RECLAMATION

Managing Water in the West

Draft Environmental Assessment/Initial Study

Kaweah Delta Water Conservation District Paregien Basin Project

July 2013

U.S. Department of the Interior
Bureau of Reclamation
Mid Pacific Region
Mid Pacific Regional Office
Sacramento, California

Kaweah Delta Water Conservation District
2975 N. Farmersville Blvd.
Farmersville, CA 93223

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.

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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List of Acronyms and Abbreviations

AF	Acre-feet
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDB	California Native Diversity Database
CPDCo	Consolidated Peoples Ditch Company
CVP	Central Valley Project
CWA	Clean Water Act
District	Kaweah Delta Water Conservation District
EA	Environmental Assessment
FWCA	Fish and Wildlife Coordination Act
GHG	Greenhouse Gases
IS	Initial Study
MBTA	Migratory Bird Treaty Act
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
$PM_{2.5}$	Particulate matter less than 2.5 microns in diameter
PM_{10}	Particulate matter between 2.5 and 10 microns in diameter
Ppm	Parts per million
Reclamation	Bureau of Reclamation
SJVAPCD	San Joaquin Valley Air Pollution Control District
$\mu g/m^3$	Microgram per cubic meter
U.S.C.	U.S. Code
USFWS	U.S. Fish and Wildlife Service

Section 1 Introduction

1.1 Background

The United States Department of Interior Bureau of Reclamation (Reclamation) proposes to provide DOI's WaterSMART program grant funds to the Kaweah Delta Water Conservation District (District) to construct the Paragien Basin Project. The Proposed Action consists of two groundwater recharge/stormwater control basins to provide groundwater recharge and to provide flood protection for the nearby City of Farmersville and the Linnell Farm Labor Center.

The Paregien Basin site is located on the delta of the Kaweah River, south of State Highway 198 and north of the City of Farmersville. The Paregien Basin site is shown on Figures 1 and 2. It is an 80-acre parcel, bordered on the north by State Highway 198, on the south and east by the Davis Ditch of the Consolidated Peoples Ditch Company and farmland and the historic remnant of Cameron Creek to the west.

With WaterSMART grants, Reclamation provides cost-shared funding on a competitive basis for on-the-ground water conservation and energy efficiency projects. The WaterSMART grant program is under the authority of Section 9504(a) of the Secure Water Act, Subtitle F of Title IX of the Omnibus Public Land Management Act of 2009, P.L. 111-11 (42 USC 10364).

In accordance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), this Environmental Assessment/Initial Study(EA//IS) discloses potential environmental impacts associated with the construction and operation of the two recharge basins and groundwater monitoring wells. This document uses the term Proposed Action for both the CEQA "Proposed Project" and the NEPA "Proposed Action." This document was prepared as a joint CEQA/NEPA document because the Proposed Action is a discretionary project of a State agency with federal involvement. The District is the CEQA lead agency and Reclamation is the NEPA lead agency.

The District was formed in 1927, specifically for the purposes of conserving and storing waters and protecting land from flood damage. The District encompasses a total land area of 340,000 acres as shown on Figure 1. The District holds water rights on the Kaweah River, as well as being a long-term contractor for both Class 1 and Class 2 supplies from the Friant Division of the Central Valley Project. The District's average annual diversion from the Kaweah River is 22,803 acre-feet, while its pre-CVP contract delivery average was 19,049 acre-feet. It is anticipated that this quantity would increase by an annual average of 3,900 acre-feet based on the CVP assignment contract.

The District currently has land developed for groundwater recharge purposes totaling almost 5,000 acres. Board of Directors' policies call for continuous increases in these facilities. The

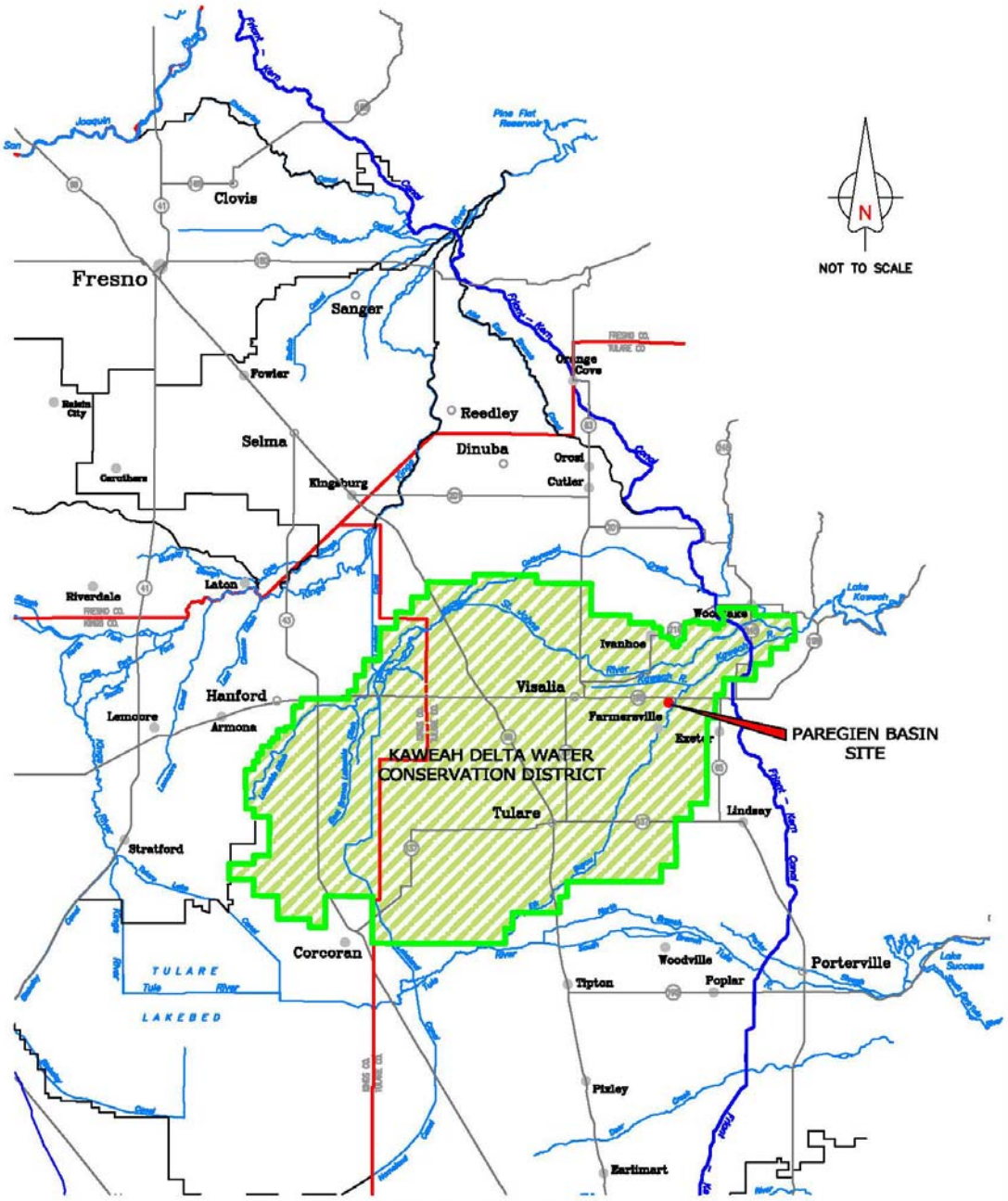
Paregien Basin site was purchased by the District for specific strategic location issues including flood control, groundwater recharge purposes and habitat enhancement purposes.

The current use of the property is pasture for beef cattle with a small area for raising alfalfa for the cattle. The design of facilities which comprise the Proposed Action support the continued use for this purpose. Deep Creek, a natural tributary of the Kaweah River, transects the central portion of the Paregien Basin site.

1.2 Need for Proposal

The Proposed Action would allow for the construction of two recharge basins to improve groundwater recharge within the District boundary. The need for the Proposed Action, consistent with the purpose of Reclamation's WaterSMART program, is to provide a reliable source of groundwater recharge for non-storable storm and flood waters and to improve the District's water supply management efficiency.

FIGURE 1

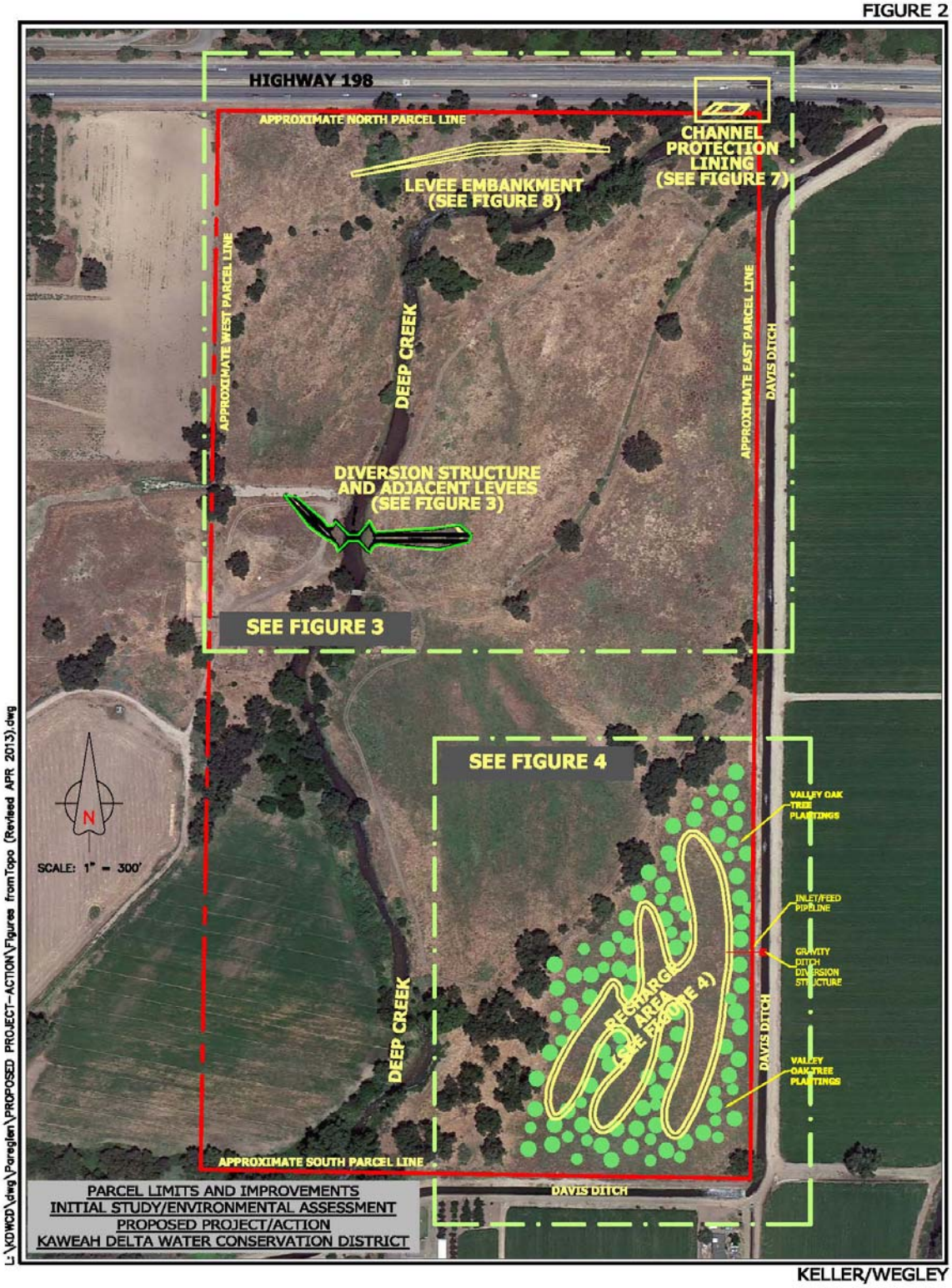


LOCATION MAP
INITIAL STUDY/ENVIRONMENTAL ASSESSMENT
PROPOSED PROJECT/ACTION
KAWEAH DELTA WATER CONSERVATION DISTRICT

L:\KDWCD\dwg\Paregien\PROPOSED PROJECT-ACTION\LOCATION MAP FIGURE 1.dwg

KELLER/WEGLEY

FIGURE 2


HIGHWAY 198
APPROXIMATE NORTH PARCEL LINE
CHANNEL PROTECTION LINING (SEE FIGURE 7)
LEVEE EMBANKMENT (SEE FIGURE 8)
APPROXIMATE WEST PARCEL LINE
DEEP CREEK
APPROXIMATE EAST PARCEL LINE
DAVIS DITCH
DIVERSION STRUCTURE AND ADJACENT LEVEES (SEE FIGURE 3)
SEE FIGURE 3
SEE FIGURE 4
N
SCALE: 1" = 300'
VALLEY OAK TREE PLANTINGS
INLET/FEED PIPELINE
GRAVITY DITCH DIVERSION STRUCTURE
RECHARGE AREA (SEE FIGURE 4)
DEEP CREEK
DAVIS DITCH
VALLEY OAK TREE PLANTINGS
APPROXIMATE SOUTH PARCEL LINE
DAVIS DITCH
PARCEL LIMITS AND IMPROVEMENTS
INITIAL STUDY/ENVIRONMENTAL ASSESSMENT
PROPOSED PROJECT/ACTION
KAWEAH DELTA WATER CONSERVATION DISTRICT
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KELLER/WEGLEY

Section 2 Alternatives Including the Proposed Action

This EA/IS 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 human environment.

2.1 No Action Alternative

Under the No Action Alternative, an average annual total of 2,370 acre-feet of groundwater supplies would not be conserved. Conservation efforts to promote the use of non-storable storm and flood waters of the Kaweah River would continue, but at a reduced rate. Groundwater levels would continue to follow their normal declining pattern and flood protection for the City of Farmersville and surrounding area would remain the same.

2.2 Proposed Action

The Proposed Action consists of Reclamation providing grant funds to support the construction of two groundwater recharge/stormwater control basins, one of 19.6 acres and one of 3.4 acres, that would be used to provide a reliable source of groundwater recharge and would provide flood protection for the nearby City of Farmersville and the Linnell Farm Labor Center. In addition, two new monitor wells would be installed and 100 yearling oak trees and associated native vegetation would be planted to be consistent with historic riparian oak savannah characteristics of the area. Figures 2, 3, 4 and 5 provide location details. When the structure gates are in their maximum up position, they would allow for water to be impounded over a surface area of 19.6 acres.

Levees necessary to complement the structure installation would extend west and east of the structure, also shown on Figure 3. These levees are planned with a top width of 20 feet and side slopes of 6:1 inside and 4:1 outside. These slopes would accommodate grasses necessary to support the cattle operation and are shallow enough in slope to avoid damage from animals grazing. Levee height at the structure would be less than four feet and would taper to zero feet. The source of material for these levees and others required as a part of the Proposed Action would come from excavation of the second basin in the southeast corner of the Paregien Basin site. Material for a third levee, also shown on Figure 3, would come from this excavation. This levee would parallel State Highway 198 and would meander so as not to detract from the visual quality of the site.

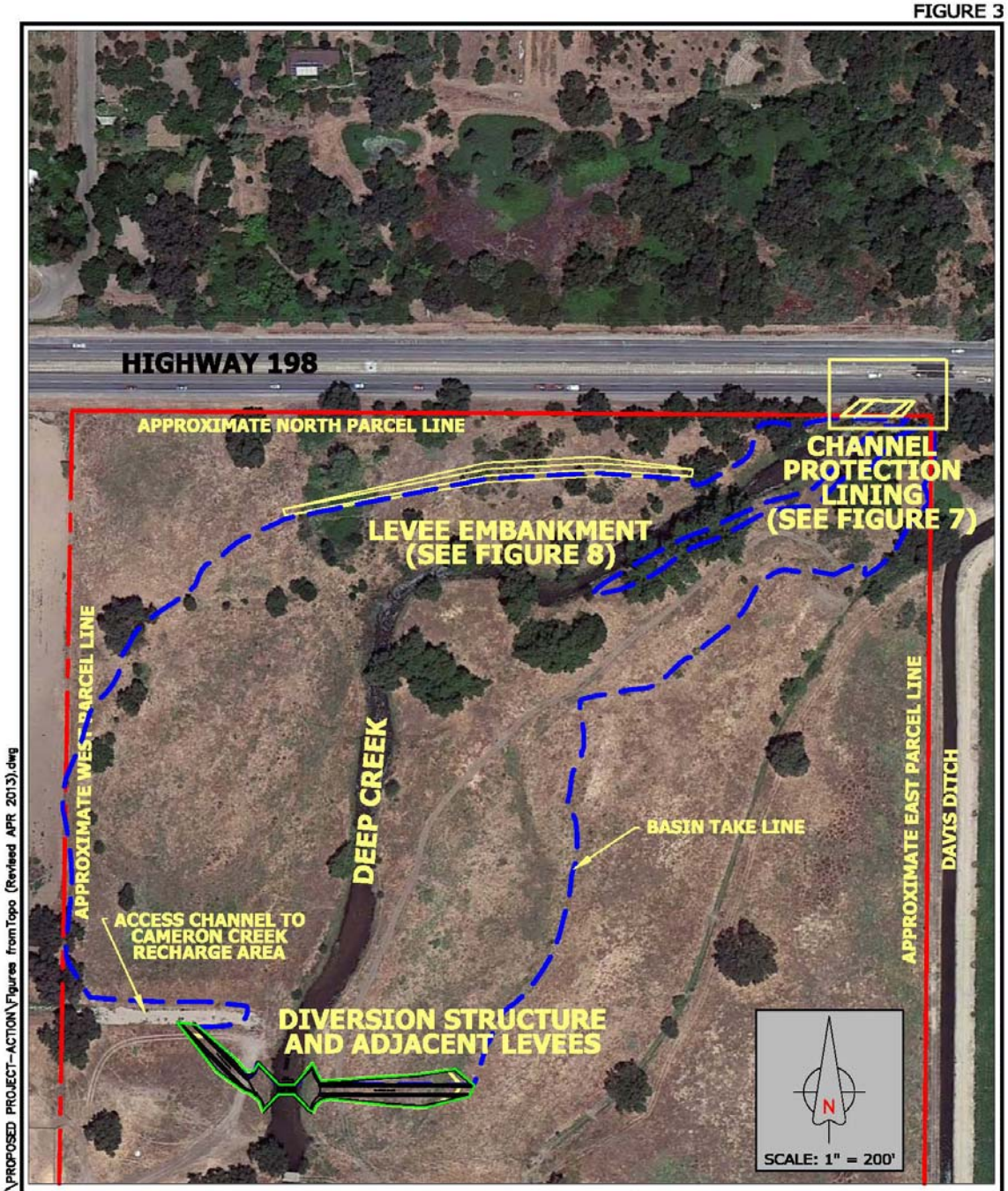
The last structural feature would be to extend the existing box culvert under State Highway 198 to terminate outside of the State Highway 198 right-of-way, so that the levee banks can tie in, thus preventing any water stored in the constructed basin limits from encroaching into the State Highway 198 right-of-way. The culvert extension location is shown in the upper right hand portion of Figure 3.

Figure 4 shows the recharge basin to be constructed in the southeast corner of the Paregien Basin site. This portion of the property has had the surface grade altered for farming, being graded west to east. The basin would be developed totally below grade, with the removed material being moved to the north to form other levees, as previously noted. The basin banks would be completed in an irregular fashion, so as to appear natural and to optimize the oak tree root zone/saturated water zone exposure which would occur as a result of recharge activities. The basin site would occupy approximately 3.4 acres with availability from the adjacent Consolidated Peoples Ditch Co. facility, located east, immediately adjacent to the Paregien Basin site, as shown on Figure 4. A structure would be constructed in the west bank of the canal facility where an installed gate would control the flow of water into the recharge basin. Flow would be by gravity, with no pumping facilities or related power required. Grass would be seeded on the inside banks of the basin once the tap roots are established on the approximately 100 yearling oaks to be planted on the basin banks. These plantings are part of an effort to assist in the restoration of the Kaweah River delta oak savannah. This is not a mitigation requirement because no trees are anticipated to be removed as a part of the Proposed Action.

As permanent agricultural plantings surround the area (walnut trees located west, southwest and south of the Proposed Action site), the timing and degree of recharge activities must take into account the degree of recharge which can be accomplished without damaging the permanent plantings and/or yield reduction impacts. Figure 5 shows the locations of existing monitor well facilities and the proposed location of two additional monitor wells. This monitor well network thus functions in two different fashions. In addition to the tree/crop adverse impact role, the data collected from the wells provides useful input into the District's numeric groundwater model providing calibration information related to direction of flow, as well as an indication as to the vertical rate of flow through the upper levels of the soil mantle.

These wells would be constructed with six-inch diameter casings that are not anticipated to exceed 40 feet in depth. Each well is to be equipped with a continuous sensing, continuous recording water level datalogger. District staff will continually monitor these wells during recharge activities to avoid potential impacts to the surrounding agriculture. Supplementing the monitor well network would be six shallow piezometers, installed to monitor groundwater movement and specifically to avoid the effects of groundwater mounding under adjacent farmlands.

FIGURE 3



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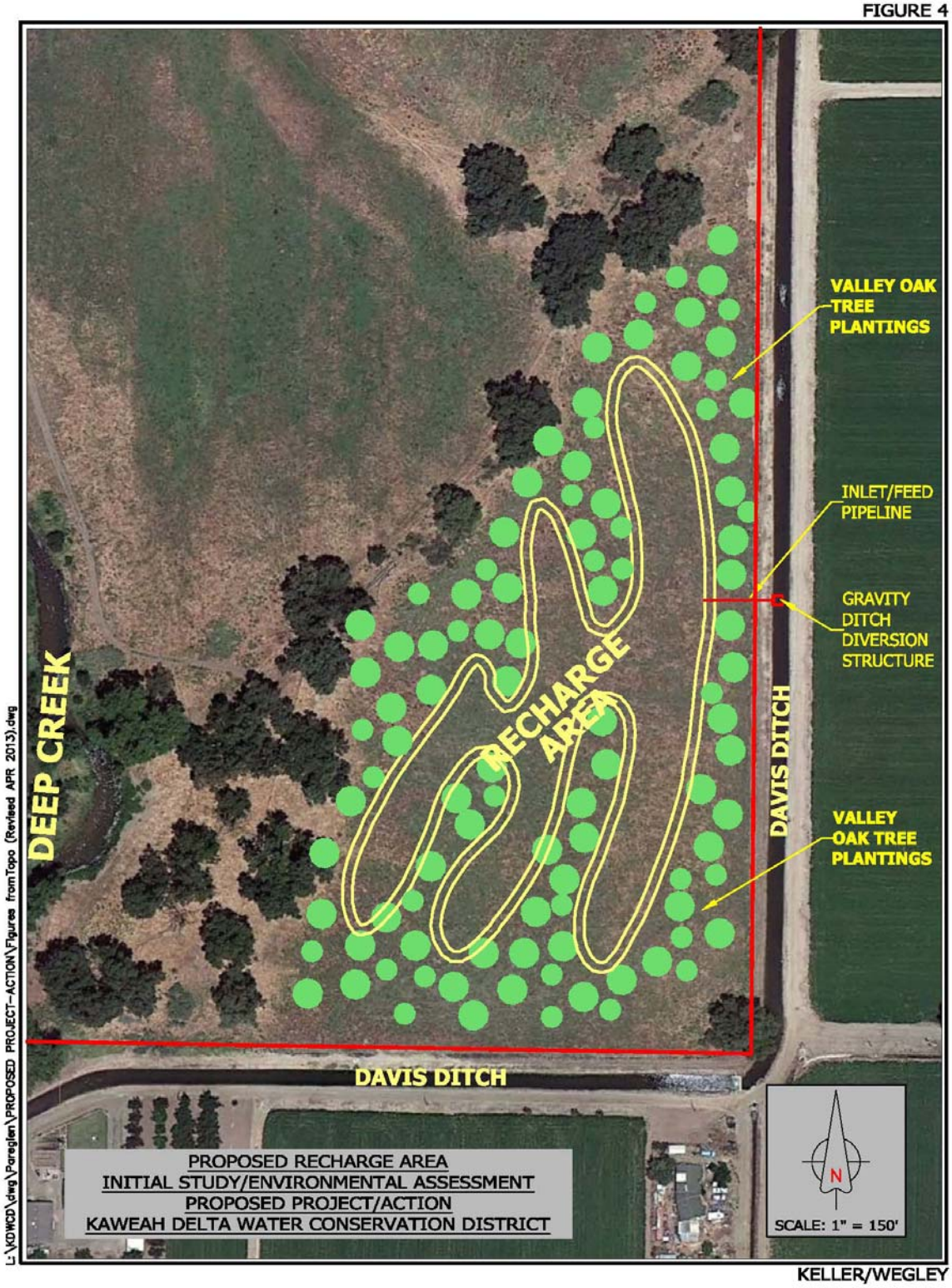
PROPOSED IMPROVEMENTS
INITIAL STUDY/ENVIRONMENTAL ASSESSMENT
PROPOSED PROJECT/ACTION
KAWEAH DELTA WATER CONSERVATION DISTRICT

KELLER/WEGLEY

FIGURE 4


DEEP CREEK
VALLEY OAK TREE PLANTINGS
INLET/FEED PIPELINE
GRAVITY DITCH DIVERSION STRUCTURE
RECHARGE AREA
DAVIS DITCH
VALLEY OAK TREE PLANTINGS
DAVIS DITCH
N
SCALE: 1" = 150'
PROPOSED RECHARGE AREA
INITIAL STUDY/ENVIRONMENTAL ASSESSMENT
PROPOSED PROJECT/ACTION
KAWEAH DELTA WATER CONSERVATION DISTRICT
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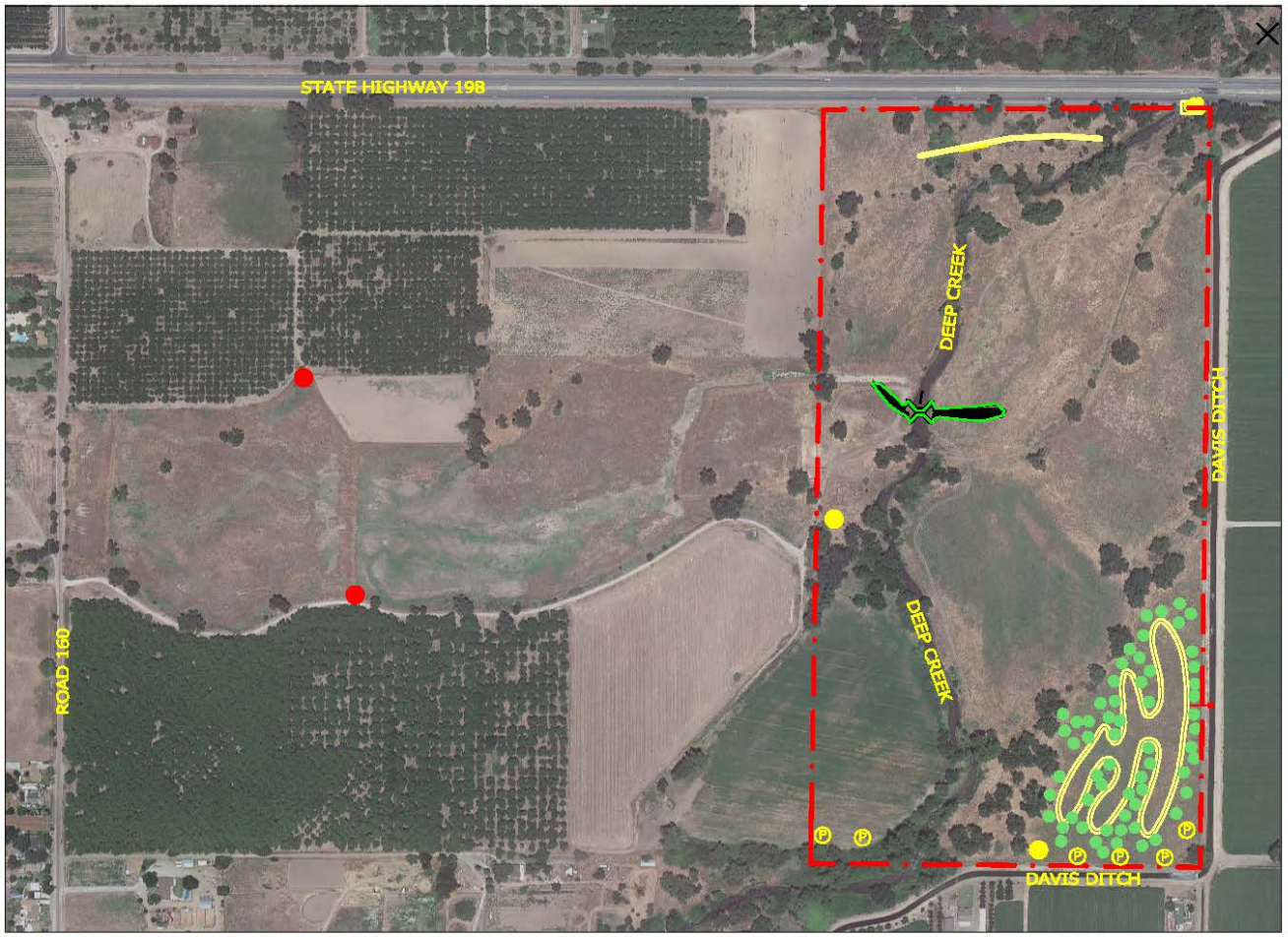

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SCALE: 1" = 500'

MONITOR WELL FACILITIES
INITIAL STUDY/ENVIRONMENTAL ASSESSMENT
PROPOSED PROJECT/ACTION
KAWEAH DELTA WATER CONSERVATION DISTRICT

LEGEND

- EXISTING MONITOR WELL
- NEW MONITOR WELL
- NEW PIEZOMETER

FIGURE 5

2.2.1 Construction Elements

- Site Preparation: Initial construction staking would be completed prior to construction activities to set construction stakes for excavation of earthen material, placement of earthen material and construction of reinforced concrete facilities. The existing lands where earthen materials would be either excavated or placed would be cleared of all existing vegetation. It is anticipated that one to two track laying dozers would be used to perform this work. Additional equipment to be used would consist of a water truck for dust control, along with one to two loaders and dump trucks to remove any material deemed unacceptable for fill material.

- Ground Disturbance: Approximately 20,000 cubic yards would be excavated over a footprint of 3.4 acres to create the Southeast Pasture Recharge Basin. This excavation would have a depth of approximately five feet. Additional ground disturbance would occur in the areas where earthen levees and permanent structures are being constructed with the excavated materials. Placement of compacted full materials would impact an area of approximately 0.75 acres, consistent with the levee areas presented on Figure 3. In the three areas where earthen levees are proposed, approximately two feet of existing material would be excavated to create a bonding plane between the existing and placed materials. It is anticipated that one to two scrapers would be used to do the bulk of the earthwork excavation, movement of the excavated materials and placement of earthen material for compaction in the designated levee areas. In addition, it is anticipated that one excavator would be used for the excavation of material near the permanent structure sites. Additional equipment used would consist of a water truck for dust control and one loader and several dump trucks to move any additional material.

- Placement of Earthen Material: Soil characteristics have been determined to allow the 20,000 cubic yards of earthen material that is proposed to be excavated from the 3.4 acre basin site for use to construct three levees for the Deep Creek Basin. The proposed levees to be constructed perpendicular to the Deep Creek Basin control structure would have a top width of 20 feet with side slopes of 6:1 (inside) to 4:1 (outside). The proposed northern levee would be constructed to complement the existing terrain. Variance in levee heights is expected due to the undulating terrain of the Project site. Generally, levee heights should not exceed four feet. As stated above, the scrapers that would be used to excavate the material would also be used for movement of materials to the north and placement for mixing with cement and compaction in the levee locations. It is envisioned that a sheepsfoot vibratory compactor would be used for compaction of material. Additional equipment to be used would consist of a water truck to assist with moisture control for compaction.

- Finish Grading: Finish grading would be completed both within the Southeast Pasture Recharge Basin and on the constructed levees in preparation for hydro-seeding. This work is envisioned to be completed by a grader with a sloper blade attachment.

- Hydro-seeding and Vegetation Planting: Hydro-seeding would be conducted on all earthen material that is excavated or placed as fill in order to eliminate potential for erosion and to allow for disturbed areas to quickly return to a natural aesthetic look. The vegetation planting proposes to furnish 100 yearling oak trees, along with various native plants. These plantings would be located in and around the Southeast Pasture Recharge Basin as shown on Figure 5.

- Turnout Structure: One turnout structure would be placed within the Consolidated Peoples Ditch Company's Davis Ditch. Consistent with Consolidated Peoples Ditch Company policies, the design and construction of this new diversion facility would consist of a structure constructed solely of reinforced concrete materials, with the exception of the control gates and associated materials. The structure would be connected to the southeasterly basin with an approximate 15 inch diameter PVC pipe which would operate under gravity conditions. The details of the facility construction would be consistent with the design/construction details presented on Figure 6.

- State Highway 198 Culvert/Bridge Modifications: Modifications to the existing State Highway 198 culvert crossing would involve an addition to the existing box culvert/bridge structure, the removal of the existing wing-walls and construction of new wing-walls and placement of earthen material. A portion of this part of the Proposed Action would take place within the California Department of Transportation (Caltrans) right-of-way and thus would require the proper permitting and coordination with Caltrans. The details of the additions to the existing box culvert/bridge structure are presented on Figure 7.

- Deep Creek Basin Control Structure: The structure to be constructed across the Deep creek channel at the location shown on Figure 3, would be constructed solely of reinforced concrete, with the exception of the control gates and associated site access and safety materials. The structure is anticipated to be 8.5 feet high, with a width of 80 feet, including the wing-walls. Due to the nature of the native soils within the Deep Creek channel area, the design calls for spread footings underneath the structure along with an over excavation of the channel bottom materials of Deep Creek and the recompaction of same to a higher density than exists in a state of nature. The details of the facility construction would be consistent with the design/construction details presented on Figure 8 and Figure 9.

- Monitor Wells: Two monitor wells would be constructed down-gradient of the Paregien Recharge Site. Each well would be approximately six inches in diameter, with depths yet to be determined, but not to exceed 40 feet. Each well would be outfitted with water level dataloggers. In addition, six shallow piezometers would be installed immediately north of the south boundary of the Paregien Recharge site as shown on Figure 2.

Construction is anticipated to begin in January 2014, and completed by August 2014. Measures developed to minimize construction impacts would be included in the construction specifications developed by the District.

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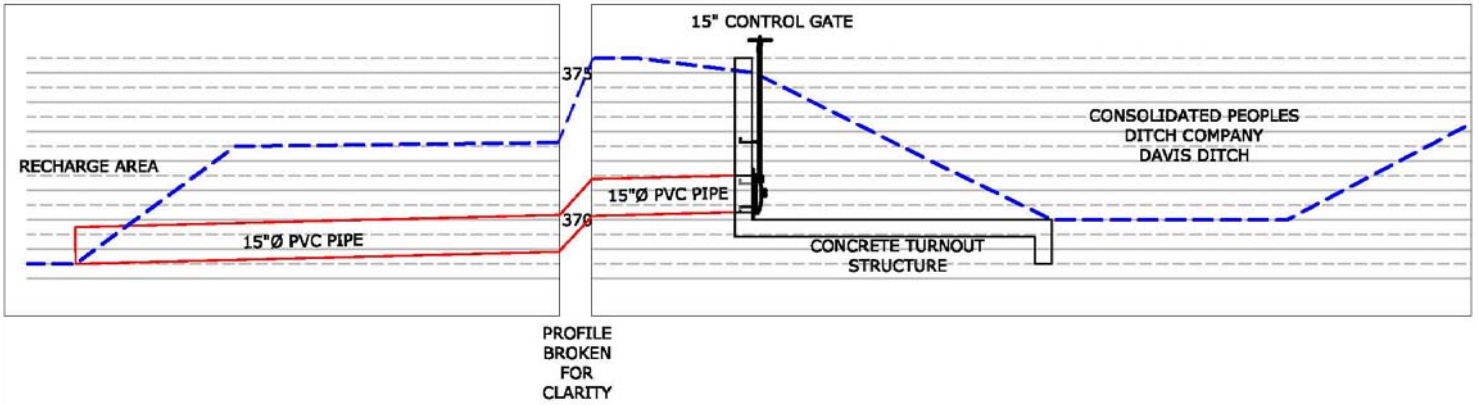


PROPOSED TURNOUT STRUCTURE
INITIAL STUDY/ENVIRONMENTAL ASSESSMENT
PROPOSED PROJECT/ACTION
KAWEAH DELTA WATER CONSERVATION DISTRICT

KELLER/WEGLEY

FIGURE 6

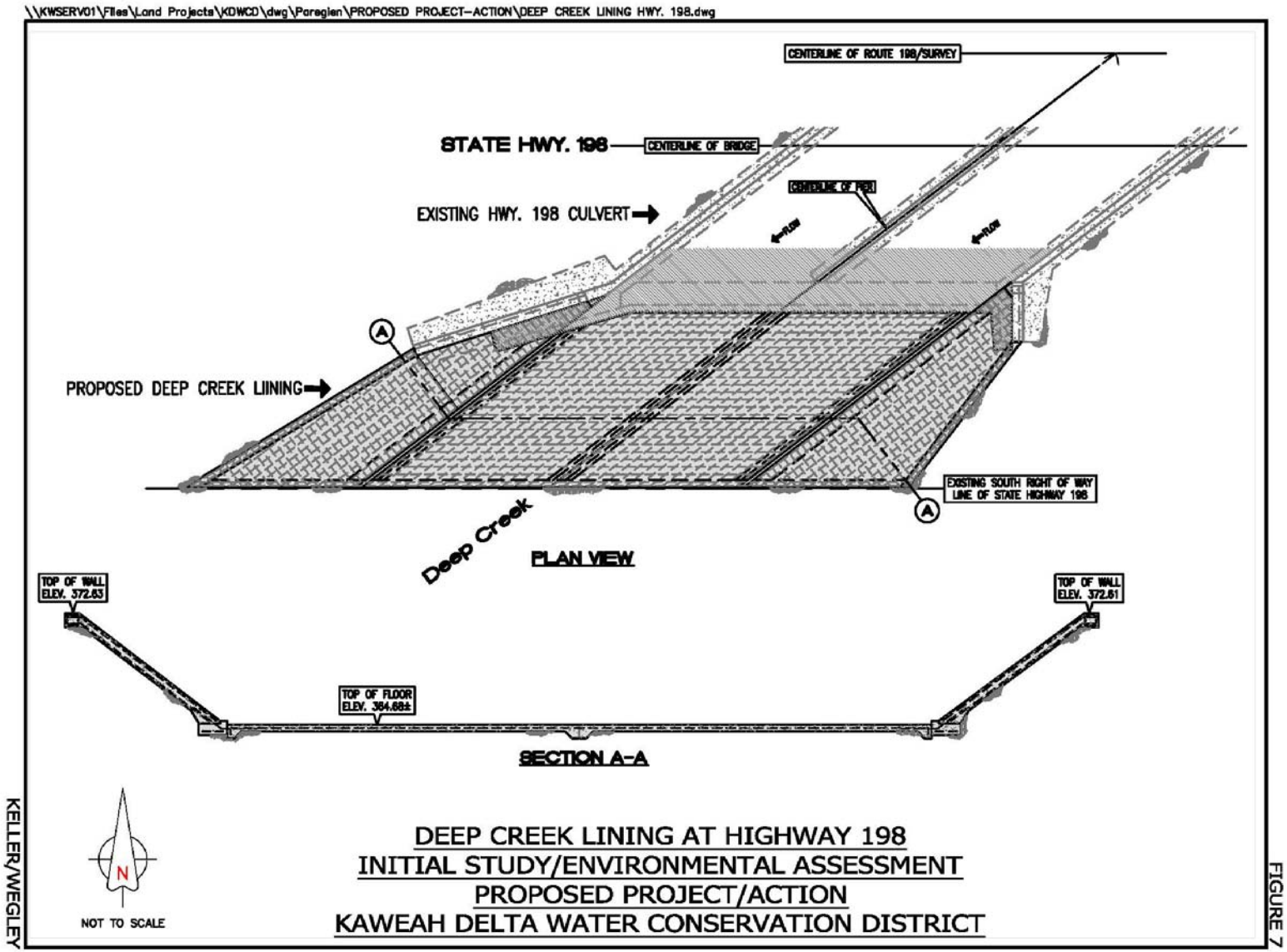
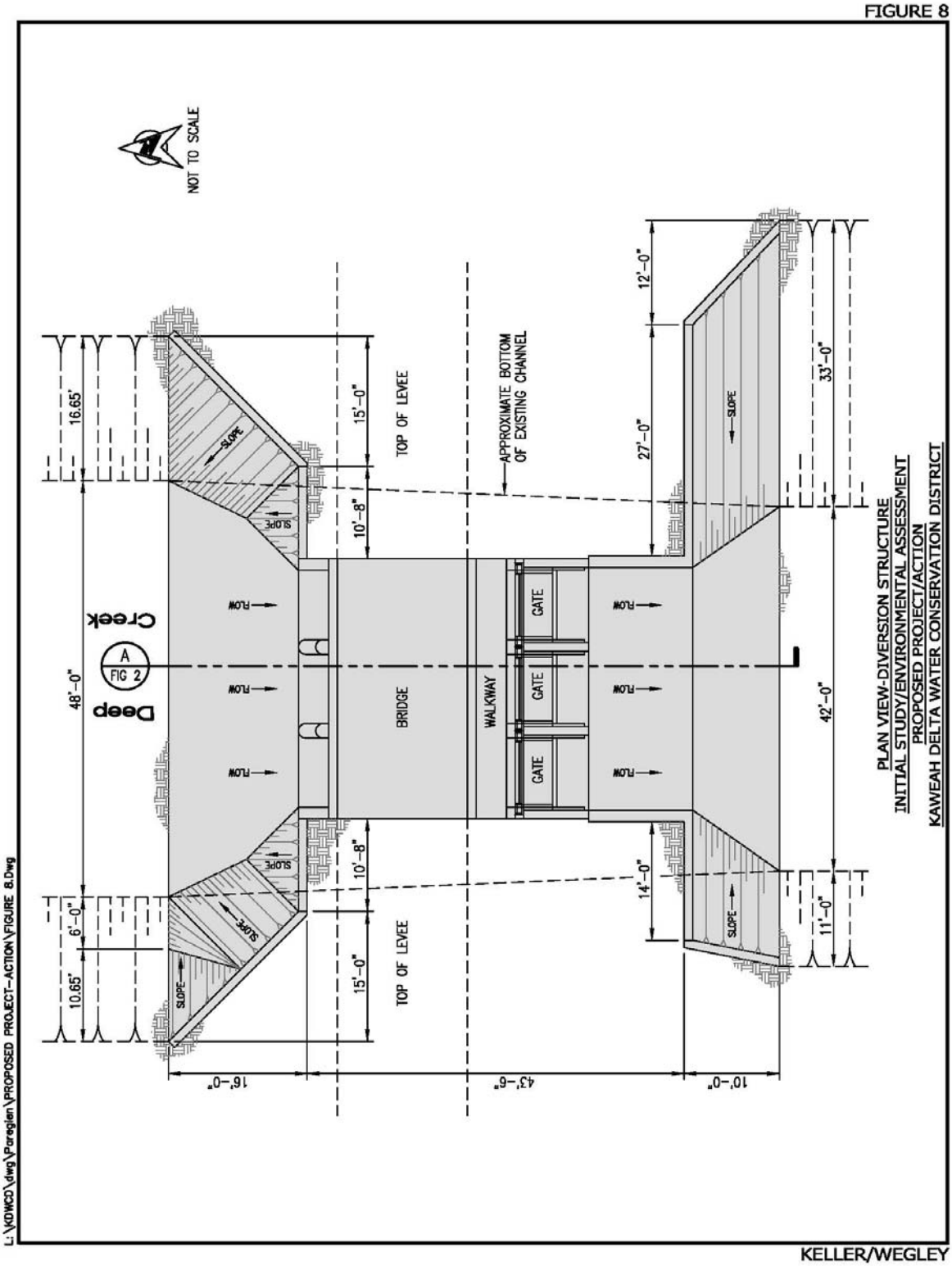

\\KWSERV01\Files\Land Projects\KDWCD\dwg\Paragien\PROPOSED PROJECT-ACTION\DEEP CREEK LINING HWY. 198.dwg
CENTERLINE OF ROUTE 198/SURVEY
STATE HWY. 198
CENTERLINE OF BRIDGE
CENTERLINE OF PIER
EXISTING HWY. 198 CULVERT
FLOW
FLOW
PROPOSED DEEP CREEK LIINING
A
A
EXISTING SOUTH RIGHT OF WAY LINE OF STATE HIGHWAY 198
Deep Creek
PLAN VIEW
TOP OF WALL ELEV. 372.63
TOP OF WALL ELEV. 372.61
TOP OF FLOOR ELEV. 364.68±
SECTION A-A
N
NOT TO SCALE
DEEP CREEK LINING AT HIGHWAY 198
INITIAL STUDY/ENVIRONMENTAL ASSESSMENT
PROPOSED PROJECT/ACTION
KAWEAH DELTA WATER CONSERVATION DISTRICT
KELLER/WEGLEY
FIGURE 7

FIGURE 8



PLAN VIEW-DIVERSION STRUCTURE
INITIAL STUDY/ENVIRONMENTAL ASSESSMENT
PROPOSED PROJECT/ACTION
KAWEAH DELTA WATER CONSERVATION DISTRICT

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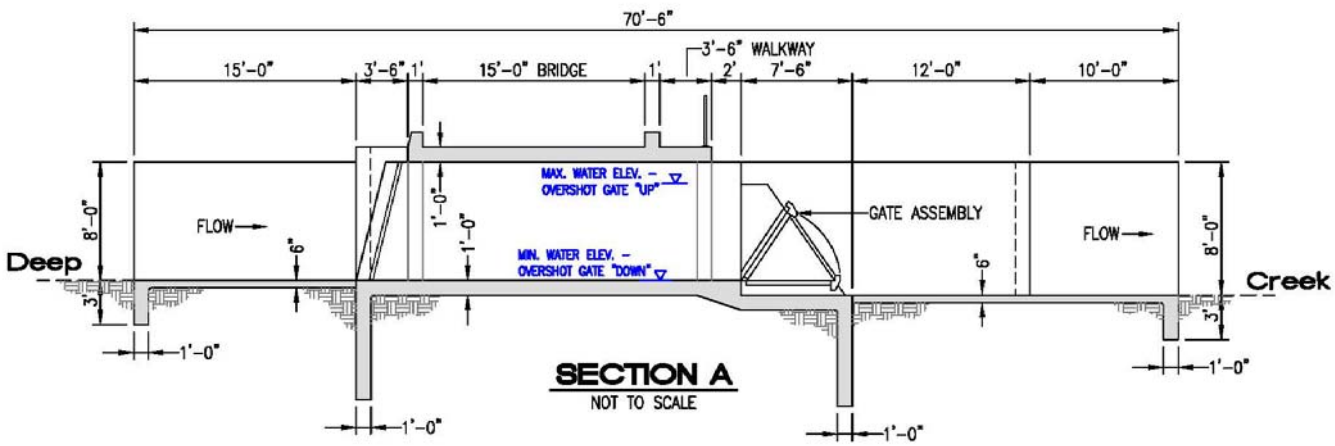
L:\KDWCD\dwg\Paregien\PROPOSED PROJECT-ACTION\FIGURE 9.dwg



SECTION A
NOT TO SCALE

SECTION A - DIVERSION STRUCTURE
INITIAL STUDY/ENVIRONMENTAL ASSESSMENT
PROPOSED PROJECT/ACTION
KAWEAH DELTA WATER CONSERVATION DISTRICT

KELLER/WEGLEY

FIGURE 9

2.2.2 Mitigation Included in the Proposed Action

- Compliance with State Department Fish and Wildlife Streambed Alteration Permit Measures: A Streambed Alteration Permit has been issued to the District by the State Department of Fish and Wildlife and contains specific procedures which are to be incorporated into the construction phase of the Proposed Action to avoid any adverse species and habitat related impacts. A summary of those measures are as follows:
    - Administrative Measures: KDWCD agrees to provide a copy of said Permit to all persons working on the Proposed Action, provide notification to the State Department of Fish and Wildlife if it is determined that a measure in the Permit might conflict with a provision imposed on the Proposed Action by another local, State, or Federal agency.
    - Avoidance and Minimization Measures: The Proposed Action would limit all non-emergency work activities to daylight hours, which is defined as that daytime period between sunrise and sunset. In addition, prior to any activity within Deep Creek, KDWCD will identify the limits of the required access routes and encroachment into the stream. The construction area will be defined with brightly-colored flagging/fencing.
    - Compensatory Measures: All excess material and debris shall be removed from the Proposed Action area. Any exposed slopes or exposed areas created by construction activities within the Deep Creek area shall be seeded with a blend of a minimum of three (3) locally native grass species. All access corridors to Deep Creek shall be removed and recontoured to the original contour.
    - Reporting Measures: KDWCD shall submit all reporting documents, as listed in the Streambed Alteration Permit, to the State Department of Fish and Wildlife.

- Impacts on Special Status Species: Consistent with District construction policies and the Streambed Alteration Permit conditions, preconstruction surveys would be conducted before ground disturbance activities begin. If surveys detect the presence of listed species or migratory birds, then construction efforts would be put on hold until an appropriate measure(s) and/or consultation with the United States Fish and Wildlife Service and/or the California Department of Fish and Wildlife take place. If surveys do not detect the presence of listed species or migratory birds, then the District would proceed with on-site monitoring prior to and during the construction phase.

- Adverse Effects on Wetlands: The Proposed Action would develop 9.38 acres of oak savannah (6.01 acres) and seasonal wetland (3.37 acres) with native plants and trees. All ground disturbances would be followed by reseeding with pasture grasses currently existing and the removal of trees, large shrubs or riparian vegetation would not occur. The development of both the oak savannah and

seasonal wetland areas were initial goals established by the District upon purchase of the property. The District is the prime agency implementing the elements of the Kaweah River Corridor Enhancement Program and the completed elements are to be permanently dedicated for preservation action as elements of the District's Habitat Conservation Plan and Natural Communities Conservation Plan, both in the final stages of development.

- Disturbance to Active Raptor Nests: A preconstruction survey would be conducted before construction activities begin to identify and avoid raptor disturbance and raptor nests. During all construction activities, any raptor nests would need to be designated as an avoidance area that would need to be protected from disturbance or monitored. Any avoidance area(s) would be clearly defined by erecting exclusionary fences or flagging with orange geo-webbing nor ribbon prior to construction. Any construction related disturbance within the buffer zone would be minimized and promptly restored to its original condition following construction.

- Disturbance of Human Remains: If human remains or any bones of possible human remains are encountered during construction, all work on the Proposed Action site would cease and the Tulare County Coroner's Office shall be immediately contacted. If the remains are determined to be of Native American origin, the Native American Heritage Commission (NAHC) shall be notified within 24 hours of determination, as required by PRC Section 5097. The NAHC shall notify designated Most Likely Descendants, who would provide recommendations for the treatment of the remains within 24 hours. The NAHC would mediate any disputes regarding treatment of remains.

- Specific Actions to Minimize Potential Impacts on Air Quality: Since calculated air quality emissions for construction efforts indicate levels below the minimum threshold, the Proposed Action would have construction specifications which would dictate minimum protocols for the construction contractor to follow during the construction phase. Enforcement of these standards would eliminate any adverse standards violating discharge above minimum requirements. Post construction, there would be no activities which generate any discharges other than a periodic employee site visit in an air quality compliant vehicle.

- Specific Actions to Minimize Noise Impacts: During construction activities, the Proposed Action could have the potential for noise in excess of the County of Tulare's General Plan standards, however, the County of Tulare's Noise Element does not identify short-term, construction noise level thresholds. The Noise Element does, however, limit noise generating activities such as construction to hours of normal business operation unless specific County of Tulare approval is given. The Proposed Action would have construction specifications which would dictate that all work at the Proposed Action site shall be performed during regular working hours.

Section 3 Evaluation of Environmental Impacts

To satisfy the need to consider environmental impacts of the action pursuant to both NEPA and CEQA, possible affects to resources were analyzed using an initial study checklist adapted from the CEQA Guidelines Appendix G. This section has been modified to address both CEQA and NEPA requirements, including NEPA requirements to evaluate Indian Trust Assets, Indian Sacred Sites, and Environmental Justice. Where there is a possibility for the action to affect a specific resource, there is a discussion of the direction and magnitude of the impact.

The format has been adopted by the District as a part of their "Guidelines Implementing the California Environmental Quality Act." The District processes its CEQA documents through the Tulare County Association of Governments and the Recorder of the County of Tulare. The County processing rules and regulations require that written explanations be presented for each issue which is to be addressed.

3.1 Resources Not Analyzed in Detail

3.1.1 Indian Sacred Sites

The Proposed Action would not affect and/or prohibit access to and ceremonial use of Indian sacred sites.

3.1.2 Indian Trust Assets

Indian Trust Assets (ITAs) are legal interests in assets that are held in trust by the United States government for federally recognized Indian tribes or individual Indians. There are no Indian reservations, Rancherias or allotments in the Proposed Action area. The nearest ITA is a Public Domain Allotment approximately 19 miles north of the Proposed Action area. The Proposed Action does not have a potential to affect ITAs.

3.1.3 Environmental Justice

Executive Order 12898, "Federal Actions to Address Environmental Justice (EJ) in Minority Populations and Low-Income Populations" requires federal agencies, to the greatest extent practicable, and as permitted by law, to achieve EJ by identifying and addressing disproportionately high and adverse human health and environmental effects, including interrelated social and economic effects, of their programs, policies and activities on minority populations and low-income populations. The Proposed Action would provide a reliable source of groundwater recharge and would provide for flood protection for the nearby low-income communities of the City of Farmersville and the Linnell Farm Labor Center. Low income and minority populations are commonly found working in agricultural settings, therefore, the

Proposed Action would not disproportionately affect the health or environment of minority or low-income populations as change in the need for farm labor is not anticipated.

3.2 Resources Analyzed

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS. Would the Proposed Action:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
The Proposed Action would result in the construction of earthen levees that are designed to complement the existing terrain.				
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
The Proposed Action would not result in any impact on existing scenic resources, such as the existing trees and shrubs on the Paregien Recharge site.				
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
The Proposed Action would occur on District owned property. All disturbed or placed earthen material would be planted with vegetation which, once growing, would allow the levee areas to blend in with the existing land features.				
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒
The Proposed Action would not include the installation or removal of lighting or the installation of any materials which would reflect light.				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
The Proposed Action would only be on District owned pasture land and post-construction reseeding would occur so that the pasture is restored. The pre-construction and post-construction land uses are the same.				
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
The Proposed Action would only be on District owned land and would not impact other lands with Williamson Act contracts.				
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
The Proposed Action site is currently zoned AE40 (Exclusive Agricultural) by the County of Tulare.				
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
See remarks under II.c.				
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒
The Proposed Action would result in groundwater recharge, which would benefit the continuation of farmable lands within the District.				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
III. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the Proposed Action:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
The Proposed Action would not conflict with any applicable air quality plan. During construction, however, the selected contractors would be required to comply with the San Joaquin Valley Air Pollution Control District's dust generation and control regulations. Air quality emissions calculations have been completed and are contained in **Appendix B**, hereto.				
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
The Proposed Action would impact less than six (6) acres and the estimated excavation volume for structures, and the conveyance pipeline is shown in the Emissions Model, Version 6.3.2 presented in **Appendix B**. The short-term increase in emissions during construction would not have an adverse effect on air quality, because construction for the proposed action would generate minimal emissions, and incremental emissions would be less than federal and state standards.				
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
The Proposed Action would have construction specifications described in Section 2.2.2 which would dictate minimum protocols for the construction contractor to follow during the construction phase. Enforcement of these measures would eliminate any adverse standards violating discharge above minimum requirements. Post construction, there would be no activities which generate any discharges other than a periodic employee site visit in an air quality compliant vehicle.				
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
See remarks under III.c.				
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒
The Proposed Action would not create objectionable odors. The Proposed Action results in a single operational procedure, that being the temporary retention of surface water associated with groundwater recharge operations. No materials would be introduced or produced which would be the source of an objectionable odor.				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES: Would the Proposed Action:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
In order to avoid any significant impact on a listed species, of which there are five (5) federally listed endangered species and six (6) threatened species that may have potential occurrences within the Proposed Action Area, several mitigation measures were incorporated into the Project design. These mitigation measures are listed in Section 2.2.2. Implementation of these measures, directed to occur by the District's Board of Directors, reduces the impact on any of the identified species to a no impact level, or under the worst case scenario, to a less than significant impact level.				
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	☐	☐	☒	☐
The Proposed Action would not disturb any riparian habitat. All areas disturbed from levee construction would be reseeded.				
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
The Proposed Action would create 9.38 acres of riparian savannah (6.01 acres) and seasonal wetland (3.37 acres) with native plants and trees. All ground and wetland disturbances would be followed by reseeding and the removal of trees or large shrubs or riparian vegetation would not occur. The creation of the new oak tree area and the seasonal wetland are directives of the District Board of Directors. The District is the lead agency in efforts to restore the Kaweah River avian corridor, this site being one of several owned by the District receiving similar habitat enhancement treatment. This activity is part of the Proposed Action				
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
The Proposed Action would not install anything that would impede movement and therefore, would have a less than significant effect on habitat for common native wildlife.				
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
The Proposed Action is complementary, not in conflict with the General Plan Policies of Tulare County relevant to natural				

resources protection; therefore, mitigation measures are not considered warranted. The oak tree plantings are restorative, from a historical perspective, the action to plant and maintain is consistent with the County General Plan element objectives encouraging habitat protection/generation which is supportive of the adopted U.S. Fish and Wildlife Service's endangered species recovery program covering the Kaweah River drainage area and the Tulare Lake Basin.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

The Proposed Action is consistent with the District's approved Work Plan for its Habitat Conservation Plan (HCP), which is one of three HCP's instituted or proposed for Tulare County. The principal purposes of the District's HCP and NCCP are to address impacts related to the District's efforts to maintain storm and flood channel capacity and to allow for construction of a specific list of construction projects with a completion horizon of no greater than 20 years. Therefore, the Proposed Action would not conflict with any such plan and no mitigation is required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES. Would the Proposed Action:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	☐	☐	☐	☒

The Proposed Action area has been subjected to a ground surface and archival cultural resources inventory and a subsurface geoarchaeological investigation, as well as the subject of Native American consultation. No historic properties were identified. Construction specifications would include specific "stop work" provisions and follow up instructions should identifiable resources or human remains be encountered. Should any post-review discovery be made, Reclamation would follow the process detailed at 36 CFR § 800.13(b).

RSOC completed a records search and a pedestrian surface survey of the entire 80-acre parcel and reporting *A Cultural Resources Assessment for the Kaweah Delta Water Conservation District Paregien Basin Project Near Farmersville, California* (Ofilia 2012). No cultural resources were observed or recorded. At the request of Reclamation, Applied Earthworks, Inc. completed a buried site sensitivity model and subsurface testing investigation. The findings of the investigation are described within the enclosures *Buried Site Sensitivity Report for the Paregien Basin Project Kaweah Delta Water Conservation District, Tulare County, California*; and *Addendum* (Mirro 2012). No buried soils or cultural features were identified that would indicate buried cultural deposits exist in the APE (vertical and horizontal) or that the area is sensitive for buried cultural remains between the test trenches. The investigation concluded that the sediment within the APE is the result of fairly recent deposition which accumulated during flood events, and found no evidence to suggest that a stable surface was present. In addition, trenching in the southeastern and southwestern portion of the APE showed that the upper four to five feet of sediments are disturbed.

Reclamation and RSOC contacted the Native American Heritage Commission (NAHC) and requested a Native American Contact List and any additional information including sacred lands in or near the project APE. Reclamation and RSOC independently submitted letters to all the Native Americans identified by the NAHC (summary within Ofilia 2012). Reclamation invited the Santa Rosa Rancheria's assistance in identifying sites of religious and cultural significance pursuant to the regulations at 36 CFR § 800.3(f)(2) and 36 CFR § 800.4(a)(4). Reclamation identified and submitted letters to three non-federally recognized Native American individuals to inquire if they have any knowledge of, or concerns with, historic properties in the area and to identify issues relating to the undertaking's potential effects on those historic properties pursuant to 36 CFR § 800.4(a)(3). Mr. Lalo Franco, Cultural Coordinator of the Santa Rosa Tachi Rancheria, responded by phone and requested a field visit.

On November 1, 2012, representatives of the Santa Rosa Rancheria, Reclamation, KDCD, Kellar-Wegley Engineering, Planning Tree Consulting, and RSOC participated in an on-site meeting. Some of the goals of the meeting were to familiarize all the parties with the project area and the proposed scope of work, and to express any concerns. The project area is actually in the ancestral territory of the Wukchumni Yokut; however, they are not a recognized tribe and often have Mr. Franco take the lead during consultation, as with this project. Reclamation provided the reporting for the buried site testing to Mr. Franco, along with a brief project summary. Upon further conversations with the parties, no further concerns were raised.

Based on the results of the inventory, buried site testing, and consultation, Reclamation reached a finding of no historic properties affected for this undertaking. No historic properties were identified and there is little potential for subsurface cultural deposits. No further cultural resources management was recommended. In addition, archaeological monitoring is not required. The buried site sensitivity model and subsurface testing investigation constitute a reasonable and good faith effort to address the potential for buried archaeological sites. Should a post-review discovery be made, Reclamation would follow the process detailed at 36 CFR § 800.13(b).

Reclamation submitted a consultation package to the California State Historic Preservation officer (SHPO) on April 10, 2012, which included the above mentioned cultural resources inventory and a subsurface geoarchaeological investigation documentation of the inventory and requested concurrence with the finding that the undertaking would result in no historic properties affected pursuant to 36 CFR § 800.4(d)(1). Reclamation received concurrence from the SHPO with the find of no historic properties affected on October 29, 2012. Correspondence with the SHPO is included within **Appendix D**.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☐	☒	☐

See remarks under V.a.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

See remarks under V.a.

d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

See remarks under V.a.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. GEOLOGY AND SOILS. Would the Proposed Action:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: The Proposed Action area is on property not accessible to the general public. Only qualified individuals would be operating the control structure.	☐	☐	☐	☒
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. According to Table 4 in Special Publications 42, prepared by the California Divisions of Mines and Geology, the nearest city which is affected by earthquake fault zones is the City of Bakersfield. The City of Bakersfield is located approximately 70 miles south of the Proposed Action area. Further, the portion of the County of Tulare in which the Proposed Action is located is not listed in said table as an area to be affected by earthquake fault zones.	☐	☐	☐	☒
ii) Strong seismic ground shaking? See remarks under IV.a.i.	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction? See remarks under IV.a.i.	☐	☐	☐	☒
iv) Landslides? See remarks under IV.a.i.	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil? Hydro-seeding would be conducted on all earthen material that is disturbed in order to eliminate potential for erosion and to allow for disturbed areas to return to productive pasture as quickly as possible.	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? The Proposed Action area is located on ground that is stable. Material to be used for levee construction would be tested by a certified lab prior to excavation. Design recommendations for base and slope stability would be developed.	☐	☐	☐	☒

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? The Proposed Action does not include the construction of permanent dwelling structures.	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? The Proposed Action does not involve the installation of septic tanks or wastewater disposal systems that are an alternative to septic tanks and therefore provision does not apply.	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GREENHOUSE GAS EMISSIONS. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? The Proposed Action is estimated to generate 127 metric tons of Carbon Dioxide equivalent, which is well below the EPA's 25,000 metric tons action threshold for greenhouse gas emissions. Refer to **Appendix C** for computations and basis for conclusion. The President's Council on Environmental Quality (CEQ) Draft Guidance for Greenhouse Gas Emissions (2010) suggests that the effects of projects directly emitting GHGs in excess of 25,000 tons annually be considered in a qualitative and quantitative manner. CEQ does not propose this reference as a threshold for determining significance, but as "a minimum standard for reporting emissions under the Clean Air Act."	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? The Proposed Action would not conflict with any applicable plan, policy or regulation adopted for reducing the emissions of greenhouse gases, because the Proposed Action is estimated to generate emissions well below the EPA's metric tons action threshold of 25,000. Refer to **Appendix C** for computations and basis for conclusion.	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
The Proposed Action would not involve hazardous materials or the handling of hazardous materials.				
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
The operation of the Proposed Action would not require the use of any hazardous materials.				
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
The closest school (Farmersville High School) is about one mile southwest of the Proposed Action site.				
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
The Proposed Action site is not a hazardous materials site. The site is not on the "Cortese list."				
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
The Proposed Action site is located 6 miles Northwest from the closest public airport (Exeter Airport).				
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
A review of an aerial map dated June 15, 2011, indicated no private air strips within the vicinity of the Proposed Action area.				
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
This is not applicable to the Proposed Action. There are no emergency response plans which involve the Proposed Action site.				
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are	☐	☐	☐	☒

adjacent to urbanized areas or where residences are intermixed with wildlands?

This is not applicable to the Proposed Action. There are no dwelling units on the Proposed Action site or immediately adjacent to said site.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY. Would the Proposed Action:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
The operation of the Proposed Action area is subject to water quality standards based on Section 401 and Section 402 requirements. The District would prepare a draft Storm Water Pollution Prevention Plan (SWPPP) and application and submit them to the Regional Water Quality Control Board for review and approval. A copy of the approved SWPPP must be on-site at all times, available for review for reference and compliance purposes.				
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
The Proposed Action facilities are being constructed for two purposes: floodwater control and groundwater recharge. The net result of the Proposed Action would result in a net positive in the aquifer volume, thus helping to assist in improving production rates in local wells.				
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
Alteration of the course of Deep Creek or waters running from the Paregien Basin site into Deep Creek would not occur. Contract CVP supplies and entitlement water held by the District of the Kaweah River would, however, be directed through Deep Creek and/or Davis Ditch to the Proposed Action site. Once directed, they would be retained for a sufficient length of time to allow for them to percolate into the soil structure of the basins to be developed on-site then ultimately to free groundwater for the purposes of groundwater recharge. In addition, damaging storm and/or flood waters would be detained on site, to the extent of available capacity, where a portion of such detained flows would percolate to useable groundwater. The remaining detained supply would be released when either damage is occurring due to the continued detention, or sufficient downstream channel capacity exists through the City of Farmersville to allow for non-damaging passage of such retained volumes. As shown on **Figure 3**, the Deep Creek channel upstream of the diversion structure would be within the take line of the basin storage area. Diversion of water stored as a result of the structure operation could also be diverted into the Cameron Creek recharge area, located between the Paregien Basin site and Road 160, as shown on **Figure 5**.				

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? As stated above, the District would prepare a SWPPP. The selected general contractor would be required to submit a Notice of Intent to comply with the General Permit order to discharge storm water associated with construction activity (WQ Order No. 2009-0009 DWQ) with the State Water Resources Control Board. Other than the proposed construction of in-channel facilities in Deep Creek, no additional land alterations would be undertaken which would result in a change in either the rate of or volume of runoff. In this Proposed Action, the purpose is to create an area where flows not normally contributory to the area, or generated from rainfall on-site, are detained for recharge purposes. In the case of the Proposed Action, this would be accomplished with no modification of site drainage patterns or change to drainage pathways or volumes. In the case of the southeast basin, annual rainfall quantities total less than ten (10) inches, or less than one (1) irrigation. The rainfall amounts normally percolate into the soil mantle, which would continue to occur post Proposed Action. The balance of the flows to be directed to the southeast basin would be entitlement flows of the Kaweah River held by the District and directed to the site for recharge purposes. No site drainage pattern changes would result from either the proposed construction or the operation of the resulting basin.	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? See remarks under IX.d.	☐	☐	☐	☒
f) Otherwise substantially degrade water quality? The Proposed Action, whether during construction or following completion, would not lead to degraded water quality. Compliance with SWPPP conditions, Streambed Alteration Permit conditions and Corps of Engineers 404 Permit conditions would avoid any adverse water quality discharge events. The design requirement of utilizing cement as a binder in the constructed levee element of the Proposed Action further reduces the potential for sediment transport from the site into the Deep Creek channel	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? The Proposed Action does not propose the construction of any housing structures.	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows? The control structure proposed to be constructed within the existing Deep Creek channel would allow for all flows to pass safely. The design of the structure would allow for this to take	☐	☐	☐	☒

place through the installation of overshot gates, which would allow for any trash to bypass through the control structure. The design of the control structure was completed with a safety factor to allow for the passage of all flows, including any trash that may be conveyed. As additional illustrative example of the structure operation, see **Figure 9**. When the overshot gates are in the full "down" position, no interference with either the passage of water or trash exists. the depth of water through the structure zone would be the same as if the structure and gates had not been constructed. Conversely, in the full "up" position, water builds up behind the gate to an elevation where water coming into the basin passes over the gates, except for that portion percolating to groundwater on ground within the take line of the basin impoundment.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐

The control structure being erected within the existing Deep Creek channel and the associated structure bypass are designed to pass all flows. In the event that the control structure would become unable to convey all waters through or over the control gates, flow would then pass through an adjacent overflow structure, which would allow for the passage of any impounded water to be redirected back into the Deep Creek channel without failure of the constructed levees or the control structure. The overflow section is designed to pass a greater volume of water than the Deep Creek channel upstream of the structure can convey to the Paregien Basin site. Thus, the structure and the associated constructed levees are protected from overtopping and avoiding a levee failure which could result in the premature discharge of water to areas downstream of the site, a portion of the Proposed Action design being to provide additional protection to this area, not less.

j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

The Proposed Action area is located over 100 miles from the Pacific Ocean and is not subject to inundation by tsunami. The existing creek, which would convey waters to the Proposed Action area is not an enclosed body of water, which indicates that inundation by seiche would not occur. The Proposed Action area is not located in an area where mud flows occur.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X. LAND USE AND PLANNING. Would the Proposed Action:				
a) Physically divide an established community?	☐	☐	☐	☒
The Proposed Action area is not located within an established community and therefore would not divide any established community.				
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
The Proposed Action is consistent with the General Plan Policies of Tulare County relevant to natural resources protection.				
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒
The Proposed Action is consistent with the District's Habitat Conservation Plan (HCP), which is under development and which is one of three HCP's instituted or proposed for Tulare County.				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. MINERAL RESOURCES. Would the Proposed Action:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
The Proposed Action site is not a site which is designated by the State Department of Mines and Geology as a site with known rock and sand resources and requiring protection from development. The Proposed Action does not bring about the loss of any known mineral resources, nor does it result in the loss of access to same were such a designation as such to be applied to the site at some point in time in the future.				
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒
The Proposed Action does not result in the loss of a locally-important mineral resource recovery site which has been designated as such by an applicable agency of jurisdiction. Such designation has not been conferred on the site and the Proposed Action does not restrict access to the site for any purpose in the future.				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. NOISE -- Would the Proposed Action result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
Upon completion, the Proposed Action would not create any adverse noise. During construction, however, there could be the potential for noise in excess of the Tulare County's General Plan standards. The selected contractor would be required, according to the construction specifications, to abide by all applicable laws. Due to the rural location of the Proposed Action area, any noise created by construction would not adversely impact adjacent residents. There are, however, two (2) residential homes adjacent to the Proposed Action site. The construction specifications would require that the selected contractor limit his noise generation to normal business hours.				
b) Exposure of persons to or generation of excessive ground - borne vibration or groundborne noise levels?	☐	☐	☐	☒
See remarks under XII.a.				
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
See remarks under XII.a.				
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
See remarks under XII.a.				
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
Does not apply. The Proposed Action area is greater than 2 miles from the nearest public or private airport.				
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
See remarks under XII.e.				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. POPULATION AND HOUSING. Would the Proposed Action:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
The Proposed Action scope of work would neither directly or indirectly substantially induce population growth.				
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
The Proposed Action area consists of existing non-native pasture, some now planted on lands which were previously farmed. Therefore, no houses could be displaced.				
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
The Proposed Action area consists of existing non-native pasture, some of which used to be existing farmlands. Therefore, no person would be displaced.				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. PUBLIC SERVICES.				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Does not apply. The Proposed Action would not require additional governmental services.				
Fire protection?	☐	☐	☐	☒
See remarks under XIV.a.				
Police protection?	☐	☐	☐	☒
See remarks under XIV.a.				
Schools?	☐	☐	☐	☒
See remarks under XIV.a.				
Parks?	☐	☐	☐	☒
See remarks under XIV.a.				
Other public facilities?	☐	☐	☐	☒
See remarks under XIV.a.				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
The Proposed Action is located on lands owned and operated by the District. Public access is not allowed.				
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒
The Proposed Action does not include any recreational facilities.				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. TRANSPORTATION/TRAFFIC. Would the Proposed Action:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? Construction activities would be performed at the Proposed Action site for the majority part on land, which is owned by the District and would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness. The balance of the construction, the off-site portion, takes place in two (2) areas. The first is on right-of-way for Davis Ditch, a facility of the Consolidated Peoples Ditch Company. An encroachment license would be issued by said Company to the District allowing for installation of the diversion facilities. The excavation for the transmission pipeline would occur on the non-operating side of the ditch, thus not disrupting any flow of traffic. The modifications to the bridge/culvert on the south side of State Highway 198 are a part of the Proposed Action. The subject construction would be subject to a double Caltrans encroachment permit, along with an approved traffic plan. All work to be done would be in accordance with approved permit conditions with no conflicts existing with traffic plans, ordinances or policies as developed or enforced by Caltrans.	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? All construction activities would be performed at the Proposed Action site or in accordance with approved encroachment permit conditions and would not conflict with an applicable congestion management program.	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? The Proposed Action is located approximately six (6) miles from the nearest airport and would not result in a change in air traffic patterns.	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? The Proposed Action design would not feature substantially increased hazards. The design was completed to allow the District to operate and maintain the Proposed Action with their own equipment.	☐	☐	☐	☒

e) Result in inadequate emergency access?	☐	☐	☐	☒

The Proposed Action would not result in the alteration of the present access to the Proposed Action site. Therefore, adequate emergency access would be maintained.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

The Proposed Action is located on lands owned by the District or in accordance with applicable encroachment permit conditions and would not decrease the performance or safety of any public facilities.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. UTILITIES AND SERVICE SYSTEMS. Would the Proposed Action:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
Not applicable to the Proposed Action.				
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
Not applicable to the Proposed Action.				
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
Not applicable to the Proposed Action.				
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
The District holds existing Kaweah River water rights with related entitlements and is a Long-Term Contractor through Reclamation's Central Valley Project – Friant Division. The District would have sufficient water supplies available to serve the Proposed Action through these entitlements.				
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
Not applicable to the Proposed Action.				
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
The Proposed Action would not generate any solid waste.				
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒
Not applicable to the Proposed Action. The Proposed Action would not generate any solid waste other than that which is construction related which would be required to be properly managed by the construction specifications created for the Proposed Action.				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? The Proposed Action is a water management action, as well as a habitat enhancement action. Any short-term species related impacts which might occur during construction would be designed to be mitigated to a less than significant level based on Proposed Action construction specification requirements.	☐	☐	☒	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? The Proposed Action is not part of a tiered or serial project. There are no elements of other projects which rely on the completion of the subject Proposed Action. Therefore, the individual issues and their described potential impacts do not have other project(s) issues and related impacts which need to be collectively analyzed. As to the individual Proposed Action impacts, there are no cumulative, collective assemblages of impacts which exceed the "less than significant impact" level. Overall, the Proposed Action has net positive cumulative effects, particularly as they apply to recharge of groundwater and additions to and enhancement of available habitat. A review of the District's list of potential projects showed that none of those projects would have an influence on the cumulative effects impact determination .	☐	☐	☒	☐
c) Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly? The Proposed Action objectives are such that, when implemented, they have the potential to provide a net positive gain on the environment and, therefore, on the human population. No adverse effects on the human population have been identified as being associated with the Proposed Action other than short-term potential construction related impacts which have had specific mitigation measures developed to reduce potential impacts to a less than significant level.	☐	☐	☐	☒

Section 4 Consultation and Coordination

4.1 Public Review Period

The Environmental Assessment/Initial Study (EA/IS) would be available for a thirty day review period. Reclamation intends to sign a Finding of No Significant Impact (FONSI) for this Proposed Action. All comments would be addressed in response form in the FONSI. Additional analysis would be prepared if substantive comments identify impacts that were not previously analyzed or considered. The District intends to provide the public with an opportunity to comment on the Draft EA/IS and proposed Negative Declaration as required by CEQA and its implementing Guidelines for a thirty day period.

4.2 Endangered Species Act (16 U.S.C. § 1531 et seq.)

Section 7 of the Endangered Species Act requires Federal agencies to ensure that discretionary federal actions do not jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of the critical habitat of these species. A CNDDB record search was conducted for the Proposed Action area in October, 2011, which resulted in the identification of five (5) federally listed endangered species and six 96) threatened species that may have potential occurrences within the Proposed Action area. Section 2.2.2 lists the mitigation measures that would be taken, if necessary, prior to and during construction of the Proposed Action. These actions are incorporated as elements of the Proposed Action. The CNDDB research table can be found in Appendix A, Biological Report. Reclamation requested concurrence from the U.S. Fish and Wildlife Service (FWS) on September 24, 2012 that the Proposed Action may affect but is not likely to adversely affect the valley elderberry long-horned beetle or the San Joaquin kit fox. FWS concurred on January 18, 2013. (See Appendix D).

4.3 National Historic Preservation Act (16 U.S.C. § 470 et seq.)

The National Historic Preservation Act (NHPA) of 1966, as amended, is the primary legislation that outlines the Federal government's responsibility to cultural resources. Cultural resources include both archaeological and built environment resources. Section 106 of the NHPA requires that Federal agencies take into consideration the effects of their undertakings on historic properties. Historic properties are cultural resources that are included in, or eligible for inclusion in, the National Register. The 36 CFR Part 800 regulations implement Section 106 of the NHPA and outline the procedures necessary for compliance with the NHPA. Compliance with the Section 106 process follows a series of steps that are designed to identify if cultural resources are present and to what level they would be affected by the proposed Federal undertaking. The current Proposed Action has no potential to affect historic properties pursuant to 36 CFR 800.3(a)(1). Reclamation submitted a consultation package to the California State Historic Preservation officer (SHPO) on April 10, 2012, which included a cultural resources inventory and a subsurface geoarchaeological investigation documentation of the inventory and requested concurrence with the finding that the undertaking would result in no historic properties affected

pursuant to 36 CFR § 800.4(d)(1). Reclamation received concurrence from the SHPO with the find of no historic properties affected on October 29, 2012. (See Appendix E).

4.4 Clean Water Act (33 U.S.C. § 1251 et seq.)

Section 401

Section 401 of the Clean Water Act (CWA) (33 U.S.C. § 1311) prohibits the discharge of any pollutants into navigable waters, except as allowed by permit issued under sections 402 and 404 of the CWA (33 U.S.C. § 1342 and 1344). If new structures (e.g., treatment plants) are proposed, that would discharge effluent into navigable waters, relevant permits under the CWA would be required for the Project applicant(s). Section 401 requires any applicant for an individual U. S. Army Corps of Engineers (Army Corps) dredge and fill discharge permit to first obtain certification from the state that the activity associated with dredging or filling would comply with applicable state effluent and water quality standards. This certification must be approved or waived prior to the issuance of a permit for dredging and filling.

The sources of water which could be discharged into Deep Creek from the site in a post Proposed Action condition are the same as the sources which currently exist. Runoff from the site would have the same source, which is rainfall, in both pre and post Proposed Action conditions. Likewise, no new source(s) of pollution are introduced to the site as a result of the Proposed Action. Discharge of any water detained as a result of the operation of the Deep Creek structure would be of the identical quality to the same water which would have otherwise flowed downstream from the Paregien Basin site if not detained for flood water management purposes. There are no additional activities or exposures to waters associated with the Paregien Basin site which are as a result of the operation of the features constructed as a part of the Proposed Action.

Section 404

Section 404 of the CWA authorizes the Army Corps to issue permits to regulate the discharge of "dredged or fill materials into waters of the United States" (33 U.S.C. § 1344). Activities such as dredging or filling of wetlands or surface waters would be required for implementation of the Proposed Action. Therefore, the District would obtain permits in compliance with CWA section 404 from the Army Corps' Sacramento District office.

The District is preparing a draft section 404 permit application which would be completed and submitted following the completion of the CEQA/NEPA process being addressed by this EA/IS. The District acknowledges that no construction involving Deep Creek would be initiated prior to a 404 permit being issued.

Section 5 References

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United States Department of Agriculture, Natural Resources Conservation Service. 2011. Web Soil Survey. http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

Appendix A

Biological Assessment

RECLAMATION

Managing Water in the West

Kaweah Delta Water Conservation District Paregien Basin Project

Biological Assessment

Tulare County, California

USGS 7 ½ minute Quadrangle: Exeter

Contact:
Bradley Hubbard
U.S. BUREAU OF RECLAMATION
Mid-Pacific Regional Office
2800 Cottage Way, E-2905
Sacramento, CA 95825
916-978-5204
bhubbard@usbr.gov

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.

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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Section 6 1.0 Introduction

The purpose of this biological assessment (BA) is to review the effects to species and habitat protected under the Endangered Species Act (ESA; 16 USC §1531 *et seq*.) from the Bureau of Reclamation's (Reclamation) Proposed Action of providing a grant funds to Kaweah Delta Water Conservation District (KDWCD or District) for the Paregien Basin Project (Proposed Action). Reclamation proposes to provide Department of the Interior's (DOI) WatersSMART program grant funds to the District to support implementation of the project. Reclamation is completing both the National Environmental Policy Act (42 USC §4321 *et seq*.) and Endangered Species Act (this consultation) compliance for the Proposed Action.

The Kaweah Delta Water Conservation District proposes to build the Paregien Basin Project. The Paregien Basin Project (Project) will assist in the Kaweah Delta Water Conservation District's effort to secure an additional resource to enhance groundwater conservation efforts. In addition, the Project will provide a reliable source of groundwater recharge and will provide for flood protection for the City of Farmersville. The subject property covered by this biological assessment is located in central Tulare County. This 80-acre parcel is located in the Exeter Quad Western Half of Section 32 Township, 18 South, Range 26 East.

An official list of federally listed endangered, threatened and proposed threatened or endangered species that have the potential to occur in the vicinity of the Proposed Action was obtained from the U.S. Fish and Wildlife Service (USFWS) on July 27, 2012 for the following USGS 7½ minute quadrangle (quads): Exeter (Appendix B). Reclamation also queried the California Department of Fish and Game's (CDFG) California Natural Diversity Database (CNDDB) for records of protected species within 10 miles of the Proposed Action location (CNDDB 2012). The following species were included:

1. *Branchinecta lynchi* vernal pool fairy shrimp (T)
2. *Desmocerus californicus dimorphus* valley elderberry longhorn beetle (T)
3. *Hypomesus transpacificus* delta smelt (T)
4. *Ambystoma californiense* California tiger salamander, central population (T)
5. *Rana draytonii* California red-legged frog (T)
6. *Gambelia (=Crotaphytus) sila* blunt-nosed leopard lizard (E)
7. *Thamnophis gigas* giant garter snake (T)
8. *Dipodomys nitratoides nitratoides* Tipton kangaroo rat (E)
9. *Vulpes macrotis mutica* San Joaquin kit fox (E)
10. *Aquilia chrysataes* Golden eagle (DFG FP)
11. *Elanus leucurus* White-tailed kite (DFG FP)

Reclamation determined special-status species that have the potential to occur in the vicinity of the Proposed Action area include:

1. San Joaquin kit fox;
2. Valley elderberry long-horned beetle.

A summary table (Table 1) was created from the USFWS species list, CNDDB records, and Kamansky's Ecological Consulting (KEC) biological report (2012). Some species identified in Table 1 were not analyzed in this BA since they would not be expected to occur in the Proposed Action area due to a lack of suitable habitat. Two species listed above, golden eagle and white-tailed kite are analyzed in the CEQA document for this project and are not covered in detail in this document. There is no critical habitat for any listed species within the Proposed Action area.

Table 1. Species Considered in this Biological Assessment			
Species	***Status[1]***	***Effects[2]***	***Potential to Occur in Proposed Action Area[3]***
Amphibians			
California red-legged frog (*Rana draytonii*)	T	NE	**Absent**. Suitable habitat absent from the site. Project would not affect habitat.
California tiger salamander, central population (*Ambystoma californiense*)	T	NE	**Absent**. Suitable habitat absent. Project would not affect habitat.
Reptiles			
Blunt-nosed leopard lizard (*Gambelia sila*)	E	NE	**Absent**. Suitable habitat is not present on the site. Project would not affect habitat.
Giant garter snake (*Thamnophis gigas*)	T	NE	**Absent**. Suitable habitat absent from Proposed Action area. Believed extirpated from Tulare Basin (Hanson and Brode 1980).
Fish			
Delta smelt (*Hypomesus transpacificus*)	T	NE	**Absent**. No natural waterways within the species' range would be affected by the proposed action. There would be no effect to Delta pumping.
Invertebrates			
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	T	**NLAA**	**Possible**. Six elderberry shrubs are within 100 feet of action footprint, three within 100 feet of work. No VELB exit holes detected.
vernal pool fairy shrimp (*Branchinecta lynchi*)	T	NE	**Absent**. No habitat exists on the site. No records or vernal pools in area of effect.
Mammals			
San Joaquin kit fox (*Vulpes macrotis mutica*)	E	**NLAA**	**Unlikely**. Several CNDDB-recorded occurrences near the Proposed Action area, but no recent records. The area is not within kit fox core habitat (USFWS 1998) and could be used as foraging habitat, though marginal because of the frequent ground disturbance in this area and low potential prey populations. Surveys for kit fox (USFWS 1999) found no evidence of occurrence in area or use for foraging.
Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)	E	**NE**	**Absent**. One old CNDDB-recorded occurrence approximately eight miles south of the project site. Reconnaissance-level surveys for kangaroo rats (CDFG 1990) but no suitable habitat or presence detected. Habitat in the Proposed Action area is suboptimal due to disturbance from agricultural production and lack of nearby populations.

1 Status= Listing of Federally protected species
E: Listed as Endangered
T: Listed as Threatened
2 Effects = Effect determination
NE: No Effect
NLAA: May affect, not likely to adversely affect
LAA: May affect, likely to adversely affect
3 Definition Of Occurrence Indicators
Possible: Species recorded in area but habitat suboptimal. Any protocol-level surveys found minimal evidence to support presence.
Unlikely: Species recorded in area but habitat suboptimal or lacking entirely. Any protocol-level surveys found no evidence to support presence.
Absent: Species not recorded in study area or protocol-level surveys found no evidence to support presence and/or suitable habitat.
4 CNDDB = California Natural Diversity Database 2010

6.1.1 1.1 Consultation to Date

Informal consultation in the form of phone calls occurred in 2011 between USFWS Hunter Kunkel and Bobby Kamansky, after KDWCD submitted the reconnaissance-level biological survey to USFWS and USFWS commented and asked for additional information. During the phone calls, Hunter requested additional information about the status of Valley elderberry long-horned beetle (VELB) and elderberry locations on the site. Additional detail was provided to the USFWS in the form of descriptions and maps documenting the location and status of VELB on the project site subsequent to the phone calls. Kamansky's Ecological Consulting sent a memo dated April 27, 2012 regarding the project summarizing the conversations to date, the next steps and potential courses of action (Log Number 08ESMF00-2012TA0264, see Appendix).

Section 7 2.0 Proposed Action

The Proposed Action Alternative would consist of Reclamation providing grant funds to support the construction of 23 acres of water re tention basins that w ould be used to provide a reliable source of groundwater recharge and w ould provide for flood protection for the nearby City of Farm ersville and the Linnell Farm Labor Center. In ad dition to the proposed w ater retention basins, new monitor wells will b e installed and oak tree habitat restoration will o ccur through the planting of year ling oak trees and specific native vegetation.

Construction Elements

- Site Preparation: In itial construction staking would be com pleted prior to construction activities to set cons truction stakes for excavation of earthen material, placement of earth en material and construction of reinforced concrete facilities. The existing lands where earthen materials will b e either excavated or placed will be cleared of all existing vegetation. It is anticipated that 1 to 2 dozers would be used to perform this work. Addition al equipment to be used would consist of a water truck for dust control, along with 1 to 2 loaders and dump trucks to remove any material deemed unacceptable for fill material.

- Ground Disturbance: Approximately 20,000 cubic yards will be excavated over a footprint of 3.4 acres to create th e Southeast Pasture Recharge Basin. This excavation will have a depth of approximately 5 feet. Add itional ground disturbance will occur in the areas where earthen levees and perm anent structures are being cons tructed. In the 3 areas where earth en levees are proposed, approximately 2 feet of existing material will be excavated to create a bonding plane between the existing and plac ed materials. It is anticipated that 1 to 2 scrap ers will be used to do the bulk of the ear thwork excavation and p lacement of earthen material. In addition, it is anticipated that 1 excavator will be used for the ex cavation of material near the permanent structure sites. Additional equipm ent used would consist of a water truck for dus t control and 1 loader and several dump trucks to move any additional material.

- Placement of Earthen Material: If soil characteristics allow, the 20,000 cubic yards of earthen material that is proposed to be excavated will be used to construct 3 levees for the Deep Creek Basin. The proposed levees to be constructed perpendicular to the Deep Creek Basin control structure will have a top width of 20 feet with side slopes of 6:1 (inside) to 4:1 (outside). The proposed northern levee will be constructed to com plement the existing terrain. Variance in

levee heights is expected due to the undulating terrain of the Project site. Generally, levee heights should not exceed 4 feet. The scrapers that would be used to excavate the material would also be used for the placement of the bulk of the material. It is envisioned that a sheepsfoot vibratory compactor will be used for compaction of material. Additional equipment used would consist of a water truck to assist with moisture control for compaction.

- Finish Grading: Finish grading will be completed within the Southeast Pasture Recharge Basin and the constructed levees in preparation for hydro-seeding. This work is envisioned to be completed by a grader with a sloper blade attachment.

- Hydro-seeding and Vegetation Planting: Hydro-seeding will be conducted on all earthen material that is disturbed in order to eliminate potential for erosion and to allow for disturbed areas to quickly return to a natural aesthetic look. The vegetation planting proposes to furnish 100 yearling oak trees, along with various native plants. These plantings will be planted in and around the Southeast Pasture Recharge Basin.

- Turnout Structure: A turnout structure will be placed within the Consolidated Peoples Ditch Company's Canal. The structure will be constructed solely of reinforced concrete, with the exception of the control gates and associated materials. The structure will be connected to the basin with an approximate 15 inch diameter PVC pipe which will operate under gravity conditions.

- State Highway 198 Culvert/Bridge Modifications: Modifications to the existing culvert crossing would involve an addition to the existing box culvert/bridge structure, the removal of the existing wing-walls, and construction of new wing-walls and placement of earthen material. A portion of this part of the Proposed Action would take place within the California Department of Transportation (Caltrans) right-of-way.

- Deep Creek Basin Control Structure: The structure will be constructed solely of reinforced concrete, with the exception of the control gates and associated site access and safety materials. The structure is anticipated to be 8.5 feet high, with a width of 80 feet, including the wing-walls. Due to the unstable nature of the native soils within the Deep Creek channel area, it is anticipated that the design will call for either spread footings or friction columns underneath the structure.

- Monitor Wells: A total of 2 monitor wells will be constructed down-gradient of the Deep Creek Basin. Each well will be approximately 6 inches in diameter, with depths yet to be determined, but not to exceed 40 feet. Each well will be outfitted with water level dataloggers. In addition, 6 shallow piezometers will be installed.

Construction is anticipated to begin in January, 2014, and would be completed by August 2014. Measures developed to minimize impacts on biological resources with the Proposed Action area will be implemented by the Kaweah Delta Water Conservation District. If a federally listed species is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the species will not be adversely disturbed.

Mitigation Elements

- Impacts on Special Status Plant Species: No impacts to special status plant species are anticipated from the Proposed Action. Mitigation of small impacts to natural habitats will be avoided by expansion of and replanting of native species and restoring poor quality habitat.

- Impacts on Special Status Animal Species: Preconstruction surveys will be conducted before ground disturbance activities begin. If said surveys detect the presence of listed species or migratory birds, then construction efforts will be put on hold until an appropriate measure(s) and/or consultation with the United States Fish and Wildlife Service and/or the Department of Fish and Game could take place. If said surveys do not detect the presence of listed species or migratory birds, then the District would proceed with on-site monitoring prior to and during the construction phase.

- Adverse Effects on Riparian Habitat: The Proposed Action will re-vegetate all disturbed area from levee construction with native plant types found on-site or directly adjacent to the site.

- Adverse Effects on Federally Protected Wetlands: The Proposed Action will restore 9.38 acres of riparian forest (6.01 acres) and seasonal wetland (3.37 acres) with native plants and trees. All ground and wetland disturbances will be followed by revegetation with native species and the removal of trees or large shrubs or riparian vegetation will not occur.

- Disturbance to Active Raptor Nests: The Proposed Action site does provide nesting and foraging habitat for raptor species such as red-tailed hawks. A Preconstruction survey will be conducted before construction activities begin to identify and avoid raptor disturbance and raptor nests. During all construction activities, any raptor nests will need to be designated as an avoidance area that will need to be protected from disturbance or monitored. Any avoidance area(s) will be clearly defined by erecting exclusionary fences or flagging with orange geo-webbing nor ribbon prior to construction. Any construction related disturbance within the buffer zone will be minimized and promptly restored to its original condition following construction.

7.1.1 2.1 Proposed Action Area

The Proposed Action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). See representative site photographs in Appendix A.

The Paregien Basin Project permanent impacts associated with construction are anticipated to total 0.57 acres of grassland through levee construction and flooding of 22.97 acres of mixed grassland and riparian woodland. This Project will also restore 9.38 acres of riparian forest and seasonal wetland with native plants. The project will also result in temporary disturbance to 0.145 acres of wetland in the stream channel at two locations.

7.1.2 2.2 Avoidance and Minimization Measures

KDWCD staff and its contractors would implement the following Avoidance and Minimization Measures prior to and during construction activities to avoid and reduce environmental impacts to federally listed San Joaquin kit fox (SJKF), and Valley elderberry long-horned beetle (VELB). Best Management Practices (BMPs), which would provide additional measures to avoid and reduce impacts to the environment, are identified in Chapter 4. Project activities would not begin until the project proponent has received written approval from Reclamation.

- **San Joaquin kit fox (Federally Listed as Endangered)**
  - 2011 *U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (USFWS 2011b). Pre-construction protocol level surveys for SJKF shall be completed no less than 14 days and no more than 30 days prior to the beginning of ground-disturbance and/or construction activities or any project activity likely to impact SJKF. Standard SJKF avoidance measures as identified in the 2011 USFWS Recommendations must be implemented during the proposed work.

- **Valley elderberry long-horned beetle (Federally Listed as Threatened)**
  - 1999 *Conservation Guidelines for the Valley Elderberry Long-horned Beetle* (USFWS 1999). Pre-construction surveys inspecting all elderberry plants within 100 feet of construction activities in the Proposed Action area shall be conducted no more than 30 calendar days prior to the start of construction. Work within 100 feet of the shrubs will be conducted outside of the beetle flight period and all impacts will be avoided by fencing shrubs 20 feet from the dripline. Elderberry shrubs will need to be designated as a protected avoidance area and monitoring will ensure that no disturbance to shrubs occurs. Any construction-related disturbance within the buffer zone will be minimized and promptly restored to its original condition following construction. USFWS/DFG will be provided with a map and written details identifying avoidance areas. The USFWS has already been provided with the map in Figure 1, for the Valley elderberry long-horned beetle.

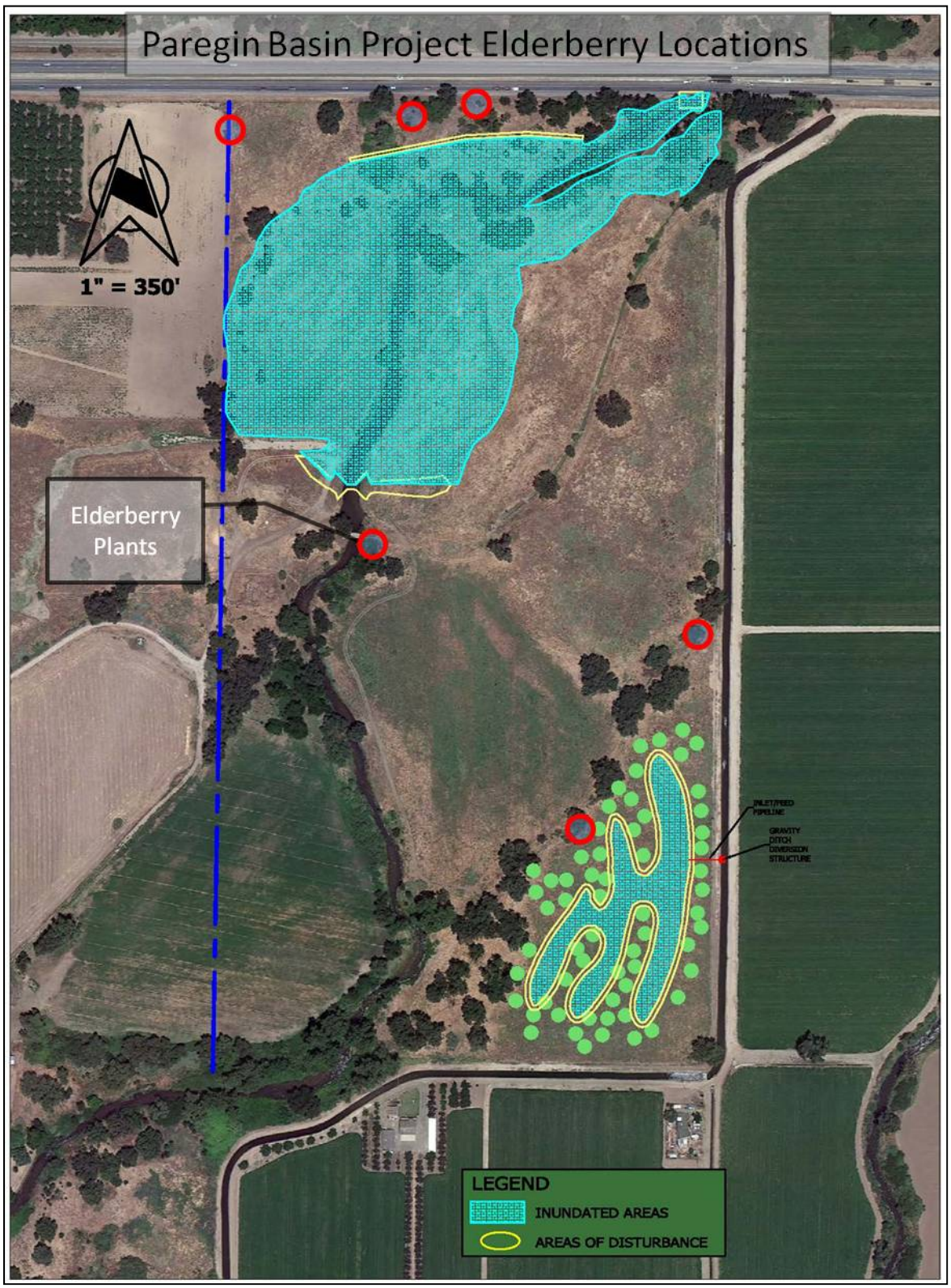

Figure 1. Map of project location, construction plans and elderberry plant locations.

Project site development may not begin until a USFWS-approved biologist conducts a pre-construction survey of the portion of the Proposed Action area for SJKF and VELB and the results have been approved by Reclamation. Work areas, including staging areas, would be clearly defined with flagging or other highly visible marking and the smallest possible area would be disturbed. Movement of heavy equipment to and from the project sites, staging areas, or borrow sites would be confined to existing roadways to minimize habitat disturbance. Construction during evening hours (when kit foxes and other animals are active and most vulnerable to vehicle or equipment-induced injury or mortality) would be avoided. In addition to conducting pre-construction surveys for the project, the biological monitors shall aid crews in satisfying take avoidance criteria and implementing project Avoidance and Minimization measures, documenting all pertinent information concerning project effects on sensitive species, and shall assist in minimizing adverse effects of project activities on sensitive species. The biological monitor is empowered to order cessation of activities if take avoidance and/or environmental protective measures are violated and would notify KDWCD's and Reclamation's representative.

To prevent inadvertent entrapment of species, any excavation and backfill should be the amount that can be completed in a workday. If this is not possible, all open holes, steep-walled holes, or trenches more than two-feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks (wooden planks would be no less than 10 inches in width and would reach the trench bottom). Before such holes or trenches are filled, they would be thoroughly inspected for trapped animals.

Section 8 3.0 Environmental Baseline and Status of the Species

KDWCD retained biologists from Kamansky's Ecological Consulting (KEC) to conduct a biological survey/study of the Proposed Action area. KEC conducted biological reconnaissance surveys and focused surveys for nesting raptors in October, 2011 (Appendix C). In addition, surveys were conducted to determine the presence of SJKF because the California Natural Diversity Database (CNDDB) indicated that they have been observed near the Proposed Action area. Surveys to determine the presence of VELB consisted of inspecting the existing elderberry shrubs for VELB exit holes. No exit holes were found on the plants.

The land on the subject property supports undisturbed (uncultivated) vegetation and some areas with native plant communities, other areas have been previously disturbed. Dominant species

observed on the subject property during the field survey include the following annuals: hare barley (*Hordeum marinum* ssp. *gussoneaum*), whitestem filaree (*Erodium moschatum*), redstem filaree (*Erodium cicutarium*), ripgut grass (*Bromus diandrus*), yellow star thistle (*Centurea solstitialis,* an invasive species that will be removed as part of restoration and mitigation in this Project). There are native, perennial grass species such as creeping wildrye (*Leymus triticoides*) and saltgrass (*Distichlis spicata*). In the woodland area, valley oaks, sycamores and willows form sparse-canopied woodland.

8.1.1 3.1 San Joaquin kit fox

The SJKF was listed as federally endangered in 1967 (USFWS 1967). Recovery of this species was addressed in a recovery plan for upland species in the San Joaquin Valley (USFWS 1998). The largest extant population occurs in Kern County in a variety of habitats, including grassland, agricultural land, and alkali sink plant community. Habitat fragmentation and degradation is the primary threat to this species, though SJKF are also preyed upon or competitive exclusion may occur in the presence of coyotes, introduced domestic dogs, bobcats, and large raptors (USFWS 1998).

The Proposed Action area could provide foraging habitat for SJKF, but prey base is very low. Agricultural practices such as cultivation, irrigation, and chemical treatments result in elevated disturbances within this area, thus limiting denning opportunities and food availability to SJKF. No kit foxes have been observed in the area for many years. In addition, neither SJKF nor their potential dens were observed during the October, 2011 survey conducted by KEC. However, the Proposed Action area still has the potential to be utilized by SJKF for foraging, and movement purposes.

8.1.2 3.3 Valley Elderberry Long-horned Beetle

Valley elderberry long-horned beetle was federally listed as threatened in 1980 (USFWS 1980). VELB is restricted to scattered stands of elderberry (*Sambucus* species) shrubs in riparian communities of California's Central Valley. Less than one inch long, females are black with a greenish tinge and reddish margins on the wing covers (elytra). Males have orange-red elytra marked with two or four black spots. In spring, adults feed and lay eggs on elderberry shrubs in Central Valley riparian communities. Larvae bore into the pithy core of the elderberry stems and, perhaps for as long as two years, mine passages in the wood as they feed. They then metamorphose into adults and emerge from living stems into the sunlight during spring or summer. Adults feed on elderberry leaves and flowers.

In addition to the population of elderberry shrubs at the adjacent Kaweah Oaks Preserve, the elderberry plants growing along other channels on the delta of the Kaweah River, including scattered elderberry shrubs along the St. Johns River, comprise the largest known population of potential host plants for Valley elderberry longhorn beetle in this part of Tulare County.

Surveys for this species KEC conducted in October, 2011 did not detect exit holes or adults at the site, but it does provide habitat for this species.

Section 9 4.0 Effects

In summary, the total amount of habitat disturbed due to the construction of the Proposed Action would result in the permanent loss of 0.57 acres of grassland through levee construction and flood 22.97 acres of mixed grassland and riparian woodland. This Project will also restore 9.38 acres of riparian forest and seasonal wetland with native plants. The project will also result in temporary disturbance to 0.145 acres of wetland in the stream channel at two locations. All ground disturbances will be followed by revegetation with native species and no trees or large shrubs or riparian vegetation will be removed. A total of 0.57 acres of potential SJKF foraging habitat would be affected and three elderberry plants would potentially temporarily be affected to within 100 feet of the dripline, but no less than 20 feet of the dripline.

9.1.1 4.1 San Joaquin kit fox

SJKF, a federal endangered species, is noted in the CNDDB as being observed within the vicinity of the Proposed Action area. No evidence that kit fox are currently occupying the Proposed Action area was found during biological surveys conducted by KEC in October 2011. However, given that SJKF are highly mobile, they could utilize the Proposed Action area for foraging. Construction activities at the Proposed Action area have the potential to kill or injure kit fox through direct impacts from construction equipment and vehicles. However, kit fox are nocturnal and would likely be active when construction work is not being conducted. Thus, they would avoid most disturbances. In addition, prey availability may decrease due to temporary disturbances during construction practices which could result in potential indirect impacts to SJKF that might utilize the area for foraging purposes.

To insure that the Proposed Action would avoid and/or minimize disturbances, injury or mortality to SJKF, preconstruction surveys would be conducted prior to initiation of work and the implementation of avoidance measures would be followed to minimize potential impacts. If no sign or evidence of SJKF is found during the preconstruction surveys, it is likely that they are not present in the vicinity and therefore would not be directly affected by the Proposed Action. If active dens are found and cannot be avoided, the standard SJKF procedure of monitoring and excavating the dens would be implemented to ameliorate potential for harm to SJKF.

Construction activities would disrupt already fragmented habitat that could be utilized by SJKF; however, this is a small portion of the total amount of annual grassland available for use within

the region of the Proposed Action. Incorporated conservation measures would avoid all other potential adverse effects to SJKF.

9.1.2 4.3 Valley Elderberry Long-horned Beetle

During construction activities, VELB may be foraging on shrubs or emerging from stems greater than one inch in diameter. To insure that the Proposed Action would avoid disturbances, injury or mortality to VELB, preconstruction surveys would be conducted prior to initiation of work and implementation of avoidance measures followed to minimize potential impacts. If no sign or evidence of VELB is found, it is likely that they are not present in the vicinity and would not be directly affected by the Proposed Action. However, three elderberry plants are in the vicinity of the work and plants will need to be protected from encroachment and damage.

9.1.3 4.5 Best Management Practices

In addition to those Avoidance and Minimization Measures specific to listed species identified in Chapter 2, the following BMPs have been provided to minimize and avoid take of sensitive species during construction activities within the Proposed Action area. All KDWCD personnel and contractors working on the construction would implement these measures:

- All ground disturbances will be followed by revegetation with native species and no trees or large shrubs or riparian vegetation will be removed;

- A qualified wildlife biologist shall conduct a sensitive species education program (tailgate briefing) for all project personnel;

- A biological monitor will be present while ground-disturbing activities occur based on the sensitivity of the habitat in which construction is occurring. In addition to conducting pre-construction surveys for the project, the biological monitor 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 adverse 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 KDWCD and Reclamation representative;

- Unless the biological monitor allows 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 or fenced 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;
- KDWCD shall appoint a representative who would be the point of contact for any employee or contractor who inadvertently kills or injures a threatened or endangered species, who finds a dead, injured or trapped animal. The representative would be identified during the preconstruction educational briefing;
- All project-related vehicles shall observe a speed limit of 25 mph or less on all routes except as posted on State and County highway/roads or paved facility roads;
- Appropriate measures shall be undertaken to prevent unauthorized vehicle entry to off-road survey routes in sensitive habitat areas. Signing would be the preferred method to discourage use;
- Work boundaries would be delineated with flagging, temporary fencing or other marking to minimize surface disturbance associated with project activities.
- The area of disturbance would 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;
- To the extent practicable, previously disturbed areas would be used to stockpile excavated materials, storage of equipment, digging of slurry or borrow pits, trailer placement, vehicle parking and other surface disturbing activities;
- The KDWCD representative shall contact CDFG or USFWS immediately in the event of a dead, injured or trapped animal. CDFG contact for immediate assistance is State Dispatch at (916) 445-0045. USFWS and CDFG shall be notified in writing within three working days in the event of an accidental death or injury of a SJKF, elderberry plant, elderberry beetle,. Notification shall include the date, time and location of the incident or finding of a dead or injured animal. USFWS contact is the Endangered Species Program Field Office, 2800 Cottage Way, Room W-2605, Sacramento, CA 95825, (916) 414-6600 and CDFG contact is 1416 9th Street, Sacramento, CA 95814, (916) 654-4262.

9.1.4 4.6 Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the Proposed Action area considered in this BA (50 CFR 402.02). Future federal actions that are unrelated to the Proposed Action are not considered in this section because they would be subject to separate consultation pursuant to Section 7 of the ESA.

Numerous activities continue to eliminate habitat for listed and proposed threatened and endangered species in the southern San Joaquin Valley. Habitat loss and degradation affecting both animals and plants continue as a result of urbanization, oil and gas development, road and utility right-of-way management, flood control projects, climate change, grazing by livestock, and agricultural practices. Listed and proposed animal species are also affected by poisoning, shooting, increased predation associated with human development, and reduction of food sources. All of these non-Federal activities are expected to continue to adversely affect listed and proposed species in the southern San Joaquin Valley.

There are no known proposed State, local, or tribal actions that are reasonably certain to occur in the Proposed Action area considered in this BA. Private actions, however, would not eliminate the risk for take of listed species due to road kills from off-road vehicles use and trash dumping. KDWCD and its contractors will implement appropriate conservation measures and/or mitigation as needed in order to minimize potential cumulative impacts.

Section 10 5.0 Conclusions

This BA reviewed the environmental baseline and considered the effects of the Proposed Action; induced effects; interrelated and interdependent effects; and the cumulative effects. SJKF and VELB *may be affected, but are not likely to be adversely affected* by the Proposed Action. In summary, the total amount of habitat disturbed due to the construction of the Proposed Action would result in the permanent loss of 0.57 acres of grassland through levee construction and flood 22.97 acres of mixed grassland and riparian woodland. This Project will also restore 9.38 acres of riparian forest and seasonal wetland with native plants. The project will also result in temporary disturbance to 0.145 acres of wetland in the stream channel at two locations. All ground disturbances will be followed by revegetation with native species and no trees or large shrubs or riparian vegetation will be removed. A total of 0.57 acres of potential SJKF habitat would be affected and three elderberry plants would potentially temporarily be affected to within 100 feet of the dripline, but no less than 20 feet of the dripline.

All areas of temporary disturbance would be returned to previous site conditions. The Proposed Action also incorporates measures that would avoid and minimize any potentially adverse effects to listed species.

Section 11 6.0 References

CDFG (California Department of Fish and Game). 1990. Region 4 approved survey methodologies for sensitive species - San Joaquin kit fox, blunt-nosed leopard lizard, San Joaquin antelope squirrel, Tipton kangaroo rat, giant kangaroo rat. Compiled by R. Rempel and G. Presley. Fresno, CA.

CNDDB (California Natural Diversity Database). 2012. California Department of Fish and Game's Natural Diversity Database, Version 3.1.1. RareFind 3.

Hansen, G. E., and J. M. Brode. 1980. Status of the giant garter snake, *Thamnophis couchi gigas* (Fitch). California Department of Fish & Game, Inland Fisheries Endangered Species Program Special Publication Report. 80-5: 1-14.

Kamansky's Ecological Consulting. 2012. Reconnaissance-level Biological Evaluation of Potential Impacts to Sensitive and Listed Species on an Approximately 80-acre Property Near the City of Visalia, Tulare County, California. January 11, 2012.

USFWS (U.S. Fish and Wildlife Service). 1967. Endangered Species. March 11, 1967. Federal Register 32: 4001.

USFWS. 1980. Listing the Valley Elderberry Long-horned Beetle – Final rule. Federal Register 45: 803-807.

USFWS. 1988. Endangered and threatened wildlife and plants; determination of endangered status for the Tipton kangaroo rat, Final Rule. July 8, 1988. Federal Register 53: 25608-25611.

USFWS. 1998. Recovery plan for the upland species of the San Joaquin Valley, California. Portland, OR. 319 pp.

USFWS. 2011. Standardized recommendations for protection of the San Joaquin kit fox prior to or during ground disturbance. Sacramento Fish and Wildlife Office, US Fish and Wildlife Service, January 2011.

Williams, D. F., and K. S. Kilburn. 1992. The conservation status of the endemic mammals of the San Joaquin Faunal Region, California, pp. 329-348. In: D.F. Williams, S. Byrne, and T.A. Rado, editors: Endangered and sensitive species of the San Joaquin Valley, California. California Energy Commission, Sacramento.

11.1.1 APPENDIX A – Project Photographs – See Appendix C, Biological Evaluation Report

11.1.2 APPENDIX B – USFWS Species List

U.S. Fish & Wildlife Service

Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the
EXETER (333C)
U.S.G.S. 7 1/2 Minute Quad

Database last updated: September 18, 2011

Report Date: July 27, 2012

Listed Species

Invertebrates

Branchinecta lynchi

vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus

valley elderberry longhorn beetle (T)

Fish

Hypomesus transpacificus

delta smelt (T)

Amphibians

Ambystoma californiense

California tiger salamander, central population (T)

Rana draytonii

California red-legged frog (T)

Reptiles

Gambelia (=Crotaphytus) sila

blunt-nosed leopard lizard (E)

Thamnophis gigas

giant garter snake (T)

Mammals

Dipodomys nitratoides nitratoides

Tipton kangaroo rat (E)

Vulpes macrotis mutica

San Joaquin kit fox (E)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

11.1.3 APPENDIX B Biological Evaluation Report

RECONNASSAINCE-LEVEL BIOLOGICAL EVALUATION OF POTENTIAL IMPACTS SENSITIVE AND LISTED SPECIES ON AN APPROXIMATELY 80-ACRE PROPERTY NEAR THE CITY OF VISALIA, TULARE COUNTY, CALIFORNIA

Prepared for:
Planning Tree Consulting, Keller-Wegley Consulting Engineers and Kaweah Delta Water Conservation District

Prepared by:

Bobby Kamansky

Kamansky's Ecological Consulting
innovative solutions to complex problems

January 24, 2012

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EXECUTIVE SUMMARY

Planning Tree Consulting contacted Kamansky's Ecological Consulting (KEC) on behalf of Keller-Wegley Engineering and Kaweah Delta Water Conservation District (KDWCD, Clients) for a survey near Visalia, Tulare County, California. The subject property is located on the south side of Highway 198 (Appendix). The parcel is currently relatively undisturbed grassland and riparian woodland consisting of approximately 80 acres.

The Paregin Basin Project includes creating two levees to create a percolation basin, modifying one structure and installing another small water control structure, an overshot gate, on Deep Creek. A small wetland will be restored and adjacent riparian woodland.

Since the Paregin Basin site is within the range of a variety of sensitive species, the Client requested that KEC conduct a biological evaluation to satisfy survey requirements for this Project in the County of Tulare. On projects such as this in the Visalia area, the United States Department of Interior, Fish and Wildlife Service (USFWS) routinely recommends that a "trained biologist, familiar with the habitat requirements of listed and proposed species, should determine whether these species or habitats suitable for these species may be affected by the proposed action...prior to the environmental review process."

The field component of the biological evaluation was conducted over two site visits on October 4th and 7th 2011. Bobby Kamansky conducted the site visits and all investigations for special status species.

This report is submitted to the Clients, Julie Phillips, Planning Tree Consulting, Hunter Kunkel at USFWS's San Joaquin Valley Branch, and Annee Ferrante at the California Department of Fish and Game (DFG).

At the time of the survey, all the land within the Project impact area comprises annual grassland and valley oak riparian woodland. A dirt road bounds the subject property on its south side, while the paved Highway 198 is located just north of the site. Most of the land in the project impact area supports undisturbed vegetation and natural plant communities. The vegetation on the subject property consists of grassland and native herbaceous weeds. The KDWCD will avoid all trees and minimize disturbance on the site and conduct appropriate pre-construction and construction monitoring to avoid impacts to sensitive species. To improve local and regional habitat associated with the site, any ground disturbances will be replanted with native species from onsite or directly adjacent to the site. The Project also will result in a net gain in seasonal wetland habitat both from the recharge basin itself and from a new wetland that will be restored from a previously farmed section of the site. Riparian woodland will be restored adjacent to the wetland.

Potential impacts to sensitive species are discussed below.

A. PROJECT DESCRIPTION, BACKGROUND, AND AGENCY INVOLVEMENT

A.1 Applicant and Project Description

Julie Phillips, Planning tree Consulting contacted Bobby Kamansky, Principal Biologist, Kamansky's Ecological Consulting (KEC) on behalf of Kaweah Delta Water Conservation District (KDWCD, Client/Applicant) for a survey in the Visalia area on the Paregin Basin Project Site (Appendix).

The subject property is located in central Tulare County (Appendix). The parcel is currently vacant, relatively undisturbed grassland and woodland. The Project site is approximately 60 miles east of the Coast Range and approximately 12 miles west of the Sierra Nevada mountains. The lands surrounding the Project site are predominantly agricultural; one upstream site is the 320-acre Kaweah Oaks Preserve owned by the Sequoia Riverlands Trust. Agriculture in the area includes row crops, vineyards, and stone fruit orchards, most of which rely heavily on a combination of groundwater and surface water resources to support irrigation demands.

The Paregien Basin Project (Project) will assist in the District's effort to secure an additional resource to enhance groundwater conservation efforts. In addition, the Project will provide a reliable source of groundwater recharge and will provide for flood protection for the City of Farmersville and Linnel Farm Labor Center.

The main feature of the Project consists of a 19.6 acre recharge basin created by construction of a control structure in Deep Creek. The Deep Creek Basin will have a capacity of approximately fifty-two (52) acre-feet. Dimensions of the basin would be approximately 1,040 feet by 980 feet. The map in the Appendix illustrates a portion of the proposed inundated area. Basin levees will be constructed in two separate locations (three actual levees) with the natural terrain of the land acting as the remainder of the basin levee. The proposed levees to be construction perpendicular to the control structure will have a top with of 20 feet with side slopes of 6:1 (inside) to 4:1 (outside). The proposed northern levee will be constructed to complement the existing terrain. Variance in levee heights is expected due to the undulating terrain of the Project site. Generally, levee heights should not exceed four (4) feet. Although earthwork quantities will vary, it is estimated that approximately 20,000 cubic yards will be needed to construct the earthen levees. Hydroseeding with native species will be conducted on all earthen material that is disturbed in order to eliminate potential for erosion.

The Deep Creek Basin structure will be constructed in the Deep Creek Channel (see Appendix for the proposed site location). The structure will be constructed solely of reinforced concrete, with the exception of the control gates and associated materials. The structure is anticipated to be eight and a half (8.5)

feet high, with a width of eighty (80) feet, including the wing-walls. Due to the unstable nature of the native soils within the Deep Creek channel area, it is anticipated that friction columns will need to be installed underneath the structure. These columns may have a depth of fifteen (15) to twenty (20) feet.

The second major element of the Project consists of a 3.4 acre recharge basin/seasonal wetland. The Southeast Pasture Recharge Basin will have a capacity of nine (9) acre-feet. The outside dimensions of the basin will vary, as it is being designed to be as natural looking as the original terrain. Soil characteristics allowing, a portion of the excavated material from the Southeast Pasture Recharge Basin will be used to construct the earthen levees on the Deep Creek Basin. A total of approximately 20,000 cubic yards will be excavated from the proposed basin site. The Appendix figure indicates the current conditions of the proposed site.

In addition to the hydroseeding in and around the area of the Southeast Pasture Recharge Basin, the District will institute an oak tree restoration and specific vegetation planting program to enhance the wildlife values on the site, restore seasonal wetland habitat and mitigation the small impacts to grassland and Deep Creek. This restoration and planting portion of the Project proposes to furnish and install approximately 100 oak trees, along with various native plants. These plantings will be instituted in and around the Southeast Pasture Recharge Basin.

Connection to the CPDCo.'s main canal will allow for specific benefits. The District will be able to make deliveries for the development of habitat consisting of the oak tree and seasonal wetland restoration and specific vegetation planting, groundwater recharge and the ability for Consolidated People's Ditch Co. to use the basin as a regulation reservoir during operational periods.

The staging area for construction activities will be within the confines of the Project site. Construction will involve the use of scrapers and excavators for the majority of the earthwork activities, along with compaction equipment, bulldozers, water trucks, drill rigs and other miscellaneous vehicles.

It is anticipated that some of the earthwork material will need to be imported, due to the onsite materials consistency not being suitable for levee construction alone. Excess onsite material may be exported offsite for other District uses, or will be stored onsite for future District projects.

Kaweah Delta Water Conservation District anticipates that construction of the basins, structures would commence in August, 2012. The construction of the monitoring wells would occur after the basin construction is complete, currently scheduled for February, 2013. The construction of the monitoring wells is scheduled to take approximately one month.

A.2 Federal Agency Interaction on Resource Issues

Because the proposed Paregin Basin Project site is within the range of the San Joaquin kit fox and other listed and proposed species, the Client requested that KEC conduct a survey for this Project in the County of Tulare. On projects such as this in the Visalia area, USFWS routinely recommends that a "trained biologist, familiar with the habitat requirements of listed and proposed species, should determine whether these species or habitats suitable for these species may be affected by the proposed action…prior to the environmental review process."

In a 1 April 1996 letter from USFWS to an applicant for a separate project in Tulare County, USFWS stated:

> If a Federal agency is involved with the permitting, funding, or carrying out of this Project, then initiation of formal consultation between the agency and the Service pursuant to Section 7 of the [Endangered Species] Act is required **if** it is determined that the proposed Project may affect a federally listed species.

In situations where the project has no federal nexus, consultation between the Applicant (KDWCD) and USFWS/CDFG pursuant to Section 10 of the [Endangered Species] Act is required **if** it is determined that the proposed project may affect a federally listed species.

A.3 State Agency Interaction on Resource Issues

California Department of Fish and Game (DFG) routinely recommends that applicants conduct a biological assessment for sensitive species and, in particular, a kit fox and raptor survey and avoidance prior to construction. In its role as a trustee agency, DFG works with project applicants to avoid or minimize adverse effects on fish, wildlife (including raptors), or native plants.

A.4 Project-related Mitigation Guidelines

USFWS and DFG work to avoid land use decisions that might restrict the range or reduce the numbers of rare or endangered species. Under the Endangered Species Act, if it is determined that listed species will be adversely affected (or if a project impact is likely to have an adverse effect on listed species), such impacts will need to be mitigated. Under these circumstances, Applicant should initiate informal consultation with USFWS to determine whether a Section 7 consultation is indicated.

Under CEQA, once a threshold for significance has been established (e.g. significant impacts to a natural community, to special status species, or to common wildlife species), applicant can address a range of mitigation options.

In view of CEQA guidelines, DFG has traditionally encouraged project proponents (such as the Client) to take the following hierarchical approach to mitigate for any human impacts on natural communities and wildlife:

1) Ideally, any proposed project should be designed to avoid impacts to high quality habitat and sensitive species (e.g. San Joaquin kit fox, raptors, or Valley elderberry longhorn beetle).

2) If avoidance is not possible, CDF&G encourages project proponent to minimize loss of natural habitat and habitat quality. Habitat improvements, including revegetation with native species or enhancement of degraded habitat (including removal of non-native species), either on-site or off-site may be used as mitigation.

3) Another important component of effective mitigation includes efforts aimed at reducing human disturbance by controlling access to sensitive areas or devising plans for coexistence.

4) Short-term mitigation may be recommended during construction. Construction and maintenance personnel are instructed on "take" avoidance. Native vegetation may be replanted, and protection recommended on the project site for habitat features critical to endangered and threatened species. Individual plants or animals may be relocated off-site by a qualified biologist.

5) Long-term mitigation may include control of alien and wild predators and invasive plant species, or encouraging growth of forage plants for native animal species.

A.5 Project Background

Julie Phillips, Principal, Planning Tree Consulting contacted Kamansky's Ecological Consulting (KEC) on behalf of Keller-Wegley Engineering and Kaweah Delta Water Conservation District (Clients) for a survey near Visalia, Tulare County, California (Appendix). The subject property is located in central Tulare County (Appendix). The parcel is currently vacant relatively undisturbed grassland and woodland.

This report is being submitted to Julie Phillips, Hunter Thompson at USFWS's San Joaquin Valley Branch, and Annee Ferranti at DFG.

It is agreed that the report of findings produced upon the conclusion of this reconnaissance level focused biological survey will be used in the following manner ONLY: for consideration during any necessary NEPA/CEQA mitigation requirements or other permitting processes. It is understood that KEC does NOT make recommendations for approval or denial of the Project.

B. LOCATION OF SUBJECT PROPERTY

The subject property covered by this biological investigation is located in central Tulare County. This 80-acre vacant parcel is located in the Exeter Quad Western Half of Section 32 Township, 18S South, Range 26 East.

C. CURRENT LAND USE

At the time of the survey (October, 2011), all the land within the Project impact area slated for the basins comprises annual grassland and valley oak woodland. Highway 198 bounds the property on the north. There are no residences or other structures on the subject property. Most of the land in the Project impact area supports undisturbed vegetation and natural plant communities. The vegetation on the subject property consisted of short, non-native and native grasses and native herbaceous species, oak, sycamore and willow trees.

Most of the land adjacent to the subject property supports undisturbed vegetation and natural plant communities. Several surrounding properties to the south are farmed. Cattle graze the Project Site most of the year.

D. SURVEY DATES AND SURVEY PERSONNEL

The field component of the investigation was conducted over two days. Bobby Kamansky conducted the initial site visit on October 4th and followed up on October 7th.

E. STUDIES REQUIRED TO SATISFY ENDANGERED SPECIES LAWS

Several species of plants and animals within the state of California have low populations, limited distributions, or both. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. State and federal laws have provided DFG and the USFWS with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. Many native plant and animal species have been formally designated as Threatened or Endangered under state and federal endangered species legislation. Others have been designated as "Species of Special Concern" by DFG. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened or endangered (CNPS 2001). Collectively, these plants and animals are referred to as "Special Status Species".

F. STUDY METHODOLOGY

F.1 Literature Review

A review of literature was conducted to provide additional information about the relevant species.

F.2 Consultation with Experts on Species

Several biologists were consulted on this Project to provide additional information. Kamansky's Ecological Consulting also provided additional species information and records from field notes by Bobby Kamansky to supplement CNDDB information about the region.

F.3 Survey Methods

Biologists walked meandering transects across the property. All of the trees and grasslands were inspected for all species.

F.2 Consult California Natural Diversity Data Base (CNDDB)

The biological investigation conducted by KEC focused on the status of several Special Status Species. Species and the two habitats listed in the CNDDB are considered Special Status Species and are often treated as if they were listed under Federal or State Endangered Species Acts.

The likelihood of the species occurring on the site is categorized as present, absent, possible or unlikely. Based on whether they were detected, are known to exist on the site or immediately adjacent (present), were not detected and not expected owing to lack of habitat (absent), possibly occurring but not detected (possible), not likely to occur and not detected (unlikely).

Forty (35) Special Status Species are known to occur in the Project vicinity. Twenty-four (24) Special Status animal species are known to occur in the general vicinity of the Paregin Basin Project Site (the subject property). Twenty of these species are found in CNDDB, while four were added from KEC field notes from the time period 2004-2011 in the Project vicinity, primarily on the adjacent Kaweah Oaks Preserve. Field surveys conducted during this biological evaluation did not document the presence of any Special Status animal or plant species on the subject property, but American badgers are known to den on adjacent Kaweah Oaks Preserve, Swainson's hawks also established a nest at the Kaweah Oaks Preserve in 2007, as well as other raptors such as white-tailed kite, Cooper's hawk, red-tailed hawks, great-horned owls and barn owls are all known to forage and nest at the Kaweah Oaks Preserve.

Thirteen (14) Special Status plant species were included in the CNDDB printout for the nine relevant quadrangles. None of these species are known to occur in the immediate vicinity of the Project site, except elderberry which is known from the site and in high densities and numbers on properties to the north and the northeast and which harbors the valley elderberry long-horned beetle and species listed as Threatened under the federal Endangered Species Act.

Five native plant communities were also listed in the CNDDB including Sycamore Alluvial Woodland, Valley Sacaton Grassland, Northern claypan Vernal Pools, Northern Hardpan Vernal Pools and Great Valley Riparian Oak Forest.

Will the Project have a substantial adverse effect, either directly or through habitat modifications, on any animal species identified as a candidate, sensitive, or Special Status Species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

The Paregin Basin Project will have a small effect on approximately 0.57 acres of grassland through levee construction and flood 22.97 acres of mixed grassland and riparian woodland. This will impact American badger habitat, but habitat will be available to this species many months out of the year when basins are not full. Also, this Project will restore 9.38 acres of riparian forest and seasonal wetland with native plants. This provides additional high-quality habitat for badgers and other species where poor quality or no habitat exists on previously farmed ground. The project will also result in temporary disturbance to 0.145 acres of wetland in the stream channel at two locations. All ground disturbances will be followed by revegetation with native species and no trees or large shrubs or riparian vegetation will be removed. Therefore, this Project **will not result in substantial adverse effect** on special status species.

Table 1 below summarizes the species and habitats that were listed in the California Natural Diversity Database.

#	QUAD NAME	SCIENTIFIC NAME	COMMON NAME	FED STATUS	CAL STATUS	CDFG	CNPS LIST	Occurrence Summary
1	Woodlake	*Chrysis tularensis*	A cuckoo wasp	None	None			Absent **
2	Exeter	*Taxidea taxus*	American badger	None	None	SC		Possible. Den and young observed on Kaweah Oaks Preserve in
3	Tulare	*Andrena macswaini*	An andrenid bee	None	None			Possible.
4	Ivanhoe	*Athene cunicularia*	burrowing owl	None	None	SC		Unlikely. Only one record at the Kaweah Oaks Preserve, no local historical records from immediate area.
	Monson	*Athene cunicularia*	burrowing owl	None	None	SC		
5	Lindsay	*Mimulus pictus*	calico monkeyflower	None	None		1B.2	Absent
	Rocky Hill	*Mimulus pictus*	calico monkeyflower	None	None		1B.2	
6	Tulare	*Caulanthus californicus*	California jewel-flower	Endangered	Endangered		1B.1	Absent
7	Visalia	*Imperata brevifolia*	California satintail	None	None		2.1	Absent.
8	Ivanhoe	*Ambystoma californiense*	California tiger salamander	Threatened	None	SC		Absent.
	Monson	*Ambystoma californiense*	California tiger salamander	Threatened	None	SC		
9	Cairns Corner	*Atriplex erecticaulis*	Earlimart orache	None	None		1B.2	Absent.
	Ivanhoe	*Atriplex erecticaulis*	Earlimart orache	None	None		1B.2	
10	Woodlake	*Ardea herodias*	great blue heron	None	None			Present, foraging.
11	Exeter	Great Valley Valley Oak Riparian Forest	Great Valley Valley Oak Riparian Forest	None	None			Present.
12	Woodlake	*Tuctoria greenei*	Greene's tuctoria	Endangered	Rare		1B.1	Absent.
13	Ivanhoe	*Chamaesyce hooveri*	Hoover's spurge	Threatened	None		1B.2	Absent.
	Monson	*Chamaesyce hooveri*	Hoover's spurge	Threatened	None		1B.2	
14	Visalia	*Lytta hoppingi*	Hopping's blister beetle	None	None			Absent.
15	Woodlake	*Brodiaea insignis*	Kaweah brodiaea	None	Endangered		1B.2	Absent.
16	Cairns	*Atriplex minuscula*	lesser saltscale	None	None		1B.1	Absent.

	Corner							
	Visalia	*Atriplex minuscula*	lesser saltscale	None	None		1B.1	
17	Lindsay	*Lytta molesta*	molestan blister beetle	None	None			Absent.
18	Exeter	*Talanites moodyae*	Moody's gnaphosid spider	None	None			Absent.
	Ivanhoe	*Talanites moodyae*	Moody's gnaphosid spider	None	None			
	Rocky Hill	*Talanites moodyae*	Moody's gnaphosid spider	None	None			
19	Rocky Hill	*Northern Claypan Vernal Pool*	Northern Claypan Vernal Pool	None	None			Absent.
20	Ivanhoe	*Northern Hardpan Vernal Pool*	Northern Hardpan Vernal Pool	None	None			Absent.
	Monson	*Northern Hardpan Vernal Pool*	Northern Hardpan Vernal Pool	None	None			
21	Exeter	*Antrozous pallidus*	pallid bat	None	None	SC		Possible.
22	Cairns Corner	*Delphinium recurvatum*	recurved larkspur	None	None		1B.2	Absent.
	Monson	*Delphinium recurvatum*	recurved larkspur	None	None		1B.2	
	Rocky Hill	*Delphinium recurvatum*	recurved larkspur	None	None		1B.2	
	Woodlake	*Delphinium recurvatum*	recurved larkspur	None	None		1B.2	
23	Lindsay	*Pseudobahia peirsonii*	San Joaquin adobe sunburst	Threatened	Endangered		1B.1	Absent.
24	Rocky Hill	*Pseudobahia peirsonii*	San Joaquin adobe sunburst	Threatened	Endangered		1B.1	
	Tulare	*Pseudobahia peirsonii*	San Joaquin adobe sunburst	Threatened	Endangered		1B.1	
	Woodlake	*Pseudobahia peirsonii*	San Joaquin adobe sunburst	Threatened	Endangered		1B.1	
25	Cairns Corner	*Vulpes macrotis mutica*	San Joaquin kit fox	Endangered	Threatened			Unlikely. No historical foraging or denning records on or near the site.
	Exeter	*Vulpes macrotis mutica*	San Joaquin kit fox	Endangered	Threatened			
	Ivanhoe	*Vulpes macrotis mutica*	San Joaquin kit fox	Endangered	Threatened			
	Lindsay	*Vulpes macrotis mutica*	San Joaquin kit fox	Endangered	Threatened			
	Monson	*Vulpes macrotis mutica*	San Joaquin kit fox	Endangered	Threatened			
	Tulare	*Vulpes macrotis*	San Joaquin kit fox	Endangered	Threatened			

		mutica					
	Visalia	*Vulpes macrotis mutica*	San Joaquin kit fox	Endangered	Threatened		
	Woodlake	*Vulpes macrotis mutica*	San Joaquin kit fox	Endangered	Threatened		
26	Ivanhoe	*Orcuttia inaequalis*	San Joaquin Valley orcutt grass	Threatened	Endangered	1B.1	Absent.
	Monson	*Orcuttia inaequalis*	San Joaquin Valley orcutt grass	Threatened	Endangered	1B.1	
	Woodlake	*Orcuttia inaequalis*	San Joaquin Valley orcutt grass	Threatened	Endangered	1B.1	
27	Exeter	*Eryngium spinosepalum*	spiny-sepaled button-celery	None	None	1B.2	Absent.
	Ivanhoe	*Eryngium spinosepalum*	spiny-sepaled button-celery	None	None	1B.2	
	Lindsay	*Eryngium spinosepalum*	spiny-sepaled button-celery	None	None	1B.2	
	Rocky Hill	*Eryngium spinosepalum*	spiny-sepaled button-celery	None	None	1B.2	
	Woodlake	*Eryngium spinosepalum*	spiny-sepaled button-celery	None	None	1B.2	
28	Lindsay	*Fritillaria striata*	striped adobe-lily	None	Threatened	1B.1	Absent.
	Rocky Hill	*Fritillaria striata*	striped adobe-lily	None	Threatened	1B.1	
29	Cairns Corner	*Atriplex subtilis*	subtle orache	None	None	1B.2	Absent.
30	Cairns Corner	*Buteo swainsoni*	Swainson's hawk	None	Threatened		Possible. Species nested at Kaweah Oaks Preserve in 2007.
30	Tulare	*Buteo swainsoni*	Swainson's hawk	None	Threatened		
31	Woodlake	*Sycamore Alluvial Woodland*	Sycamore Alluvial Woodland	None	None		Present. Small numbers of sycamores are present on the site.
32	Cairns Corner	*Dipodomys nitratoides nitratoides*	Tipton kangaroo rat	Endangered	Endangered		Absent.
33	Exeter	*Desmocerus californicus dimorphus*	valley elderberry longhorn beetle	Threatened	None		Possible. Exit holes documented on adjacent Kaweah Oaks Preserve. Shrubs present on the site. No exit holes observed.
34	Exeter	*Valley Sacaton Grassland*	Valley Sacaton Grassland	None	None		Absent.
35	Ivanhoe	*Branchinecta lynchi*	vernal pool fairy shrimp	Threatened	None		Absent.
	Monson	*Branchinecta lynchi*	vernal pool fairy shrimp	Threatened	None		
	Rocky Hill	*Branchinecta lynchi*	vernal pool fairy shrimp	Threatened	None		

36	Ivanhoe	*Atriplex persistens*	vernal pool smallscale	None	None		1B.2	Absent.
37	Ivanhoe	*Lepidurus packardi*	vernal pool tadpole shrimp	Endangered	None			Absent.
	Monson	*Lepidurus packardi*	vernal pool tadpole shrimp	Endangered	None			
38	Rocky Hill	*Eumops perotis californicus*	western mastiff bat	None	None	SC		Possible. Frequency analysis of echo-location suggests this species on adjacent Kaweah Oaks Preserve.
	Visalia	*Eumops perotis californicus*	western mastiff bat	None	None	SC		
	Woodlake	*Eumops perotis californicus*	western mastiff bat	None	None	SC		
39	Visalia	*Actinemys marmorata*	western pond turtle	None	None	SC		Possible. Observed during extremely wet years at the Kaweah Oaks Preserve in the late 1980s.
40	Ivanhoe	*Spea hammondii*	western spadefoot	None	None	SC		Absent.
	Monson	*Spea hammondii*	western spadefoot	None	None	SC		
	Woodlake	*Spea hammondii*	western spadefoot	None	None	SC		
41	Exeter		White-tailed kite	None		DFG FP		Possible. Nested at Kaweah Oaks Preserve, May, 2007
42	Exeter	*Eremophilia alpestris*	Horned lark	None	None	SSC		Possible. Documented at the Kaweah Oaks Preserve in September 2005
43	Exeter	*Aquilia chrysataes*	Golden eagle	None	None	SSC (Nesting and wintering), DFG FP		Possible. Documented in summer 2007 on Kaweah Oaks Preserve.
44	Exeter	*Accipter cooperi*	Cooper's hawk	None	None	SSC (Nesting)		Possible. Pair with nest observed in May, 2005 on Friends Property to south of the site, Individual observed July 10, 2007 on Kaweah Oaks Preserve

**Present – Species observed on the site during the study.
Possible – Species reasonably likely to occur because good habitat exists and/or species observed adjacent to the site.
Absent – No habitat is present on the site and there are no historical records on or near the site.
Unlikely - Species reasonably unlikely to occur because no adequate habitat exists and/or species was not observed adjacent to the site.

G. VEGETATION ON THE PAREGIN BASIN PROJECT SITE

G.1 Natural Communities

Associations of plant species that grow in assemblages under similar ecological conditions are called plant communities (also known as natural communities or biotic communities). Generally, they are named for the dominant species found in the association. Definition of plant communities is important not only because it identifies types of plants that are present, but also because it indicates habitat types and animal species which may be found in the community. In this section, common names and scientific (Latin binomial) names of plants will both be given the first time they are mentioned; thereafter only common names will be used.

G.2 Native Plant Communities

The land on the subject property supports undisturbed (uncultivated) vegetation and native plant communities. According to the natural community classification scheme used by Holland (1986), the proposed Paregin Basin Project Site is located in a part of the southern San Joaquin Valley that originally contained components of two natural communities prior to development: Valley Grassland and Valley Oak Riparian Woodland. These two communities are generally treated similarly here.

G.3 Plant Species Composition on the Paregin Basin Project Site

The entire subject property comprises annual grassland and valley oak riparian woodland.

The subject property currently supports relatively high species richness of wild plants. There are patches of native vegetation on the subject property. Dominant species observed on the subject property during the field survey include the following annuals: hare barley (*Hordeum marinum* ssp. *gussoneaum*), whitestem filaree (*Erodium moschatum*), redstem filaree (*Erodium cicutarium*), ripgut grass (*Bromus diandrus*), yellow star thistle (*Centurea solstitialis,* an invasive species that will be removed as part of restoration and mitigation in this Project). There are native, perennial grass species such as creeping wildrye (*Leymus triticoides*) and saltgrass (*Distichlis spicata*). In the woodland, valley oaks, sycamores and willows form a sparse canopied woodland.

G.3.a Valley Oak Woodland Habitat

While nearly the entire property qualifies as undisturbed ground, the most disturbed portions of the property support a different association, the ditchbank association. This association is briefly described below, as it is a small portion of the property. Valley oaks (*Quercus lobata*), sycamores (*Plantanus racemosa*) and willows (*Salix* sp.) are the most common tree species on the site. These trees occur at the highest density near waterways.

G.3.b Waterway (Ditch bank) Association

The waterway (ditch bank) association is not one of the plant communities listed in Holland (1986) but it is a recognizable plant community that includes some species that are normally found in native riparian or freshwater marsh communities. This ditch bank association occurs along several hundred linear feet along the Deep Creek. Species that are part of this narrow (from a few inches to about three feet in width) strip of hydrophytic vegetation require aquatic (ditch bank or marsh-like) conditions. These plants either grow in the water or in the moist soil at the water's edge. On the subject property, this community of native and non-native plants includes the following species: smooth scouring rush (*Equisetum laevigatum*), flax-leaved fleabane (*Conyza bonariensis*), mare's tail (*Conyza canadensis*), cudweed species (*Gnaphalium sp.*), yellow cress (*Rorippa palustris* var. *occidentalis*), panicle willowweed (*Epilobium brachycarpum*), seep monkeyflower (*Mimulus guttatus*) and Mexican sprangletop (*Leptochloa uninerva*). This community provides limited food and cover for aquatic animals (including invertebrates like damselflies and dragonflies) and vertebrates (like fish, frogs, and ducks).

H. INVERTEBRATES

H.1 Valley elderberry longhorn beetle, *Desmocerus californicus dimorphus* FT

The endemic Valley elderberry longhorn beetle (VELB) is restricted to scattered stands of elderberry (*Sambucus* species) shrubs in riparian communities of California's Central Valley. Less than one inch long, females are black with a greenish tinge and reddish margins on the wing covers (elytra). Males have orange-red elytra marked with two or four black spots. In spring, adults feed and lay eggs on elderberry shrubs in Central Valley riparian communities. Larvae bore into the pithy core of the elderberry stems and, perhaps for as long as two years, mine passages in the wood as they feed. They then metamorphose into adults and emerge from living stems into the sunlight during spring or summer. Adults feed on elderberry leaves and flowers.

Adult VELB have been observed and collected on 10 dates between 4 April and 15 May (maxima 13-18 April) at valley floor sites below 500 feet elevation; adults have been observed and collected on 5 dates between 28 April and 19 June (maxima 4-9 June) at foothill sites above 500 feet elevation.

Only a few elderberry shrubs were observed on the site, though there are many shrubs in the vicinity and on adjacent Kaweah Oaks Preserve and no shrubs are anticipated to be in the flooded perimeters.

I. VERTEBRATE ANIMALS ON THE PAREGIN BASIN PROJECT SITE

Twenty two vertebrate species, including 21 birds, were recorded at the Paregin

Basin Project Site. See Appendix.

I.1 Amphibians

No Amphibians were observed on the subject property during field work. But the site provides habitat for western toads (*Bufo boreas*) and tree frogs (*Pseudacris regillia*).

I.2 Reptiles

No reptiles were observed on the subject property during field work. The site does provide habitat for common species such as western fence lizards (*Scleropus occidentalis*).

I.3 Birds

Several bird species were observed on the site during survey times and dates. The site has characteristics of a grassland with common species such as western Meadowlarks (*Sturnella neglecta*) and the riparian area supports winter resident birds, neotropical migrants and raptors such as red-tailed hawks (*Buteo jamacansis*), barn owls (*Tyto alba*) and for Swainson's hawks (*Buteo swainsonii*), although no Swainson's hawks were observed on the site and they have been known to nest on the adjacent Kaweah Oaks Preserve. See Appendix for full list.

I.4 Mammals

California ground squirrels (*Spermophilus beechii*) are prevalent on the site and the site provides habitat for species such as American badger (*Taxus taxidea*) and long-tailed weasels (*Mustela frenata*), but these species were not observed during the surveys.

J. RESULTS OF BIOLOGICAL EVALUATION

J.1 SPECIAL STATUS PLANT SPECIES

J.1.a Spiny-sepaled button-celery (*Eryngium spinosepalum*) CNPS 1B.2

Spiny-sepaled button-celery is recorded on the Lindsay and Porterville Quads in this portion of Tulare County.

The site provides little to no habitat for this species. **No spiny-sepaled button-celery was found on the subject property.** The sandy loam and loam soils on the subject property are not suitable habitat for button celery. No vernal pools occur on the subject property. The closest suitable habitat for this species was located on 725 acres of land that is known as the James K. Herbert Wetland Prairie Preserve.

J.1.b California jewel-flower (*Caulanthus califonrica*) Fed Endangered, State Endangered CNPS 1B.1

There is one quad with records for the California jewel flower: Tulare.

Habitat for this species is listed by CNPS as chenopod scrub, valley and foothill grassland, and pinyon-juniper woodland. The closest habitat association to the jewel flower habitat is the grassland, though this species was not observed in grassland during this survey.

No California jewel flower was found on the subject property.

J.1.c Earlimart orache (*Atriplex erecticalis*) CNPS 1B.2

This CNPS species profile mentions records of Earlimart orache on the Cairns Corner and Ivanhoe quads in this portion of Tulare County

No Earlimart orache, or any annual saltbush (*Atriplex*) species, was found on the subject property. The sandy loam and loam soils on the subject property are not suitable habitat for Earlimart orache. Earlimart orache grows on valley and foothill grassland. The closest suitable habitat for this species was located on 725 acres of land that is known as the James K. Herbert Wetland Prairie Preserve.

J.1.d Subtle orache (*Atriplex subtilis*) CNPS 1B.2

This CNDDB lists records of subtle orache on the Cairns Corner and Ivanhoe quads.

No subtle orache or any annual saltbush (*Atriplex*) species, was found on the subject property. Subtle orache grows on Chenopod scrub, alkali meadows and seeps, and valley and foothill grassland. The closest suitable habitat for this species was located on 725 acres of land that is known as the James K. Herbert Wetland Prairie Preserve.

J.1.e Lesser saltscale (*Atriplex miniscula*) CNPS 1B.1

There are records if this species from the Cairns Corner Quad and Visalia quads. The CNDDB record from the Cairns Corner Quad originates from swales and margins of slickspots in annual grassland with bush seepweed and common tarplant at the Tulare County Landfill property on both sides of Bliss Road (Road 152) about 0.5-1.0 mile north of Avenue192 (in the northwest ¼ and the southwest ¼ of the northeast ¼ of Section 35, Township 20 South, Range 25 East) 7 miles southeast of Tulare.

No lesser saltscale, or any annual saltbush (*Atriplex*) species, was found on the subject property. Lesser saltscale grows on Chenopod scrub, playas, sandy soils in alkaline areas, and valley and foothill grassland often in association with slough systems and river floodplains. None of these plant communities occur on the subject property. The closest suitable habitat for this species was located on 725 acres of land that is known as the James K. Herbert Wetland Prairie Preserve.

J.1.f Hoovers spurge (*Chamsayce hooverii*) Fed. Threatened, State Endangered, CNPS 4
Hoover's spurge records are from the Ivanhoe and Monson quads. Habitat for this species includes pinyon and juniper woodland, chenopod scrub woodland, valley and foothill grassland at elevations ranging from 50-915 meters.

No Hoover's spurge was found on the subject property. The site provides very little habitat for this species.

J.1.g Kaweah brodiaea (*Brodiaea insignis*) State Endangered 1B.2

The CNDDB lists this species on the Woodlake Quad from higher elevation, on decomposed granite and other substrates not common to the subject property.

This species is known only from foothill, higher elevation sites. **No Kaweah brodiaea was found on the subject property.**

J.1.h Striped adobe-lily (*Fritillaria striata*) State Threatened, CNPS 1B.1
There two quads that have records for the striped adobe-lily: Lindsay and Rocky Hill.

Habitat for this species is grasslands and woodlands with heavy adobe clay soils and is not expected to occur on the Paregin Basin Site. No suitable soils occur for this species on the site.

No striped adobe-lilies were found on the subject property. The sandy loam and loam soils on the subject property are not suitable habitat for this species.

J.1.i San Joaquin adobe sunburst (*Pseudobahia peirsonii*) Fed Threatened, State Endangered, CNPS 1B.1
There are 4 Quads that has a record for the San Joaquin adobe sunburst: Rocky Hill, Lindsay, Tulare, and Woodlake quads.

Habitat for this species is grasslands and woodlands with heavy adobe clay soils and is not expected to occur on the subject property.

No San Joaquin adobe sunbursts were found on the subject property.
The sandy loam and loam soils on the subject property are not suitable habitat for this species.

J.1.k Recurved larkspur (*Delphinium recurvatum*) CNPS 1B.2
This CNPS species profile mentions records of recurved larkspur on the Cairns Corner Quad in this portion of Tulare County. The CNDDB record

from the Cairn's Corner Quad originates from a report from swales and margins of slickspots in annual grassland with bush seepweed and common tarplant at the proposed Tulare County Landfill expansion site on both sides of Bliss Road (Road 152) about 0.5-1.0 mile north of Avenue192 (the northwest ¼ of Section 35 and the southwest ¼ of the northeast ¼ of Section 35, Township 20 South, Range 25 East), 7 miles southeast of Tulare.

No recurved larkspur was found on the subject property. The sandy loam and loam soils on the subject property are not suitable habitat for recurved larkspur or any of the associated halophytes noted above. The closest suitable habitat for this species was located on 725 acres of land that is known as the James K. Herbert Wetland Prairie Preserve, West of Lindsay.

J.1.l Calico monkeyflower (*Mimulus pictus*) CNPS 1B.2
There is one Quad that has a record for the calico monkey flower: Lindsay Quad. CNPS identifies habitat as broadleaved upland forests and cismontane forests with granitic substrate and so is not expected on the subject property.

No calico monkey flower was found on the subject property. The sandy loam and loam soils on the subject property are not suitable habitat for this species.

J.1.m San Joaquin Valley Orcutt grass (*Ocuttia inequalis*) Fed Threatened, State Endangered, CNPS 1B.1
This species is known from the Ivanhoe, Mondon and Woodlake quads. It is associated exclusively with seasonal wetlands, especially vernal pools. No vernal pools were observed on the site and this species is not expected to occur on the site.

No San Joaquin Valley orcutt grass was found on the subject property. The sandy loam and loam soils on the subject property are not suitable habitat for this species because they are not conducive to vernal pools and ponding.

J.1.n Greene's tuctoria (*Tuctoria greenei*) Fed Endangered, State Rare, CNPS 1B.1
This species is known from the Ivanhoe, Mondon and Woodlake quads. It is associated exclusively with seasonal wetlands, especially vernal pools. No vernal pools were observed on the site and this species is not expected to occur on the site.

No green's tuctoria was found on the subject property. The sandy loam and loam soils on the subject property are not suitable habitat for

this species because they are not conducive to vernal pools and ponding.

J.1.1 SPECIAL STATUS PLANT COMMUNITIES

J1.1.a Sycamore alluvial woodland

There is one Quad that has a record for the sycamore alluvial woodland: Woodlake, the record is from Dry Creek, a tributary to the Kaweah River system. There are small amounts of this habitat on the Project site.

Sycamore alluvial woodland grows on alluvial deposits from intermittent or perennial streams on relatively flat areas with relatively shallow water tables (DFG 1994).

Several western sycamore trees were found on the subject property. In all likelihood, the subject property was once part of the riparian forest on the Deep Creek/Four Creeks Area. Modified flooding regimes from the Kaweah Dam have severed this floodplain from its river. The altered hydrology on the subject property have created poor conditions for riparian and sycamore habitat health and regeneration. Flooding on the property associated with the recharge basins may improve regeneration chances and restoration may improve this community.

J1.1.a Valley sacaton grassland

This community was listed on the Exeter Quad were the subject property is located and occurs on the adjacent Kaweah Oaks Preserve. Only 2-3 acres of the site could be considered in this community and are outside of the proposed impact area.

J.2 SPECIAL STATUS INVERTEBRATES

J.2.a Vernal pool fairy shrimp (*Branchinecta lynchii*) FT

There are 3 quads recording the presence of this species in this part of Tulare County: Ivanhoe, Rocky Hill and Monson quads.

Vernal pool fairy shrimp have been observed and positively identified in vernal pools at Sequoia Riverlands Trust's 725-acre Herbert Wetland Prairie Preserve (Section 7 and Section 18, Township 20 South, Range 26 East).

No vernal pool fairy shrimp were found on the subject property. The sandy loam and loam soils on the subject property are not suitable habitat for vernal pool fairy shrimp. No vernal pools occur on the subject property.

Vernal pool fairy shrimp are entirely dependent on vernal pool habitat associated with particular soils. **Vernal pool fairy shrimp are unlikely to occur anywhere on the subject property because there are no vernal pools located anywhere on or adjacent to the subject property.** The closest suitable habitat for this species was located on 725 acres of land that is known as the James K. Herbert Wetland Prairie Preserve.

J.2.b vernal pool tadpole shrimp (*Lepiduris packerdii*) Fed Endangered
There are 3 quads recording the presence of this species in this part of Tulare County: Ivanhoe, Rocky Hill and Monson quads.

Vernal pool tadpole shrimp have been observed and positively identified in vernal pools at Department of Fish and Game's Stone Corral Ecological Reserve, in northern Tulare County.

No vernal pool tadpole shrimp were found on the subject property. The sandy loam and loam soils on the subject property are not suitable habitat for vernal pool tadpole shrimp. No vernal pools occur on the subject property.

Vernal pool tadpole shrimp are entirely dependent on vernal pool habitat associated with particular soils. **Vernal pool tadpole shrimp are unlikely to occur anywhere on the subject property because there are no vernal pools located anywhere on or adjacent to the subject property.**

J.2.c Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)
The endemic Valley elderberry longhorn beetle (VELB) is restricted to scattered stands of elderberry (*Sambucus* species) shrubs in riparian communities of California's Central Valley. Less than one inch long, females are black with a greenish tinge and reddish margins on the wing covers (elytra). Males have orange-red elytra marked with two or four black spots. In spring, adults feed and lay eggs on elderberry shrubs in Central Valley riparian communities. Larvae bore into the pithy core of the elderberry stems and, perhaps for as long as two years, mine passages in the wood as they feed. They then metamorphose into adults and emerge from living stems into the sunlight (Steinhart 1990) during spring or summer. Adults feed on elderberry leaves and flowers (Halstead and Oldham 2000).

The CNDDB Quad printout includes one Valley elderberry longhorn beetle occurrence on the Success Dam Quad. Adults VELB have been

observed and collected on 10 dates between 4 April and 15 May (maxima 13-18 April) at valley floor sites below 500 feet elevation; adults have been observed and collected on 5 dates between 28 April and 19 June (maxima 4-9 June) at foothill sites above 500 feet elevation (Halstead and Oldham 2000).

Historically, VELB occurred throughout the Central Valley. Currently, only a few selected sites within the region house populations. These sites include Solano and Sacramento county parks, at the McConnell State Recreation Area along the Merced River, and at sites on the Tule, Kaweah, Kings, and San Joaquin Rivers. On the Kaweah River, elderberry stems with VELB exit holes have been observed in riparian woodland habitat at Sequoia Riverlands Trust's Kaweah Oaks Preserve (East of Visalia), near the Charter Oak Tree along Charter Oak Drive, and north of Cutler Park on the St. Johns River (KAS Consultants 1993). VELB records from the Tule River come from Tule River Indian Reservation (Hansen 2005, 2005d) and the western edge of Porterville (one mile from the Porterville 5 acre Annex).

USFWS hopes to restore the beetle to its former habitat by protecting and reintroducing elderberry bushes (Steinhart 1990). In addition to the population of elderberry shrubs at the Kaweah Oaks Preserve, the elderberry plants growing along other channels on the delta of the Kaweah River, including scattered elderberry shrubs along the St. Johns River, comprise the largest known population of potential host plants for Valley elderberry longhorn beetle in this part of Tulare County.

This species may occur on the site, but was not documented during the surveys. It has been observed on the adjacent Kaweah Oaks Preserve.

J.2.d Hopping's blister beetle, (*Lytta hoppingi*)

Ducor is the only Quad in which this species is recorded.

This species generally occurs in foothill habitats in the western San Joaquin Valley; feeds on flowers from March through June.

No Hopping's blister beetles were found on the subject property. No habitat for this species exists on the subject property. There is a lengthy history (10 years or more) of disturbance at the subject property, leaving it poor habitat for most special status species and unlikely for any occurrences.

J.2.e Molestan blister beetle, (*Lytta molesta*)

Lindsay is the only Quad in which this species is recorded

This feeds on flowers in the summer and fall, mostly composites. San Joaquin Valley from Contra Costa County south to Tulare and Kern Counties

No Molestan blister beetles were found on the subject property. Little to **n**o habitat for this species exists on the subject property. There is a lengthy history (10 years or more) of disturbance at the subject property, leaving it poor habitat for most special status species and unlikely for any occurrences.

J.3 SPECIAL STATUS AMPHIBIANS AND REPTILES

J.3.a Western spadefoot (*Spea Hammondii*) DFG SSC

This species does not occur on the site. The site provides little to no habitat for this species. The nine quad CNDDB printout includes three occurrences of western spadefoot on the Monson, Woodlake and Ivanhoe quads. Anecdotal accounts not represented in CNDDB also document Western spadefoots on property with grassland/vernal pool habitat at the Sequoia Riverlands Trust's Herbert Wetland Prairie Preserve (Section 7 and Section 18, Township 20 South, Range 26 East), (B. Kamansky, field notes).

No Western spadefoots were found on the subject property. The sandy loam and loam soils on the subject property are not suitable habitat for Western spadefoots. No vernal pools occur on the subject property. Western spadefoots are found primarily in annual grasslands with vernal pools. **Western spadefoot is unlikely to occur anywhere on the subject property because there are no grasslands with vernal pools located anywhere on or adjacent to the subject property.** The closest suitable habitat for this species is noted in the above paragraph.

J.3.b California tiger salamander (*Ambystoma californense*) Fed Threatened, SSC

This species does not occur on the site. The site provides little to no habitat for this species.

The California tiger salamander records are from the Ivanhoe and Monson quads. Anecdotal accounts not represented in CNDDB document California tiger salamander can be found on or near the State of California's Stone Corral Ecological Reserve northeast of the subject site (B. Kamansky, field notes).

No California tiger salamanders were found on the subject property. The sandy loam and loam soils on the subject property are not suitable habitat for California tiger salamander. No vernal pools occur on the

subject property. California tiger salamander are found primarily in annual grasslands with vernal pools. **California tiger salamander is unlikely to occur anywhere on the subject property because there are no grasslands with vernal pools located anywhere on or adjacent to the subject property.** The closest suitable habitat for this species is noted in the above paragraph.

J.3.e Western pond turtle (*Clemmys marmorata*), DFG SSC
Records for this species occur in the Visalia Quadrangle in CNDDB. There are records from the adjacent Kaweah Oaks Preserve in 1988 and turtles likely occupy the site during high water years but are absent during most years.

No western pond turtles were found on the subject property. The proposed recharge basins and associated restoration will likely improve habitat for this species on the site.

J.4 SPECIAL STATUS BIRDS

J.4.a Swainson's hawk (*Buteo swainsoni*) (nesting) State Threatened

In the edited text on Swainson's hawk below, passages most pertinent to the subject property are highlighted in **bold** type:

Swainson's hawks prefer open habitats. These include: mixed and short grass grasslands with **scattered trees or shrubs for perching; dry grasslands**; **irrigated meadows**; and edges between two habitat types (ecotones). **Within California, Swainson's hawks favor agricultural areas, (particularly alfalfa fields),** juniper-sage flats, **riparian areas,** and **oak savannas**. **Over 95% of the nesting sites for this species are estimated to be on private lands. In the summer months, Swainson's hawks primarily eat insects, birds, and small mammals, occasionally taking reptiles, amphibians, and other invertebrates.**

During migration and in the winter, the hawk's diet consists mainly of insects. The hawks appear to exploit the abundance of prey made available due to the effects of certain farming activities. **Within California, Swainson's hawks begin nesting in late March and the young usually leave the nest by the end of July.** In the Central Valley they [typically] nest in riparian areas. This association with riparian habitat is most likely due to the lack of trees in intensively cultivated and industrially-developed areas. (To view a species profile for Swainson's hawk, see the Endangered Species Recovery Program (ESRP) online Web URL:

http://esrpweb.csustan.edu/speciesprofiles/profile.php?sp=busw).

In Tulare County and Kings County, the local range of this State threatened species is an approximately 625 square mile region bounded by Cross Creek (at Highway 99), 14½ Avenue just north of Nevada Avenue, Corcoran, Angiola, Alpaugh, Tipton, and Inside Creek (at Highway 137, Hansen 2005d)

The summary CNDDB printout (Table 1) includes a Swainson's hawk nest record on the Cairn's Corner Quad, approximately eight miles to the south of the subject property in 2009, a nesting Swainson's Hawk pair was observed on adjacent Kaweah Oaks Preserve.

In Tulare County and Kings County, more than 33 Swainson's hawk nests have been located in isolated trees or small groves of eucalyptus (18), valley oak (8), Fremont's cottonwood (4), Goodding's black willow (3), and deodar cedar (1). Nest trees stand in (or adjacent to) open agricultural land (16), along riparian corridors or irrgation channels (16), or at the edge of a tailwater pond (1). Foraging habitat surrounding the nest trees is chiefly alfalfa or other row crops (30) but also includes expanses of grassland and scrub habitat (3) (Hansen 2005d).

No Swainson's hawks were observed on the subject property during the October, 2011 field survey. Even though there are many trees on the property, Swainson's hawks do not regularly nest in the vicinity. No evidence exists that the area is used by Swainson's Hawks. Appropriate avoidance measures should be employed such as pre-construction surveys and construction monitoring for this and other raptors should be employed for this Project.

J.4.d Western burrowing owl (*Athene cunicularia*) SSC

Records for this species are on the Ivanhoe and Monson quads. This species prefers short grass prairie and other sparsely-vegetated areas where foraging is optimal. The grasslands on the site are denser than burrowing owl preferred habitat.

J.4.e Great blue heron (*Ardea herodias*)
The CNDDB record for this species occurs on the Woodlake quad where a rookery was located.

This species forages on the site, but nesting is unlikely at the survey time. Habitat restoration on the site may actually improve habitat for this species, which doesn't currently nest on adjacent Kaweah Oaks Preserve or on the Paregin Basin.

J.5 SPECIAL STATUS MAMMALS

J.5.a Pallid bat (*Antrozous pallidus*) DFG SSC

The Exeter Quad has records for this species. This species was not observed on the site. The site may provide some foraging habitat for this species.

Pallid bat is a California Species of Special Concern. Pallid bats occur in a variety of habitats including grasslands, shrublands, woodlands, and forests; they are most common in dry open habitats with rocky areas for roosting.

No pallid bats were observed during the field survey at the Paregin Basin Property. While this species could forage aerially over almost any habitat in the area, **typical pallid bat roosting sites are not available on the subject property.**

J.5.c Western mastiff bat (*Eumops perotis californicus*) DFG SSC

This species' records are from the Rocky Hill, Visalia and Woodlake quads.

This species was not observed on the site. The site may provide some habitat for this species. **No western mastiff bats were observed during the field survey at** the Paregin Basin Project site (**the subject property**). This species could forage aerially over almost any habitat in the area and a few **typical roosting sites are available on the subject property.**

J.5.g Tipton's Kangaroo rat (*Dypodomys nitroides nitratoides*) Fed Endangered, State Endangered

Two quads, the Cairn's Corner and the Woodville Quads have records for this species. This species' habitat consists of annual grasslands and alkali sink scrub. While annual grassland exists on the site, typical habitat for this species in this part of Tulare County wasn't widespread and there are only a few records for this species in Tulare County.

This species was not expected to occur on the site, because soil types and other critical features are absent on the subject property. This species is also very flood-intolerant and would likely have been extirpated in the frequent floods in the area, had it once been present nearby. **No Tipton's kangaroo rats were found on the subject property.**

J.5.h San Joaquin kit fox, *Vulpes macrotis mutica* Fed Endangered, State Threatened

Records of San Joaquin kit fox in this part of Tulare County come from eight quads: Cairns Corner, Exeter, Ivanhoe, Lindsay, Monson, Tulare Visalia and Woodlake. These widespread occurrences suggest foraging activity and not any denning activity.

ESRP text on San Joaquin kit fox below, passages most pertinent to the subject property are highlighted in **bold** type:

San Joaquin kit foxes inhabit grasslands and scrublands, many of which have been extensively modified. Types of modified habitats include…**grazed annual grasslands**. **Oak woodland**, alkali sink scrubland, and vernal pool and alkali meadow communities also provide habitat for kit foxes. Dens are scarce in areas with shallow soils because of the proximity to bedrock, high water tables, or impenetrable hardpan [or claypan] layers. Kit foxes are active year-round and are primarily nocturnal. (To view a species profile for San Joaquin kit fox, see the Endangered Species Recovery Program (ESRP) online Web URL: http://esrpweb.csustan.edu/speciesprofiles/profile.php?sp=vuma)

No San Joaquin kit fox were observed during this field survey. No evidence of San Joaquin kit fox denning activity was found anywhere on the subject property during this biological evaluation. No known kit fox dens (or confirmed kit fox den sign) were detected on any of the transect surveys. There was also no evidence of kit fox tracks or scat anywhere on the subject property.

The proposed Project should have no impact on denning habitat of this federally-and state-listed species.

San Joaquin kit fox is a special status animal species which is known to occur regionally. **San Joaquin kit fox may occasionally pass through the site while foraging** but, based on habitat characteristics and prey availability, **this species would not be expected to den on the subject property. The subject property does not provide important intrinsic habitat values unique to the area.** This part of Tulare County is not considered good denning habitat for this species. The most recent records of denning activity were in orange groves south of Exeter, in 1994. This species may make its way into this part of Tulare County infrequently. No dens have ever been detected at the adjacent Kaweah Oaks Preserve, nor have any individuals been sighted there over the last 25 years.

J.5.j American badger (*Taxadia taxus*), SCC
There is one quad with this species recorded: Porterville. There are anecdotal accounts of badgers denning and rearing young on the adjacent Kaweah Oaks Preserve.

The Paregin Basin Project will have a small effect on approximately 0.57 acres of grassland through levee construction and flood 22.97 acres of mixed grassland and riparian woodland. This will impact American badger habitat, but habitat will be available to this species many months out of the year when basins are not full. Also, this Project will restore 9.38 acres of riparian forest and seasonal wetland with native plants. This provides additional high-quality habitat for badgers and other species where poor quality or no habitat exists on previously farmed ground. **No American badgers were found on the subject property.** Habitat for this species exists on the subject property and this species could possibly utilize the site for foraging and denning. Appropriate avoidance measures such as pre-construction surveys and construction monitoring will provide adequate protection measures.

K. IMPACT ANALYSIS AND MITIGATION

K.1 SIGNIFICANCE CRITERIA

General plans, area plans, and specific projects are subject to the provisions of the California Environmental Quality Act (CEQA) to assess the impacts of proposed projects on the environment before they are constructed. For example, site development may require the removal of some or all of a site's existing vegetation. Animals associated with this vegetation could be destroyed or displaced**.** Plants and animals adapted to humans, roads, buildings, pets, etc. may replace those species which formerly occurred on the site. Plants and animals that are state and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed. These impacts may be considered significant or not. According to Guide to the California Environmental Quality Act (Remy et al. 1999), "Significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the Project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest. Specific project impacts to biological resources may be considered "significant" if they will:

- have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species (including threatened and endangered species) in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;

- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans,

policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;

- have a substantial adverse effect on federally protected wetlands as defined by Section 404 of The Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

- interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;

- conflict with the provisions of an adopted Habitat Conservation Plan, or other approved local, regional, or state habitat conservation plan (Remy et al. 1999).

Furthermore, CEQA Guidelines Section 15065 states that a project may trigger the requirement to make a "mandatory findings of significance" if "the Project has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare or threatened species, or eliminate important examples of the major periods of California history or prehistory."

In a Draft EIS/EIR prepared for a Project in Kings County by the United States Army Corps of Engineers (USACE), the document states,

> For this section [Section 4.12 Effects on Endangered Species], any project action which would affect the continued existence of an endangered or threatened species or a species of special concern is considered to be a significant adverse affect [*sic*].

If the Client can demonstrate that potential impacts to biological resources will be avoided then these impacts should be considered less-than-significant for the purpose of a CEQA review.

K.2 RELEVANT GOALS, POLICIES, AND LAWS

K.2.1 Threatened and Endangered Species

State and federal "endangered species" legislation has provided CDF&G and the USFWS with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Species listed as threatened or endangered under provisions of the state and federal endangered species acts, candidate species for such listing, state species of special concern, and some plants listed as endangered by the California Native Plant Society are collectively referred to as "species of special status". Permits may be required from both the CDF&G and USFWS if activities associated with a proposed project will result in the "take" of a listed species. "Take" is defined by the state of California as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" (California Fish and Game Code, Section 86). "Take" is more broadly defined by the federal Endangered Species Act to include "harm" (16 USC, Section 1532 (19), 50 CFR, Section 17.3). Furthermore, the CDF&G and the USFWS are responding agencies under the California Environmental Quality Act (CEQA). Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues to make project-specific recommendations for their conservation.

K.2.2 Migratory Birds

Birds of prey are also protected in California under provisions of the State Fish and Game Code, Section 3503.5,(1992), which states that it is "unlawful to take, possess, or destroy any birds in the Order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto".
Construction disturbances during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDF&G.

K.2.3 Birds of Prey

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K.2.4 Wetlands and Other "Jurisdictional Waters"

Natural drainage channels and wetlands are considered "Waters of the United States" (hereafter referred to as "jurisdictional waters"). The U.S. Army Corps of Engineers (USACE) regulates the filling or grading of such waters under the authority of Section 404 of The Clean Water Act (Wetland Training Institute, Inc. 1990). The extent of jurisdiction within drainage channels is defined by "ordinary high water marks" on opposing channel banks. Wetlands are habitats with soils that are intermittently or permanently saturated, or inundated. The resulting anaerobic conditions select for plant species known as hydrophytes that show a high degree of fidelity to such soils. Wetlands are identified by the presence of hydrophytic vegetation, hydric soils (soils saturated intermittently or permanently saturated by water), and wetland hydrology according to methodologies outlined in the 1987 Corps of Engineers Wetlands Delineation Manual (USACE 1987).

All activities that involve the discharge of fill into jurisdictional waters are subject to the permit requirements of the USACE (Wetland Training Institute, Inc. 1991). Such permits are typically issued on the condition that the applicant agrees to provide mitigation that results in no net loss of wetland functions or values. No permit can be issued until the Regional Water Quality Control Board (RWQCB) issues a certification (or waiver of such certification) that the proposed activity will meet state water quality standards. The RWCQB is also responsible for enforcing National Pollution Discharge Elimination System (NPDES) permits, including the General Construction Activity Storm Water Permit. All projects requiring federal money must also comply with Executive Order 11990 (Protection of Wetlands).

The California Department of Fish and Game has jurisdiction over the bed and bank of natural drainages according to provisions of Section 1601 and 1603 of the California Fish and Game Code (California Department of Fish and Game 1995). Activities that would disturb these drainages are regulated by the CDF&G via a Streambed Alteration Agreement. Such an agreement typically stipulates that certain measures will be implemented which protect the habitat values of the drainage in question.

K.3 ENVIRONMENTAL IMPACT/MITIGATION

K.3.1 Impacts on Special Status Plant Species?
Impact

No impacts to special status plant species are anticipated from this Project.

Avoidance
Because no impacts to Special Status plant species are anticipated, no avoidance is required.

Minimization

Because no impacts to Special Status plant species are anticipated, no minimization is required.

Compensation

No compensation is required.

Monitoring
The Client plans to avoid all possible impacts, minimize the small impacts to natural habitats and mitigate all avoidable disturbances by replanting native species, restoring poor quality habitat and these improvements will need to be monitored to provide adaptive responses to challenges and opportunities.

K.3.2 Impacts on Special Status Animal Species?
Will the Project have a substantial adverse effect, either directly or through habitat modifications, on any plant species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service

Impact
Forty (40) Special Status Species are known to occur in the Project vicinity. Twenty-four (24) Special Status animal species are known to occur in the general vicinity of the Paregin Basin Project Site (the subject property). Twenty of these species are found in CNDDB, while four were added from KEC field notes from the time period 2004-2011 in the Poject vicinity, primarily on the adjacent Kaweah Oaks Preserve. Field surveys conducted during this biological evaluation did not document the presence of any special status animal species on the subject property, but American Badgers are known to den on adjacent Kaweah Oaks Preserve.

Avoidance
Habitat for two Special Status animal species, American Badgers and Swainson's hawks was found on the subject property, and the site provides habitat for other protected species such as raptors (detailed below). The site provides no habitat for any other special status animal species, except perhaps kit fox foraging habitat, though no kit foxes have

been observed in the immediate vicinity in at least the last 25 years. The Project will have only small, insignificant and temporary impacts to regional populations of these species. **Impacts to all potential badger individuals and dens located in the Project area need to be avoided as well as potential impacts to nesting raptors.** Since habitat for Special Status animal species occurs on the subject property, avoidance, minimization and mitigation measures are warranted.

Since take of badgers and raptors as a result of any project-related construction or earth-moving work would be considered a significant environmental impact, impacts to all badgers and dens and raptors in nest trees located in the Project area will need to be avoided. In order to avoid impacts to animals, the Clients should take the following three steps:

1. Client should initiate informal consultation with DFG and possibly Tulare County, if applicable. This means that the Client will need to communicate with and coordinate its activities with a DFG biologist who is specifically assigned to deal with these issues in this part of California. That DFG biologist can clarify, for KEC or Client's engineer, if other measures are required for avoidance.

2. During this biological evaluation, KEC examined the subject property for any badgers or associated dens and raptors. No badgers were detected, but a barn owl was observed. However, badgers and other raptor species could move into the Project impact areas (flooded areas, or areas where soil will be disturbed for levees). Therefore, if the Client decides to pursue the "avoidance" approach, pre-construction surveys and construction monitoring are required. This level of survey detail will be required in order for the Client to complete the next step (step 3) in avoidance.

3. Perform construction during a time when the species are less likely to be disturbed (see also section under raptors below). Follow all disturbance activities with native species revegetation.

During any construction activities, any badger dens and raptors will need to be designated as an avoidance area that will need to be protected from disturbance or monitored avoided and/or excavated in coordination with DFG. This avoidance area will be clearly defined by erecting exclusionary fences or flagging with orange geo-webbing nor ribbon prior to construction. Any construction-related disturbance within the buffer zone will be minimized and promptly restored to its original condition following construction. DFG will be provided with a map and written details identifying avoidance areas.

If avoidance measures are implemented appropriately no mitigation for this special status species would be anticipated as a result of the proposed Project. However, in the event that badgers or badger dens would be impacted, then mitigation, compensation and consultation will be needed. The Client has expressed a desire to minimize impacts and to follow the intent of the law to ensure compliance on this Project.

Minimization
Minimization measures assume that some level of impact will occur (that some level of disturbance occurs). Under this approach, the Client will still need to continue consultation with DFG or County. As the Client initiates this process they can offer to perform the following measures as part of their permitting process with the Agencies in order to help minimize impacts to the badgers and raptors:

- Revegetate disturbed areas with native species from on the site or adjacent areas;
- Conduct employee education programs to inform workers about sensitive biological resources they may encounter and what they should do to minimize potential impacts.

Monitoring
While construction occurs, a biologist will need to be onsite to educate workers, monitor compliance, best management practices and to identify and protect natural resources, including Special Status Species. The monitor will be responsible for ensuring that appropriate measures are taken to prevent disturbance of core avoidance areas. Any unauthorized take of Special Status species will be immediately reported to DFG by the monitor. The monitor will also notify the Project Coordinator who will stop work until corrective measures are implemented.

The designated Project Coordinator and the designated monitor for this Project will need to be established if Client decides to pursue mitigation and monitoring.

The Client expressed interest in also restoring any disturbed areas and restoring grassland, oak woodland. The restoration site will need to be monitored for a period of time in accordance with DFG guidelines to document and record progress towards restoration and enhancement. The applicant must state, in the mitigation plan, which monitoring schedule will be followed.

Mitigation
Although San Joaquin kit foxes been reported in the CNDDB, the site is not considered good kit-fox habitat and kits foxes do not frequent the

area or nest anywhere in the vicinity. Swainson's hawks could forage in the adjacent agriculture fields to the south and nest on the site. Preconstruction surveys will be conducted before any ground-disturbing activities are to begin. If the surveys detect the presence of listed species or migratory birds, then the Project will be paused until appropriate measures or consultation with the USFWS/DFG can take place.

If preconstruction surveys find that no special-status species are present within the Project area, then the Project may proceed with monitors on site. KDWCD would implement the following environmental protection measures to reduce environmental consequences associated with the Project.

Environmental Protection Measures
Biological Resources United States Fish and Wildlife Service (USFWS) approved pre-construction protocol level surveys for San Joaquin kit fox shall be conducted no fewer than 14 days and no more than 30 days prior to the onset of any ground-disturbing activity (USFWS 1999). KDWCD will follow standardized Recommendations for Protection of the San Joaquin kit fox prior to and during ground disturbance (USFWS 1999). These surveys will also detect any American badger activity in the area and recommend appropriate avoidance and minimization measures.

If activities take place during avian nesting season (March 1 - August 1), a qualified biologist will conduct nest surveys within a 500-ft radius of the construction site, with an emphasis on Swainson's hawks (*Buteo swainsoni*) (USFWS 1994). Appropriate measures shall be determined in consultation with the California Department of Fish and Game (DFG) in the event an active nest is located in an area subject to disturbance. No restrictions are required for avian species for construction activities that occur during the non-breeding season (August 1 through February 28) or after the young have fledged.

K.3.3. Adverse Effects on Riparian Habitat or other Sensitive Natural Communities?
Will the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Impact

Most of the site is riparian woodland and grassland. The Paregin Basin Project will have a small effect on approximately 0.57 acres of grassland through levee construction and flood 22.97 acres of mixed grassland and riparian woodland. This will impact American badger habitat, but habitat

will be available to this species many months out of the year when basins are not full. Also, this Project will restore 9.38 acres of riparian forest and seasonal wetland with native plants and trees, forbs and grasses. This provides additional high-quality habitat for badgers and other species where poor quality or no habitat exists on previously farmed ground with invasive species. The Project will also result in temporary disturbance to 0.145 acres of wetland in the stream channel at two locations. All ground disturbances will be followed by revegetation with native species and no trees or large shrubs or riparian vegetation will be removed. Therefore, this Project **will not result in substantial adverse effect** on special status species.

Mitigation
The Kaweah Delta Water Conservation District plans to revegetate all disturbed areas from levee construction with native plants from on the site or directly adjacent to the site. The Project includes restoration of 9.38 acres of riparian forest and associated native species.

The following species are appropriate for revegetation efforts and restoration of the riparian forest:

Trees
Valley oak (*Quercus lobata*)
Western sycamore (*Plantanus racemosa*)
Sandbar willow (*Salix sp*)
Arroyo willow (*Salix* sp.)
Fremont's cottonwood (*Populus fremontii*)
Buttonwillow (*Cephalanthus occidentalis*)

Grasses and Forbs
Creeping wildrye (*Leymus triticoides*)
Saltgrass (*Distichlis spicata*)
Alkali sacaton (*Sporobolus aeroides*)
Barbar sedge (*Carex barbarae*)
Gumplant (*Grindelia camporum*)
Goldenrod (*Euthamia californica*)
California coneflower (*Anemopsis californica*)

K.3.4. Adverse Effects on Federally Protected Wetlands?
Will the Project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Impact

No marshes or vernal pools occur on the property, but creeks cross the property.

The flooding 22.97 acres of mixed grassland and riparian woodland will create seasonal wetland habitat and this will provide a net benefit to species that are associated with these habitats. The Project will also result in temporary disturbance to 0.145 acres of wetland in the stream channel at two locations.

Mitigation

This Project will restore 9.38 acres of riparian forest (6.01) and seasonal wetland (3.37 acres) with native plants and trees. This provides additional high-quality habitat where poor quality or no habitat exists on previously farmed ground with invasive species. All ground and wetland disturbances will be followed by revegetation with native species and no trees or large shrubs or riparian vegetation will be removed. Therefore, this Project **will not result in substantial adverse effect** on wetlands given the restoration, avoidance and minimization measures.

K.3.5. Interference with Wildlife Movement and Wildlife Corridors? Will the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Impact
The Project site is on the Oaks to Tules riparian corridor, but the proposed actions have limited scope and should not obstruct wildlife movement.

There are already two water control structures upstream of the Project site, one at 0.7 miles from the Project Site and one at 2.7 miles from the Project Site. The proposed water control structure is called an overshot gate and this type of structure can allow overflow while retaining water and adjustable to the centimeter and thus is unlikely to constrict fish movement along this reach of the stream.

A considerable amount of open space lands in the vicinity of the subject property will continue to be used by native species for home range and dispersal movements. Therefore, this Project will result in a less than significant effect on regional wildlife movements.

Mitigation

Because this Project will result in a less than significant effect on regional wildlife movements, mitigation measures are not considered warranted.

K.3.6. Substantial Reductions in Fish & Wildlife Habitat?
Will the Project reduce substantially the habitat of a fish or wildlife species, including causing a fish or wildlife population to drop below self-sustaining levels or threaten to eliminate an animal community?

Impact

Most of the site is riparian woodland and grassland. The Paregin Basin Project will have a small effect on approximately 0.57 acres of grassland through levee construction and flood 22.97 acres of mixed grassland and riparian woodland. This will impact American badger habitat, but habitat will be available to this species many months out of the year when basins are not full. Also, this Project will restore 9.38 acres of riparian forest and seasonal wetland with native plants and trees. This provides additional high-quality habitat for badgers and other species where poor quality or no habitat exists on previously farmed ground with invasive species. The Project will also result in temporary disturbance to 0.145 acres of wetland in the stream channel at two locations. All ground disturbances will be followed by revegetation with native species and no trees or large shrubs or riparian vegetation will be removed. Therefore, this Project **will not result in substantial reduction in fish or wildlife habitat**.

Mitigation

Because this Project will have a less than significant effect on habitat for common native wildlife occurring in this portion of Tulare County, mitigation measures for common species are not considered warranted. No fish or wildlife populations are likely to drop below self-sustaining levels because of Project-related activities. The proposed Project does not threaten to eliminate any animal community, so mitigation measures for animal communities are not warranted.

K.3.7 Conflicts with Local Policies or Ordinances?
Will the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Impact

The Project appears to be consistent with the General Plan Policies of

Tulare County that are relevant to natural resource protection. No County ordinances protect the types of biological resources found on the subject property, except riparian areas, which will experience a net increase in acreage. Therefore, as long as the Applicant consults with DFG and any other agencies on potential impacts to badgers, then the Project will not be in conflict with Tulare County General Plan policies or natural resource protection ordinances.

Mitigation

Because this Project appears to be consistent with the General Plan Policies of Tulare County relevant to natural resource protection, mitigation measures further protecting biological resources are not considered warranted.

K.3.8 Conflicts with Adopted Conservation Plans?
Will the Project conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan?

Impact

Only three HCPs, and no NCCP, or conservation plan have been instituted (or proposed) for Tulare County. Kaweah Delta Water Conservation District has an HCP in process and this Project is generally consistent with the HCP in progress. Therefore, the Project will not conflict with any such plan.

Mitigation

None required.

K.3.9 Degradation of Water Quality?
Will the Project result in the degradation of water quality in seasonal creeks, reservoirs and downstream waters?

Impact

The excavation of loose soils often creates conditions conducive to erosion and the concomitant deposition of sediment in adjacent drainages. The KDWCD proposes to protect water quality by restoring and improving native species where disturbances near creeks occur. Potential Project impact to water quality in seasonal creeks, reservoirs and downstream waters will be less than significant if these measures are implemented.

Mitigation

Because the Project will result in a less than significant impact on water quality in nearby creeks and rivers, mitigation measures are not considered warranted.

K.3.10 Disturbance to Active Raptor Nests?
Will construction activities during Project implementation disturb any active raptor nests?

Impact
The subject property currently does provide nesting and foraging habitat habitat for raptor species such as red-tailed hawks. Surveys may be required to avoid any raptor impacts if construction occurs during breeding season.

Avoidance
The Migratory Bird Treaty Act (MBTA) protect raptors from disturbances. Swainson's hawk are found in the grasslands and agricultural lands of California's Central Valley during the spring and summer. They exhibit a high degree of nest site fidelity and nests are constructed in trees, and include Fremont cottonwood (*Populus fremontia*), willow (*Salix* spp.), Valley oak (*Quercus lobata*), and eucalyptus (*Eucalyptus* spp.) (Bloom 1980). The nesting season for Swainson's hawk occurs from March 1 through September 15. This species spends large amounts of time soaring over grasslands and agricultural fields in the Central Valley and can travel up to 29 kilometers to forage for prey (Estep 1989). Swainson's hawks will forage for prey in row crops (Estep 1989) on small mammals, insects, and birds.

Several CNDDB-recorded occurrences indicate Swainson's hawk occur within a 10 mile radius of the Project area (CNDDB 2011 and B. Kamansky field notes) and other raptors occur on the site.

Preconstruction surveys will be required to identify and avoid raptors and raptor nest as well as other species (see above). During any construction activities, any badger dens and raptors will need to be designated as an avoidance area that will need to be protected from disturbance or monitored avoided and/or excavated in coordination with DFG. This avoidance area will be clearly defined by erecting exclusionary fences or flagging with orange geo-webbing nor ribbon prior to construction. Any construction-related disturbance within the buffer zone will be minimized and promptly restored to its original condition following construction. DFG will be provided with a map and written details identifying avoidance areas.

Mitigation

If avoidance measures are implemented appropriately no mitigation for raptors would be anticipated as a result of the proposed Project. However, in the event that badgers or badger dens would be impacted, then mitigation, compensation and consultation will be needed. The Client has expressed a desire to minimize impacts and to follow the intent of the law to ensure compliance on this Project.

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ANNOTATED CHECK LIST OF NATIVE AND INTRODUCED PLANTS OBSERVED ON 80 ACRES DURING BIOLOGICAL EVALUATION OF POTENTIAL IMPACTS TO SPECIAL STATUS SPECIES (ENDANGERED, THREATENED, AND CANDIDATE SPECIES AND SPECIES OF SPECIAL CONCERN) AND NATURAL HABITAT AREAS ON THE PAREGIN BASIN PROJECT SITE IN CENTRAL, TULARE COUNTY, CALIFORNIA

Taxonomic nomenclature (except for several common names) and sequence of major taxonomic groups follows Hickman (1993). Within major taxa, Family and Genus names are listed alphabetically rather than in phylogenetic sequence.

Common names are principally those used by Abrams (1923-1947), Cooperative Extension (1978), Crampton (1974), Munz and Keck (1968), Niehaus (1976), and Texas A&M University Bioinformatics Working Group Biota of North America Program (1997).

Common Name	*Scientific Name*	Class	Plant Family	Native?
Mexican Elderberry	*Sambucus nigra L. subsp. canadensis (L.) Bolli*	dicot	Adoxaceae	Y
Pigweed, red-stemmed	*Amaranthus retroflexus L.*	dicot	Amaranthaceae	Y
Lamb's Quarters	*Chenopodium album L.*	dicot	Amaranthaceae	Y
Goosefoot	*Chenopodium berlandieri* Moq.	dicot	Amaranthaceae	Y
Bur-chervil	*Anthriscus caucalis* M. Bieb.	dicot	Apiaceae	N
Poison Hemlock	*Conium maculata L.*	dicot	Apiaceae	N
Narrow-Leaf Milkweed	*Asclepias fascicularis Decne.*	dicot	Apocynaceae	Y
Mugwort, California	*Artemesia douglasiana Besser.*	dicot	Asteraceae	Y
Mule fat	*Baccharis salicifolia (Ruiz & Pav.) Pers.*	dicot	Asteraceae	Y
Yellow Star Thistle	*Centaurea solstitialis L*	dicot	Asteraceae	N

Pineapple-weed	*Chamomilla suaveolens (Pursh) Rydb.*	dicot	Asteraceae	N
Bull Thistle	*Cirsium vulgare* (Savi) Ten	dicot	Asteraceae	N
Horseweed	*Conyza bonariensis (L.) Cronquist*	dicot	Asteraceae	Y
Horseweed	*Conyza canadensis (L.) Cronquist*	dicot	Asteraceae	N
California Goldenrod	*Euthamia occidentalis* Nutt.	dicot	Asteraceae	Y
Cudweed	*Gnaphalium lutteo-album* L.	dicot	Asteraceae	N
Gumweed	*Grindelia camporum* var. *camporum* E. Greene	dicot	Asteraceae	Y
Sunflower, annual	*Helianthus annuus L.*	dicot	Asteraceae	Y
Spikeweed	*Centromadia pungens*	dicot	Asteraceae	Y
Telegraphweed	*Heterotheca grandiflora Nutt.*	dicot	Asteraceae	N
Prickly Lettuce	*Lactuca serriola L.*	dicot	Asteraceae	N
Groundsel	*Senecio vulgaris* L.	dicot	Asteraceae	N
Milk Thistle	*Silybum marianum (L.) Gaertner.*	dicot	Asteraceae	N
Prickly Sowthistle	*Sonchus asper (L.) Hill.*	dicot	Asteraceae	N
Stephanomeria	*Stephanomeria exigua Nutt.*	dicot	Asteraceae	Y
Dandeilion	*Taraxacum officinale F. H. Wigg.*	dicot	Asteraceae	N
Cocklebur	*Xanthium strumarium* L.	dicot	Asteraceae	Y
Fiddleneck	*Amsinckia lycopsoides Lehm.*	dicot	Boraginaceae	Y
Heliotrope - Alkali	*Heliotropium curassavicum L.*	dicot	Boraginaceae	Y
Popcorn Flower	*Plagiobothrys canescens Benth.*	dicot	Boraginaceae	Y
Mustard, wild	*Brassica kaber* (DC.) L.C. Wheeler.	dicot	Brassicaceae	N
Mustard, black	*Brassica nigra (L.) W. D. J. Koch*	dicot	Brassicaceae	N

Shepherd's Purse	*Capsella bursa-pastoris (L.) Medikus.*	dicot	Brassicaceae	N
Mustard, hedge	*Sisymbrium officinale L.*	dicot	Brassicaceae	N
Chickweed	*Stellaria media* (L.) Villars.	dicot	Caryophyllaceae	N
Bassia -5 hook	*Bassia hyssopifolia* (Pallas) Kuntze.	dicot	Chenopodiaceae	N
Wild watermelon	*Citrullus colocynthis (L.) Schrad.*	dicot	Cucurbitaceae	N
Dodder	*Cuscuta salina* Engelm.	dicot	Cuscutaceae	Y
Nutsedge	*Cyperus esculentus* L.	dicot	Cyperaceae	N
Tule rush	*Scirpus acutus*	monocot	Cyperaceae	Y
Scouring Rush	*Eleocharis montevidensis Kunth*	dicot	Equisetaceae	Y
Horsetail rush	*Equisetum hymenale L*	dicot	Equisetaceae	Y
Dove Weed	*Croton setigerus Hook.*	dicot	Euphorbiaceae	Y
Bush Lupine	*Lupinus albifrons* Benth	dicot	Fabaceae	Y
Lupine, Miniature	*Lupinus bicolor Lindley.*	dicot	Fabaceae	Y
Burclover	*Medicago polymorpha* L.	dicot	Fabaceae	N
Sweet clover	*Melilotus officinalis (L.) Pall.*	dicot	Fabaceae	N
Vetch	*Vicia sativa L.*	dicot	Fabaceae	N
Valley Oak	*Quercus lobata Née*	dicot	Fagaceae	Y
Filaree (Storksbill)	*Erodium cicutarium* (L.) L'Her.	dicot	Geraniaceae	N
Henbit	*Lamium amplexicaule* L.	dicot	Lamiaceae	N
Horehound	*Marrubium vulgare L.*	dicot	Lamiaceae	N
Wild mint	*Mentha arvensis L. var. villosa*	dicot	Lamiaceae	N
Spearmint	*Mentha spicata L. var. spicata.*	dicot	Lamiaceae	N
Hedgenettle	*Stachys albens* A. Gray.	dicot	Lamiaceae	Y
Dwarf nettle	*Urtica urens* L.	dicot	Lemnaceae	N

Ammania	*Ammania coccinea* Rottb.	dicot	Lythraceae	Y
Fig	*Ficus carica* L.	dicot	Moraceae	N
Panicled Willow Herb	*Epilobium brachycarpum C. Presl.*	dicot	Onagraceae	Y
Poke Weed (salad)	*Phytolacca americana L*	dicot	Phytolacaceae	N
Water Speedwell	*Veronica anagallis-aquatica L.*	dicot	Plantaginaceae	Y
California Sycamore	*Platanus racemosa* Nutt.	dicot	Platanaceae	Y
Wild oats	*Avena fatua* L.	monocot	Poaceae	N
Ripgut Brome	*Bromus diandrus* Roth.	monocot	Poaceae	N
Soft Chess	*Bromus hordeaceus* L.	monocot	Poaceae	N
Bermuda Grass	*Cynodon dactylon* (L.) Pers.	monocot	Poaceae	N
Saltgrass	*Distichlis spicata* (L.) E. Greene.	monocot	Poaceae	Y
Barnyardgrass	*Echinochloa crus-galli* (L.) Beauv.	monocot	Poaceae	Y
Hare Barley	*Hordeum leporinum* Link	monocot	Poaceae	N
Creeping Rye Grass	*Leymus triticoides* (Buckley) Pilger.	monocot	Poaceae	Y
Rye, annual	*Lolium multiflorum Lam.*	monocot	Poaceae	N
Witch Grass	*Panicum capillare* L.	monocot	Poaceae	Y
Dallisgrass	*Paspalum dilatatum* Poiret.	monocot	Poaceae	N
Bluegrass	*Poa annua L.*	monocot	Poaceae	N
Johnson Grass	*Sorghum halapense* (L.) Pers.	monocot	Poaceae	N
Smartweed	*Polygonum lapathifolium L.*	dicot	Polygonaceae	Y
Curly Dock	*Rumex crispus* L.	dicot	Polygonaceae	Y
Virgin's Bower	*Clematis ligusticifolia Nutt.*	dicot	Ranunculaceae	Y
Himalayan Berry	*Rubus discolor Weihe & Nees*	dicot	Rosaceae	N

Buttonwillow	*Cephalanthus occidentalis* L. var. *californicus* Benth.	dicot	Rubiaceae	Y
Bedstraw	*Galium aparine* L.	dicot	Rubiaceae	Y
Cottonwood, Fremont	*Populus fremontii* S. Watson	dicot	Salicaceae	Y
Willow, White	*Salix exigua Nutt.*	dicot	Salicaceae	Y
Willow, Black	*Salix gooddingii C. Ball.*	dicot	Salicaceae	Y
Willow, Arroyo	*Salix lasiolepis Benth.*	dicot	Salicaceae	Y
Monkeyflower	*Mimulus guttatus DC.*	dicot	Schrophulariaceae	Y
Woolly Mullein	*Verbascum thapsus L.*	dicot	Schrophulariaceae	Y
Chinese Tree of Heaven	Ailanthus altissima (Mill.) Swingle	dicot	Simaroubaceae	N
Datura	*Datura stramonium L.*	dicot	Solanaceae	N
Jimsonweed	*Datura wrightii Regel*	dicot	Solanaceae	Y
Tobacco, Indian	*Nicotiana acuminata Hook var. multiflora (Phillipi) Reiche.*	dicot	Solanaceae	Y
Tobacco, Tree	*Nicotiana glauca Graham.*	dicot	Solanaceae	N
Nightshade	*Solanum americanum Miller.*	dicot	Solanaceae	N
Stinging Nettle	*Urtica dioica L. var. holosericea. (Nutt.) Thorne.*	dicot	Urticaceae	Y
Wild Grape	*Vitis californica Benth.*	dicot	Vitaceae	Y
Puncture vine	*Tribulus terrestris L.*	dicot	Zygophyllaceae	N

PLANT SPECIES STATUS

TOTAL Number of NATIVE Species:	**48**
TOTAL Number of INTRODUCED Species:	**48**
GRAND TOTAL OF ALL PLANT SPECIES:	**96**

ANNOTATED CHECK LIST OF VERTABRATE ANIMALS
OBSERVED ON 80 ACRES
DURING BIOLOGICAL EVALUATION
OF POTENTIAL IMPACTS TO SPECIAL STATUS SPECIES
(ENDANGERED, THREATENED, AND CANDIDATE SPECIES
AND SPECIES OF SPECIAL CONCERN)
AND NATURAL HABITAT AREAS
ON THE PAREGIN BASIN PROJECT SITE
IN CENTRAL,
TULARE COUNTY, CALIFORNIA

Species observed includes species which were identified by tracks, dens, vocalizations, and other sign.

CSC = California State Species of Special Concern

I = an Introduced (aka invasive, exotic or non-native) species

Bird families and species are listed in phylogenetic order based on the Check-list of North American Birds: Species of Birds of North America from the Arctic through Panama, Including the West Indies and Hawaiian Islands. 7th ed. (American Ornithologist's Union, 1998).

Class: **AVES. Birds**

Family: **CORVIDAE. Crows**

Aphelocoma californica		Western scrub-jay
Corvus corax		Common Raven
Icterus bullock		Bullock's Oriole

Family: **Hawks**

Cathartes aura		Turkey Vulture
Buteo jamaicensis		Red-tailed Hawk

Family: **FACONIDAE. Falcons**

Falco sparverius		American Kestrel

Family: **STURNIDAE. Starlings**

Sturnus vulgaris	I	European starling

Family: **FRINGILLIDAE. Finches**

Carpodacus mexicanus		House finch
Carduelis tristis		American goldfinch
Carduelis psaltria		Lesser Goldfinch

Family: **PASSERIDAE. Weavers**

Passer domesticus	I	house sparrow

Baeolophus inornatus	Oak Titmouse
Tachycineta bicolor	Tree Swallow

Family: **Tyrant Flycatchers**

Myiarchus cinerascens	Ash-throated Flycatcher
Tyrannus verticalis	Western Kingbird
Sayornis nigricans	Black Phoebe

Family:

Callipepla californica	California Quail
Zenaida macroura	Mourning Dove

Family:

Melanerpes formicivorus	Acorn Woodpecker

Family:

Troglodytes aedon	House Wren

Family:

Ardea herodias	Great Blue Heron

Class: **MAMMALIA. Mammals**
Order: **RODENTIA. Squirrels, Rats, Mice, and Relatives**

Family: **GEOMYIDAE. Pocket Gophers**

Thomomys bottae	Botta's pocket gopher

VERTEBRATE SPECIES OBSERVED ON THE PAREGIN BASIN PROJECT SITE

AMPHIBIANS:	**0**
REPTILES:	**0**
BIRDS:	**21**
MAMMALS:	**1**

TOTAL NUMBER OF VERTEBRATE OBSERVED : 22

APPENDIX A

PHOTOGRAPHS

Photograph of the project site, near where the structure of the recharge basin.

Photograph of the enhancement area where previously farmed ground, heavily disturbed and dominated by yellow star thistle. This site will be planted with oaks and other riparian and wetland vegetation.

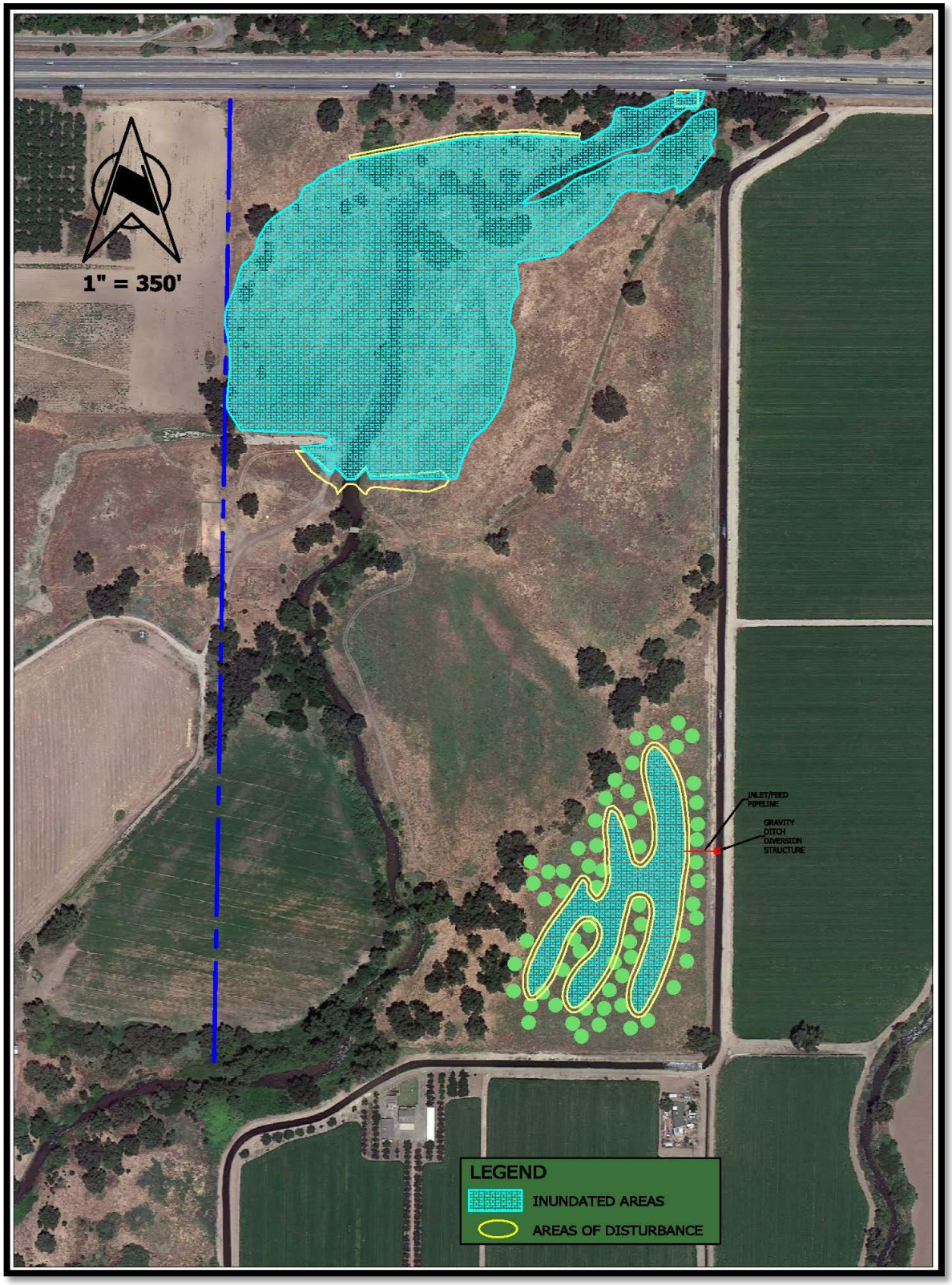
A photograph of the project area that will be seasonally flooded.

Photograph looking west where the water control structure will be installed.

APPENDIX B

MAPS

Site map



Bobby Kamansky, principal biologist
conservation planning • ecological restoration • species inventory • cartography/GIS • fire management • interpretive services
p.o. box 731 • three rivers, california 93271 • cell: 559.287.3311 • email: bobinator1@hotmail.com

Appendix B
Air Quality Monitoring Data

Paregien Basin Project

Tulare County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Other Non-Asphalt Surfaces	1	Acre

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	7	**Precipitation Freq (Days)**	51		

1.3 User Entered Comments

Project Characteristics -

Land Use - The project involves the construction of a four acre groundwater recharge/stormwater control basin.

Construction Phase - Project construction will take approximately five months.

Off-road Equipment - Project construction would use 2 loaders and 2 track laying dozers.

Off-road Equipment - 1 scraper and 2 excavators would be used during demolition.

Off-road Equipment -

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2013	0.13	1.04	0.54	0.00	0.00	0.05	0.05	0.00	0.05	0.05	0.00	122.48	122.48	0.01	0.00	122.70
2014	0.02	0.17	0.13	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.00	20.12	20.12	0.00	0.00	20.16
Total	**0.15**	**1.21**	**0.67**	**0.00**	**0.00**	**0.06**	**0.06**	**0.00**	**0.06**	**0.06**	**0.00**	**142.60**	**142.60**	**0.01**	**0.00**	**142.86**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2013	0.13	1.04	0.54	0.00	0.00	0.05	0.05	0.00	0.05	0.05	0.00	122.48	122.48	0.01	0.00	122.70
2014	0.02	0.17	0.13	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.00	20.12	20.12	0.00	0.00	20.16
Total	**0.15**	**1.21**	**0.67**	**0.00**	**0.00**	**0.06**	**0.06**	**0.00**	**0.06**	**0.06**	**0.00**	**142.60**	**142.60**	**0.01**	**0.00**	**142.86**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Waste						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Waste						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Demolition - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.06	0.53	0.26	0.00		0.02	0.02		0.02	0.02	0.00	55.79	55.79	0.00	0.00	55.90
Total	**0.06**	**0.53**	**0.26**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**55.79**	**55.79**	**0.00**	**0.00**	**55.90**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.77	0.00	0.00	0.77
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.77**	**0.77**	**0.00**	**0.00**	**0.77**

3.2 Demolition - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.06	0.53	0.26	0.00		0.02	0.02		0.02	0.02	0.00	55.79	55.79	0.00	0.00	55.90
Total	**0.06**	**0.53**	**0.26**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**55.79**	**55.79**	**0.00**	**0.00**	**55.90**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.77	0.00	0.00	0.77
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.77**	**0.77**	**0.00**	**0.00**	**0.77**

3.3 Site Preparation - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.04	0.33	0.15	0.00		0.01	0.01		0.01	0.01	0.00	45.86	45.86	0.00	0.00	45.93
Total	**0.04**	**0.33**	**0.15**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**45.86**	**45.86**	**0.00**	**0.00**	**45.93**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.80	0.00	0.00	0.81
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.80**	**0.80**	**0.00**	**0.00**	**0.81**

3.3 Site Preparation - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.04	0.33	0.15	0.00		0.01	0.01		0.01	0.01	0.00	45.86	45.86	0.00	0.00	45.93
Total	**0.04**	**0.33**	**0.15**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**45.86**	**45.86**	**0.00**	**0.00**	**45.93**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.80	0.00	0.00	0.81
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.80**	**0.80**	**0.00**	**0.00**	**0.81**

3.4 Grading - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.18	0.12	0.00		0.01	0.01		0.01	0.01	0.00	18.81	18.81	0.00	0.00	18.85
Total	**0.02**	**0.18**	**0.12**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**18.81**	**18.81**	**0.00**	**0.00**	**18.85**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.44	0.00	0.00	0.44
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.44**	**0.44**	**0.00**	**0.00**	**0.44**

3.4 Grading - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.18	0.12	0.00		0.01	0.01		0.01	0.01	0.00	18.81	18.81	0.00	0.00	18.85
Total	**0.02**	**0.18**	**0.12**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**18.81**	**18.81**	**0.00**	**0.00**	**18.85**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.44	0.00	0.00	0.44
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.44**	**0.44**	**0.00**	**0.00**	**0.44**

3.4 Grading - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.17	0.13	0.00		0.01	0.01		0.01	0.01	0.00	19.67	19.67	0.00	0.00	19.71
Total	**0.02**	**0.17**	**0.13**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**19.67**	**19.67**	**0.00**	**0.00**	**19.71**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.45	0.00	0.00	0.45
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.45**	**0.45**	**0.00**	**0.00**	**0.45**

3.4 Grading - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.17	0.13	0.00		0.01	0.01		0.01	0.01	0.00	19.67	19.67	0.00	0.00	19.71
Total	**0.02**	**0.17**	**0.13**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**19.67**	**19.67**	**0.00**	**0.00**	**19.71**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.45	0.00	0.00	0.45
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.45**	**0.45**	**0.00**	**0.00**	**0.45**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NaturalGas Mitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Other Non-Asphalt Surfaces	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Other Non-Asphalt Surfaces	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					0.00	0.00	0.00	0.00
Unmitigated					0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Other Non-Asphalt Surfaces	0 / 0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Other Non-Asphalt Surfaces	0 / 0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					0.00	0.00	0.00	0.00
Unmitigated					0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Other Non-Asphalt Surfaces	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Other Non-Asphalt Surfaces	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

9.0 Vegetation

Appendix C
Greenhouse Gas Emissions Computations

Job No. 122513V1

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MEMORANDUM

To: Mr. Dennis R. Keller, P.E.
Keller-Wegley Engineering

From: Mrs. Emily Bowen, LEED AP

Subject: Paregien Basin Project WaterSMART Grant GHG Emissions

Date: April 16, 2013

Background

The United States Department of Interior (DOI) Bureau of Reclamation (Reclamation) proposes to provide the DOI's WaterSMART program grant funds to the Kaweah Delta Water Conservation District for the implementation of the Paregien Basin Project. With WaterSMART grants, Reclamation provides cost-shared funding on a competitive basis for on-the-ground water conservation and energy efficiency projects. The WaterSMART grant program is under the authority of Section 9504(a) of the Secure Water Act, Subtitle F of Title IX of the Omnibus Public Land Management Act of 2009, P.L. 111-11 (42 USC 10364).

Below is a discussion of the potential greenhouse gas impacts for the construction of the Project facilities. Attached are the results from the calculations performed using the the California Emissions Estimator Model.

Greenhouse Gases

Climate change refers to change in measures of climate (e.g., temperature, precipitation, or wind) lasting for decades or longer. Many environmental changes (changes in sun's intensity, changes in ocean circulation, deforestation, urbanization, burning fossil fuels, etc.) can contribute to climate change (EPA 2009). Gases that trap heat in the atmosphere are often called greenhouse gases (GHG). Some GHG such as carbon dioxide (CO_2) occur naturally and are emitted to the atmosphere through natural processes and human activities. Other GHG (e.g., fluorinated gases) are created and emitted solely through human activities. The principal GHG that enter the atmosphere because of human activities are: CO_2, methane (CH_4), nitrogen oxides (NO_x), and fluorinated gasses (EPA 2009). During the past century, humans have substantially added to the amount of GHG in the atmosphere by burning fossil fuels such as coal, natural gas, oil, and gasoline to power our cars, factories, utilities, and appliances. The added gases, primarily CO_2 and CH_4, are enhancing the natural greenhouse effect, and likely contributing to an increase in global average temperature and related climate changes. At present, there are uncertainties associated with the science of climate change (EPA 2009). More than 20 million Californians rely on regulated delivery of water resources such as the State Water Project and the CVP, as well as established water rights from rivers. Increases in air temperature may lead to changes in precipitation patterns, runoff timing and volume, sea level rise, and changes in the

amount of irrigation water needed due to modified evapotranspiration rates. These changes may lead to impacts to the State's water resources and project operations. While there is general consensus in their trend, the magnitudes and onset-timing of impacts are uncertain and are scenario-dependent (Anderson et al. 2008).

In 2002, with the passage of Assembly Bill 1493 (AB 1493), the State launched an innovative and proactive approach to dealing with GHG emissions and climate change at the state level. AB 1493 requires the California Air Resources Board to develop and implement regulations to reduce automobile and light truck GHG emissions; these regulations would apply to automobiles and light trucks beginning with their respective 2009 models. The State has adopted Assembly Bill 32 (AB 32) and has identified GHG reduction goals; the effect of increased GHG emissions as they relate to global climate change is inherently an adverse environmental impact. While the emissions of one single project will not cause global climate change, GHG emissions from multiple projects throughout the world could result in an impact with respect to global climate change.

This Greenhouse Gas Analysis covers the construction and implementation of Paregein Basin, including the construction of two flood control/water recharge basins (Deep Creek Basin and the Southeast Pasture Recharge Basin), two groundwater level monitor wells and vegetative plantings around the basins.

Project implementation would involve temporary short-term construction emissions from various activities. Approximately 20,000 cubic yards of soil will be excavated over a footprint of 3.4 acres to create the southeast basin. The excavated soil will be used to create three levees for the Deep Creek Basin with a top width of 20 feet. A new control structure will be constructed across the Deep Creek channel and will be 8 ½ feet high with a width of 80 feet. Two six inch monitoring wells will also be constructed at a depth of approximately 40 feet. The California Emissions Estimator Model (CalEEMod) was used to quantify criteria pollutant emissions and CO_2 equivalencies associated with the basin and well installation. It is estimated that construction activities would generate 142.6 metric tons of CO_2 (see attachment for modeling output files).

There would be no long-term emissions associated with this Project, as water recharge is a passive process. When comparing the construction CO_2 equivalencies emissions of 142.6, to the EPA's 25,000 metric tons per year threshold for annually reporting GHG emissions (EPA 2009), the Project would have a less than significant impact with regards to greenhouse gas emissions.

References

Anderson, J., F., Chung, M. Anderson, L. Brekke, D. Easton, M. Ejeta, R. Peterson, and R. Snyder, 2008. *Progress on Incorporating Climate Change into Management of California's Water Resources*. Climatic Change 87:S91-S108, DOI 10.1007/s10584-007-9353-1.

California Emissions Estimator Model. 2011. South Coast Air Quality Management District. Accessed April, 2013.

EPA. 2009. Mandatory Reporting of Greenhouse Gases, Final Rule (40 CFR Parts 86, 87, 89 et al.) *Federal Register*. 74(209): 56260-56519.

Appendix D
Endangered Species Correspondence

United States Department of the Interior

BUREAU OF RECLAMATION
Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, CA 95825-1898

IN REPLY REFER TO:

MP-410
ENV-7.00

SEP 24 2012

VIA ELECTRONIC MAIL ONLY

MEMORANDUM

To: Field Supervisor, Sacramento Fish and Wildlife Office
Attn: Thomas Leeman

From: Richard J. Woodley
Regional Resources Manager

Subject: Kaweah Delta Water Conservation District Paregien Basin Project (Project) and Potential Effects to Valley elderberry longhorn beetle (VELB) and San Joaquin kit fox

Pursuant to Section 7 of the Endangered Species Act (16 U.S.C. § 1536) the Bureau of Reclamation requests written concurrence from the U.S. Fish and Wildlife Service (USFWS) that the project may affect, but is not likely to adversely affect the Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) or the San Joaquin kit fox (*Vulpes macrotis mutica*). Reclamation's determination is predicated on implementation of the avoidance and minimization measures provided in the attached biological assessment prepared for the project. The biological assessment also provides a full description of the activities and timing of activities associated with the project. Also included in the biological assessment are pictures of the project area collected at locations associated with the construction of basins and associated structures as part of the project.

Informal consultation in the form of phone calls occurred in 2011 between USFWS's Hunter Kunkel and Bobby Kamansky, after the Kaweah Delta Water Conservation District submitted the reconnaissance-level biological survey to USFWS and USFWS commented and asked for additional information. During the phone calls, Hunter requested additional information about the status of VELB and elderberry locations on the site. Additional detail was provided to the USFWS in the form of descriptions and maps documenting the location and status of VELB on the project site. Kamansky's Ecological Consulting sent a memo dated April 27, 2012 regarding the project, summarizing the conversations to date, the next steps and potential courses of action (Log Number 08ESMF00-2012TA0264).

Reclamation also requests that USFWS covers the U.S. Army Corps of Engineers' permitting action in their concurrence for the Project. The Proposed Action's impacts that would be covered under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act permits were included in the analysis in the BA.

If you have any questions, please contact Mr. Brad Hubbard, Natural Resources Specialist, at 916-978-5204 or bhubbard@usbr.gov.

Attachment

cc: Ms. Kathy Norton
U.S. Army Corps of Engineers, Sacramento District
Regulatory Division
1325 J Street, Room 1350
Sacramento, California 95814

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In Reply Refer To:
08ESMF00-2012-I-0668

January 18, 2013

JAN 28 '13

Memorandum

To: Richard J. Woodley, Regional Resources Manager, U.S. Bureau of Reclamation, Mid-Pacific Regional Office, Sacramento, California

From: Thomas Leeman, Chief, San Joaquin Valley Division, Sacramento Fish and Wildlife Office, Sacramento, California

Subject: Informal Consultation for the Kaweah Delta Water Conservation District Paregien Basin Project, Tulare County, California

This memo acknowledges the U.S. Fish and Wildlife Service's (Service) September 25, 2012, receipt of the U.S. Bureau of Reclamation's (Reclamation) September 24, 2012, letter requesting our concurrence with your determination that your action of providing grant funds for the proposed Kaweah Delta Water Conservation District's Paregien Basin project (project) may affect but is not likely to adversely affect the federally-listed as endangered San Joaquin kit fox (*Vulpes macrotis mutica*) and the federally-listed as threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*). Critical habitat for valley elderberry longhorn beetle has been designated but does not occur in the action area. The Service has not designated critical habitat for San Joaquin kit fox. This response is in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act).

The proposed project is located in Section 32, Township 18 south, Range 26 east, Mount Diablo Baseline and Meridian (UTM coordinates 11S 303791 meters east, 4021965 meters north), Tulare County, California. Project activities include creation of the 19.6 acre Deep Creek detention basin and the 3.4 acre Southeast Pasture basin. A total of 20,000 cubic yards will be excavated from the proposed basin sites. Both basins would be used to provide a source of groundwater recharge and would provide flood protection for the nearby City of Farmersville and the Linnell Farm Labor Center.

Based on the information you have provided to us, the Service concurs with your determination. We concur with your determination because: 1) we agree that San Joaquin kit fox is not reasonably likely to be in the action area; and 2) you will implement the following conservation measures identified in your letter:

1. A Service-approved biologist will conduct pre-construction surveys for San Joaquin kit fox no less than 14 days and no more than 30 days prior to the onset of any project related ground or vegetation-disturbing activity. Surveys will follow the *U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (USFWS 2011).

2. The *Conservation Guidelines for the Valley Elderberry Longhorn Beetle (USFWS 1999)* will be implemented.

3. Work occurring within 100 feet of elderberry shrubs will be conducted outside of the beetle flight period (March – June). No work is proposed closer than 55 feet from elderberry shrubs.

This concludes the Service's review of the proposed project. No further coordination with the Service under the Act is necessary at this time. Please note, however, this this letter does not authorize take of listed species. As provided in 50 CFR §402.14, initiation of formal consultation is required where there is discretionary Federal involvement or control over the action (or is authorized by law) and if: 1) new information reveals the effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this review; 2) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this review; or 3) a new species is listed or critical habitat designated that may be affected by the action.

If you have any questions regarding this response, please contact Hunter Kunkel, Fish and Wildlife Biologist, or Thomas Leeman, Chief, San Joaquin Valley Division at (916) 414-6600.

Appendix E
Cultural Resources Correspondence

United States Department of the Interior

BUREAU OF RECLAMATION
Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, CA 95825-1898

IN REPLY REFER TO:

APR 10 2012

MP-153
ENV-3.00

CERTIFIED – RETURN RECEIPT REQUESTED

Mr. Milford Wayne Donaldson
State Historic Preservation Officer
Office of Historic Preservation
1725 23rd Street, Suite 100
Sacramento, CA 95816

Subject: National Historic Preservation Act (NHPA) Section 106 Consultation for the Proposed Kaweah Delta Conservation District (KDCD) Project, Tulare County, California (Project #11-SCAO-167)

Dear Mr. Donaldson:

The Bureau of Reclamation is initiating the NHPA Section 106 consultation process for the proposed Kaweah Delta Conservation District Project. Reclamation is providing funding for a WaterSMART grant to the KDCD to increase efficiency with managing storm water. The expenditure of Federal funds by Reclamation constitutes an undertaking as defined in Section 301(7) of the NHPA (16 U.S.C. 470), as amended. Reclamation is consulting with you pursuant to the 36 CFR Part 800 regulations that implement Section 106 of the NHPA. We are seeking your concurrence with a finding that the project will result in no historic properties affected.

The project is located approximately 50 miles southeast of Fresno, 65 miles northwest of Bakersfield, and just north of Farmersville, in Tulare County, California (Figure 1). Reclamation will provide funding for the KDCD to undertake a project involving construction of a levee perpendicular to Deep Creek, the construction of a check structure/levee with automated gates that would impound a 60-acre-foot basin in the north end of a pasture, and the excavation of earth for the enhancement basin in the southeast pasture. In addition, 100 oak trees will be planted in the southeast pasture. All of the proposed components described will be within an 80-acre parcel just south of Highway 198 (Figure 2).

Reclamation has determined the project area of potential effects (APE) involves the proposed basin retention area, the proposed check structure/levee, the southeast pasture that will function as an enhancement basin and oak tree restoration area, and a transportation corridor between the proposed levee and the southeast pasture. The APE is depicted on the Exeter U.S. Geological

Survey (USGS) quadrangle, Section 31, T. 18 S., R. 26 E (see Figure 1), as well as an aerial photo (see Figure 2).

In an effort to identify historic properties, RSO Consulting (RSOC) and Applied Earthworks, Inc. completed ground surface and subsurface investigations, on behalf of KDCD. RSOC completed a records search and a pedestrian surface survey of the entire 80-acre parcel and reporting *A Cultural Resources Assessment for the Kaweah Delta Water Conservation District Paregien Basin Project Near Farmersville, California* (Ofilia 2012), which included the entire APE. No cultural resources were observed or recorded. Also on behalf of KDCD and at the request of Reclamation, Applied Earthworks, Inc. completed a buried site sensitivity model and subsurface testing investigation. The findings of the investigation are described within the enclosures *Buried Site Sensitivity Report for the Paregien Basin Project Kaweah Delta Water Conservation District, Tulare County, California*; and *Addendum* (Mirro 2012). No buried soils or cultural features were identified that would indicate buried cultural deposits exist in the APE (vertical and horizontal) or that the area is sensitive for buried cultural remains between the test trenches. The investigation concluded that the sediment within the APE is the result of fairly recent deposition which accumulated during flood events, and found no evidence to suggest that a stable surface was present. In addition, trenching in the southeastern and southwestern portion of the APE showed that the upper four to five feet of sediments are disturbed.

Reclamation and RSOC contacted the Native American Heritage Commission (NAHC) and requested a Native American Contact List and any additional information including sacred sites in or near the project APE. Reclamation and RSOC independently submitted letters to all the Native Americans identified by the NAHC (summary within Ofilia 2012). Reclamation invited the Santa Rosa Rancheria's assistance in identifying sites of religious and cultural significance pursuant to the regulations at 36 CFR § 800.3(f)(2) and 36 CFR § 800.4(a)(4). Reclamation identified and submitted letters to three non-federally recognized Native American individuals to inquire if they have any knowledge of, or concerns with, historic properties in the area and to identify issues relating to the undertaking's potential effects on those historic properties pursuant to 36 CFR § 800.4(a)(3). Mr. Lalo Franco, Cultural Coordinator of the Santa Rosa Tachi Rancheria, responded by phone and requested a field visit.

On November 1, 2012, representatives of the Santa Rosa Rancheria, Reclamation, KDCD, Kellar-Wegley Engineering, Planning Tree Consulting, and RSOC participated in an on-site meeting. Some of the goals of the meeting were to familiarize all the parties with the project area and the proposed scope of work, and to express any concerns. The project area is actually in the ancestral territory of the Wukchumni Yokut; however, they are not a recognized tribe and often have Mr. Franco take the lead during consultation, as with this project. Reclamation provided the reporting for the buried site testing to Mr. Franco, along with a brief project summary. Upon further conversations with the parties, no further concerns were raised.

Based on the results of the inventory, buried site testing, and consultation, Reclamation has reached a finding of no historic properties affected for this undertaking. No historic properties were identified and there is little potential for subsurface cultural deposits. Reclamation invites your comments on the delineation of the APE and our efforts to identify historic properties.

Reclamation also requests your concurrence with our finding that the undertaking will result in no historic properties affected pursuant to 36 CFR § 800.4(d)(1). Please contact Mr. Scott Williams, Archeologist, at 916-978-5042 or sawilliams@usbr.gov if you have any questions about this project.

Sincerely,

Anastasia T. Leigh
Regional Environmental Officer

Enclosures - 5

STATE OF CALIFORNIA – THE RESOURCES AGENCY
Edmund G. Brown, Jr., *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov
calshpo@parks.ca.gov / www.ohp.parks.ca.gov

Reply in Reference To: **BUR120416B**

October 29, 2012

Anastasia Leigh - Regional Environmental Officer
United States Department of the Interior
Bureau of Reclamation, Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, CA 95825-1898

Re: Section 106 consultation for the *Kaweah Delta Conservation District Project , Tulare County, California* (Project # 11-SCAO-167)

Dear Ms. Leigh:

Thank you for consulting pursuant to 36 CFR Part 800 (as amended 8-05-04) regulations implementing Section 106 of the National Historic Preservation Act (NHPA). You are seeking my comments on the Area of Potential Effect (APE) and historic property identification efforts; and, concurrence on "*No Historic Properties Affected.*"

BUR is providing WaterSMART grant funding to the Kaweah Delta Conservation District (KDCD) to construct a storm water management project in Tulare County. The undertaking is described as involving "construction of a check structure/levee with automated gates that would impound a 60-acre-foot basin in the north end of a pasture, and excavation of earth for the enhancement (recharge) basin in the southeast pasture", and planting 100 oak trees around the latter. As described in additional communications with BUR staff, the vertical APE involves removing 5-ft of soil within the (estimated) 10.5-acre enhancement (recharge) basin - which will be used as a borrow area for constructing the check structure/levee. As I understand, BUR determined the APE encompasses approximately 80-acres and includes the above project activities. The APE is depicted in Figures 1 and 2 of the cover letter you submitted with the three following studies as evidence of historic property identification and evaluation work:

- *A Cultural Resources Assessment For the Kaweah Delta Water Conservation District Paregien Basin Project Near Famersville, California* (RSO, R. Orfila 2012)
- *Buried Site Sensitivity Report For Paregien Basin Project Kaweah Delta Water Conservation District, Tulare County, California* (Applied Earthworks, M. Morro 2012)
- *Addendum to Buried Site Sensitivity Report For Paregien Basin Project Kaweah Delta Water Conservation District, Tulare County, California* (Applied Earthworks, M. Morro 2012)

The above describe methods and results of record searches at the Southern San Joaquin Valley Information Center and Native American Heritage Commission (NAHC), consultation with NAHC identified contacts, a buried site sensitivity (geoarchaeological) study, and field-survey of the APE. Consultation involved a field visit with the Santa Rosa Tachi Rancheria in which the scope of work and the geoarchaeological study were discussed. No concerns about the undertaking were raised by the rancheria or by any other Native American contacts.

The geoarchaeological study included reviews of historical images and maps; soils and geological

data; prior geomorphological investigations; and, field-work. Field-work involved collecting radiometric samples from creek banks and digging six 2-ft wide by 6-ft deep (length not indicated) backhoe test trenches in arbitrary levels of 30.0-cm within the enhancement (recharge) basin area. Stratigraphic analyses of trench profiles indicated the southern portion of the test area is overlain with approximately 4 to 5-ft of artificial fill that was hypothesized as material imported for creating level agricultural cropland. Screened samples of soil from each 30.0-cm level in the test trenches identified no archaeological remains. The study determined native soils in the test area are consistent with the Natural Resources Conservation Service classified Grangerville series (alluvial fans and flood plains); which is considered sensitive for archaeological deposits in the Central Valley.

After reviewing your cover letter and supporting studies, I have the following comments:

1. Pursuant to 36 CFR Part 800.4(a)(1), I have **no objections** to your APE delineation.
2. Pursuant to 36 CFR Part 800.4(b)(1), the *Level of Effort* identifying historic properties is appropriate but I have one following remark;
    - Please be aware BUR should employ archaeological monitoring during ground disturbing activities as the soil type is identified consistent with the archaeologically sensitive Grangerville series.
3. Pursuant to 36 CFR Part 800.4(d)(1), I **concur** with "*No Historic Properties Affected.*"

Be advised that under certain circumstances such as an unanticipated discovery or a change in project scope you may have additional future Section 106 responsibilities. Thank you for including historic properties and my comments as part of your project planning and I look forward to reviewing future consultations on BUR's undertaking. Please direct questions to Jeff Brooke of my staff at (916) 445-7003/jbrooke@parks.ca.gov.

Sincerely,

Susan K Stratton for

Carol Roland-Nawi, PhD
State Historic Preservation Officer

Appendix F
Indian Trust Assets Compliance

KLEINSMITH, DOUGLAS <dkleinsmith@usbr.gov>

Re: Kaweah Groundwater Basin Project ITA request

RIVERA, PATRICIA <privera@usbr.gov> Wed, Apr 17, 2013 at 8:51 AM
To: "KLEINSMITH, DOUGLAS" <dkleinsmith@usbr.gov>

Doug,

I reviewed the proposed action to provide a grant to Kaweah Delta Water Conservation District to support the construction of two groundwater recharge/stormwater control basins, one of 19.6 acres and one of 3.4 acres, that would be used to provide a reliable source of groundwater recharge and would provide for flood protection for the nearby City of Farmersville and the Linnell Farm Labor Center. In addition to the proposed water retention basins, two new monitor wells would be installed and oak tree restoration would occur through the planting of 100 yearling oak trees and surrounding specific native vegetation.

The proposed action does not have a potential to affect Indian Trust Assets. The nearest ITA is a Public Domain Allotment approximately 19 miles North of the project locations.

Patricia Rivera
Native American Affairs Program Manager
Bureau of Reclamation
Sacramento, CA 95825
(916) 978-5194

Patricia Rivera
Native American Affairs Program Manager
US Bureau of Reclamation
Mid-Pacific Region
2800 Sacramento, California 95825
(916) 978-5194

On Tue, Apr 16, 2013 at 1:47 PM, KLEINSMITH, DOUGLAS <dkleinsmith@usbr.gov> wrote:

> Patricia,
>
> Attached is my ITA request for the subject project.
>
> Doug
>
> –
> *Douglas Kleinsmith*
> Natural Resource Specialist
> Bureau of Reclamation
> 2800 Cottage Way, Sacramento CA
> (916) 978-5034
> dkleinsmith@usbr.gov