Initial Study and
Mitigated Negative Declaration
for
Buena Vista Water Storage District, Northern Area Project

Lead Agency: Buena Vista Water Storage District

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Section A. Environmental Checklist

1. **Project title:**

   Buena Vista Water Storage District, Northern Area Project

2. **Lead Agency/Project Sponsor:**

   Buena Vista Water Storage District
   525 North Main Street
   P.O. Box 756
   Buttonwillow, CA 93206

3. **Contact person and phone number:**

   Maurice Etchechury 661-324-1101

4. **Project location:**

   The project area is located within the Buena Vista Water Storage District (BVWSD), 16 miles west of Bakersfield and bordered by State Highway 46 to the north, 7th Standard Road to the south, and the California Aqueduct to the west (Figure 1).

5. **General plan designation:**

   NA

6. **Zoning:**

   Exclusive Agriculture (A)

7. **Description of project: (Describe the whole action involved, including but not limited to, later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)**

   The revised Northern Area Project (NAP) is located 16 miles west of Bakersfield within the Buttonwillow Service Area of the BVWSD, and primarily entails the installation of buried pipeline. The pipe would vary in size, between 21 and 63 inches, and be primarily buried adjacent to the Main Drain Canal and other district facilities, including portions of the Westside and Eastside Canals (Figure 2). The new pipeline would be installed largely within the existing Right-of-Way (ROW) of the Main Drain and other district facilities. Laterals that deviate from district facilities would be located adjacent to field roads or other geographical features that minimize impacts to conservation and farming. Easements would be obtained from landowners to accommodate the new pipeline. The project construction would include activities consistent with digging, trenching, and excavation of soil to install the new pipeline. The pipeline would be constructed in a manner to minimize disturbance, avoid the perched aquifer, and also be built in different sections, as finances become available.

Each section of the pipeline would operate as a discreet unit, providing water to specific locations within the BVWSD. As shown on Figure 2, pipeline Section 1 is indicated in red, which will serve lands shaded in red. Pipeline Section 2 (green) will serve lands shaded in green. Pipeline Section 3 (blue) serves lands shaded in blue. The three sections of the pipeline can be built and operated independently of each other.

Section 1 of the pipeline would be connected to the Semitropic 120-inch line, which runs easterly from the California Aquaduct. Section 1 will run south along the Main Drain Canal ROW for 7 miles and terminate at Lerdo Highway. This line would be pressurized by the elevation difference between the California Aqueduct and Main Drain Canal of approximately 80 feet. The Section 1 pipeline is designed to operate by gravity flow. Two laterals would be constructed, running east and west, which are approximately 1 mile and 0.25-mile long respectively. Two pumping stations would be retrofitted to allow water to be pumped from the existing Main Drain Canal into the pipeline (Figure 2).

Section 2 would begin at a new pumping station on the West Side Canal at Canal 29, the very southern end of the project area. The new 8-mile section of the pipeline would run north to Lerdo Highway and terminate at the southern end of Section 1. Section 2 would provide water to specific areas in the southern portion of the BVWSD. Additionally, another 4 miles of new pipeline would be constructed along the East Side Canal, and connect to an existing BVWSD pipeline that runs parallel to the Semitropic Canal (Figure 2).

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

When Section 3 is completed and placed into service the Westside Canal can be kept dry from Lerdo Hwy north to the Highway 46, the BVWSD's northern boundary. When Sections 2 and 3 are completed, the Westside Canal can be kept dry from the new pump station to Canal 29, just south of Perral Road, north to the BVWSD boundary.

Although the three sections can be built and operated as separate projects, when sections one and two are completed they can be connected to allow gravity flow from the California Aqueduct to be transported into Section 2 under limited operating conditions.

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

The goals and objectives of the proposed project are to conserve water by reducing water lost through canal seepage, to reduce operational costs, and to allow for more irrigation water to be delivered to district agricultural users on a year-round basis. The installation of the new pipeline would also aid in lowering the water table of the poor quality perched shallow aquifer. The BVWSD would recoup the cost of the project through short-term sales of the canal seepage water.

8. Surrounding land uses and setting:

The BVWSD lies in the trough of California's southern San Joaquin Valley, approximately 16 miles west of the City of Bakersfield. Aside from the small unincorporated town of Buttonwillow, there are no other population centers within the BVWSD. The BVWSD's Service Area comprises approximately 50,000 acres within the lower Kern River watershed, and can be divided into two distinct areas: the Buttonwillow Service Area and the Maples Service Area. The Buttonwillow Service Area comprises approximately 45,000 acres situated northwesterly of the Buena Vista Lake Bed. The Maples Service Area of BVWSD comprises approximately 5,000 acres situated easterly of the Buena Vista Lake Bed. The Henry Miller Water District (HMWD) is a part of BVWSD; however, HMWD is not a part of BVWSD's Service Area and possesses its own water contracts with the Kern County Water Agency.

9. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):

- California Water Resources Control Board Construction Activities Storm Water General Permit
- Central Valley Flood Protection Board Encroachment Permit
- San Joaquin Valley Air Pollution Control Board Dust Control Plan and Indirect Source Review
- Kern County Grading Permit
- California Department of Transportation Encroachment Permit
- Kern County Roads Department Encroachment Permit

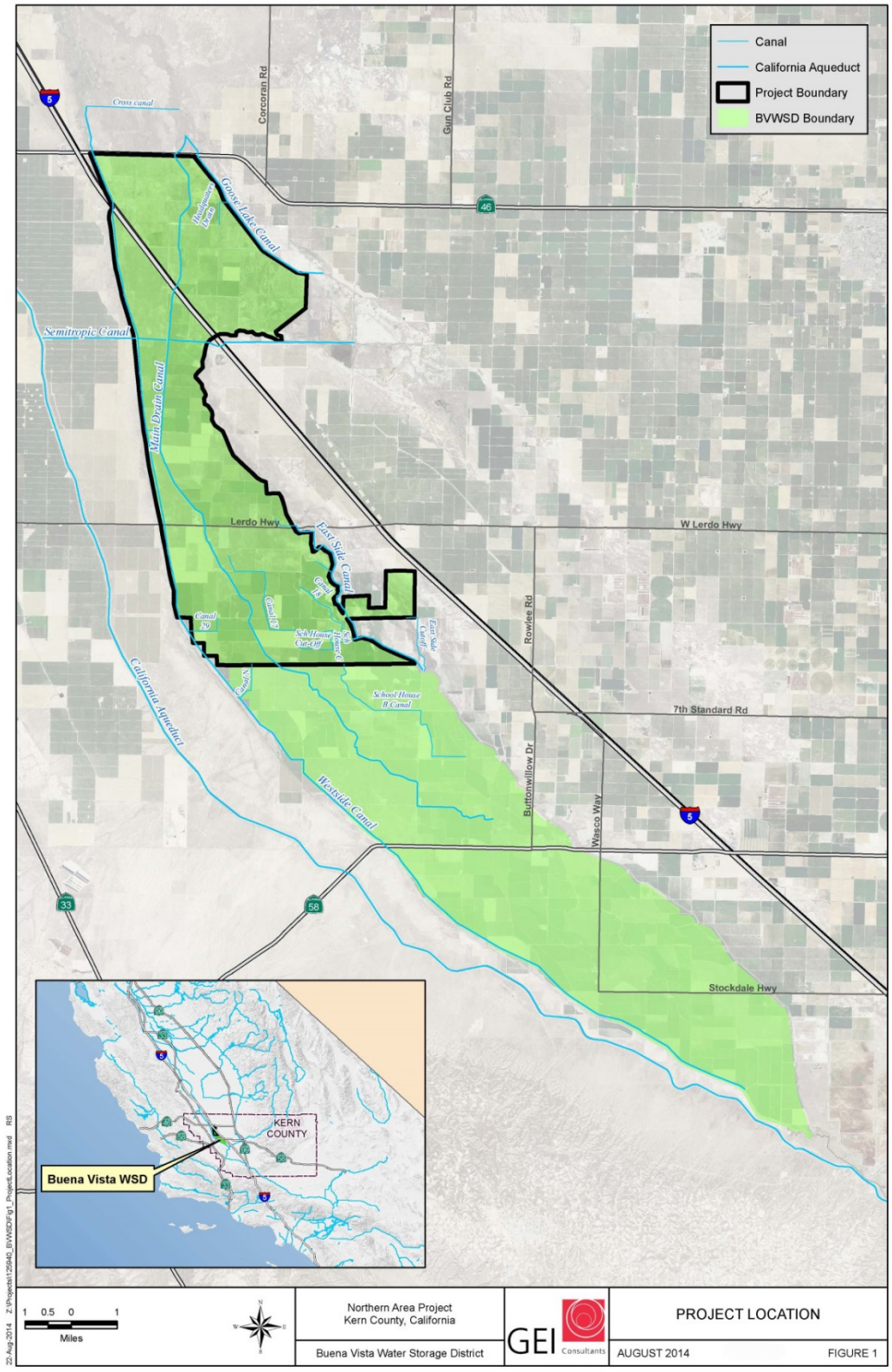

Figure 1: Project Location

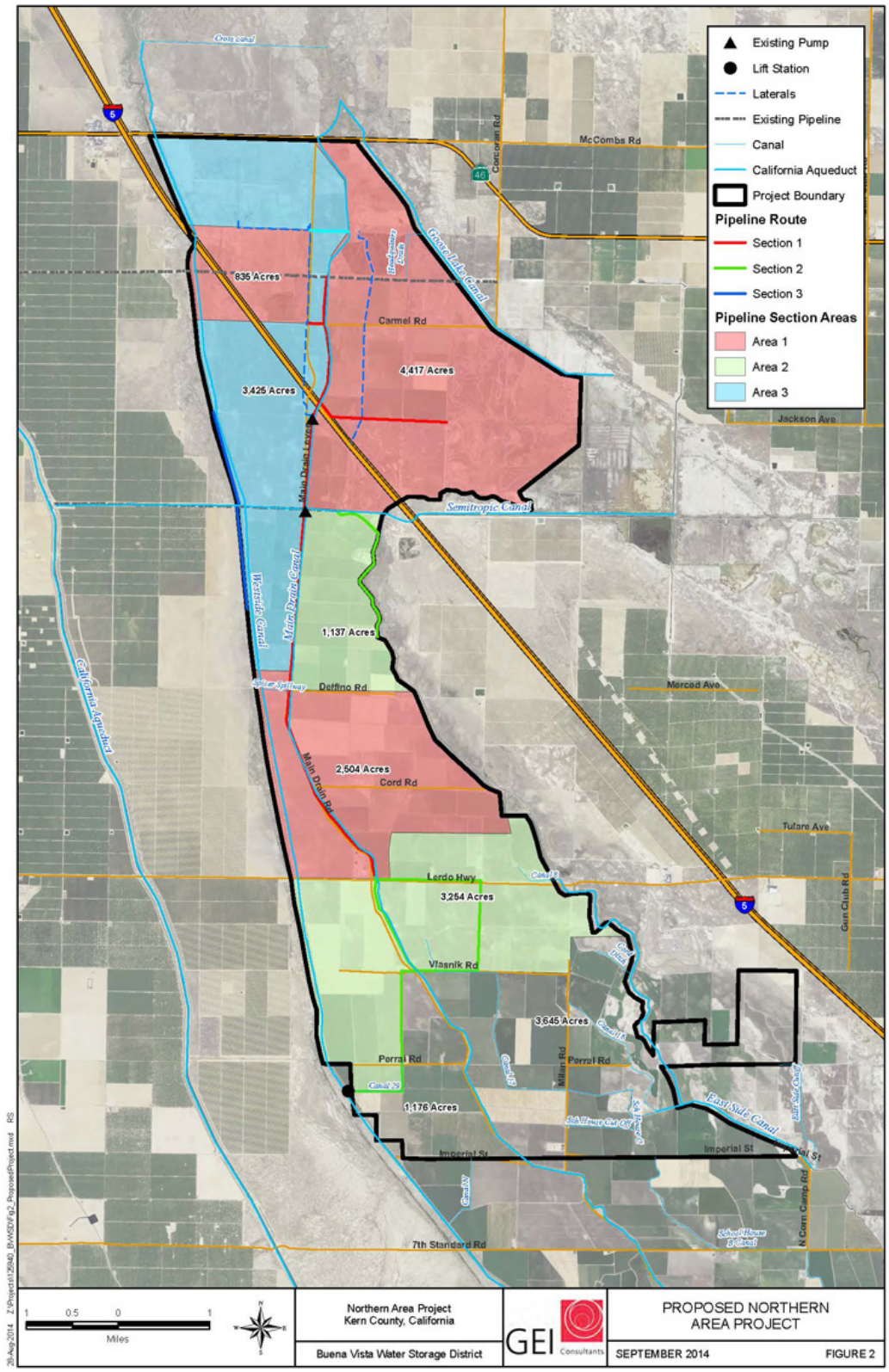

Figure 2: Proposed Northern Area Project

Section B. Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☒ Air Quality
☒ Biological Resources	☐ Cultural Resources	☐ Geology / Soils
☒ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☒ Hydrology / Water Quality
☐ Land Use / Planning	☐ Mineral Resources	☒ Noise
☐ Population / Housing	☐ Public Services	☐ Recreation
☐ Transportation / Traffic	☐ Utilities / Service Systems	☐ Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature_____ Replace this page _____ Date_____

Signature_____ Date_____

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS – Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

(a-d) The project area is flat, comprising dirt roads, open water canals, and various agricultural crops. There are no significant view-sheds or scenic vistas (Figure 3). The proposed action would result in buried facilities, reconstruction of existing structures, construction of one new lift station, and decommissioning some existing canals. There would be little change to the existing view. The proposed project would not create any new sources of light.

The construction activities would last approximately 6 to 9 months and only occur during daylight hours. During construction, there would be a small number of construction vehicles at the site; however, this would not be substantially different than agricultural equipment normally used. Construction and operation of the proposed project would not appear different than current operations at the BVWSD. Therefore there would be no change to visual resources from the proposed project and thus no impact to aesthetics, buildings, or surroundings.

Figure 3: Typical View Shed in the Project Area

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FOREST RESOURCES – 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?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
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))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
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?	☐	☐	☐	☒
(a-e) The project is located in an agricultural area that is almost entirely in active production (with the exception of roads and canals, related conveyance facilities and lands designated for conservation uses). The project would increase water supplies by reducing water lost through the leaking canals and improve production by lowering the ground water (cumulative impact). Six miles of lateral canals within the project area will be reclaimed for agricultural use as portions will be decommissioned and buried. This may increase over time as the capabilities of the pipeline are fully integrated into district operations. The project is expected to increase water supply and have a beneficial effect to agricultural production and therefore, no impact to agriculture and forest resources.				
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 project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
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)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

(a-e) The Project is located within the southern San Joaquin air-shed. This portion of the air-shed is in non-compliance for federal and state air quality standards for ozone and Particulate Matter 10 and 2.5 (San Joaquin Valley Air Pollution Control District [SJVAPCD]) 2014. The Project would involve seven construction vehicles during the 6 to 9 month project implementation phase for the delivery of materials and equipment, and excavation of soil to bury the new pipe. Equipment and vehicles used would be subject to state mobile source emissions controls. The SJVAPCD has established guidance for assessing air quality impacts for small projects. Using project size and type based on the Small Project Analysis Level, the BVWSD's NAP would not exceed the established threshold of 1,673 vehicle trips a day for Commercial projects (SJVAPCD 2012). See Section E for Mitigation Measures.

The primary concern for the proposed project is Particulate Matter 10 emissions from ground disturbance. The construction of the project would be subject to standard SJVAPCD permitting requirements for dust control. An approved Dust Control Plan is required if the project involves disturbing more than 5 acres of earth or 2400 cubic yards for any 3 construction days.. The BVWSD would contact the SJVAPCD to determine if an Indirect Source Review – Air Impact Assessment (ISR) is required for construction vehicle emissions. An ISR determination letter and/or mitigation plan would be submitted with the project's Dust Control Plan for construction. With the employment of Dust Control Plan, the proposed project is not expected to contribute substantially to existing levels of Particulate Matter 10 or conflict with the SJVAPCD's air quality plan. There are no sensitive receptors in the area as it is remote and with very few residents. Due to the mobile nature of the pipeline construction, any emission issues would last only a few days at each site.

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

IV. BIOLOGICAL RESOURCES – Would the project:				
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 Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
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 Game or US Fish and Wildlife Service?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
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?	☐	☐	☐	☒

(a-f) The biological assessment conducted for the BVWSD NAP project found that no special status animal or plant species were present within the boundaries of the proposed project site. The complete biological resources report is found in Section D. No suitable habitat for special status animal or plant species was present within the boundaries of the proposed project site during biological surveys; however, native habitats and natural lands occur in proximity to the project site. Since the proposed project would be mainly conducted within the Main Drain Canal ROW, no sensitive habitats that were observed in proximity would be impacted during project implementation. No impacts to riparian vegetation are proposed since the project is located outside the riparian corridor that occurs along the Kern River Flood Canal. Therefore, no impacts to streams, riparian areas, wetlands, vernal pools, or other sensitive habitats will result from the proposed project.

Based on habitats present in areas surrounding the project site and conditions that were observed during biological surveys, it was determined that several special status wildlife species have some potential, albeit low, to occur in the proposed project site. The occurrence of special status animal species including but not limited to blunt-nosed leopard lizard, Western burrowing owl, Le Conte's thrasher, San Joaquin antelope squirrel, San Joaquin pocket mouse, Tulare grasshopper mouse, American badger, and San Joaquin kit fox cannot be discounted. Although no habitat features (burrows, dens, or nests) were observed that may serve as potential shelter or be used for refuge and/or breeding, there is potential for these species to occasionally pass through and/or to forage portions of the project site. In the event that these species become established in the proposed project site, mitigation measures to protect this species from potential impacts are described in this section under Mitigation Measures.

Implementation of the proposed project could potentially impact individual blunt-nosed leopard lizards, should they be present in the proposed project site during project implementation. Should California ground squirrel burrows, or other small mammal burrows become established in the project site prior to construction, the project could impact burrows that may be potentially used by blunt-nosed leopard lizards. Impacts to blunt-nosed leopard lizards or their burrows could occur through crushing by construction equipment or entombment below ground in burrows during project activities. This species' normal behavior could also be affected due to noise and vibration from project activities. Impacts to this species would be considered

significant

Implementation of the proposed project could potentially impact individual special status small mammal species including giant kangaroo rats, Tipton kangaroo rats, San Joaquin antelope squirrel, San Joaquin pocket mouse, Tulare grasshopper mouse, should they be present in the proposed project site during project implementation. Should small mammal burrows become established in the project site prior to construction, the project could impact burrows that may be potentially used by these species. Impacts to special status small mammal species or their burrows could occur through crushing by construction equipment or entombment below ground in burrows during project activities. These species' normal behavior could also be affected due to noise and vibration from project activities. Impacts to these species would be considered significant

Implementation of the proposed project could potentially impact individual San Joaquin kit fox, American badgers, or their dens, should they become established within the proposed project site prior to project implementation. Impacts to badgers or kit fox could occur through crushing by construction equipment during project activities. This species could also be affected due to noise and vibration from project activities if dens are located closer than 250 feet to the proposed project site; project-related noise and vibration could cause the abandonment of occupied dens.

Implementation of the proposed project could potentially impact individual and nesting burrowing owls should they become established within the proposed project site prior to or during project implementation. Impacts to this species could occur through crushing by construction and drilling equipment during implementation of project activities. Actively nesting burrowing owls could also be affected due to noise and vibration from project activities if nests are located closer than 250 feet to the proposed project; project-related noise and vibration could cause the abandonment of active nest sites. Impacts to this species would be considered significant. Pre-construction surveys are recommended to detect species presence and/or use in the project site

Implementation of the proposed project could potentially impact individual and nesting migratory bird species should they become established within the proposed project site prior to project implementation. Impacts to migratory bird species could occur through crushing by construction and drilling equipment during implementation of project activities. Actively nesting birds could also be affected due to noise and vibration from project activities, if nests are located closer than 250 feet to the proposed project site. Project-related noise and vibration could cause the abandonment of active nest sites. Impacts to these species would be considered significant.

In the unlikely event that special status plant species become established within the proposed project site, the proposed project could potentially impact special status plants during construction or operation. Impacts to these species could occur through crushing by construction equipment during implementation of project activities. Special-status plants could potentially be impacted if they are present in areas of natural lands or native habitat and are directly disturbed during project construction or operation. However, by confining project activities to previously disturbed areas, the potential for impact to special status plants is considered low.

Traffic in the project site consists of agricultural equipment and vehicles associated with water distribution, and storage, and canal/levee maintenance and operation. The amount of traffic in the general area varies from sporadic to moderate and may vary seasonally as a result of agricultural activities. A short-term increase in vehicle traffic is anticipated during project implementation and less so after project completion. This will result in a short-term increase in associated noise, which may cause temporary disturbance to common wildlife species. Increased vehicular traffic could cause direct mortality to these species or impede normal activities such as dispersal (Luckenbach 1975, Weinstein 1978). Species intolerant of human activities may use the proposed project site less when humans are regularly present in the area (Bushnel 1978, Lee and Griffith 1977). Common wildlife species observed during biological surveys appear to have acclimated to active agriculture and ongoing activities surrounding the proposed project site.

With the implementation of mitigation measures 1 through 22 (Section E), the proposed project would have a less than significant impact on listed or other sensitive plants or animal species.

Based on historic land conversion to agriculture, and current use in the project site, no suitable habitat is present for special status species within the boundaries of the proposed project site. No riparian habitat, perennial, or intermittent streams occur in the proposed project site. Since the proposed project site is located in disturbed areas adjacent to existing canals and the project site is mainly surrounded by active agriculture, no impacts to natural communities, riparian areas or other sensitive habitats would result from the proposed project. Therefore, the proposed project would not have any substantial adverse effect on sensitive natural communities.

No federally-protected wetland habitat was observed within the footprint of the proposed project site, or existing access roads during the biological surveys and assessment. Therefore, the proposed project site would not have any substantial adverse effect on federally-protected wetlands.

The proposed project would not interfere with movement of any wildlife species or with established native resident or migratory wildlife corridors. Native resident and/or migratory fish and known native wildlife nursery sites are not present within the proposed project site. No impact is anticipated.

The project as proposed would not conflict with any local policies or ordinances protecting biological resources, such as tree preservation policies/ordinances. No native trees are present within the proposed project site. No impact is anticipated.

There are no adopted Habitat Conservation Plans, Natural Community Conservation Plans or other approved local, regional, or state habitat conservation plans in the project areas. No impact is anticipated.

Direct mortality or injury to sensitive animal populations could occur from earth-moving activities, assuming that sensitive animal populations become established prior to or during project implementation. Mitigation measures to protect sensitive animal species from potential impacts are described in Section E. Biological surveys are recommended prior to earth disturbing activities associated with pipeline installation (i.e., digging, trenching, backfilling).

See Section E for Mitigation Measures.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☐	☐	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

(a-d) The project area is located towards the southern end and on the open flats of the San Joaquin Valley; a large interior and relatively low-lying valley that drains northwards to the San Francisco Bay. While the study area is a significant distance from the Pacific Ocean, the elevation is only approximately 260 feet above mean sea

level. Prior to reclamation and channelization, the region would have been a low lying, water rich area characterized by sloughs, marshes and swamps. At present, the NAP is surrounded by active farm fields. Historical and recent land-use has thus changed the vegetation that was once present within and near the project area.

An archival records search, background studies, and an intensive, on-foot surface reconnaissance of the BVWSD NAP in Kern County, California, were conducted as part of a Phase I archaeological survey. No significant historical or cultural resources were found to be present within the project area. Development of the project area therefore does not have the potential to result in adverse impacts to cultural resources. It is recommended that an archaeologist be contacted in the unlikely event that archaeological resources are discovered during the construction or use of the pipeline. The complete cultural resources report is found in Section D.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. GEOLOGY AND SOILS – Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☒
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.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

(a-e) The proposed project does not lie within the Alquist-Priolo Earthquake Fault Zone nor is it in a liquefaction or landslide zone (California Department of Conservation 2014). The lack of topography in the project area precludes landslides. Potential damage from seismic activity due to rupture or settlement would be considered adverse since the pipeline is carrying water for agricultural purposes however, the conversion of open canals

to buried pipelines as described under the proposed project, would not create any additional potential for adverse impacts from seismic activity.

With the implementation of the Dust Control Plan (see Section III), loss of topsoil would be minimized during construction. Operation of the proposed project would not substantially increase topsoil loss or create a potential for soil erosion as the area is in constant agricultural production and topographically flat. Therefore, implementation of the proposed project would not have adverse effects to geology and soils.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GREENHOUSE GAS (GHG) EMISSIONS – Would the project:				
a) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs?	☐	☐	☐	☒

(a-b) The Environmental Protection Agency's (EPA) mandatory reporting threshold for large sources of GHGs is 25,000 metric tons of CO2 emitted annually (EPA 2014). This threshold is approximately the amount of CO2 generated by 4,400 passenger vehicles per year. Comparatively, emissions from seven construction vehicles during project implementation would be considerably lower. Because these activities would be similar to existing conditions, for both construction and operation, and will be far below the threshold level of emissions, the project GHG emissions would not represent a substantial change and would not conflict with the Kern county's GHG emissions reduction program.

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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
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?	☐	☐	☐	☒
(a-h) The project is located in an agricultural area, containing no communities of any size. The proposed project is located away from population centers, involves no hazardous materials and would rely on electric power rather than liquid fuels. The pipeline would carry water and thus would pose no hazard in the event of failure. Fires are unlikely within the project area as it contains agricultural crops, a low fuel source for fire. The proposed project would not affect emergency response plans as facilities would not interfere with traffic routes or response vehicle transport. There would not be an increase in hazards or materials from implementing the proposed project.				
IX. HYDROLOGY AND WATER QUALITY – Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
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)?	☐	☐	☒	☐
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
f) Otherwise substantially degrade water quality?	☐	☒	☐	☐
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?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
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?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

(a-j) BVWSD is located in the southwestern portion of the San Joaquin Valley. Data on local geology and groundwater conditions within BVWSD suggest that it is substantially isolated from much of the Kern County groundwater subbasin and that this isolation, coupled with the BVWSD's access to surface water, leads to groundwater supply conditions within the BVWSD's boundaries that differ from those characteristic of many other locations within Kern County.

There are three main aquifers in the project area: the perched, shallow, and deep aquifers. Impacts to the latter two aquifers are discussed as one main aquifer. Each is described fully in the complete groundwater report found in Section D. Water quality in the perched aquifer would be impacted as a result of the proposed project however water quality in the perched aquifer is already poor. Salinity in the perched aquifer would gradually increase to approximately 1,745 mg/L from baseline conditions. The increase is due to the decrease in recharge of low Total Dissolved Solids (TDS) water and the elimination of salts being exported due to groundwater discharge to the Main Drain Canal. Salinity levels are expected to increase in the main aquifer to 170mg/ L above baseline conditions. The increase is predominately due to the increased salinity in the leakance from the perched aquifer.

Implementation of the proposed project would decrease groundwater levels in the main aquifer by approximately 2 feet from baseline levels. There would be no change in groundwater levels of the perched aquifer. This potential effect to the perched aquifer is small due to the reduction of evaporation through the soils and a reduction in outflow as the groundwater discharges to the Main Drain Canal would be eliminated.

BVWSD would monitor water quality and water levels in the perched and main aquifer to confirm that no significant impact is occurring. If an impact is occurring, mitigation measures would be implemented. See Section E for Mitigation Measures.

There are no streams or rivers within the project area. The project area is primarily flat and developed with a water conveyance system to deliver water to crops. There is no source of water within the project area that would feed surrounding surface waterbodies, therefore, drainage patterns to receiving waters would not be impacted. Stormwater is captured and utilized for irrigation therefore there would be no impact from stormwater runoff.

There are no above-ground structures planned other than a pump station for the proposed project, therefor there would be no impact to infrastructure or people. The proposed project is far removed from waterbodies that could provide a source for water-related natural disasters such as flooding, tsunamis or mudflows.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X. LAND USE AND PLANNING – Would the project:				
a) Physically divide an 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?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒
(a-c) The proposed project is located in an area zoned for agriculture and will serve existing farmland. The project is located outside of existing communities and is consistent with existing zoning. There are no adopted Habitat Conservation Plans, Natural Community Conservation Plans or other approved local, regional, or state habitat conservation plans covering the proposed project site. There would not be a conflict with conservation plans or land use plans as zoning would not change in the project area.				
XI. MINERAL RESOURCES – Would the project:				
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
(a-b)The proposed project is not located in or near an area of mineral resources.				
XII. NOISE – Would the project 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?	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
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?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
(a-f) The project is located in an agricultural land use area with no known sensitive receptors. There would be no changes to existing operation and no change in existing noise levels. Construction would occur during the day, and is located in a remote area, without a population center or many residences. Since the project is not located near any sensitive receptors, construction noise will not have a significant impact.				
XIII. POPULATION AND HOUSING – Would the project:				
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)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
(a-b) The proposed project is located in an agricultural area and away from population centers. The project will result in no new housing. In addition, the project will result in no new long-term employment. The construction phases will be less than 1 year and the operations will require no additional employees to operate. The expected increase in water due to the reduction of inefficiencies in water delivery would be sold to Kern County agricultural users and would not be allocated for urban growth. There would be no impact to population and housing.				
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:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

(a) The proposed project is located in an undeveloped area. The characteristics of the facilities pose no increase in fire risk. In addition, the construction phase will be relatively short with no construction activities occurring at night. The operation phase will require no additional employees to maintain and operate. Therefore the project will demand no additional public services.

	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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
(a-b) No recreational facilities exist in the project area. The proposed project will not increase the population nor otherwise affect local recreational facilities.				
XVI. TRANSPORTATION / TRAFFIC – Would the project:				
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
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?	☐	☐	☐	☒

(a-f) The proposed project occurs in a rural area with lightly travelled roads. The project will result in no additional employees or transit routes. Construction traffic will utilize existing public roads to deliver equipment, supplies, and workers to the construction sites. Since the pipeline construction will move along a linear corridor; no one place will experience a change in traffic for any extended period of time. Construction of the project will employ only a few individuals at a time. The pipeline project consists of buried facilities and would not increase hazards during operation. Therefore, changes in transportation reliability or access would not be significant.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. UTILITIES AND SERVICE SYSTEMS – Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
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?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

(a-g) No wastewater treatment facilities occur in the project area. Storm water and agricultural runoff currently collects within certain existing ditches and canals. These accumulations are covered by the Water Quality Management Plan – August 2012 Main Drain (Canal) approved by the State Water Resources Control Board. The proposed project will result in no new wastewater facilities or wastewater flow. Minimal waste will be generated during construction and no increase in waste production will occur during the operation of the project. Canals are primarily comprised of dirt and construction would not create a substantial amount of waste material. The project will be designed to capture and reuse storm water that collects within project facilities. The project will conserve existing water supplies and make them more readily available to existing water users. Therefore, the proposed project will not place constraints on the local utilities and services that would create adverse impacts.

	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?	☐	☒	☐	☐
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)	☐	☒	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

(a-c) In order to address potentially significant impacts, BVWSD will adopt a mitigation program to lower impacts to a level of non-significance. Changes in climate and future land use changes were assessed to determine potential cumulative impacts (Section D). Cumulative impacts to Groundwater would be potentially significant without mitigation measures as described in Section E with details available in Section D. The summary table below illustrates the project impacts to Groundwater and the cumulative impacts to Groundwater.

The Brackish Groundwater Remediation Project (BGRP) is a probable future project. The BVWSD has applied for a state grant for the BDRP to provide funding to install approximately 60 wells, 200 feet apart, along the west side of the pipeline (Figure 4). The wells would extract brackish, unpalatable water from a shallow supply in the area. The brackish water would be blended with better quality water and supplied to local agricultural users. An Environmental Impact Report (EIR) for the BVWSD Water Management Program (State Clearinghouse No. 2009011008) was prepared in 2009 for this project (in addition to three other proposed projects). Construction of the BGRP would last a year but would not overlap with the construction period for the proposed Northern Pipeline Project. Therefore, there are no cumulative impacts to air quality, noise, or greenhouse gas emissions from the BGRP.

Implementation of the BGRP is proposed a mitigation measure for the potential impact to water quality, as described in Section E. The BGRP will extract highly saline groundwater and blend it with higher quality water for re-use.

Impact	Change from baseline		Percent change		Level of significance
	With Project	Cumulative with Project	With Project	Cumulative with Project	
Decline groundwater level in perched aquifer (in comparison to baseline).	0 Feet	1.4 Feet	0	6%	No impact, decline in groundwater levels in cumulative scenario is considered beneficial.
Decline in groundwater level in main aquifer (in comparison to baseline).	2.3 Feet	3.6 Feet	0.6%	<1%	Less than significant.
Decline in subsurface outflow from perched aquifer to Tulare Lake groundwater basin.	0 AFY	0.6 AFY	0%	6%	Less than significant. Total was supply in Tulare Lake groundwater subbasin is 12,100,000 AF
Decline in subsurface outflow from perched aquifer to northeast.	0	0.6 AFY	0%	10%	Less than significant. Land overlain by farmland, so decline in water level is beneficial to agricultural production.
Subsurface outflow from perched aquifer to main Kern County groundwater basin and SWSD.	0 AFY	0.2 AFY	0% of outflow to from perched aquifer, but a tiny fraction of total recharge.	5% of outflow from perched aquifer, but a tiny fraction of total recharge.	Less than significant. Total recharge in SWSD ranges from 146,000 to 338,000 AFY.
Decline in subsurface outflow from main aquifer to main Kern County groundwater basin and SWSD.	20 AFY	34 AFY	<1%	1%	Less than significant.
Increase in TDS in perched aquifer (compared to baseline).	1,745 mg/L	700 mg/L	192%	133%	Potentially significant.
Increase in TDS in main aquifer	170 mg/L	155 mg/L	4%	4%	Potentially significant. Change in TDS is small, but long term

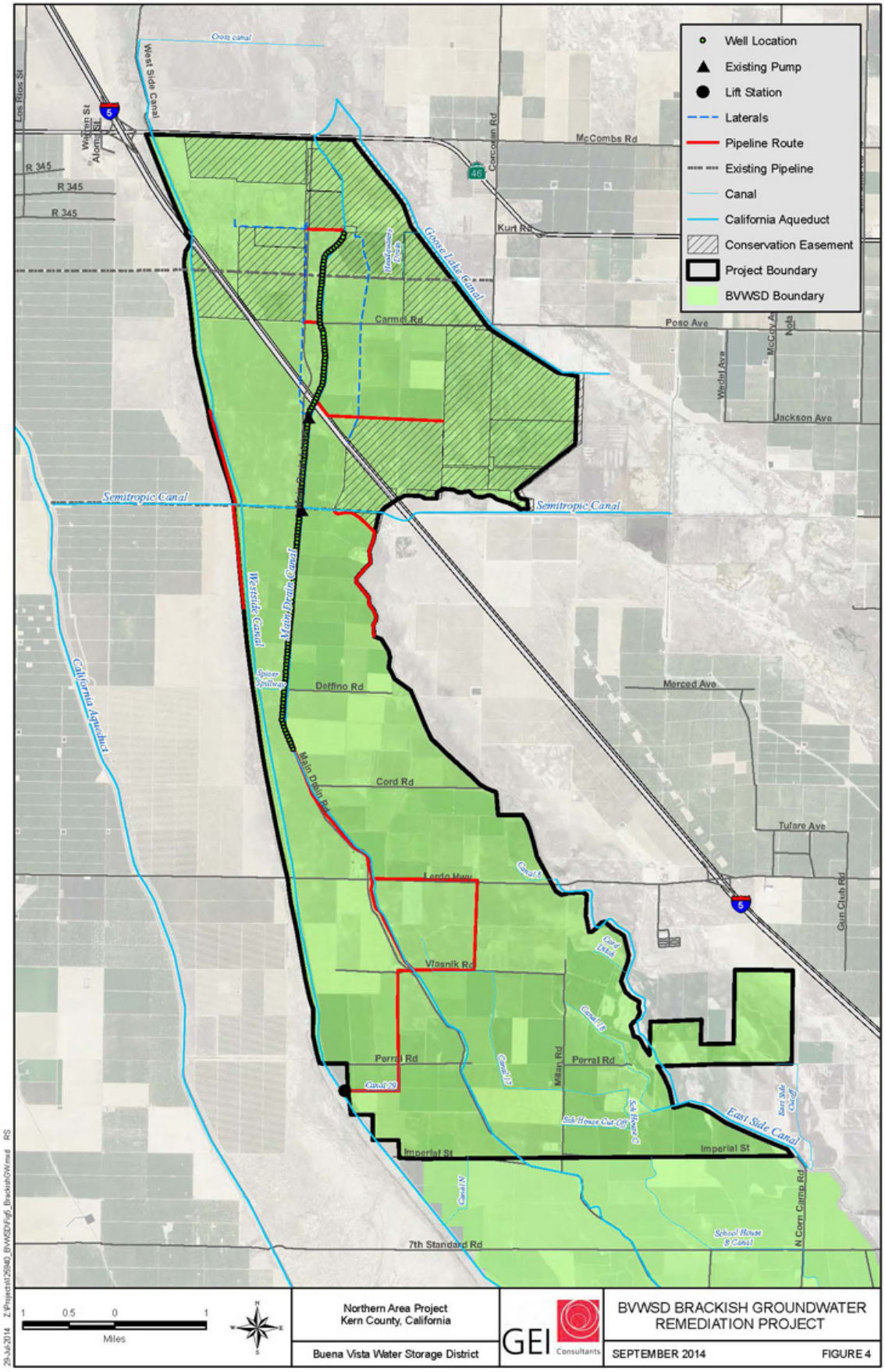

Figure 4: BVWSD Brackish Ground Water Remediation Project

Section C. References

Bushnel, R. G. 1978. Effect of noise on wildlife. Introduction. Pages 7-22. In: Fletcher, J. L. and R. G. Busnel (eds.). Effects of noise on wildlife. Academic Press, New York. 305

California Department of Conservation. 2014. http://www.quake.ca.gov/gmaps/WH/regulatorymaps.htm

California Department of Fish and Game (CDFG). 2004. Approved survey methodology for the blunt-nosed leopard lizard. Unpublished protocol, California Department of Fish and Game, Sacramento, California. 4 pp.

California Department of Fish and Game (CDFG). 2012. *Staff Report on Burrowing Owl Mitigation*. State of California Natural Resources Agency. Department of Fish and Game. March 2012.

California Department of Fish and Wildlife (CDFW). 2014. California Natural Diversity Database. Rare Find 5, for Commercial Subscribers. Habitat Planning and Conservation Branch. Electronic Database.

Lee, J. M. and D. B. Griffith. 1977. Transmission audible noise and wildlife. In: ProceedingsSymposium Ninth International. Congress on Acoustics. July 4-9, 1977. Madrid, Spain.

Lukenbach, R. A. 1975. What the ORVS are doing to the desert. Fremontia 2(4): 3-11.

San Joaquin Valley Air Pollution Control District (SJAPCD) 2012. http://www.valleyair.org/transportation/CEQA%20Rules/SPALTables61912.pdf.

San Joaquin Valley Air Pollution Control District (SJAPCD). 2014. http://www.valleyair.org/aqinfo/attainment.htm.

United States Environmental Protection Agency (EPA). 2014. Greenhouse Gas Reporting Program. http://www.epa.gov/ghgreporting/

United States Fish and Wildlife Service (USFWS). 2011. U.S. Fish and Wildlife Service Standardized Recommendations For Protection Of The Endangered San Joaquin Kit Fox Prior To Or During Ground Disturbance. Prepared by the Sacramento Fish And Wildlife Office, January 2011. 9 pp.

United States Fish and Wildlife Service (USFWS). 2013. *Caulanthus californicus* (California jewelflower)

United States Fish and Wildlife Service (USFWS). 2014a. Online Inventory of Threatened and Endangered Species. Available online at: http://sacramento.fws.gov/es/spp_lists/QuickList.cfm.

Weinstein, M. 1978. Impact of off-road vehicles on the avifauna of Acton Canyon, California. U.S. Bureau of Land Management, California Desert Program, Riverside, Calif. Report on Contr. CA-060-CT7-2734.

Section D. Technical Memos and Reports

Cultural Resources

Biological Resources

Groundwater Resources

Mitigation Measures

In order to reduce potential impacts to a less than significant level, the following mitigation measures will be implemented:

Air Quality

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

Biological

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

BIO 2 - As close to the beginning of project activities as possible, but not more than 14 days prior, a qualified biologist will conduct a final pre-construction biological survey of the proposed project site and buffer areas to verify that no special status species have become established in the project site or buffer areas.

BIO 3 – Project site boundaries will be clearly delineated by stakes and/or flagging. Project activities are restricted to the project site to minimize inadvertent degradation or loss of adjacent lands during project construction.

BIO 4 - All small mammal burrows that may serve as potential refugia for special-status species will be avoided by 50 feet during all project activities.

BIO 5 - Off-road traffic outside of designated project site will be prohibited.

BIO 6 - Project-related traffic will observe a 10 mph speed limit in the project site except on county roads and state and federal highways to avoid impacts to special status and common wildlife species.

BIO 7 - When possible project activities will be scheduled to avoid evening hours to minimize potential impacts to special status wildlife species that are active in the nighttime.

BIO 8 - Hazardous materials, fuels, lubricants, and solvents that spill accidentally during project-related activities will be cleaned up and removed from the project as soon as possible according to applicable federal, state and local regulations.

BIO 9 - All excavated steep-walled holes or trenches in excess of three (3) feet in depth will be provided with one or more escape ramps constructed of earth fill to prevent entrapment of endangered species or other animals. Ramps will be located at no greater than 1,000-foot intervals (for pipelines etc.) and at not less than 45-degree angles. Trenches will be inspected for entrapped wildlife each morning prior to onset of project activities and immediately prior to the end of each working day. Before such holes or trenches are filled they will be inspected thoroughly for entrapped animals. Any animals discovered will be allowed to escape voluntarily without harassment before project activities related to the trench resume, or removed from the trench or hole by a qualified biologist and allowed to escape unimpeded.

BIO 10 - All pipes, culverts, or similar structures stored at the proposed project site overnight having a diameter of four inches or greater will be inspected thoroughly for wildlife species before being buried, capped, or otherwise used or moved in any way. Pipes laid in trenches overnight will be capped. If during project implementation a wildlife species is discovered inside a pipe, that section of pipe will not be moved or, if necessary, moved only once to remove it from the path of project activity, until the wildlife species has escaped.

BIO 11 - All food-related trash items such as wrappers, cans, bottles or food scraps generated during project activities will be disposed of only in closed containers and regularly removed from the proposed project site. Food items may attract wildlife species onto the proposed project site, consequently exposing such animals to increased risk of injury or mortality. No deliberate feeding of wildlife will be allowed.

BIO 12 - To prevent harassment or mortality of wildlife species via predation, or destruction of their dens or nests, no domestic pets will be permitted on the project site.

BIO 13 - The following measures (a-g) will be implemented by BVWSD to ensure protection and avoid take of blunt-nosed leopard lizards during project implementation:

a. A final clearance survey will be conducted to ensure that no blunt-nosed leopard lizards are present and no burrows have become established in the project site and a 50 foot avoidance buffer. All burrows suitable for potential use by blunt-nosed leopard lizards will be avoided by project activities.

b. If suitable burrows that may serve as potential refugia for blunt-nosed leopard lizard cannot be avoided within the project site and a minimum 50-foot avoidance buffer cannot be maintained, then additional surveys to detect the species will be completed in accordance with CDFW's Approved Survey Methodology For The Blunt-Nosed Leopard Lizard (CDFG 2004).

c. If no individual blunt-nosed leopard lizards are observed and no burrows are identified within the project site and a 50-foot avoidance buffer during the final clearance survey, then project activities may proceed.

d. When possible, conduct project activities when lizards are inactive (generally when temperatures are below 77° F and/or above 95° F).

e. All vehicle operators will check under vehicles and equipment prior to operation, or if left idle.

f. If a blunt-nosed leopard lizard is observed during project pre-construction or clearance surveys, the USFWS and CDFW will be notified for further guidance.

BIO 14 - The following measures (a-b) will be implemented by BVWSD to ensure protection and no take of blunt-nosed leopard lizards during periods of inactivity for the species (late October through early spring):

a. If the project is conducted during the blunt-nosed leopard lizard inactive period (late October through early spring) and no burrows are identified within the boundaries of or within 50 feet of the project site during pre-construction surveys, then construction activities may proceed.

b. If suitable burrows that may serve as potential refugia for blunt-nosed leopard lizard cannot be avoided within the project site and a minimum 50-foot avoidance buffer cannot be maintained, then additional surveys to detect the species will be completed in accordance with the CDFW Approved Survey Methodology For The Blunt-Nosed Leopard Lizard (CDFG 2004).

c. CDFW recommends avoidance measures be observed year-round as the partial or entire collapse of a burrow may result in take of special status species and/or Blunt-Nosed Leopard Lizard that occupy the burrows even when not active.

BIO 15 - If San Joaquin kit foxes become established within the proposed project site prior to project implementation, BVWSD will implement the following measures (measures 15-20) contained in the USFWS's Standardized Recommendations For Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS 2011):

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

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

b. Exclusion zones will be fenced to protect the den in such a manner that kit fox's access to the den is not restricted Acceptable fencing includes untreated wood particle-board, silt fencing, or orange construction fencing, as long as it has opening for kit fox ingress/egress and keeps humans and equipment out.

c. Exclusion zone barriers will be maintained until all construction related or operational disturbances have been terminated. At that time all fencing will be removed to avoid attracting subsequent attention to the dens.

d. For potential and/or atypical dens, placement of 4 to 5 flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be

required, but the exclusion zone must be observed.

e. Project activities are not allowed with exclusion zones.

BIO 16 - If a natal/pupping den is discovered within the project site or within 200 feet of the project boundaries, the USFWS will be immediately notified and under no circumstances should the den be disturbed or destroyed without prior authorization. If the pre-construction biological surveys reveal an active natal pupping den or new information, BVWSD should contact the USFWS immediately to obtain the necessary take authorization/permit.

BIO 17 - Destruction of any known or natal/pupping kit fox den requires take authorization/permit from the USFWS. Consultation with USFWS and CDFW is required prior to any activities that may result in the loss of a potential or known natal/pupping den. Limited destruction of kit fox dens may be allowed, if avoidance is not a reasonable alternative, provided the following procedures are observed:

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

b. If kit fox activity is observed at the den(s) during this period, the dens) should be monitored for at least five (5) consecutive nights from the time of the observation to allow any resident animal to move to another den during its normal activity. Only when the den(s) are determined unoccupied may the den(s) be excavated.

c. Destruction of the den(s) should be accomplished by careful excavation until it is certain that no kit foxes are inside. The den(s) should be fully excavated, filled with dirt and compacted to ensure that kit foxes cannot reenter to use the den(s) during the construction period. If at any point during excavation, a kit fox is discovered inside the den(s), the excavation activity will cease immediately and monitoring the den as described above should resume. Destruction of the den(s) may be completed when in the judgment of the biologist, the animal has escaped, without further disturbance, from the partially destroyed den(s).

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

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

BIO 20 - If ground disturbing activities occur during the breeding season of migratory avian or

raptor species (February through mid-September), surveys for active nests will be conducted by a qualified biologist no more than 10 days prior to start of activities. Pre-construction nesting surveys will be conducted for nesting migratory avian and raptor species in the project site and buffer areas. Pre-construction biological surveys will occur prior to the proposed project implementation, and during the appropriate survey periods for nesting activities for individual avian species. Surveys will follow required CDFW and USFWS protocols, where applicable. A qualified biologist will survey suitable habitat for the presence of these species. If a migratory avian or raptor species is observed and suspected to be nesting, a buffer area will be established to avoid impacts to the active nest site. Identified nests should be continuously surveyed for the first 24 hours prior to any construction-related activities to establish a behavioral baseline. If no nesting avian species are found, project activities may proceed and no further mitigation measures will be required. If active nesting sites are found, the following exclusion buffers will be established, and no project activities will occur within these buffer zones until young birds have fledged and are no longer reliant upon the nest and parental care for survival:

- Minimum no disturbance of 250 feet around active nest of non-listed bird species and 250-foot no disturbance buffer around migratory birds;

- Minimum no disturbance of 500 feet around active nest of non-listed raptor species;

- and 0.5-mile no disturbance buffer from listed species and fully protected species until breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival;

- Once work commences, all nests should be continuously monitored to detect any behavioral changes as a result of project activities. If behavioral changes are observed, the work causing that change should cease and the appropriate regulatory agencies (i.e., CDFW, USFWS, etc.) will be consulted for additional avoidance and minimization measures; and

- A variance from these no disturbance buffers may be implemented when there is compelling biological or ecological reason to do so, such as when the project area would be concealed from a nest site by topography. Any variance from these buffers is advised to be supported by a qualified wildlife biologist and is recommended that CDFW and USFWS be notified in advance of implementation of a no disturbance buffer variance.

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

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

b. Occupied burrows will not be disturbed during the burrowing owl nesting season (February 1 through August 31) unless a qualified biologist approved by the CDFW verifies through non-invasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

c. Burrowing owls present in the project site or within 500 feet (as identified during pre-construction biological surveys) will be moved away from the disturbance area using passive relocation techniques. Prior to commencement of relocation, a management plan will be prepared and approved by CDFW. Relocation will be completed between September 1 and January 31 (outside of breeding season). A minimum of one or more weeks is required to relocate the owls and allow them to acclimate to alternate burrows. Passive relocation techniques will follow the CDFG Staff Report on Burrowing Owl Mitigation Guidelines (2012) and include the following measures:

    i. Install one-way doors in burrow entrances. Leave doors in place for 48 hours to ensure owls have left the burrow.

    ii. Allow one or more weeks for owls to acclimate to off-site burrows. Daily monitoring will be required for the passive relocation period.

    iii. Once owls have relocated off-site, collapse existing burrows to prevent reoccupation. Prior to burrow excavation, flexible plastic pipe will be inserted into the tunnels to allow escape of any remaining owls during excavation. Excavation will be conducted by hand whenever possible.

    iv. Destruction of burrows will occur only pursuant to a management plan approved by CDFW.

    v. As an alternative (if approved by CDFW), all occupied burrows identified off-site within 500 feet of construction activities outside of nesting season (September through January) and during nesting season (February 1 through August 31) could be buffered by hay bales, fencing (e.g. sheltering in place) or as directed by a qualified biologist and the CDFW.

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

a. If any special status plant species are identified during pre-construction surveys adjacent to the proposed disturbance zone, a qualified biologist retained by BVWSD will clearly delineate the location of the plant population. If the plant population(s) is directly adjacent to the proposed disturbance zone, BVWSD will install protective fencing between the disturbance zone and the plant population to

ensure that special status plants are avoided or adequately protected.

b. Avoid travel and impact to sensitive habitats near the project site.

Groundwater

GW -1: construct a new set of nested or clustered monitoring wells, with screens placed opposite the perched, shallow and deep aquifers to confirm the changes in water quality and water levels these different aquifers.

GW -2: If monitoring of the main aquifer (as described in Mitigation Measure GW-1) detects that the water level is declining to a degree that potential impacts to water users may occur, then water conserved by construction of the Northern Area Project will be used to periodically provide additional groundwater recharge to the main aquifer. This recharge will be conducted where the A-clay is not present, as necessary to compensate for the loss of groundwater recharge from the perched aquifer. (Note: this impact is not anticipated based on the analysis in this report, but this mitigation measure is incorporated to address an unexpected outcome.)

GW-3: The Brackish Groundwater Remediation Project (BGRP) will be implemented to lower water levels in the perched aquifer and control salinity in both the perched and main aquifer.

The BGRP is designed to remediate brackish groundwater within the BSA by recovering groundwater from two aquifer zones. In the northern Buttonwillow Service Area, the BGRP consists of construction and operating strategically-located shallow and medium depth brackish groundwater recovery wells and collection and conveyance pipelines. The project will pump low quality water from the aquifer and blend it with higher quality water delivered to the project area through the Northern Area Pipeline, making this water available for agricultural uses. The BGRP will lower and control the salinity in the perched aquifer and the main aquifer.

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