, and Western snowy plover. In addition, two (2) Swainson's hawks were observed overhead in flight near the West Side Canal during biological surveys. Special-status plants that have been documented in vicinity to the project sites include Kern mallow, slough thistle, Lost Hills crownscale, and recurved larkspur.

BVWSD retained qualified biologists from Robert A. Booher Consulting to conduct a biological study of the Proposed Action area on May 21-22, 2014, August 5, 2014 and September 11, 2014. In addition to a literature review from various sources, they conducted biological reconnaissance surveys for the San Joaquin Kit Fox, San Joaquin Antelope Squirrel, Blunt-Nosed Leopard Lizard, and the presence of suitable habitat for the Tipton kangaroo rat, giant kangaroo rat, Western burrowing owl, Swainson's hawk, and other targeted species of concern. Habitat within the Proposed Action area has been largely modified by human activity. Habitat types and land uses within the area include active and fallow agricultural/ruderal habitat, non-native grass communities, and aquatic habitat in irrigation canals. There is no critical habitat for any listed species within

the Proposed Action Area. Table 3-3 lists the special status species that could potentially occur within the Proposed Action area.

**Table 3.3**  
**Special-Status Species Potentially Occurring in the Proposed NAP area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Requirements	Potential to Occur in Project Sites
<b><i>Amphibians and Reptiles</i></b>					
Western pond turtle	<i>Emys marmorata</i>	-	SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches, typically with aquatic vegetation. Require basking sites and suitable upland habitat (sandy banks or grassy open fields) near water for egg-laying.	Low Potential. Potential habitat is present in the Kern River Flood Canal to the west, outside of the proposed project site. The proposed project sites do not support suitable habitat for the species, as canals are regularly maintained and lack aquatic vegetation year round. Where canals were observed to have water, the adjacent upland habitats were under active agricultural production (i.e., pomegranates, grape vineyards). No individuals were observed or evidence of the species was identified during biological surveys. Western pond turtles have not been recorded within the boundaries of the proposed project sites; however, the species has been documented in the Kern River Flood Canal at Lerdo Highway, approximately 1 mile west of the project site (see Figure 3a) and to the northeast, near Goose Lake (CDFW 2014).
Blunt-nosed leopard lizard	<i>Gambelia sila</i>	FE	CE, FP	Resident of sparsely vegetated alkali and desert scrub habitats, in areas of low topographic relief. Seeks cover in mammal burrows, under shrubs or structures such	Low Potential. Potential habitat is present in undisturbed/uncultivated areas in vicinity to the proposed project site (Interstate 5 corridor, areas adjacent to the West Side Canal, etc.).

**Table 3.3**  
**Special-Status Species Potentially Occurring in the Proposed NAP area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Requirements	Potential to Occur in Project Sites
				as fence posts. May excavate their own burrows, but typically utilize small mammal or other lizard burrows.	No suitable habitat for blunt-nosed leopard lizard is present in the proposed project sites, as much of the area is used for water distribution and adjacent lands have been converted to agricultural use. No burrows suitable for potential use by this species were observed within the boundaries of the proposed project sites. No individual blunt-nosed leopard lizards were observed during biological surveys and the species has not been recorded in the project sites. A blunt-nosed leopard lizard was documented approximately 1.8 miles to the east (see Figure 3a). Blunt-nosed leopard lizards have been recorded in locations north of Highway 46, approximately 2 miles and 4 miles from the project site, and 5 miles to the south, in the Lokern Area (CDFW 2014).
San Joaquin whipsnake	<i>Masticophis flagellum ruddocki</i>	-	SSC	Open, dry habitats with little or no tree cover. Found in valley grassland and saltbush scrub in the San Joaquin Valley. The species needs mammal burrows for refuge and egg laying sites.	Low Potential. The species may be present in undisturbed/uncultivated areas of habitat in vicinity to the proposed project site (Interstate 5 corridor, areas adjacent to the West Side and Semitropic Canals, etc.). However, no suitable habitat that contains small mammal burrows was

**Table 3.3**  
**Special-Status Species Potentially Occurring in the Proposed NAP area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Requirements	Potential to Occur in Project Sites
					observed within the boundaries of the proposed project sites. No individual San Joaquin whipsnakes were observed during biological surveys. The species has been documented in Valley Saltbush Scrub habitat between the West Side Canal and the California Aqueduct, at a location approximately 5.3 miles northwest of the project site (CDFW 2014) (see Figure 3a).
Coast horned lizard	<i>Phrynosoma blainvillii</i>	-	SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Requires open areas for sunning, bushes for cover, and patches of loose soil for burial. Needs an abundant supply of ants and other insects.	Low Potential. The species may be present in undisturbed/uncultivated areas of habitat in vicinity to the proposed project site (Interstate 5 corridor, areas adjacent to the West Side and Semitropic Canals, etc.). However, no suitable habitat was observed within the boundaries of the proposed project sites, as much of the area is used for water distribution and adjacent lands have been converted to agricultural use. No individual Coast horned lizards were identified during biological surveys. The species has been recorded approximately 3 miles east of the Main Drain Canal, on the east side of Interstate 5 (CDFW 2014).
California red-legged frog	<i>Rana draytonii</i>	FT	SSC	Lowlands and foothills in or near permanent sources of deep water	No Potential. No suitable habitat for California red-legged frog was observed

**Table 3.3**  
**Special-Status Species Potentially Occurring in the Proposed NAP area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Requirements	Potential to Occur in Project Sites
				with dense, shrubby or emergent riparian vegetation. Requires 11 to 20 weeks of permanent water for larval development. Must have access to aestivation habitat, consisting of small mammal burrows and moist leaf litter.	within the proposed project sites. Furthermore, the proposed project sites are located outside the current known range and distribution of the species.
Western spadefoot	<i>Spea hammondi</i>	-	SSC	Grassland habitats but can be found in valley foothill hardwood woodlands. Requires vernal pools for breeding and egg-laying.	Low Potential. Potential habitat is present in undisturbed/uncultivated areas of habitat in vicinity to the proposed project site (Interstate 5 corridor, areas adjacent to the West Side and Semitropic Canals, etc.). However, no suitable habitat was observed in the proposed project sites, as much of the area is used for water distribution and adjacent lands have been converted to agricultural use. No individual spadefoot toads were identified during biological surveys. The species has been recorded on the east side of the California Aqueduct, approximately 3 miles northwest of the proposed project site (CDFW 2014).

**Table 3.3**  
**Special-Status Species Potentially Occurring in the Proposed NAP area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Requirements	Potential to Occur in Project Sites
Giant garter snake	<i>Thamnophis gigas</i>	FT	CT	A highly aquatic species that prefers fresh water marsh and low gradient streams. Has adapted to drainage ditches and irrigation canals.	No Potential. No suitable habitat for giant garter snake was observed within the proposed project sites. Furthermore, the proposed project sites are located outside the current known range and distribution of the species..
<b>Birds</b>					
Western burrowing owl	<i>Athene cunicularia</i>	-/BCC	SSC	Open grasslands, prairies, farmlands, and deserts.	Low Potential. Potential habitat is present in undisturbed/uncultivated areas in vicinity to the proposed project sites (Interstate 5 corridor, areas adjacent to the West Side and Semitropic Canals, etc.) and agricultural lands may be used as foraging habitat. However, no burrows were observed during biological surveys that were of appropriate size for potential use by this species. No individual burrowing owls or sign of their presence (i.e., whitewash, castings, feathers, etc.) were identified during biological surveys. The species has not been recorded within the boundaries of the proposed project sites. Numerous sightings of burrowing owls and several active burrows have been documented approximately 2-3 miles west of the project site, in valley saltbush scrub habitat along the California Aqueduct

**Table 3.3  
Special-Status Species Potentially Occurring in the Proposed NAP area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Requirements	Potential to Occur in Project Sites
					(CDFW 2014). Burrowing owls are also known to occur on the Semitropic Ridge, 4.0 miles north of the proposed project site (CDFW 2014).
Swainson's hawk	<i>Buteo swainsoni</i>	-/ BCC	CT	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	Known to Occur. Two (2) Swainson's hawks were observed in flight over the West Side Canal during biological surveys. No nest sites were identified, however potential roosting and/or nesting habitat is present in areas surrounding the project sites that support riparian vegetation, tree (eucalyptus) stands, and/or large tamarisk. Riparian vegetation is present outside the project site, in the Kern River Flood Canal that occurs west of and parallel to the West Side Canal. Potential foraging habitat for the species is present in areas of agriculture planted to suitable crops (alfalfa, etc.). Swainson's hawk has been historically recorded 4.5 miles to the northwest (CDFW 2014). The species was more recently documented at a nest site approximately 6 miles to the southeast, in the Lokern Area (CDFW 2014)

**Table 3.3**  
**Special-Status Species Potentially Occurring in the Proposed NAP area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Requirements	Potential to Occur in Project Sites
Western snowy plover	<i>Charadrius alexandinus nivosus</i>	FT/BCC	-/SSC	Occurs on sandy beaches, salt pond levees, and shores of large alkali lakes. The species needs sandy or gravelly soils that are friable for nesting.	Low Potential. No suitable foraging or nesting habitat for this species was observed in the proposed project sites. The species has not been recorded in the project site. Western snowy plovers have been documented approximately 1.8 miles to the east (CDFW 2014). Two adult birds were observed at this location and presumed to be nesting near Goose Lake Bed.
Le Conte's thrasher	<i>Toxostoma lecontei</i>	-/BCC	SSC	Alkali desert scrub and open desert wash, scrub, and succulent scrub habitats. Nests in dense, spiny shrubs or densely branched cactus, usually 2-8 feet above the ground.	Low Potential. Potential (nesting) habitat for this species is present in undisturbed/uncultivated areas in vicinity to the proposed project that support a shrub component. These areas were observed along Interstate 5 and portions of the Semitropic Canal, Goose Lake Canal, and West Side Canal. Le Conte's thrashers have not been recorded in the project sites; however the species has been historically documented 4.2 miles to the northeast and 7 miles to the south of the proposed project site (CDFW 2014).
<b>Mammals</b>					
San Joaquin (Nelson's) antelope squirrel	<i>Ammospermophilus nelson</i>	-	CT	Found in the western San Joaquin Valley from 150 to 3,600 feet in elevation. Found on dry sparsely vegetated loam soils.	Low Potential. Potential habitat is present in undisturbed/uncultivated areas in vicinity to the proposed project sites. These areas were observed

**Table 3.3**  
**Special-Status Species Potentially Occurring in the Proposed NAP area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Requirements	Potential to Occur in Project Sites
				This species digs burrows or uses other rodent (kangaroo rat or California ground squirrel) burrows. Requires widely scattered shrubs, forbs, and grasses in broken terrain with gullies and washes.	along Interstate 5 and portions of the Semitropic Canal and West Side Canals. However, no suitable habitat or small mammal burrows suitable for use by this species were observed within the boundaries of the proposed project sites. No San Joaquin antelope squirrels have been documented in the project sites; the nearest recorded occurrence of the species is 1 mile to the west, in Valley Saltbush Scrub habitat adjacent to the West Side Canal (see Figure 3a). The species has also been identified in locations approximately 1.8 miles to the north (Semitropic Ridge), 1.8 miles to the southeast (east of Interstate 5) and 5 miles south, in the Lokern Area (CDFW 2014).
Giant kangaroo rat	<i>Dipodomys ingens</i>	FE	CE	Prefer annual grassland on gentle slopes of generally less than 10°, with friable, sandy-loam soils. However, most remaining populations are found on poorer, marginal habitats which include shrub communities on a variety of soil types and on slopes up to about 22°. Giant kangaroo rats develop burrow systems with one	Low Potential. Potential habitat is present in undisturbed/uncultivated areas in vicinity to the proposed project sites. These areas were observed along Interstate 5 and portions of the Semitropic Canal, Goose Lake Canal, and West Side Canal. However, no suitable habitat for this species is present within the boundaries of the proposed project sites. No potential

**Table 3.3**  
**Special-Status Species Potentially Occurring in the Proposed NAP area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Requirements	Potential to Occur in Project Sites
				to five or more separate openings. Utilize two types of burrow: 1) a vertical shaft with a circular opening and no dirt apron, and 2) a larger, more horizontally-opening shaft, usually wider than high with a well-worn path leading from the mouth.	burrows were observed during biological surveys and no sign of giant kangaroo rat presence (i.e., mowing, hay stacking, seed caching, vertical burrow entrances, etc.) was identified. This species has not been documented within the boundaries the proposed project sites. The nearest occurrence of giant kangaroo rat to the project site is documented 2.5 miles southwest, on the west side of the California Aqueduct (CDFW 2014). The species has also been recorded 5.4 miles south of the project, south of Lokern Road and approximately 7.4 miles to the southeast (CDFW 2014).
Short-nosed kangaroo rat	<i>Dipodomys nitratoides brevinasus</i>	-	SSC	Permanent resident of alkali desert scrub habitat and herbaceous habitats with scattered shrubs. Currently found mainly in the southwestern San Joaquin Valley at elevations up to 1800 ft. Forages on open round and under shrubs, eating mainly seed for annual forbs and grasses. Requires sandy loam soils for excavation of burrows.	Low Potential. Potential habitat is present in undisturbed/uncultivated areas in vicinity to the proposed project sites. These areas were observed along Interstate 5 and portions of the Semitropic Canal, and West Side Canals. However, no suitable habitat for this species is present within the boundaries of the proposed project sites. No potential burrows were observed in the project sites during biological surveys. Short-nosed kangaroo rats have been documented

**Table 3.3**  
**Special-Status Species Potentially Occurring in the Proposed NAP area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Requirements	Potential to Occur in Project Sites
					2.2 miles to the west (see Figure 3a). The species has been identified in Valley Saltbush Scrub habitat on the west side of the California Aqueduct (CDFW 2014). Short-nosed kangaroo rats have also been confirmed over 5 miles south of the project sites, in the Lokern area, and 6 miles to the northeast, on the Semitropic Ridge (CDFW 2014).
Tipton kangaroo rat	<i>Dipodomys nitratoides nitratoides</i>	FE	CE	Saltbush scrub and sink scrub communities in the Tulare Lake Basin of the Southern San Joaquin Valley. Requires soft, friable soils which escape seasonal flooding. This species digs burrows in elevated soil mounds often at the bases of shrubs.	Known to Occur. Potential habitat is present in undisturbed/uncultivated areas in vicinity to the proposed project sites. Areas of suitable habitat (Valley Saltbush and Sink Scrub) were observed around Interstate 5, the Semitropic Canal, and west of the West Side Canal. However, no suitable habitat for this species is present within the boundaries of the proposed project sites. No burrows suitable for use by the species were observed in the project sites during biological surveys. Tipton kangaroo rats have not been recorded within the project sites; however, the species has been (historically) documented near Goose Lake, in areas of habitat 2.3 miles east and 3 miles southeast of the project site

**Table 3.3**  
**Special-Status Species Potentially Occurring in the Proposed NAP area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Requirements	Potential to Occur in Project Sites
					(see Figure 3a). The species has also been identified in Semitropic Ridge to the north and Lokern Area to the south (CDFW 2014).
Western mastiff bat	<i>Eumops perotis californicus</i>	-	SSC	Open, semi-arid to arid habitats. Conifer and deciduous woodlands, Coastal scrub, chaparral, and grasslands. This species roosts in crevices on cliff faces or high buildings, and in trees or tunnels.	Low Potential. Potential foraging habitat is present in the proposed project sites. The species may potentially roost in tree stands that occur in proximity, however no suitable roosts were observed in the proposed project sites. No individuals were observed during biological surveys and the species has not been documented in the project sites. The Western mastiff bat was historically recorded approximately 1.3 miles southwest of the project site in a location near McKittrick (CDFW 2014).
Tulare grasshopper mouse	<i>Onychomys torridus tularensis</i>	-	SSC	Found in the hot, arid portions of the southern San Joaquin Valley, Ceirvo-Panoche Region in Fresno and San Benito counties, and adjacent interior valleys of the Coast Ranges (e.g., Cuyama Valley and Carrizo Plain). Occurs in a variety of habitats including blue oak woodland, upper Sonoran subshrub scrub, alkali sink and mesquite	Low Potential. Potential habitat is present in undisturbed/uncultivated areas surrounding the proposed project sites. Areas of suitable habitat (valley saltbush and sink scrub) were observed around Interstate 5, the Semitropic Canal, and west of the West Side Canal. However, no suitable habitat for this species is present within the boundaries of the proposed project site. The species has not been recorded in

**Table 3.3**  
**Special-Status Species Potentially Occurring in the Proposed NAP area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Requirements	Potential to Occur in Project Sites
				associations (on the valley floor), and grasslands (at the base of the foothills).	the project sites (see Figure 3a). Tulare grasshopper mouse has been documented in a few locations south of the project site, near Lokern and on the south side of the California Aqueduct (CDFW 2014).
San Joaquin pocket mouse	<i>Perognathus inornatus inornatus</i>	-	SSC	Found in grasslands and blue oak savannahs. Requires friable soils for digging.	Low Potential. Potential habitat is present in undisturbed/uncultivated areas in vicinity to the proposed project sites. Areas of suitable habitat were observed around Interstate 5, the Semitropic Canal, and west of the West Side Canal. However, no suitable habitat for this species is present within the boundaries of the proposed project sites. The species has not been recorded in the project sites (see Figure 3a). San Joaquin pocket mouse has been documented 5.7 miles to the south, near Lokern, and 7.5 miles west of the project site, west of the California Aqueduct (CDFW 2014).

**Table 3.3**  
**Special-Status Species Potentially Occurring in the Proposed NAP area.**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Federal Status</b>	<b>State Status</b>	<b>Habitat/Requirements</b>	<b>Potential to Occur in Project Sites</b>
Buena Vista Lake ornate shrew	<i>Sorex ornatus relictus</i>	FE	SSC	Marshlands and riparian areas in the Tulare Basin. Uses stumps, logs, and litter for cover. Prefers moist soil.	Low Potential. Riparian habitat is present outside the project sites, along the Kern River Flood Canal that may serve as potential for this species. No suitable habitat for this species was observed in the proposed project sites. The species has not been documented within the boundaries of the proposed project sites (CDFW 2014).
American badger	<i>Taxidea taxus</i>	-	SSC	The species is found in a variety of open herbaceous and shrub vegetation types/habitats with dry, friable soils. It is widely distributed in California, with the exception of the humid coastal belt, occurring from sea-level to alpine meadows and coniferous forests.	Low Potential. Potential habitat is present in undisturbed/uncultivated areas surrounding the project sites. Areas of suitable habitat (valley saltbush and sink scrub) were observed around Interstate 5, the Semitropic Canal, and west of the West Side Canal. However, no suitable habitat for this species is present within the boundaries of the proposed project sites. No burrows that were of appropriate size for use by badger or sign (i.e., scat, tracks, digging, prey remains, etc.) of the species was observed during biological surveys. Badgers have been documented approximately 7.5 miles southeast of the project sites, foraging in an area of saltbush scrub habitat.

**Table 3.3**  
**Special-Status Species Potentially Occurring in the Proposed NAP area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Requirements	Potential to Occur in Project Sites
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	FE	CT	Inhabit annual grasslands or grassy open stages with scattered shrubby vegetation. Require loose-textured sandy soils for burrowing, and a suitable prey base.	Low Potential. Potential habitat is present in undisturbed/uncultivated areas in vicinity to the proposed project sites. Areas of suitable habitat (Valley Saltbush and Sink Scrub) were observed around Interstate 5, the Semitropic Canal, and west of the West Side Canal. However, no suitable habitat for this species is present within the boundaries of the proposed project sites. No individual San Joaquin kit fox, burrows that were of appropriate size for potential use by the species, or other sign (i.e., scat, tracks, digging, prey remains, etc.) of activity were observed during biological surveys.. No San Joaquin kit fox have been documented within the boundaries of the proposed project sites (see Figure 3a). The closest record of the species to the project site is 1 mile east of Main Drain Canal; this observation record is of dens or kit fox that were observed in 1988 (CDFW 2014). Numerous sightings of individual kit fox (including road kills), and active dens have been documented in the CNDDDB in proximity to the project sites (see Figure 3a).
<b>Invertebrates</b>					

**Table 3.3**  
**Special-Status Species Potentially Occurring in the Proposed NAP area.**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Federal Status</b>	<b>State Status</b>	<b>Habitat/Requirements</b>	<b>Potential to Occur in Project Sites</b>
Vernal pool fairy shrimp	<i>Branchinecta lynchii</i>	FT	-	Found in short-lived seasonal cool-water vernal pools with low to moderate dissolved solids.	No Potential. No suitable habitat (vernal pools) was observed within the proposed project sites. This species has not been documented within the boundaries of or in proximity to the proposed project sites (CDFW 2014).
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	FT	-	Occurs only in the Central Valley of California, in association with blue elderberry ( <i>Sambucus mexicana</i> ). Prefers to lay eggs in elderberries 2-8 inches in diameter; some preference shown for stressed elderberry shrubs.	No Potential. No suitable habitat (elderberry bushes) was observed within the proposed project sites. This species has not been documented within the boundaries of or in proximity to the proposed project (CDFW 2014).
<b>Plants</b>					
Horn's milk-vetch	<i>Astragalus hornii</i> var. <i>hornii</i>	-	Rank 1B.1	Playas, meadows and seeps. Found along lake margins, and in alkaline soils. Elevation range: 60 to 850 meters. Blooming period: May through October.	Low Potential. No suitable habitat for this species is present within the boundaries of the proposed project sites. Potential habitat may be present in undisturbed/uncultivated areas in vicinity to the proposed project sites. No individuals were observed during biological surveys. Horn's milk-vetch has not been documented within the boundaries of the proposed project sites (CDFW 2014); however, the species has been recorded approximately 1.6 miles north of the project sites and is presumed extant in

**Table 3.3**  
**Special-Status Species Potentially Occurring in the Proposed NAP area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Requirements	Potential to Occur in Project Sites
					the Semitropic quadrangle (CNPS 2014).
Earlimart orache	<i>Atriplex cordulata</i> <i>var. erecticaulis</i>	-	Rank 1B.2	Valley and foothill grassland. Elevation range: 40 to 100 meters. Blooming period: April to November.	Low Potential. No suitable habitat for this species is present within the boundaries of the proposed project sites. Potential habitat may be present in undisturbed/uncultivated areas in the project vicinity. No individuals were observed during biological surveys. Earlimart orache has not been documented within the boundaries of the proposed project sites; however the species has been recorded approximately 4 miles to the east (CDFW 2014) and is presumed extant in the Semitropic quadrangle (CNPS 2014).
Heartscale	<i>Atriplex cordulata</i> <i>var. cordulata</i>	-	Rank 1B.2	Chenopod scrub, valley and foothill grassland, meadows, and seeps. Found on alkaline flats and scalds in the Central Valley, and on sandy soils. Elevation range 0 to 560 meters. Blooming period: April through October.	Low Potential. No suitable habitat for this species is present within the boundaries of the proposed project sites. Potential habitat may be present in undisturbed/uncultivated areas in the project vicinity. No individuals or were observed during biological surveys. Heartscale has not been documented within the boundaries of the proposed project site; however the species has been recorded approximately 7 miles south of the project sites (CDFW 2014).

**Table 3.3**  
**Special-Status Species Potentially Occurring in the Proposed NAP area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Requirements	Potential to Occur in Project Sites
Crownscale	<i>Atriplex coronata</i> <i>var. coronata</i>	-	Rank 4.2	Chenopod scrub, valley and foothill grassland, and vernal pools. Found in alkaline and clay soils. Elevation range 1 to 590 meters. Blooming period: March through October.	Low Potential. No suitable habitat for this species is present within the boundaries of the proposed project sites. Potential habitat may be present in undisturbed/uncultivated areas in the project vicinity. No individuals or were observed during biological surveys. Crownscale has not been documented within the boundaries of the proposed project sites (CDFW 2014) but is presumed extant in the Semitropic and Lost Hills quadrangles (CNPS 2014).
Lost Hills crownscale	<i>Atriplex coronata</i> <i>var. vallicola</i>	-	Rank 1B.2	Chenopod scrub, valley and foothill grassland, and vernal pools. Found in powdery, alkaline soils that are vernal moist with <i>Frankenia</i> , <i>Atriplex</i> spp., and <i>Distichlis</i> . Elevation range: 0 to 605 meters. Blooming period: April through August.	Known to Occur. Potential habitat is present in undisturbed/uncultivated areas in the project vicinity. Potentially suitable habitat is present Interstate 5, near the Semitropic and West Side Canals. No suitable habitat for this species is present within the boundaries of the proposed project sites. No individuals or evidence of the species were observed during biological surveys. Lost Hills crownscale has not been documented within the boundaries of the proposed project sites; however the species has been recorded along the Main Drain Canal and near the south end of the project (see Figure 3b). The species is presumed extant in

**Table 3.3  
Special-Status Species Potentially Occurring in the Proposed NAP area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Requirements	Potential to Occur in Project Sites
					the Semitropic, Lost Hills, and Lokern quadrangles (CNPS 2014) and in areas of valley saltbush scrub habitat that persist along the West Side Canal and the Kern River Flood Canal (CDFW 2014).
California jewel-flower	<i>Caulanthus californicus</i>	FE	CE, Rank 1B.1	Chenopod scrub, pinyon and juniper woodland, valley and foothill grassland. The species was historically distributed throughout the Central Valley and Carrizo Plain. Found on sandy soils. Elevation range: 61 to 1,000 meters. Blooming period: February through May.	No Potential. The proposed project is located outside the known range and current distribution of the species, as no natural extant populations persist in Kern County. (USFWS 2014b). This species has not been documented within the project sites (CDFW 2014).
Slough thistle	<i>Cirsium crassicaule</i>	-/	Rank 1B.1	Chenopod scrub, marshes and swamps (sloughs), and riparian scrub. Elevation range: 3 to 100 meters. Blooming period: May through August.	Known to Occur. Potential habitat for this species is present in vicinity to the proposed project site (in undisturbed/uncultivated areas of habitat around Interstate 5, and along the Kern River Flood Canal). No suitable habitat for this species is present within the boundaries of the proposed project sites. No individuals were observed during biological surveys. Slough thistle has not been documented within the boundaries of the proposed project sites; however, the species was historically recorded

**Table 3.3**  
**Special-Status Species Potentially Occurring in the Proposed NAP area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Requirements	Potential to Occur in Project Sites
					between the Main Drain Canal and Goose Lake Canal (CDFW 2014) (see Figure 3b). Furthermore, slough thistle is presumed extant in the Semitropic quadrangle (CNPS 2014).
Recurved larkspur	<i>Delphinium recurvatum</i>	-/	Rank 1B.2	Chenopod scrub, Cismontane woodland, Valley and foothill grassland. Found on alkaline soils. Elevation range: 3 to 790 meters. Blooming period: March through June.	Low Potential. No suitable habitat for this species is present within the boundaries of the proposed project sites. Potential habitat is present in undisturbed/uncultivated areas in the project vicinity. No individuals or were observed during biological surveys. This species has been documented approximately 1.9 miles east of the proposed project sites (CDFW 2014) (see Figure 3b) Recurved larkspur is presumed extant in the Semitropic and Lokern quadrangles (CNPS 2014).
Kern mallow	<i>Eremalche kernensis</i>	FE	Rank 1B.1	Chenopod scrub, valley and foothill grassland. Elevation range: 70 to 1,290 meters. Blooming period: March through May.	Known to Occur. The species has been recorded in areas of Valley Saltbush Scrub habitat that persist along the West Side Canal and adjacent to the Kern River Flood Canal (CDFW 2014). Potential habitat is present in undisturbed/uncultivated areas in the project vicinity (along the Interstate 5 corridor, etc.). No suitable habitat for this species is present within the boundaries of the proposed project

**Table 3.3**  
**Special-Status Species Potentially Occurring in the Proposed NAP area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Requirements	Potential to Occur in Project Sites
					sites. No individuals or evidence of the species were observed during biological surveys. Kern mallow has not been documented within the boundaries of the proposed project sites; however the species has been recorded near the south end of the project along the West Side Canal (CDFW 2014) (see Figure 3b).
Hoover's eriastrum	<i>Eriastrum hooveri</i>	Delisted	Rank 4.2	Chenopod scrub, pinyon and juniper woodlands, and valley and foothill grasslands. Elevation range: 50 to 915 meters. Blooming period: March through July.	Low Potential. No suitable habitat for this species is present within the boundaries of the proposed project sites. Potential habitat is present in undisturbed/uncultivated areas in the project vicinity. No individuals or were observed during biological surveys. The species has been recorded along I-5, approximately 2.4 miles to the east, and in a location 2.9 miles northwest of the Main Drain Canal (CDFW 2014).
Munz's tidy-tips	<i>Layia munzii</i>	-	Rank 1B.2	Chenopod scrub, valley and foothill grasslands. In alkaline clay soils. Elevation range: 150 to 700 meters. Blooming period: March through April.	Low Potential. No suitable habitat for this species is present within the boundaries of the proposed project sites. Potential habitat is present in undisturbed/uncultivated areas in the project vicinity. No individuals or were observed during biological surveys. Munz's tidy-tips has been recorded approximately 4.7 miles northwest of

**Table 3.3**  
**Special-Status Species Potentially Occurring in the Proposed NAP area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Requirements	Potential to Occur in Project Sites
					the Main Drain Canal (CDFW 2014). The species is also presumed extant in the Semitropic and Lost Hills quadrangles (CNPS 2014).
Showy golden madia	<i>Madia radiata</i>	-	Rank 1B.1	Cismontane woodland, valley and foothill grassland. Elevation range: 25 to 1,215 meters. Blooming period: March through May.	Low Potential. No suitable habitat for this species is present within the boundaries of the proposed project sites. Potential habitat is present in undisturbed/uncultivated areas in the project vicinity. No individuals or were observed during biological surveys. Showy golden madia has not been documented in the project site; however, the species has been recorded approximately 3.4 miles south of the project, in Valley saltbush scrub habitat along the California Aqueduct ROW (CDFW 2014).
San Joaquin woollythreads	<i>Monolopia congdonii</i>	FE	List 1B.2	Chenopod scrub, valley and foothill grasslands of the western San Joaquin Valley. Elevation range: 60 to 800 meters. Blooming period: February through May.	Low Potential. No suitable habitat for this species is present within the boundaries of the proposed project sites. Potential habitat is present in undisturbed/uncultivated areas in the project vicinity. No individuals or were observed during biological surveys. This species was not observed during biological surveys. This species has not been documented within the project site (see Figure 3); however populations of

**Table 3.3**  
**Special-Status Species Potentially Occurring in the Proposed NAP area.**

Common Name	Scientific Name	Federal Status	State Status	Habitat/Requirements	Potential to Occur in Project Sites
					San Joaquin woollythreads have been documented in two (2) areas west of the project site that support saltbush scrub habitat (CDFW 2014) (see Figure 3b). CDFW 2014)

### **3.2.1 Environmental Consequences**

#### **3.2.1.1 No Action**

Under the No Action Alternative, Section One of the NAP will not receive a WaterSMART grant and there will be no impact to biological resources.

#### **3.2.1.2 Proposed Action**

The habitat assessment conducted for the BVWSD NAP found that no suitable habitat for special-status animal or plant species is present within the boundaries of the Proposed Action area; however, native habitats and natural lands are present in undisturbed/uncultivated areas in proximity to the project sites. No riparian, wetland, vernal pool, streams, or other sensitive community types were observed within the boundaries of the proposed project sites during biological surveys. The proposed NAP would avoid directly impacting riparian areas, designated wetlands, and potential wetland areas, as they occur outside the boundaries of the proposed project sites. Since the proposed project would be conducted mainly within the Main Drain Canal ROW and along existing canal banks, no sensitive habitats that were observed in proximity would be impacted.

Based on habitats present in areas surrounding the project sites and conditions that were observed during the biological surveys, several special-status wildlife species have some potential, albeit low, to occur in the proposed project sites. Special-status animal species including, but not limited to, blunt-nosed leopard lizard, Western burrowing owl, Le Conte's thrasher, San Joaquin antelope squirrel, San Joaquin pocket mouse, Tulare grasshopper mouse, American badger, and San Joaquin kit fox may occur in natural lands and uncultivated areas in the project vicinity. Habitats observed during biological surveys were generally present in uncultivated areas surrounding Interstate 5, the Semitropic Canal, along the Kern River Flood Canal, and adjacent to the West Side Canal. Although no habitat features (burrows, dens, or nests) were observed that may serve as potential shelter or be used for refuge and/or breeding, there is potential for these species to occasionally pass through and/or to forage portions of the project sites. Therefore, avoidance measures to protect special-status wildlife species during pipeline construction and installation are recommended (See Section 2.2.1 Environmental Commitments).

## **3.3 Air Quality**

Section 176 (c) of the Clean Air Act (CAA) (42 U.S.C. 7506 (c)) requires that any entity of the Federal government that engages in, supports, or in any way provided financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable State Implementation Plan (SIP) required under Section 110 (a) of the CAA (42 U.S.C. 7401 (a)) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with a SIP's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality

Standards (NAAQS) and achieving expeditious attainment of those standards. Each federal agency must determine that any action that is proposed by the agency and that is subject to the regulations implementing the conformity requirements will, in fact conform to the applicable SIP before the action is taken.

On November 30, 1993, the U.S. EPA promulgated final general conformity regulations at 40 CFR 93 Subpart B for all Federal activities except those covered under transportation conformity. The general conformity regulations apply to a proposed federal action in a non-attainment or maintenance area if the total direct and indirect emissions of the relevant criteria pollutant(s) and precursor pollutant(s) caused by the Proposed Action equal or exceed certain threshold amounts, thus requiring the Federal agency to make a determination of general conformity.

The SJVAPCD has established thresholds of significance for criteria pollutant emissions at the project level. Using project type and size, the district has pre-quantified emissions and determined a size below which it is reasonable to conclude that a project would not exceed applicable thresholds of significance for criteria pollutants (SJVAPCD 2012).

Projects that fit the descriptions and project sizes provided in the table Table 3.4 below are deemed to have a less than significant impact on air quality.

**Table 3.4: Small Project Analysis Level by Vehicle Trips**

<b>Land Use Category</b>	<b>Project Size</b>
Residential Housing	1,453 trips/day
Commercial	1,673 trips/day
Office	1,628 trips/day
Institutional	1,707 trips/day
Industrial	1,506 trips/day

### **3.3.1 Affected Environment**

The proposed NAP is located within the southern San Joaquin air-shed, surrounded by approximately 50,000 acres of agricultural fields, dirt roads and earthen canals to convey water for irrigation. The San Joaquin air-shed is in non-compliance for federal and state air quality standards for ozone and Particulate Matter (PM) 10 microns or less and PM 2.5 microns or less (SJVAPCD 2014). Ozone is primarily a product of more concentrated motor vehicle traffic on a regional scale. Particulate matter is generated from vehicle tailpipes, industry, wood combustion and fugitive dust from unpaved surfaces.

### **3.3.2 Environmental Consequences**

#### **3.3.2.1 No Action Alternative**

Under the No Action Alternative, Reclamation would not award BVWSD with a WaterSMART grant to help fund construction of Section One of the NAP. Therefore, there would be no impact to air quality.

### **3.3.2.2 Proposed Action**

The Project would involve 7 construction vehicles during the 8-month project implementation phase for the delivery of materials and equipment, and excavation of soil to bury the new pipe. Using project size and type based on the Small Project Analysis Level in Table 3.4, the BVWSD's NAP would not exceed the established significance threshold of 1,673 vehicle trips a day for Commercial projects. Construction vehicles would travel once per day to the construction site, and as each portion of Section One is completed, the vehicles would travel to the next construction area to resume digging, trenching and installation of the pipe. An over estimation of vehicle trips to and from the project area per day would be 4 per vehicle for a total of 28 trips per day. Equipment and vehicles used would be subject to state mobile source emissions controls. Due to the mobile nature of the pipeline construction, any emission issues would last only a few days at each site.

The primary air quality concern for the proposed project is Particulate Matter emissions (fugitive dust) from ground disturbance and vehicular traffic on unpaved surfaces. The construction of the project would be subject to standard SJVAPCD permitting requirements, which includes an approved Dust Control Plan. With the employment of Dust Control Plan, the proposed project is not expected to contribute substantially to existing levels of particulate matter or conflict with the SJVAPCD's air quality plan. There are no sensitive receptors in the area as it is remote and with very few residents. The BVWSD would contact the SJVAPCD to determine if an Indirect Source Review – Air Impact Assessment (ISR) is required for construction vehicle emissions. An ISR determination letter and/or mitigation plan would be submitted with the project's Dust Control Plan for construction.

The operation phase of the project would rely on gravity flow and electric pumps to move the water to the places of use. Since the proposed project would not have a significant increase in electrical demand than the existing operations, the project would have no adverse impacts to air quality during the operations phase.

## **3.4 Cultural Resources**

Cultural resources is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. Title 54 U.S.C. 300101 et seq., formerly and commonly known as the National Historic Preservation Act (NHPA) is the primary legislation for Federal historic preservation. Section 106 of the NHPA (54 U.S.C. 306108) requires Federal agencies to take into consideration the effects of their undertakings on historic properties and to afford the Advisory Council on Historic Preservation an opportunity to comment. Historic properties are those cultural resources that are listed on or eligible for inclusion in the National Register of Historic Places (National Register). The implementing regulations at 36 CFR Part 800 for Section 106 describe the process that the Federal agency takes to identify historic properties within the area of potential effects and to assess the effects that the proposed undertaking will have on those historic properties, through consultations with the

State Historic Preservation Officer, Indian tribes, and other identified consulting and interested parties.

Reclamation proposes to award a WaterSMART Water Use Efficiency Grant to the BVWSD to construct approximately 10 miles of pipeline in the northern portion of their service area. The expenditure of Federal funds is an undertaking as defined in 36 CFR § 800.16(y) and is a type of activity that has the potential to cause effects on historic properties under 36 CFR § 800.3(a).

### **3.4.1 Affected Environment**

In an effort to identify historic properties, BVWSD contracted ASM Affiliates to conduct a cultural resources survey to assist in the identification of historic properties (Whitley et al. 2015). Whitley et al. (2015) conducted a records search at the Southern San Joaquin Valley Information Center, and a pedestrian survey of the APE on October 22 and 23, 2014. Three cultural resources were identified within the APE for proposed action: Main Drain Canal, 17 Extension Canal, and the L Canal, which are part of the Kern River Flood Canal District (Whitley et al. 2015:Figure 4). Twelve isolated artifacts were also documented during survey along the Main Drain Canal within the APE: seven waste flakes (lithic debitage), two unifacially-flaked tools, two bifacially-flaked tools, and one cobble hammerstone (Whitley et al. 2015:35). These isolates were all located within the constructed earthen berm of the Main Drain Canal.

ASM Affiliates recorded and evaluated the segments of the Main Drain Canal, 17 Extension Canal, and the L Canal within the APE for this undertaking. The Kern River Flood Canal District was not recorded, but was described in detail by Whitley et al. (2015) within the historic context. While the scope of their entire survey resulted in recording and updating records for additional segments of district features, recording the entire system was outside the scope of this project. Reclamation believes that the information in the report supports a determination that the segments of the Main Drain Canal, 17 Extension Canal, and the L Canal within the APE are eligible as contributing elements to the larger system under Criterion A given that the canal segments have retained integrity of location, setting, feeling, and association (Whitley et al. (2015).

For the purposes of this project, Reclamation is treating the Kern River Flood Canal District as eligible for inclusion in the National Register. Reclamation considers it eligible under Criterion A for local contributions to the history of early settlement, reclamation, and agriculture in Kern County. The system as a whole has retained integrity of location, setting, feeling, and association. The system still functions for the original purpose for which it was constructed, in a very similar agricultural setting as existing during the time of its original construction and development, and along nearly the same alignments as its original construction. The historic context presented by Whitley et al. (2015) demonstrates the association of the Kern River Flood Canal District with “Theme 1: Development of Irrigated Agriculture in the San Joaquin Valley, 1852-1964” (Whitley et al. 2015:18). The physical features of the Kern River Flood Canal District, taken together, convey the property's historic character.

The only identified historic properties within the APE are the Main Drain Canal, 17 Extension Canal, and the L Canal. Reclamation applied the criteria of adverse effect [36 CFR § 800.5(a)] and found that the proposed action would result in no significant alterations to the historic characteristics that make the Main Drain Canal, 17 Extension Canal, and the L Canal eligible for the National Register as contributing elements to the Kern River Flood Canal District. The proposed actions of installing a new pipeline and retrofitting modern pump stations on the Main Drain Canal will not alter any physical characteristics of the canal or its berm. Upon completion, the Main Drain Canal, 17 Extension Canal, and the L Canal rights of-way and embankments will be recontoured to their pre-construction form. Since there will be no alterations to the Main Drain Canal, 17 Extension Canal, and the L Canal, the Kern River Flood Canal District will also be unaffected.

Utilizing these identification efforts, Reclamation entered into consultation with the California State Historic Preservation Officer (SHPO) in May 2015, seeking their concurrence on a finding of “no adverse effect to historic properties pursuant to 36 CFR § 800.5(b).” A response from SHPO is pending.

### **3.4.2 Environmental Consequences**

#### **3.4.2.1 No Action Alternative**

Under the no action alternative, Reclamation would not award BVWSD with a WaterSMART grant to help fund the construction of Section One of the NAP. There would be no change in operations. Conditions related to cultural resources would remain the same as existing conditions.

#### **3.4.2.2 Proposed Action**

The Proposed Action is the type of activity that has the potential to affect historic properties. A records search, a cultural resources survey, and Tribal consultation identified historic properties within the APE. Reclamation determined that there will be no adverse effect to historic properties pursuant to 36 CFR § 800.5(b); therefore, no cultural resources would be affected as a result of implementing the Proposed Action.

## **3.5 Cumulative Impacts**

### **3.5.1 Affected Environment**

The BVWSD has received a grant from DWR for funding Sections Two and Three of the NAP. Construction of these two sections began in April of 2015 and is expected to conclude in the fall of 2015. Section Two would begin at a new pumping station on the West Side Canal at Canal 29, the very southern end of the project area. The new 8-mile section of the pipeline would run north to Lerdo Highway and terminate at the southern end of Section One. Section Two would provide water to specific areas in the southern portion of the BVWSD. Additionally, another 4 miles of new pipeline would be constructed along the East Side Canal, and connect to an existing BVWSD pipeline that runs parallel to the Semitropic Canal (Figure 2).

Section Three would consist of approximately 3 miles of new pipeline connected to existing district facilities and private facilities. The new pipeline would service agricultural lands in specific areas in the northern portion of the BVWSD (Figure 2). The short lateral included in Section Three, in the northern portion of the project area (approximately 0.5 mile north of the existing Semitropic 120-inch line), would connect to a private pipeline which parallels the Main Drain, in which BVWSD has a capacity interest.

### **3.5.2 Environmental Consequences**

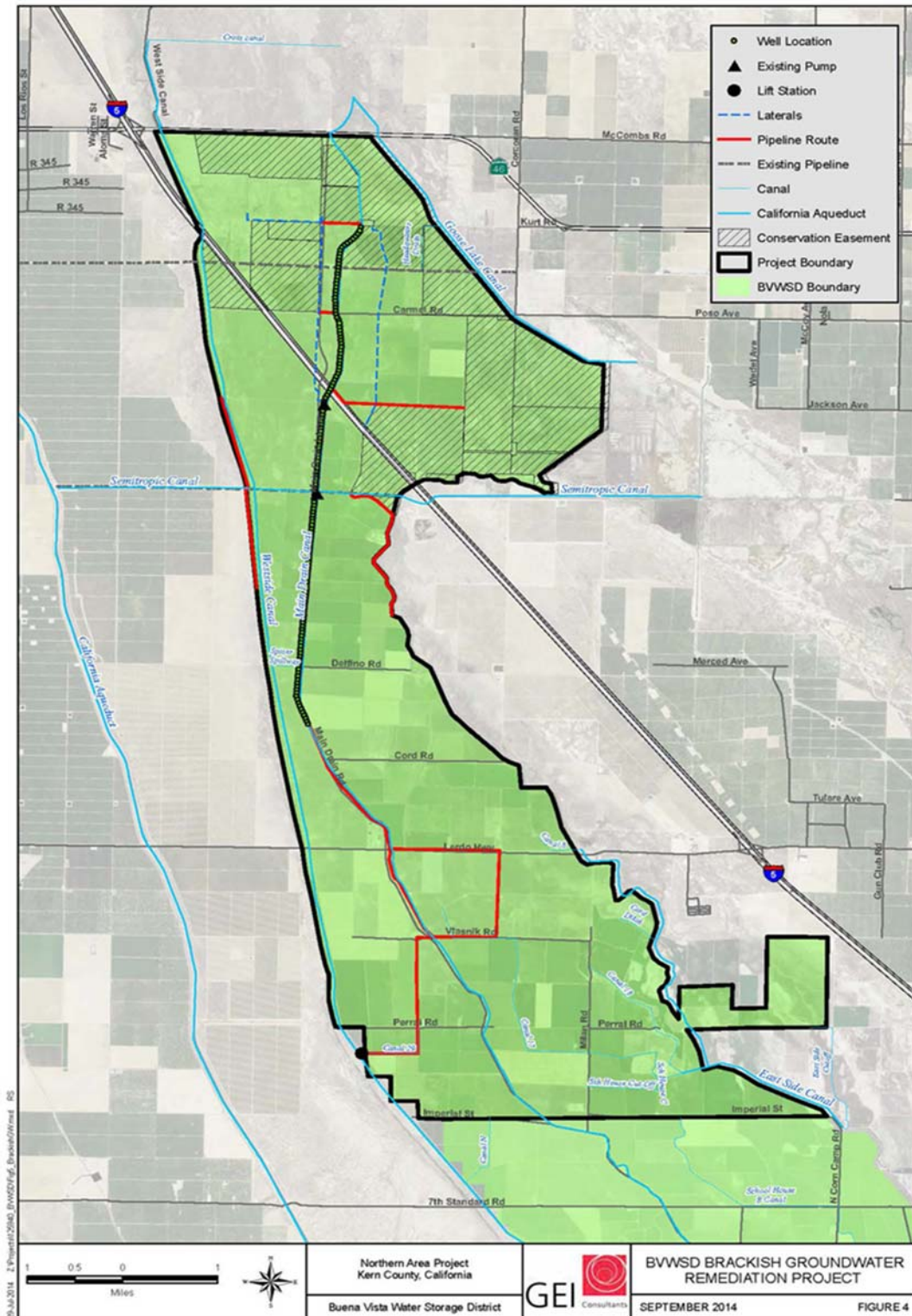
BVWSD prepared an Initial Study and Mitigated Negative Declaration as required under the California Environmental Quality Act for the NAP. The BVWSD has evaluated the environmental effects of the entire NAP and mitigation measures similar to measures established within this EA have been established for Sections Two and Three. Construction of the other sections of the NAP would not have a significant cumulative effect to resources in the Proposed Action area if mitigation measures are followed during construction of each Section of the NAP.

In order to reduce impacts to groundwater quality, the BVWSD will adopt a mitigation program (see Section 2.2.1). Most of California is experiencing Exceptional Drought (Svoboda 2014). The additional water available for irrigation, through project implementation, would be a benefit during drought situations as seepage that will be eliminated from the East Side and West Side canals (in the Project area) is estimated to be approximately 15,400 AF/y. Improvements in the water conveyance system would provide additional water and reliability that is needed for agricultural production.

Additionally, the Brackish Groundwater Remediation Program (BGRP) is a probable future project that would mitigate for the increase in salt concentrations to the perched aquifer. The BVWSD has applied for a state grant for the BGRP to provide funding to install approximately 60 wells, 200 feet apart, along the west side within the existing ROW of the NAP. The wells would extract brackish, unpalatable water from a shallow supply in the area. The brackish water would be blended with better quality water and supplied to local agricultural users (Figure 5). An Environmental Impact Report (EIR) for the BVWSD Water Management Program (State Clearinghouse No. 2009011008) was prepared in 2009 for the BGRP (in addition to three other proposed projects). Construction of the BGRP would last approximately 8 months and would overlap with the construction period for the proposed NAP by approximately four months. There would be 4 additional construction type vehicles including a backhoe, two pickup trucks, and a drilling rig mounted on semi-truck operating during the 4 month overlap period. Using project type and size (Table 3.4) it is reasonable to conclude that the cumulative effects of the construction periods overlapping would not exceed applicable thresholds of significance for criteria pollutants. Therefore, no cumulative impacts to air quality are expected. Equipment and vehicles used would also be subject to state mobile source emissions controls.

The addition of 4 construction type vehicles to the Project action area during the period of overlapping between the NAP and the BGRP may temporarily increase noise levels but it would not create an appreciable increase from the construction noise of Section One.

Greenhouse gas impacts are considered to be cumulative impacts since any increase would add to the existing inventory of gases that could contribute to climate change. Construction activities and vehicle type and number would be similar for Sections Two and Three of the NAP. The emissions from construction activities from 7-11 vehicles for construction periods that last approximate a year, would not meet the 25,000 metric tons EPA reporting threshold as 25,000 is roughly equivalent to the annual emissions of 4,400 passenger vehicles per year (EPA 2014). Emission from the construction vehicles would be temporary and in large area without any other major sources nearby. Because these activities would be similar to existing conditions, for both construction and operation, and will be far below the reporting threshold level for emissions, the project GHG emissions would not represent a substantial change and would not conflict with the Kern County's GHG emissions reduction program.



**Figure 5: BVWSD Brackish Ground Water Remediation Project.**

## **4.0 Consultation and Coordination**

### **4.1 Public Review Period**

In accordance with the California Environmental Quality Act, the BVWSD conducted an Initial Study for the NAP. The Findings and the Proposed Mitigated Negative Declaration was submitted to the California State Clearinghouse on September 22, 2014. The following agencies and sovereign entities provided comments: California Department of Transportation, CDFW, Native American Heritage Commission, Tejon Indian Tribe, and Wanda Allen. The comments were incorporated into the Final Initial Study and the Mitigation Monitoring and Reporting Program.

Reclamation will provide the public with an opportunity to comment on this EA and a Finding of No Significant Impact.

### **4.2 Endangered Species Act (16 USC § 1531 et seq.)**

Section 7 of the ESA requires Federal agencies, in consultation with the Secretary of the Interior, to ensure that their actions do not jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of the critical habitat of these species.

On May 19, 2015, Reclamation requested USFWS concurrence that the Project may affect, but is not likely to adversely affect the San Joaquin kit fox.

### **4.3 Cultural Resources**

Title 54 U.S.C. § 306108, commonly known as Section 106 of the National Historic Preservation Act (formerly 16 U.S.C. 470 et seq.), requires Federal agencies to consider the effects of their undertakings on historic properties, properties determined eligible for inclusion in the National Register, and to afford the Advisory Council on Historic Preservation an opportunity to comment. Compliance with Section 106 follows a series of steps, identified in its implementing regulations found at 36 CFR Part 800, that include identifying consulting and interested parties, identifying historic properties within the area of potential effect, and assessing effects on any identified historic properties, through

consultations with the SHPO, Indian tribes and other consulting parties. Reclamation initiated Section 106 consultation with the California SHPO, and made a finding of “no adverse effect to historic properties,” pursuant to 36 CFR §800.5(b), for the proposed undertaking.

## 5.0 References

- Boyd, W.H. 1997. Stagecoach Heyday in the San Joaquin Valley (1853-1876)
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