

**Initial Study
and Mitigated Negative Declaration**
for the
**Richvale Irrigation District Phase I Infrastructure Modernization
Project**
May 2020



Lead Agency:

Richvale Irrigation District
1193 Richvale Highway, Richvale, CA 95974

Prepared By:



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Table of Contents

1 Project Contacts and Information..... 1

2 Project Description 2

3 Determination 10

4 Environmental Checklist..... 12

4.1 Aesthetics..... 12

4.2 Agricultural and Forestry Resources..... 14

4.3 Air Quality..... 16

4.4 Biological Resources..... 21

4.5 Cultural Resources 33

4.6 Energy..... 35

4.7 Geology and Soils..... 36

4.8 Greenhouse Gas Emissions..... 38

4.9 Hazards and Hazardous Materials..... 39

4.10 Hydrology and Water Quality..... 41

4.11 Land Use and Planning 43

4.12 Mineral Resources..... 43

4.13 Noise..... 44

4.14 Population and Housing..... 45

4.15 Public Services 45

4.16 Recreation..... 46

4.17 Traffic and Transportation 47

4.18 Tribal Cultural Resources..... 48

4.19 Utilities and Service Systems 49

4.20 Wildfire 50

5 Mandatory Findings of Significance..... 53

6 Preparers and References 54

6.1 Report Preparation and Review..... 54

6.2 References 54

7 Acronyms and Abbreviations..... 56

8 Mitigation Monitoring and Reporting Program..... 58

List of Tables

Table 1. Types of Improvements To be Implemented as Part of the Project..... 2

Table 2: Attainment Status for Criteria Air Pollutants for Butte County CA. 18

Table 3: Federally listed Species with Potential to Occur in the Action Area and Effect Determinations 23

Table 4: State listed Species with Potential to Occur in the Action Area and Associated Status..... 23

Table 5: Proposed Mitigation for Active and Inactive Season Work. 32

List of Figures

Figure 1: Location map..... 9

Figure 2: APE map..... 10

Appendices

- Appendix A: Biological Resources Assessment
- Appendix B: Giant Garter Snake Habitat Assessment
- Appendix C: Project Work Locations

1 Project Contacts and Information

This Project Information, Description, and Environmental Checklist contained herein constitute the contents of an Initial Study in accordance with Section 15063 of the California Environmental Quality Act (CEQA) Guidelines:

Project Title	Richvale Irrigation District Phase I Infrastructure Modification Project
Lead Agency Contact and Address	Richvale Irrigation District 1193 Richvale Highway Richvale, CA 95974
Project Sponsor's Name and Address	Richvale Irrigation District Sean Earley, General Manager (530) 882-4243
Contact Person and Phone Number	Sean Earley, General Manager Richvale Irrigation District (530) 882-4243 Mark Wolfe AICP, Principal Planner NorthStar (530) 893-1600 ext. 213

2 Project Description

The proposed project is part of Richvale Irrigation District’s (RID) comprehensive plan for system modernization and boundary flow monitoring developed as part of the 2014 Feather River Regional Agricultural Water Management Plan (FRRAWMP). The project will implement modernization improvements at 12 locations to reduce operational spillage and increase on-farm efficiency to provide multiple water use efficiency (WUE) benefits. The District has received implementation funding through the California Department of Water Resources (DWR) and the U.S. Bureau of Reclamation, and the proposed actions are expected to be completed by mid-2021. **(Figure 1-Location Map)**

Description of Construction Activities

Project activities will vary according to the needs of each specific location. These activities will include structural improvements at lateral canal headings along the Main Canal and Main West Canal to provide control of water level, flow, measurement and automation. Improvements will mostly consist of retrofitting of existing structures with new automated gates or the installation of weir boxes and Remote Tracker (RT) brackets. In addition, at some locations, improvements will include the construction of a concrete-lined section of the irrigation canal which will include buried conduit. Construction activities will vary according to the needs of each specific improvement location.

For purposes of this assessment, project activities were divided into eight separate improvement types, four of which would result in ground disturbing activities ranging in size from 2,020 square feet (sf) to 18,915 sq. A list of improvement types and if ground disturbance is required can be seen in **Table 1**.

Table 1. Types of Improvements To be Implemented as Part of the Project.

Site Name	Construction Activity	Ground Disturbance Required
Ollies Weir/Humpy West/Humpy Weir	Line section, bury conduit (105 ft), replace board bays with metal slide gates. Humpy West to be abandoned, boards removed.	Yes
Humpy South	Line section, bury conduit (270 ft)	Yes
Mixing Box	Line sections, actuated slide gate retrofit, replace 4 bays with slide gates and High Pump heading, bury conduit (470 ft)	Yes
Bradford Lateral	Weir box and RT bracket	Yes
Peterson Lateral	Weir box and RT bracket	Yes
Jones Weir	Actuated slide gate – retrofit	No

Site Name	Construction Activity	Ground Disturbance Required
Banyon Flume Resolution/Watts Heading	Replace board bays with metal slide gates and ITRC flap gate	No
9010 Weir	Replace board bays with metal slide gates	No
Rystrom Weir	Replace board bays with metal slide gates	No
Low Pump Heading and Drop Structure	New actuated radial gates	No
Floyd's Weir	Actuated slide gate – retrofit	No
Tower Weir	Actuated slide gate – retrofit	No

Activities that require ground disturbance and structural modification will consist of excavation trenching, concrete lining, new structure placement, and backfilling. Depending on the project type, construction activities will be completed with an excavator, skid steer-loader, skid-steer trencher, dump truck, concrete mix truck, concrete pump truck, a flatbed truck with a crane, and pickup trucks.

Typical excavation activities associated with the lining of canals, will consist of removing, re-contouring, and re-compacting earthen material along the canal banks to create a landform that will facilitate the lining of the section with concrete. Rock slope protection would be placed along the side slopes of transition points to protect the concrete lined portions from scour. Earthen material from excavations of the lined portions of canal may be temporarily stockpiled adjacent to the canal along the access road within the staging area. All work will be performed adjacent to the structure from the point of access.

Work areas vary depending on the improvement type and will include the improvement project, construction staging, and stockpile areas, if applicable. Construction staging will take place on the canal access roads adjacent to the improvement area. If equipment and construction materials are stored outside of the work area, they will be located within the District's maintenance yard and/or a construction easement would be obtained from adjacent landowners to utilize their existing agricultural operations yard. These yards are generally improved with gravel parking and outbuildings and are used for equipment storage, agricultural processing, vehicle maintenance, etc. All work areas will be clearly defined and marked to confine the areas of disturbance. In addition to the work areas, there are approximately 9.2 miles of access roads providing ingress and egress to the improvement sites. Since the project is occurring at discrete locations along longer portions of canal, it is important to differentiate between work areas and disturbance area. As such, the project areas include all the activities at each improvement site (i.e. staging, stockpiling, equipment movement, etc.) while the disturbance area is the where temporary and permanent ground disturbing activities will occur. It should be noted; the disturbance area is contained within the greater project area. See **Appendix C** for maps of project work locations.

Construction at each work location would be short in duration as the project mostly involves small replacements of water control structures such as weir boxes although lining canal sections may be longer in duration. Due to water delivery constraints during the irrigation season it is anticipated that some work may be necessary during the GGS inactive season, as this also coincides with a time when the District's canals are typically dry. However, when feasible, project construction will be conducted during the snake's active season (May-October). It is assumed that construction activities would likely occur concurrently at multiple locations. For activities involving retrofitting existing structures, the ease of construction and reduction in earthmoving activities has the potential to shorten the construction window for those types.

Construction is slated to begin in 2020. The schedule is influenced by inclement weather, timing of the execution of access agreements and permits, work windows and constraints that may be imposed by conditions defined in applicable permits. The project and construction activities are slated for completion in 2021. An extended timeframe may be required for construction completion dependent upon weather and permit requirements.

For construction activities anticipated to occur between October 1 through April 30 (GGS inactive season), any pre-construction activities that can occur, such as mechanical mowing, hand cutting, and site preparation, would be completed prior to September 15 of the year in which winter work is expected. Proposed avoidance and minimization measures that impact work scheduling are discussed in Avoidance and Minimization Measures

2.1 Environmental Setting

The Richvale Irrigation District Phase I Infrastructure Modernization Project is located in Butte County, within Township 19N, Range 02E of the Shippee, Biggs, West of Biggs, and Nelson U.S. Geological Survey (USGS) 7.5-minute quadrangles. More generally, RID is located in the northern Sacramento Valley, east of the Butte Creek and west of the Thermalito Afterbay within and surrounding the community of Richvale. The District's service area encompasses approximately 30,000 acres providing water primarily to agricultural customers. The District is bound on the north by the southern boundary of the Western Canal Water District, and on the south by the Cherokee Canal and the Biggs Extension Canal while the California Department of Fish and Wildlife's Upper Butte Basin Wildlife Area lies to the west. Adjoining water districts include Western Canal Water District to the north, Butte Water District to the east, and Biggs-West Gridley Water District to the south. The District is located in CALFED Subregion 5 and relies exclusively on surface water from the Bay-Delta watershed for its water supply. Landowners within the District also rely on groundwater to a limited extent, with increased reliance in years of severe drought and curtailment of surface water supplies from Lake Oroville.

The biological survey area (BSA) is that area within the District's service area where proposed improvements are located. Each improvement area includes the project area, the impact area, and the surrounding survey buffer. The environmental setting describes the BSA in its entirety.

The BSA is composed primarily of irrigation canals and rice fields, small areas of riparian habitat are found along the canals in the southern portion of the BSA. More urban and residential habitats are found within the central portion of the BSA within and surrounding Richvale. Vegetation observed within the District included species typical of urban and rural areas, pastures, rice, disturbed grasslands, riparian areas, and freshwater wetland habitats throughout the valley. The vegetation along the District's canals is dominated by non-native grasses and forbs along the top and upper portion of the canal banks and hydrophytic species along the lower portions near the water line and within the canal.

Non-native grass and forb species observed along the upper portions of District canal banks include johnsongrass (*Sorghum halepense*), crab grass (*Digitaria sanguinalis*), slender wild oat (*Avena barbata*), seashore vervain (*Verbena littoralis*), yellow star thistle (*Centaurea solstitialis*), field mustard (*Brassica rapa*), curly dock (*Rumex crispus*), horseweed (*Erigeron canadensis*), prickly lettuce (*Lactuca serriola*) and field bindweed (*Convolvulus arvensis*). The composition of species is heavily affected by mowing and herbicide applications conducted during routine canal maintenance of the access roads. Hydrophytic species encountered along the lower portions of the canal banks and within the canals include cattail (*Typha latifolia*), hardstem bulrush (*Schoenoplectus acutus*), water primrose (*Ludwigia hexapetala*), marsh purslane (*L. peploides*), mosquito fern (*Azolla filiculoides*), duckweed (*Lemna* sp.), and watergrass (*Echinochola crus-galli*).

The vegetation in the more urban portions of the district consists of ornamental tree species typical of residential landscaping including fruitless mulberry (*Morus alba*), Chinese pistache (*Pistacia chinensis*), palm (*Washingtonia* sp.), eucalyptus (*Eucalyptus* sp.), silver maple (*Acer saccharinum*), camphor (*Cinnamomum camphora*), cypress, and birch (*Betula* sp.). Ground cover consists of manicured landscaping including a variety of shrubs and herbaceous species and lawn.

Soils within the District generally consist of clay alluvium over loamy alluvium. A majority of the District is covered by four soil map units defined by the Natural Resources Conservation Service (NRCS), including Lofgren-Blavo Complex 0 to 1 percent slope, Esquon-Neerdobe Complex, 0 to 1 percent slopes, Duric Xerarents-East Biggs Complex 0 to 1 percent slope, and Esquon Silt Loam 0 to 1 percent slope. Topography is generally flat sloping to the southwest with elevations ranging from approximately 110 feet above mean sea level (msl) to approximately 60 feet above msl near the southwestern portion of the District. Weather within the District is typical of Mediterranean climates with hot, dry summers and mild winters with low to moderate rainfall amounts. Average rainfall is approximately 27 inches with a majority falling between November and March.

Habitat Types

California habitat types are described in the California Wildlife Habitat Relationships (CWHR) system based on classifications created by Mayer and Laudenslayer (1988). The CWHR system was designed to aid in the mapping of habitats utilized by California's commonly-occurring birds, mammals, reptiles, and amphibians.

The project area is composed primarily of irrigation canals and rice fields, small areas of riparian habitat are found along the Cherokee Canal. More urban and residential habitats are found within the central portion of the project area within and surrounding Richvale..

Barren

Barren habitat is defined by a lack of vegetation. Structure and composition of the substrate is often determined by the region of the state, the surrounding environment, and geologic conditions. Barren areas represent extreme environments for vegetation (i.e. impermeable substrate, vertical slope). Barren habitats are found in juxtaposition with a wide variety of habitat types throughout California. Where vegetation is absent the structure of the substrate becomes the primary component of the habitat.

Barren habitat is sporadically found throughout the District boundaries. It primarily occurs on pathways and access roads adjacent to the canals.

Urban

Urban habitat occurs throughout California from small villages to the largest metropolitan areas. The vegetative structure within urban habitats can be quite variable, but is often maintained. Species

composition can be dominated by exotic species but many times natives can be found as they can be better suited to the physical conditions of the region. Lawns are the typical groundcover found in urban habitats, they are comprised of a variety of grass species and are almost always irrigated. Urban habitat is present in the form of single-family residences throughout the BSA. The homes within the BSA are maintained and includes ornamental trees and shrubs plus a lawn. Species observed in urban habitat included European starling (*Sturnus vulgaris*) and house sparrow (*Passer domesticus*).

Urban habitat is primarily found within and surrounding Richvale as well as residential land uses located adjacent to agricultural land uses within the District.

Rice

Rice is found growing throughout the northern Central Valley typically on level terrain with heavy clay soils that hold water well. Rice is a flood irrigated annual crop grow in laser leveled fields that are flooded and then dried down to let the seed mature and to facilitate harvesting of the fields. Rice crops are typically planted in the spring and harvested in the fall months. Wildlife observed in this habitat included Brewer's blackbird (*Euphagus cyanocephalus*), red-winged blackbird (*Agelaius phoeniceus*), killdeer (*Charadrius vociferus*), and great blue heron (*Ardea herodias*).

This habitat type is found covering large areas of the District, primarily surrounding the community of Richvale.

Riverine

Riverine habitats consist of intermittent or perennial water. Higher elevation rivers and streams tend to be smaller and higher velocity. At lower elevations, rivers and streams become slow and enlarged. The transition from higher elevation to lower will cause temperature and turbidity to increase, dissolved oxygen will decrease and the bottom will transition from rocky towards muddy or silty. Riverine habitats are found in close association with terrestrial habitats and in many cases, are contiguous with lake and emergent wetland habitats.

Riverine habitat is present along Cherokee Canal at the southern border of the District, additionally, many of the canals throughout the District function similarly to riverine habitat. The canals are variable in width and depth but generally fall between 5 to 30 feet wide and anywhere from 1 to 10 or more feet deep. The canals are earthen lined for the most part and vegetated along the banks with primarily non-native species present. Some of the canals contain hydrophytic vegetation within the prism including cattail, bulrush, water primrose, mosquito fern, water grass, and smartweed.

Pasture

Pasture habitats are planted on flat and gently rolling terrain on soils not suitable for other crops and where an ample water supply is available (Mayer and Laudenslayer, 1988). Vegetation composition within pastures are a mix of perennial grasses and legumes that typically provide 100 percent canopy cover. The plant species seeded in pastures varies depending on management practices used and geographic area. Some typical plant species occurring in pastures includes Bermuda grass (*Cynodon dactylon*), dallisgrass (*Paspalum dilatatum*), rye grass (*Lolium* spp.), a variety of clovers (*Trifolium* sp.), and pacific rush (*Juncus effusus*). The height and density of the vegetation is dependent on cultural and management practices including the type of livestock and the duration of the grazing. Pastures can be utilized by a variety of wildlife including ground nesting birds such as waterfowl, pheasant, cranes, egrets, and killdeer. Pastures also provide foraging habitat for raptor species including northern harriers and white-tailed kites and mammal species including deer.

Pasture habitat is found sporadically to the west of Richvale as well in small portions at the periphery of the towns at rural residences.

Annual grassland

Annual grasslands are described as open grasslands composed primarily of annual plant species. Species commonly found within annual grasslands include wild oats (*Avena fatua*), ripgut brome (*Bromus diandrus*), red brome (*Bromus madritensis*), soft chess (*Bromus hordeaceus*), wild barely (*Hordeum spontaneum*), foxtail fescue (*Vulpia myuros*), filaree (*Erodium ssp.*), and various clovers (*Castilleja*) among others. Wildlife species that use annual grasslands include the western fence lizard (*Sceloporus occidentalis*), garter snake (*Thamnophis*), western rattlesnake (*Crotalus oreganus*), black-tailed jackrabbit (*Lepus californicus*), California ground squirrel (*Otospermophilus beecheyi*), burrowing owl (*Athene cunicularia*), short-eared owl (*Asio flammeus*), horned lark (*Eremophila alpestris*), western meadowlark (*Sturnella neglecta*), northern harrier (*Circus hudsonius*), and American kestrel (*Falco sparverius*).

Annual grassland habitats are found on the upper portions of most of the canals within the District. They tend to occur in narrow strips rather than large portions of contiguous land.

Fresh Emergent Wetland

Fresh emergent wetlands are found throughout California and typically occur in level to gently rolling terrain. Fresh emergent wetlands are flooded enough that plants present are able to prosper in anaerobic conditions. This habitat is dominated by emergent hydrophytes such as hardstem bulrush (*Schoenoplectus acutus*) and cattail (*Typha latifolia*). Typical wildlife observed in this habitat include great egret (*Ardea alba*), great blue heron, killdeer, red-winged blackbird, Brewer's blackbird, wood duck (*Aix sponsa*), mallard (*Anas platyrhynchos*), Sierran tree frog (*Pseudacris sierra*) and red swamp crayfish (*Procambarus clarkia*).

Fresh emergent wetland habitat is found within many of the canals within the District's boundaries.

Valley Foothill Riparian

Valley foothill riparian habitat generally is found in association with riverine systems in California. Structurally, valley foothill riparian habitats are quite diverse, containing distinct vegetation layers. Fremont cottonwood (*Populus fremontii*), interior live oak (*Quercus wislizeni*), and Goodding's black willow (*Salix gooddingii*) dominated the canopy of the valley foothill riparian habitats on the site. The understory was quite sparse but did contain mule's fat (*Baccharis salicifolia*). The herbaceous layer consisted mostly of non-native grasses.

The diversity of vegetative structure within valley foothill riparian habitats provides food, water, nesting, dispersal habitat, and shelter for a number of species. On the site Bullock's oriole (*Icterus bullockii*), western kingbird (*Tyrannus verticalis*), lesser goldfinch (*Spinus psaltria*), house finch (*Haemorhous mexicanus*), Bewick's wren (*Thryomanes bewickii*), tree swallow (*Tachycineta bicolor*), northern mockingbird (*Mimus polyglottus*), and western fence lizard (*Sceloporus occidentalis*) were all encountered in the valley foothill riparian patch within the BSA.

Valley foothill riparian habitat is found in very small portions primarily along the Cherokee canal east and south of Richvale.

NorthStar prepared a Biological Resources Assessment (BRA, **Appendix A**) which includes a list of special-status plants and wildlife species from information provided by the U.S. Fish and Wildlife Services (USFWS) species list, the California Department of Fish and Wildlife Natural Diversity Database (CNDDDB), and the California Native Plant Society (CNPS) species list. The information was evaluated to determine the likelihood of each species' occurrence in and near the project and the potential impacts from the proposed project (NorthStar, May 2019). Two special-status plant species were determined to have at least moderate potential to occur including Sanford's arrowhead (*Sagittaria sandordii*) and woolly rose-mallow (*Hibiscus lasiocarpus* var. *occidentalis*). The BSA potentially

provides suitable habitat for two special-status reptile species including giant garter snake (GGS) (*Thamnophis gigas*), and northwestern pond turtle (*Actinemys marmorata*). Northwestern pond turtle was observed by NorthStar biologist Matt Rogers within the District's canal adjacent to Colusa Highway. Giant garter snake was not observed during biological surveys but there are a number of known occurrences within the area with some overlapping with potential work areas. The BSA provides potentially suitable nesting habitat for a variety of birds including tricolored blackbird (*Agelaius tricolor*), greater sandhill crane (*Grus canadensis tabida*), loggerhead shrike (*Lanius ludovicianus*), merlin (*Falco columbarius*), northern harrier (*Circus hudsonius*), Osprey (*Pandion haliaetus*), Swainson's hawk (*Buteo swainsoni*). Additionally, the BSA provides suitable foraging and nesting habitat for variety of migratory birds protected by the Migratory Bird Treaty Act (MBTA) within the project boundaries

There is no potential for any special-status fish species to occur within the BSA due to a lack of suitable riverine habitat for listed salmonids. Additionally, water diversions are required to be screened to prevent passage of adult anadromous fish from natural water bodies with connectivity to the ocean into the canals.

Due to the potential for GGS, NorthStar prepared a Biological Assessment (BA) to initiate consultation with the USFWS to request concurrence that the proposed project may affect, and is likely to adversely affect the federally-listed as threatened GGS. The proposed project is not within designated or proposed critical habitat for any federally-listed species. The project will incorporate the Avoidance and Minimization Measures identified by regulatory agencies to avoid impacts to GGS (NorthStar, June 2019). No other federally listed special-status species are expected to occur in the project area.

The mean annual precipitation is approximately 20 inches per year. The mean annual air temperature during the summer is approximately 77°F, and approximately 48°F during the winter months. (WRCC 2018). The site is approximately 55 feet above sea level.

2.2 Other Public Agencies Whose Approval is Required/Obtained

United States Army Corps of Engineers

- USFWS Section 7 Endangered Species Act (ESA) Determination

California Department of Fish and Wildlife-Fish and Game Code

- Section 2080.1 Notification and Consistency Determination

Figure 1: Location map

Figure 2: APE map

3 Determination

3.1.1 Environmental Factors Potentially Affected

The environmental factors checked below could be potentially affected by this project; however, with the incorporation of mitigation measures,* potentially significant impacts are reduced to less than significant level by the project” (CEQA Guidelines Section 15382).

- | | | |
|----------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------------------|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agricultural/Forestry Resources | <input checked="" type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy |
| <input type="checkbox"/> Geology/Soils | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards/Hazardous Materials |
| <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Population & Housing | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation | <input type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Wildfire | <input checked="" type="checkbox"/> Mandatory Findings of Significance |

3.1.2 Determination:

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

Date

Matt Rogers, Associate Planner

Richvale Irrigation District

Printed Name

For

4 Environmental Checklist

4.1 Aesthetics

Would the project:	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant	No Impact
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources within a state scenic highway?				X
c) Substantially degrade the existing visual character or quality of the site/surroundings?				X
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				X

4.1.1 Setting

The Butte County General Plan Figures COS-7, COS-8, and COS-9 display identified scenic resources within Butte County. The scenic resources depicted in COS-7 include the land based scenic resources (Table Mountain, Butte Creek Canyon, Feather Falls Scenic Area, and Sacramento River Wildlife Refuge) and water based scenic resources (Lake Oroville, Lake Wyandotte, Thermalito Afterbay, and Philbrook Reservoir).

There are no officially designated State Scenic highways within Butte County, however, State Route 70 (SR 70) north of the intersection of State Route 149 (SR 149) is considered an eligible State Scenic Highway. As seen in Figure COS-8 in the Butte County General Plan the County has designated SR 70 through the Feather River Canyon and a portion of State Route 32 (SR 32) north of Forest Ranch as County Scenic Highways.

Scenic Highway Overlay Zones are identified in COS-9 of the General Plan, the zones extend 350 linear feet from the centerline of each of the scenic routes identified. The Scenic Overlay Zones can be found on portions of SR 32 north of Chico, the Skyway, southern portions of State Route 191 (SR 191) and Pentz Road, and portions along Forbestown Road and Lumpkin Road.

Based on information presented within the Butte County General Plan, the project area is not located within, or in the vicinity of any identified scenic resources.

4.1.2 Discussion

a) **Less than Significant.** The Butte County General Plan does not inventory any scenic vistas within the project area and there are no scenic vistas proximate to the project site. The General Plan Draft Environmental Impact Report (DEIR) identifies geographic features such as the Table Mountain, Butte Creek Canyon, Feather Falls Scenic Area, and the Sacramento River Wildlife Area as scenic resources within the County which contribute to the County's character. This project is not located near the Sacramento River or the Feather River. The project site is north of the Sutter Buttes, however it will not obstruct the views of the mountain range. Although the rural setting and unique geography of Butte County and its surrounding area have created a number of scenic vistas and corridors, the

proposed project only includes minor canal facilities replacement, along the existing canal alignments for improved efficiencies and will not have a substantial adverse effect on a scenic vista.

- b) **No Impact.** There are no resources within a state scenic highway in the project area. Furthermore, there are no officially recognized scenic roadways in Butte County. The proposed project would not result in a significant change to the appearance of the existing roadway, nor would it eliminate access to scenic views or alter the landscapes surrounding the project site.
- c) **No Impact.** The proposed project will not substantially degrade the existing visual character or quality of the site and its surroundings. The project would not create structures with a substantial vertical presence. Temporary visual impacts may occur during construction activities, when heavy equipment and construction materials will be present within the project area. Neither the function nor the general appearance of the surrounding area would be substantially modified by the proposed project.
- d) **No Impact.** The improvements associated with this project do not include the installation of lighting or reflective surfaces that could contribute to substantial sources of light or glare. Additionally, construction will not occur during the evening or nighttime hours.

Mitigation: None required

4.2 Agricultural and Forestry Resources

Would the project:	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant	No Impact
a) Convert Farmland (Prime, Unique or of Statewide Importance) pursuant to the Farmland Mapping and Monitoring Program of the CA Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 1220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
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?			X	

4.2.1 Setting

Important Farmland

To characterize the environmental baseline for agricultural resources, Important Farmland Maps produced by the California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP) were reviewed. Important Farmland maps show categories of Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance (if adopted by the county), Grazing Land, Urban and Built-up Land, Other Land, and Water. Prime Farmland and Farmland of Statewide Importance map categories are based on qualifying soil types, as determined by the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), as well as current land use. These map categories are defined by the Department of Conservation's FMMP as follows:

Prime Farmland: Land which has the best combination of physical and chemical characteristics for the production of crops. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming methods.

Farmland of Statewide Importance: Land that is similar to *Prime Farmland* but with minor shortcomings, such as greater slopes or less ability to hold and store moisture.

Unique Farmland: Land of lesser quality soils used for the production of specific high economic value crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to produce sustained high quality or high yields of a specific crop when treated and managed according to current farming methods. It is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Examples of crops include oranges, olives, avocados, rice, grapes, and cut flowers.

Farmland of Local Importance: Land of importance to the local agricultural economy, as determined by each county's board of supervisors and local advisory committees. Examples include dairies, dryland farming, aquaculture, and uncultivated areas with soils qualifying for *Prime Farmland* and *Farmland of Statewide Importance*. Butte County has not adopted a definition of Farmland of Local Importance.

Grazing Land: Land on which the existing vegetation, whether grown naturally or through management, is suitable for grazing or browsing of livestock.

Urban and Built-up Land: Land used for residential, industrial, commercial, construction, institutional, public administrative purpose, railroad yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment plants, water control structures, and other development purposes. Highways, railroads, and other transportation facilities are also included in this category.

Other Land: Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

Water: Water areas with an extent of at least 40 acres.

Williamson Act

The California Land Conservation Act of 1965, commonly known as the Williamson Act, was established based on numerous State legislative findings regarding the importance of agricultural lands in an urbanizing society. Policies emanating from those findings include those that discourage premature and unnecessary conversion of agricultural land to urban uses and discourage discontinuous urban development patterns, which unnecessarily increase the costs of community services to community residents. The Williamson Act authorizes each County to establish an agricultural preserve. Land that is within the agricultural preserve is eligible to be placed under a contract between the property owner and County that would restrict the use of the land to agriculture in exchange for a tax assessment that is based on the yearly production yield. The contracts have a 9-year term that is automatically renewed each year, unless the property owner or county requests a non-renewal or the contract is cancelled.

4.2.2 Discussion

- a) **No Impact.** The proposed project does occur adjacent to lands designated as Important Farmlands; however, the project will occur within the existing canal and canal levee right-of-way. The project would not result in the conversion of Prime Farmland, Farmland of Statewide Importance, Unique Farmland or Farmland of Local Importance, as shown on the maps prepared pursuant to Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.
- b) **No Impact.** The project will not conflict with existing zoning for agricultural use, or a Williamson Act Contract. While there are Williamson Act Contracts on lands adjacent to the project, project activities in these areas will occur within the existing roadway right-of-way. Therefore, relative to land use designations and Williamson Act contracts, there would be no impact.
- c) **No Impact.** The proposed project would not conflict with existing zoning for, or cause the rezoning of forestland (as defined in Public Resources Code §1220(g)), timberland (as defined in Public Resources Code §4526), or Timberland Production (as defined in Government Code §51104(g)), because the

project site and the surrounding area does not contain forest land. The proposed project is located in the Sacramento Valley, a non-forested region.

- d) **No Impact.** The proposed project would not cause the rezoning or loss of forestland or timberland to non-forest use due to its location within Butte County. The proposed project is located on the valley floor of California’s Central Valley, and, as such does not contain forest land.
- e) **Less Than Significant.** The proposed project does not involve changes to the existing environment that could result in the conversion of Farmland to non-agricultural use. The proposed project involves the replacement of water district facilities that will improve water delivery to area farmers. Agricultural uses in the surrounding area will continue.

Mitigation: None required

4.3 Air Quality

Would the project:	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?		X		
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 emissions that exceed quantitative thresholds for ozone precursors)?		X		
d) Expose sensitive receptors to substantial pollutant concentrations?		X		
e) Create objectionable odors affecting a substantial number of people?			X	

4.3.1 Setting

The proposed project is located within the Northern Sacramento Valley Air Basin (NSVAB). Summer conditions in the NSVAB are typically characterized by high temperatures and low humidity, with temperatures averaging from approximately 90 degrees Fahrenheit during the day and 50 degrees Fahrenheit at night. During the summer months, the prevailing winds are typically from the south. Winter conditions are characterized by occasional rainstorms interspersed with stagnant and sometimes foggy weather. The daytime average temperature is in the low 50s°F and nighttime temperatures average in the upper 30s°F. During winter, winds predominate from the south, but north winds frequently occur. Rainfall occurs mainly from late October to early May, with an average of 17.2 inches per year, but this amount can vary significantly each year.

Dispersion of local pollutant emissions are predominately affected by the prevailing wind patterns and inversions that often occur in the NSVAB. Within the NSVAB, two types of inversions can occur. During the summer months, sinking air forms a “lid” over the region and confines pollution to a shallow layer near the ground, which can contribute to photochemical smog problems. During winter nights, air near the

ground cools while the air aloft remains warm, which can cause poor dispersion of ground level pollutant emissions (Butte County General Plan EIR; BCAQMD, 2014).

Current Ambient Air Quality

Federal and state standards have been established for six criteria pollutants, including ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulates less than 10 microns and 2.5 microns in diameter (PM₁₀ and PM_{2.5}), and lead (Pb). The Butte County Air Quality Management District (BCAQMD) is the primary agency responsible for assuring that the federal and state ambient air quality standards are attained and maintained in Butte County. The BCAQMD operates a network of ambient air monitoring stations throughout Butte County. Depending on whether the standards for a particular criteria air pollutant has been met or exceeded, the local air basin is classified as being in “attainment” or “nonattainment.” Based on the most recent monitoring data, Butte County is a nonattainment area for both state and federal ozone standards, the state PM_{2.5} standards, and the state PM₁₀ standards. Butte County is in attainment for the state and federal standards for sulfur dioxide, nitrogen dioxide, carbon monoxide, and federal standards for PM_{2.5} and PM₁₀ (BCAQMD, 2018).

Air Quality Planning

The California Clean Air Act requires air districts to prepare a plan for air quality improvement for criteria pollutants for which the District is in nonattainment. The BCAQMD’s Air Quality Attainment Plan was first adopted in 1991 and updated in 1994, 1997, 2000 and 2003. In 2006, the District collaborated with other air pollution control districts in the NSVAB to prepare a joint Air Quality Attainment Plan. That joint plan has been updated in 2006, 2009 and 2012 as the Northern Sacramento Valley Planning Area Triennial Air Quality Attainment Plan. The attainment plan is the basis for an air district’s functional strategy to meet federal and state ambient air quality standards.

The BCAQMD, in its role of insuring projects are properly evaluated for consistency with ambient air quality standards and the Northern Sacramento Valley Planning Area Triennial Air Quality Attainment Plan, have prepared guidelines to assist applicants and lead agencies in evaluating potential air quality and greenhouse impacts that may occur with a proposed project. Established with these guidelines are screening criteria to determine whether or not additional modeling for criteria air pollutants is necessary for a project. The screening criteria listed in Table 4.3-2 were created using CalEEMod version 2013.2.2 for the given land use types. To determine whether or not a proposed project meets the screening criteria, the size and metric for the land use type (units or square footage) should be compared with that of the proposed project. If a project meets the applicable screening criteria, then further quantification of criteria air pollutants is not necessary, and it may be assumed that the project would have a less than significant impact for criteria air pollutants. If a project exceeds the size provided by the screening criteria for a given land use type then additional modeling and quantification of criteria air pollutants should be performed (BCAQMD, 2014).

LAND USE TYPE	MAXIMUM SCREENING LEVELS FOR PROJECTS
Single Family Unit Residential	30 units
Multi-Family (Low Rise) Residential	75 units
Commercial	15,000 square feet
Educational	24,000 square feet
Industrial	59,000 square feet
Recreational	5,500 square feet
Retail	11,000 square feet

Source: Butte County AQMD, CEQA Air Quality Handbook, 2014

4.3.2 Discussion

- a) **Less Than Significant.** The proposed project is the replacement of small, structurally deficient water control facilities. It does not involve the construction of new expanded facilities. The proposed project will be required to comply with all applicable rules, regulations, and control measures including permitting, prohibitions, and limits to emissions that work to reduce air pollution throughout California. Therefore, it will not conflict with or obstruct implementation of any air quality plans in Butte County. The proposed project would not create a source of new vehicle traffic, such as a new housing development or commercial uses, and thus there would be no added vehicle trips to the existing roadway network, and no long-term air quality impacts. The proposed project is located within the Northern Sacramento Valley Air Basin (NSVAB) and the jurisdiction of the Butte County Air Quality Management District (BCAQMD). Construction activities may result in minimal ground disturbance due to placement of water control components. To comply with the BCAQMD rules (3.0 and 3.16, visible and fugitive dust emissions), the District shall comply with all Best Available Mitigation Measures (BAMMs) for the control of construction related particulate emissions.
- b) **Less Than Significant With Mitigation Incorporated.** Implementation of the proposed project would result in the generation of short-term construction-related air pollutant emissions. Diesel fumes may be noticeable near the site; however, diesel fumes will be a short-term effect. All equipment must comply with California emissions standards. Exhaust emissions from construction equipment would contain reactive organic gases (ROG), nitrogen oxides (NOx), carbon monoxide (CO) and particulate matter less than 10 microns in diameter (PM10). Particulate matter less than 10 microns emissions would also result from windblown dust (fugitive dust) generated during construction activities. As shown in **Table 1**, per the California Ambient Air Quality Standards (CAAQS) the project area is designated as non-attainment for ozone, and a non-attainment area for 24-hour PM10.

The project would not result in construction related emissions exceeding BCAQMD emission thresholds, having a less than significant impact to regional air quality. The incorporation of **Air Quality MM-1**, would ensure construction related emissions impacts would be less than significant.

Table 2: Attainment Status for Criteria Air Pollutants for Butte County CA.

Pollutant	State	Federal
NOx	Attainment	Attainment
SO ₂	Attainment	Attainment
CO	Attainment	Attainment
1-hour Ozone	<i>Non-Attainment</i>	_____
8-hour Ozone	<i>Non-Attainment</i>	<i>Non-Attainment</i>
24-Hour PM ¹⁰	<i>Non-Attainment</i>	Attainment
24-Hour PM ^{2.5}	No Standard	Attainment
Annual PM ¹⁰	Attainment	No Standard
Annual PM ^{2.5}	<i>Non-Attainment</i>	Attainment
Source: BCAQMD 2018		

- c) **Less Than Significant With Mitigation Incorporated.** The project involves replacement of water control structures throughout the water district, and will not generate new traffic, thereby generating more emissions, as would new development (i.e., residential or commercial land uses).

The project will generate short-term construction related emissions associated with equipment used for construction activities. These emissions would contain ozone precursors, PM₁₀ and PM_{2.5}. Additional particulate matter emissions in the form of fugitive dust could be generated during ground disturbing activities for placement of weir boxes, culverts, headwalls, and head gates.

The proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard. Each of the above impacts are temporary, local, and construction related. The incorporation of **Air Quality MM-1** would reduce these impacts to a less than significant level. Air quality mitigation measures are consistent with the requirements of the Butte County General Plan and the BCAQMD specifications for pollution and dust control.

- d) **Less Than Significant With Mitigation Incorporated.** Residences can be found in close proximity to the project vicinity within and surrounding the community of Richvale. Project activities consist of minor water control infrastructure removal and upgrades. Although residences are found in close proximity to the project area, there are no schools or hospitals in the area and no substantial pollutant concentrations are anticipated to occur. Temporary construction activities would result in particulate emissions in an area designated as non-attainment. However, implementation of BMM's and Standard Mitigation Measures for construction outlined in section the BCAQMD CEQA review, and the incorporation of **Air Quality MM-1** would minimize the exposure of sensitive receptors to fugitive dust to the maximum extent possible.

- e) **Less Than Significant.** Other than construction activities (diesel odors may be noticeable near the construction site), no long-term odor producing activities would result from the project. Therefore, the proposed project would not result in less than significant objectionable odor impacts.

4.3.3 Mitigation:

Air Quality MM-1

The following best practice measures as per BCAQMD to reduce impacts to air quality will be incorporated into the project during construction as applicable. These measures are intended to reduce criteria air pollutants that may originate from the site during the course of construction operations.

Diesel PM Exhaust from Construction Equipment and Commercial On-Road Vehicles Greater than 10,000 Pounds

- All on- and off-road equipment shall not idle for more than five minutes. Signs shall be posted in the designated queuing areas and/or job sites to remind drivers and operators of the five-minute idling limit.
- Idling, staging and queuing of diesel equipment within 1,000 feet of sensitive receptors is prohibited.
- All construction equipment shall be maintained in proper tune according to the manufacturer's specifications. Equipment must be checked by a certified mechanic and determined to be running in proper condition before the start of work.
- Install diesel particulate filters or implement other CARB-verified diesel emission control strategies.

- Shall not operate a diesel-fueled auxiliary power system (APS) to power a heater, air conditioner, or any ancillary equipment on that vehicle during sleeping or resting in a sleeper berth for greater than 5 minutes at any location when within 100 feet of a restricted areas.
- To the extent feasible, truck trips shall be scheduled during non-peak hours to reduce peak hour emissions.

Fugitive Dust

Construction activities can generate fugitive dust that can be a nuisance to local residents and businesses near a construction site. Dust complaints could result in a violation of the District’s “Nuisance” and “Fugitive Dust” Rules 200 and 205, respectively. The following is a list of measures that may be required throughout the duration of the construction activities:

- Reduce the amount of the disturbed area where possible.
- Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. An adequate water supply source must be identified. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible.
- All dirt stockpile areas should be sprayed daily as needed, covered, or a District approved alternative method will be used.
- Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following completion of any soil disturbing activities.
- Exposed ground areas that will be reworked at dates greater than one month after initial grading should be sown with a fast-germinating non-invasive grass seed and watered until vegetation is established.
- All disturbed soil areas not subject to re-vegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the Butte County Air Quality Management District.
- Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.
- All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with local regulations.
- Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site.
- Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible.
- Post a sign in prominent location visible to the public with the telephone numbers of the contractor and the Butte County Air Quality Management District - (530) 332-9400 for any questions or concerns about dust from the project.”

All fugitive dust mitigation measures required should be shown on grading and building plans. In addition, the contractor or builder should designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holidays and weekend period when work may not be in progress. The name and telephone number of such persons shall be provided to the District prior to land use clearance for map recordation and finished grading of the area.

Please note that violations of District Regulations are enforceable under the provisions of California Health and Safety Code Section 42400, which provides for civil or criminal penalties of up to \$25,000 per violation.

4.4 Biological Resources

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
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?		X		
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?			X	
c) Have a substantial adverse effect on 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?			X	
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?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
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?				X

4.4.1 Setting

A Biological Resources Assessment (BRA) report (**Appendix A**), which assessed the potential for significant impacts to special-status species, was prepared for the proposed project by NorthStar in June 2019. As part of the BRA, a list of special-status plant and animal species was compiled from the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation database, California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB), and the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants to determine special-status species that may potentially be affected by the proposed project. All the special-status species listed by the USFWS, CDFW, and CNPS occurring within the USGS quadrangles surrounding the project area.

The Biological Study Area (BSA) is composed primarily of irrigation canals and rice fields, small areas of riparian habitat are found along the canals in the southern portion of the BSA. More urban and residential habitats are found within the central portion of the BSA within and surrounding Richvale. Vegetation observed within the District included species typical of urban and rural areas, pastures, rice, disturbed grasslands, riparian areas, and freshwater wetland habitats throughout the valley. The vegetation along the District's canals is dominated by non-native grasses and forbs along the top and upper portion of the canal banks and hydrophytic species along the lower portions near the water line and within the canal.

Non-native grass and forb species observed along the upper portions of the canal banks include johnsongrass (*Sorghum halepense*), crab grass (*Digitaria sanguinalis*), slender wild oat (*Avena barbata*), seashore vervain (*Verbena littoralis*), yellow star thistle (*Centaurea solstitialis*), field mustard (*Brassica rapa*), curly dock (*Rumex crispus*), horseweed (*Erigeron canadensis*), prickly lettuce (*Lactuca serriola*) and field bindweed (*Convolvulus arvensis*). The composition of species is heavily affected by mowing and herbicide applications conducted during routine canal maintenance of the access roads. Hydrophytic species encountered along the lower portions of the canal banks and within the canals include cattail (*Typha latifolia*), hardstem bulrush (*Schoenoplectus acutus*), water primrose (*Ludwigia hexapetala*), marsh purslane (*L. peploides*), mosquito fern (*Azolla filiculoides*), duckweed (*Lemna* sp.), and watergrass (*Echinochola crus-galli*).

The vegetation in the more urban portions of the district consists of ornamental tree species typical of residential landscaping including fruitless mulberry (*Morus alba*), Chinese pistache (*Pistacia chinensis*), palm (*Washingtonia* sp.), eucalyptus (*Eucalyptus* sp.), silver maple (*Acer saccharinum*), camphor (*Cinnamomum camphora*), cypress, and birch (*Betula* sp.). Ground cover consists of manicured landscaping including a variety of shrubs and herbaceous species and lawn.

Soils within the District generally consist of clay alluvium over loamy alluvium. A majority of the District is covered by four soil map units defined by the Natural Resources Conservation Service (NRCS), including Lofgren-Blavo Complex 0 to 1 percent slope, Esquon-Neerdobe Complex, 0 to 1 percent slopes, Duric Xerarents-East Biggs Complex 0 to 1 percent slope, and Esquon Silt Loam 0 to 1 percent slope. Topography is generally flat sloping to the southwest with elevations ranging from approximately 110 feet above mean sea level (msl) to approximately 60 feet above msl near the southwestern portion of the District. Weather within the District is typical of Mediterranean climates with hot, dry summers and mild winters with low to moderate rainfall amounts. Average rainfall is approximately 27 inches with a majority falling between November and March

Due to the generally disturbed nature of the BSA, suitable habitat for special-status plant species is minimal to non-existent. No special-status plant species were determined to have potential to occur within the BSA due to the disturbed nature of the BSA, continued agricultural activities in the vicinity, and continued canal maintenance. Additionally, species such as Sanford's arrowhead and wooly rose mallow that can be found in freshwater environments in the northern Central Valley were not observed during biological surveys.

Special-status wildlife species with at least moderate potential to occur within the project area include, giant garter snake (*Thamnophis gigas*), northwestern pond turtle (*Actinemys marmorata*), bald eagle (*Haliaeetus leucocephalus*), greater sandhill crane (*Antigone canadensis*), loggerhead shrike (*Lanius ludovicianus*), merlin (*Falco columbarius*), northern harrier (*Circus hudsonius*), Swainson's hawk (*Buteo swainsoni*), osprey (*Pandion haliaetus*), tricolored blackbird (*Agelaius tricolor*), and birds protected by the Migratory Bird Treaty Act (MBTA).

In addition to the BRA, a Biological Assessment (BA) and GGS Habitat Assessment (**Appendix B**) were prepared in accordance with legal requirements set forth under Section 7 of the Endangered Species Act (ESA) (16 U.S.C. 1536 (c)). The BA consisted of plant and biological field surveys to identify any federally listed special-status species habitat located within the project corridor. The BA proposes, through field studies conducted that the project “may affect and is likely to adversely affect” giant garter snake (GGS). In addition, measures for avoidance and minimization would ensure impacts to aquatic and upland habitat will be reduced. The District will implement avoidance and minimization measures as detailed in applicable regulatory permits to avoid impacts. Measures may include but are not limited to, staging the equipment and the excavated material in designated areas, and using erosion control methods such as silt fencing and straw wattles. If deemed necessary by USFWS and/or CDFW during the ESA Section 7 consultation process and/or the Fish and Game Code Section 2080.1, respectively, the District will also purchase compensatory mitigation credits for the loss of aquatic and upland habitat.

Table 2 includes federally listed special-status species with at least moderate potential of occurring within the project (including the potential for foraging habitat) and an associated effect determination.

Table 3: Federally listed Species with Potential to Occur in the Action Area and Effect Determinations

Species	Effect Determination
Giant garter snake (<i>Thamnophis gigas</i>)	May affect, likely to adversely affect

Table 3 includes State listed species and CDFW Species of Special Concern with at least moderate potential to occur within the project area.

Table 4: State listed Species with Potential to Occur in the Action Area and Associated Status

Species	Status
Giant garter snake (<i>Thamnophis gigas</i>)	State Threatened
Northwestern pond turtle (<i>Emys marmorata</i>)	Species of Special Concern
Bald eagle	State Endangered
Greater sandhill crane	State Threatened
Loggerhead shrike	Species of Special Concern
Merlin	CDFW Watchlist
Modesto Population of Song Sparrow	Species of Special Concern
Northern harrier	Species of Special Concern
Swainson’s hawk (<i>Buteo swainsoni</i>)	State Threatened
Osprey	Species of Special Concern
Tricolored blackbird	State Candidate Endangered

4.4.2 Discussion

- a) **Less Than Significant With Mitigation.** Field surveys of the project area were conducted between June 19, 2018 and January 24, 2019 by NorthStar biologists Carol Wallen, Matt Rogers, and NorthStar environmental scientists Andrew Huneycutt, Bryn Copson, and Jake Sivertson, as well as Swaim Biological, Inc. biologists Eric Britt, Jeff Mitchell, and Cole Paris. Based on the survey results and literature research, special-status species have at least moderate potential to occur within the project area, include Sanford’s arrowhead (*Sagittaria sanfordii*), woolly rose-mallow (*Hibiscus lasiocarpus* var. *occidentalis*), giant garter snake (*Thamnophis gigas*), northwestern pond turtle (*Actinemys marmorata*), bald eagle (*Haliaeetus leucocephalus*), greater sandhill crane (*Antigone*

canadensis), loggerhead shrike (*Lanius ludovicianus*), Merlin (*Falco columbarius*), northern harrier (*Circus hudsonius*), Swainson's hawk (*Buteo swainsoni*), osprey (*Pandion haliaetus*), tricolored blackbird (*Agelaius tricolor*), migratory birds and raptors protected by the Migratory Bird Treaty Act (MBTA).

Giant Garter Snake

The giant garter snake is a federal and state listed threatened species endemic to the wetlands of the Sacramento and San Joaquin Valleys of California. The giant garter snake prefers the high-quality natural wetlands which include marshes, ponds, small lakes, low-gradient streams with silty substrates, and managed wetlands. Additionally, it has become readily apparent giant garter snakes inhabit agricultural wetlands and other associated waterways such as irrigation and drainage canals, sloughs, and adjacent uplands in the Central Valley. Because of the direct loss of natural habitat, GGS now relies on rice farming in the Sacramento and San Joaquin Valley, but also uses managed marsh areas in federal national wildlife refuges and state wildlife areas. Giant garter snakes are typically absent from larger rivers with sand, rock and gravel substrates, wetlands with sand, gravel, or rock substrates due to a lack of habitat and emergent vegetation. Riparian woodlands typically do not provide suitable habitat because of excessive shade, lack of basking sites, and absence of prey populations (USFWS 2006). The GGS is active from early spring (April-May) through mid-fall (October-November), although this period of activity varies based on weather. During the winter they are much less active and rarely emerge from burrows. When active, the species usually remains near wetland habitat, although they can move up to 0.8 km in a day (USFWS 1999).

The loss and fragmentation of habitat is the leading threat to GGS throughout the range of the species. Habitat loss has occurred from urban expansion, agricultural conversion, and flood control. Fragmentation limits dispersal and isolates populations of the giant garter snake, increasing the likelihood of inbreeding, decreasing fitness, and reducing genetic diversity. Some populations of the giant garter snake are subject to the cumulative effects of a number of other existing and potential threats, including roads and vehicular traffic, predation by non-native species and climate change.

Primary habitat requirements consist of 1) adequate water during the snake's active season (early-spring through mid-fall) to provide food and cover; 2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season; 3) grassy banks and openings in waterside vegetation for basking; and 4) higher elevation uplands for cover and refuge from floodwaters during the snake's dormant season in the winter (USFWS 2006).

According to the USFWS Recovery Plan for the Giant Garter Snake released in 2017, habitat components include; 1) a fresh water component with protective emergent vegetative cover that will allow foraging, 2) An upland component near the aquatic habitat that can be used for thermoregulation and for summer shelter in burrows, and 3) An upland refugia component that will serve as winter hibernacula. Further, researchers and experts acknowledge qualitative components for ideal aquatic and upland habitat. Ideal aquatic habitat has 1) water present from March through November; 2) slow moving or static water flow with mud substrate, 3) the presence of emergent bankside vegetation that provides cover from predators and may serve in thermoregulation, 4) the absence of a continuous canopy of riparian vegetation, 5) available prey in the form of small amphibians and small fish, 6) thermoregulation sites with supportive vegetation such as folded tule clumps immediately adjacent to escape cover, 7) the absence of large predatory fish, and 8) the absence of recurrent flooding, or where flooding is probable the presence of upland refugia. Ideal upland habitat contains, 1) available bankside vegetative cover, typically tule or cattail, for screening from potential predators, 2) available permanent shelter, such as bankside cracks or crevices, holes, or small mammal burrows and 3) free of poor grazing management practices (i.e., grazing to the point at

which giant garter snake refugia has been reduced or eliminated). An important portion of the upland component is upland refugia for the winter months when the snakes bromate and enter a lethargic state similar to mammalian hibernation. Over-wintering sites generally consist of mammal burrows along canal or marsh banks, or rock slope protection along roadways or canal edges.

Giant garter snakes feed primarily on small fish, tadpoles, and frogs. The GGS inhabits small mammal burrows and other soil crevices above prevailing flood elevations throughout its winter dormancy period. The snakes typically select burrows with sunny exposure along south and west facing slopes. The breeding season extends through March and April, and females give birth to live young from late July through early September. Brood size is variable, ranging from 10 to 46 young, with a mean of 23 (Hansen and Hansen, 1990). Young immediately scatter into dense cover and absorb their yolk sacs, after which they begin feeding on their own. Although growth rates are variable, young typically more than double in size within the first year; sexual maturity averages three years for males and five years for females (Hansen and Hansen, 1990).

The project area meets all the essential GGS habitat components, as set forth in the November 13, 1997 USACE Programmatic Formal Consultation for GGS within the Northern California counties, including Butte County. In addition to the habitat components set forth in the USFWS Recovery Plan.

The BSA contains adequate water year around due to the regulated irrigation within the BSA. Rice fields are available adjacent to the District's canals in many areas during the snake's active season creating an alternative aquatic habitat for the species to utilize. Additionally, emergent vegetation in the form of tule, cattail, or water primrose is present in portions of the canal which provides suitable aquatic habitat for the species to forage, thermoregulate, and escape predators.

Many sites within the BSA contain bankside vegetation that creates a protective screen against predators. Permanent shelters are available in the form of bankside cracks, cervices, holes, and small mammal burrows. Additionally, manmade structures present within the BSA could be utilized for shelter such as open spaces between rock slope protection and the back sides of abutments/structures.

The higher elevation uplands do contain refugia, which the snake inhabits during winter months. Several types of refugia are commonly encountered along the District's canals including mammal burrows, rock slope protection near structures, and crevices alongside conveyance structures.

Several GGS were detected during surveys conducted by NorthStar and Swaim biologists, additionally a number of occurrences are found in close proximity to the project area. The CNDDDB contains three records for GGS within one mile of the overall project footprint. These include a record of a female captured in 1998 at the junction of Richvale East Road and Butler Canal, a record of an individual collected in 1942 about two miles north of Richvale, and three individuals captured about 3.7 miles west-southwest of Richvale in 2013. Approximately 14 additional GGS records occur within five miles of the project footprint, most of which are located to the north or west of the project. Each of these occurrences near the project area may be comprised of multiple GGS individuals.

The project will temporarily and permanently disturb potential aquatic and upland habitat. The inclusion of **Biological Resources MM-1** will ensure impacts to GGS are less than significant.

Northwestern Pond Turtle

The northwestern pond turtle can be found throughout California and is the only abundant native turtle in California. They are associated with permanent or nearly permanent water in a wide variety of habitats at elevations ranging from near sea level to 4,700 feet. They require basking sites

including partially submerged logs, rocks, mats of floating vegetation, or open mud banks. The northwestern pond turtle hibernates in colder areas underwater on muddy bottoms. Nesting sites are typically constructed along the banks of permanent water in soils at least 10 cm deep and must have high internal humidity for eggs to develop and hatch (Jennings and Hayes 1994).

The nearest known occurrences are found in Gold Run Creek and near the Thermalito Afterbay along the Feather River, additionally the species is found in the Upper Butte Basin Wildlife Area and along Butte Creek west of Richvale. The species was not observed during biological surveys of the BSA.

Implementation of **Biological Resources MM-2** would ensure project related impacts to western pond turtles would be less than significant.

Bald Eagle

The bald eagle is known from Alaska to California and in California it is a permanent resident, now restricted to breeding mostly in Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity Counties. Bald eagles are also found in a few favored inland waters in Southern California. They are more common at lower elevations, and are not found in the high Sierra Nevada. They require large bodies of water or free flowing rivers with abundant fish, and adjacent snags or other perches. Bald eagles will occasionally forage in flooded fields for displaced voles or other small mammals. They will also scavenge dead fish, water birds, and mammals, and have been known to steal from osprey. Typically nests within 1.6 km (1 mile) of water in large, old-growth, or dominant live trees with open branchwork (less than 40% canopy). Nests are usually located 16-61 m (50-200 feet) above the ground. Breeding occurs from February to July; however, they don't begin nesting if human disturbance is evident.

There were no bald eagle nests discovered during biological surveys of the BSA, however, the species was observed foraging within the BSA during January of 2019. It is not expected the species would nest within the BSA due to its distance from a large body of water such as the Sacramento River or Lake Oroville. The species is regularly seen during the winter months when they come into the Central Valley following migrating waterfowl.

The implementation of **Biological Resources MM-3** will ensure impacts to bald eagle would be less than significant.

Greater Sandhill Crane

The greater sandhill crane is a state threatened species that can be found in open habitats with scattered shrubs, bogs, marshes, and prairies across northern North America and the southeastern United States. Typically, they winter in immense flocks in Bosque del Apache, New Mexico, and the Anahuac National Wildlife Refuge, Texas. Greater sandhill cranes are omnivores that eat insects but will also take small birds, mammals, amphibians, reptiles, and fish. Nesting occurs in wetlands with vegetated areas. (Cornell lab 2017). In northern California, greater sandhill cranes nest in northeastern California and winter in the Central Valley where they are found readily in agricultural areas where they will forage on waste grain rice. The species arrives in the Central Valley in mid-October and depart by March or April to nesting grounds.

Greater sandhill crane is not expected to nest within the BSA, but is expected to occur within the Central Valley. Sandhill cranes were observed during biological surveys of the BSA during January 2019, they could not be readily identified to subspecies due to distance from observers.

The implementation of **Biological Resources MM-3** will ensure impacts to greater sandhill crane would be less than significant.

Loggerhead Shrike

The loggerhead shrike is a common resident and winter visitor in lowlands and foothills throughout California. They can be found in open habitats with scattered shrubs, trees, posts, fences, utility lines or other perches. Typically, they occur in open canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats. They rarely occur in heavily urbanized areas but are often found in open croplands. Loggerheaded shrikes mainly eat large insects, but also take small birds, mammals, amphibians, reptiles, fish, carrion, and various other invertebrates. They nest in shrubs or trees at heights ranging from 0.4 to 15 meters above the ground. Adults lay eggs from March to May with male and females tending their young into July or August.

Open areas to the west of the towns of Biggs and Gridley provide suitable open habitat for the species. It is not expected the species would nest within the Central Valley but the species would be expected to be found foraging within the area during the winter months. The species was not observed during biological surveys of the BSA.

Implementation of **Biological Resources MM-3** will ensure impacts to loggerhead shrike will be less than significant.

Merlin

The merlin is a small, stocky falcon with a blocky head. In general, the species is dark overall with a broadly striped chest although their coloration varies geographically and by gender. The merlin nests in forested openings, edges and along rivers across northern North America. During migration and in the winter the species can be found in open areas, open forests, grasslands, and coastal areas. The species is a dynamic predator that feeds primarily on small birds but will also supplement its diet with small mammals and insects.

The species does not breed in California and is an uncommon winter migrant from approximately September to May. Numbers have declined markedly in California in recent decades. The species will not be found during the breeding season within the BSA but it is possible it could occur during the winter months as suitable foraging habitat is present within the BSA. The species was not observed during biological surveys of the BSA.

Implementation of **Biological Resources MM-3** will ensure impacts to merlin will be less than significant.

Northern Harrier

Northern harriers are a raptor commonly found near wetlands and open grasslands perched on or flying close to the ground. The northern harrier is one of the few birds of prey that is frequently polygynous when ecological conditions permit. Nests are constructed on the ground, typically in dense, low vegetation that provides a visual barrier and cover. In drier habitats, the nest consists of a loose, thin layer of sticks. In wetter situations, nests are larger, more substantial structures. Nests are built by the female and typically consist of grass, reeds, and small sticks. Breeding activity begins in April, concluding in September, with a peak in activity from June to July. A single brood of four to six eggs are incubated by the female. Incubation begins with the last egg and lasts about 29–39 days.

The female broods the young for about 4 weeks while the male provisions the female and young with prey items. Young begin to leave the nest, moving around into the surrounding vegetation, at about 2 weeks of age. The amount of time spent at the nest steadily decreases after this point until fledging. First flight generally occurs at 29–34 days of age. Young remain in the vicinity of the nest until dispersal.

Northern harrier was observed regularly during biological surveys of the BSA. The species was commonly seen in the agricultural areas of the BSA foraging over rice, pasture, rice, converted wetland, and marsh habitat.

Implementation of **Biological Resources MM-3** will ensure impacts to northern harrier will be less than significant.

Osprey

The osprey is a migratory raptor species that feeds almost exclusively on live fish. Foraging in clear, open waters, ospreys dive feet first to catch their prey. This species is considered a Species of Special Concern by the CDFG, despite recent population increases following the elimination of pesticide use such as DDT, which caused population decline during the 1950s and up to 1970. Osprey populations appear to be increasing since the 1970s. Nests are constructed from sticks to form platforms on top of dead-topped trees, cliffs, man-made structures (i.e. cell phone and utility towers), and occasionally on the ground. Ospreys arrive on nesting grounds mid-March to early April and lay between 1-4 eggs. Southern migration occurs in October, with osprey flying along the coast and western slopes of Sierra Nevada in October to Central and South America (CDFG 2005).

No large osprey nests were observed within the BSA; however, suitable nesting habitat is present within the larger Fremont cottonwoods found along the Cherokee Canal.

Implementation of **Biological Resources MM-3** will ensure impacts to osprey will be less than significant.

Song Sparrow (Modesto Population)

The Modesto population is a subspecies of song sparrow and is a California species of special concern. It is endemic to California and lives only in the north-central portion of the Central Valley. The highest densities occur in the Butte Sink in Butte County, and along the Sacramento-San Joaquin Delta. Breeding records exist for Butte, Colusa, Sutter, Sacramento, and San Joaquin counties. While it is still common in some areas, it is believed that large-scale loss of wetland and riparian habitat has caused population decline and extirpation in other areas. The sparrow is found in emergent freshwater marshes, riparian willow (*Salix* spp.) thickets, and valley oak forests with a blackberry understory, and sometimes along vegetated irrigation canals and levees. It breeds from mid-March to early August. (Shuford and Gardali 2008; Humple and Geupel 2004). In general, song sparrows are small with a short bill and brown streaking on a white chest and flanks (Cornell Laboratory of Ornithology 2016). The sparrow's diet consists primarily of seeds for much of the year, but insects become increasingly important, reaching more than 70 percent of its diet in May. Habitat loss and fragmentation—as well as nest predation by several species of mammals, snakes, and birds, including feral domestic cats—pose threats to the sparrow (Shuford and Gardali 2008; Humple and Geupel 2004).

There are no distinctive differences in appearance between song sparrows that allow absolute visual identification of a song sparrow as being part of the “Modesto population.” Although designation as

subspecies for the “Modesto” song sparrow is pending further research, it is recognized as such and has been listed as a California SSC.

Emergent habitat within the canals found in BSA appears suitable and similar to areas where individuals of the Modesto population are typically found. The species was not observed during biological surveys of the BSA.

Implementation of **Biological Resources MM-3** will ensure impacts to Modesto Population song sparrow will be less than significant.

Swainson’s Hawk

Swainson’s hawk is listed as Threatened under the California Endangered Species Act (CESA). It is a long-distance migrant with nesting grounds in western North America. Swainson’s hawks arrive in the Central Valley between March and early April to establish breeding territories. Breeding occurs from late March to late August, peaking in late May through July (Fitzner 1980).

The Swainson’s hawk nests in isolated trees, small groves, or large woodlands, adjacent to open grasslands or agricultural fields. This species typically nests near riparian areas; however, it has been known to nest in urban areas as well. Nest locations are usually in close proximity to suitable foraging habitats, which include grasslands, fallow fields, irrigated pastures, alfalfa and other hay crops, and low-growing row crops. Swainson’s hawks primarily prey upon small rodents such as ground squirrels (*Spermophilis* spp.), pocket gophers (*Thomomys* spp.), voles (*Microtus* spp), but insects, reptiles, and birds may be consumed as well (Snyder and Wiley 1976; Fitzner 1980; Estep 1989). Swainson’s hawks leave their breeding grounds to return to their wintering grounds in late August or early September (Bloom and DeWater 1994). Swainson’s hawks’ largest threats are loss of habitat and secondary poisoning from insecticides on their wintering grounds (Woodbridge et al. 1995a).

The large trees present within the BSA could provide suitable nesting habitat for Swainson’s hawk additionally, fallowed fields may provide suitable foraging habitat for the species. The nearest known occurrences for the species are found along the Cherokee Canal and Butte Creek to the north and west of the proposed project location. No Swainson’s hawk nests were observed during biological surveys of the BSA nor was the species observed.

The implementation of **Biological Resources MM-4** will ensure impacts to Swainson’s hawk would be less than significant.

Tricolored Blackbird

Tricolored blackbird is a state threatened species under the California Endangered Species Act (CESA). The tricolored blackbird occurs throughout California’s Central Valley and in coastal habitats from Sonoma County south. The tricolored blackbird requires dense fresh emergent wetlands to nest and breed, and forages in grassland and cropland habitats. Its nests are made from mud and plant materials and colonies can consist of 50 pairs to as large as 30,000 pairs. Tricolored blackbirds require open, accessible water, protective nesting substrates (flooded, thorny, or spiny vegetation), and suitable foraging space within a few miles of the nesting colony. In response to loss of fresh emergent wetland habitat, tricolored blackbirds have been increasingly observed to utilize Himalayan blackberry (*Rubus armeniacus*), elderberry, poison oak (*Toxicodendron diversilobum*), and grain fields for colony establishment.

The habitats present in the BSA provide large areas of suitable foraging habitat for the species. Additionally, the BSA provides suitable nesting habitat for the species as Himalayan blackberry and emergent vegetation can be found along the District's canals. No active tricolored blackbird colonies were observed during biological surveys of the BSA. Many of the occurrences found in the vicinity of Richvale have been determined to be possibly extirpated. Most of the occurrences are from the 1930s and during re-surveys in 2011 no birds were observed.

Implementation of **Biological Resources MM-3** will ensure impacts to tricolored blackbird would be less than significant.

Migratory Birds and Raptors

The federal Migratory Bird Treaty Act (MBTA) and California F.G.C. Sections 3503 and 3800 protect the occupied nests and eggs of migratory and non-game bird species. The Federal Bald and Golden Eagle Protection Act also prohibits the take of bald and golden eagles and their nests. Birds nest in a variety of places including trees, shrubs, man-made structures, and the ground. Work buffers around migratory birds and their nests are typically needed to minimize impacts to these species. Any proposed project must take measures to avoid the take of any migratory and non-game birds, nests, or eggs.

Numerous migratory bird species were observed during the wildlife survey. Active cliff and barn swallow nesting was observed on concrete structures along the District's canals. With the implementation of **Biological Resources MM-3** impacts to migratory birds and raptors would be less than significant.

- b) **Less Than Significant.** The proposed project will temporarily and permanently impact potential GGS aquatic and upland habitat by replacing the existing water control infrastructure with new modern facilities. Temporary impacts to habitat will be returned to pre-construction conditions. Mitigation credits for permanent impacts to GGS habitat would be purchased at a ratio determined by USFWS and/or CDFW from a USFWS and CDFW approved mitigation bank.
- c) **Less Than Significant.** Although the District's canals are likely jurisdictional under Section 404 of the Clean Water Act (CWA), the replacement of the infrastructure will be conducted under an U.S. Army Corps of Engineers (USACE) maintenance exemption. The project will apply for a "no permit needed" determination from the USACE and subsequently the Regional Water Quality Control Board (RWQCB) for the CWA Section 401 Water Quality Certification. The proposed project would be required to adhere to the applicable performance standards of the USACE and the RWQCB via that regulatory process. The following regulatory permits will be acquired prior to the start of any grading or construction activities within the project area:

- USFWS Section 7 ESA Informal Consultation
- F.G.C. Section 1602 Streambed Alteration Agreement from CDFW
- F.G.C. Section 2080.1 Notification and Consistency Determination from CDFW

Obtaining the appropriate regulatory permits ensures: 1) compliance with applicable state and federal laws, 2) that potential impacts to wetlands and other waters of the U.S., waters of the state, and streambed and banks (including irrigation ditches), and listed species are mitigated appropriately (including the payment of mitigation fees), and 3) minimizes, reduces, or avoids potentially significant impacts.

- d) **Less than Significant.** The proposed project would involve the removal of the current structurally deficient water delivery infrastructure and replacing them with modern facilities along the District's canals. Temporary disturbances resulting from vegetation removal will be restored to pre-project conditions. Additionally, aquatic habitat that may support GGS will be monitored prior to and during construction to minimize potential impacts. The project would not result in the introduction of permanent barriers to movement of any resident or migratory fish or wildlife species, nor would it result in the introduction of any new long-term factors (light, fencing, noise, human/presence and/or domestic animals) which could hinder the normal activities of wildlife.
- e) **No Impact.** The proposed project would not conflict with any local plans or policies that protect biological resources. The project would be required to adhere to the mitigation measures and standard/permitting requirements of regulatory agencies, as set forth in this study.
- f) **No Impact.** The project site is not subject to the provisions of any adopted habitat conservation plans or natural community conservation plans, as the Butte Regional Conservation Plan is yet to be adopted. Regarding local plans, policies and ordinances, the proposed project would result in no impact.

4.4.3 Mitigation:

Biological Resources MM-1 Obtain Regulatory Permits and Implement Avoidance and Minimization Measures

- The project will conduct the following consultations and/or permits, as necessary and applicable:
 - USFWS Section 7 ESA Informal Consultation
 - F.G.C. Section 1602 Streambed Alteration Agreement from CDFW
 - F.G.C. Section 2080.1 Notification and Consistency Determination from CDFW
- Given the GGS habitat located within the project boundaries, the purchase of compensatory mitigation will likely be required by USFWS and/or CDFW. If the purchase of mitigation credits is deemed applicable and necessary by USFWS and/or CDFW during the ESA Section 7 consultation process and/or Fish and Game Code Section 2080.1 consistency determination process, the District shall purchase compensatory mitigation for permanent loss of suitable aquatic and upland habitat for GGS. Mitigation credits would be purchased at the ratio identified by USFWS and/or CDFW. If mitigation credits for permanent impacts to GGS habitat are required, then the following compensatory mitigation is proposed: Temporarily impacted habitat along the canal is anticipated to readily reestablish following construction activities. Additionally, to hasten revegetation, upland areas adjacent to the canals will be hydroseeded with a mixture of native species to promote reestablishment of bankside vegetation. Once construction is completed and pre-construction conditions (topography and hydrology) are reestablished they should revert to pre-construction vegetation character within a few months to a year following completion of project activities.

If work is to occur during the GGS active season, temporary impacts totaling 0.147 acres will be mitigated at a ratio of 0.5:1 for a total compensation for temporary impacts of 0.0735 acres. Permanent impacts totaling 0.074 acres will be mitigated at a ratio of 3:1 for a total compensation for permanent impacts of 0.222 acres. The total number of acres (temporary impact and permanent impact) of mitigation would be 0.2955 acres.

If work is to occur during the GGS inactive season, temporary impacts totaling 0.147 acres will be mitigated at a ratio of 1:1 for a total compensation for temporary impacts of 0.147 acres. Permanent impacts totaling 0.074 will be mitigated at a ratio of 4:1 for a total compensation for permanent impacts of 0.296 acres. The total number of acres (temporary impact and permanent impact) of mitigation would be 0.443 acres. The following table summarizes the proposed mitigation for the project.

Table 5: Proposed Mitigation for Active and Inactive Season Work.

Active Season Work						
Mitigation Requirements	Temporary Impacts Mitigation		Permanent Impact Mitigation		Total Mitigation Required/Cost	
	Impact (ac)	(0.5:1)	Impact (ac)	(3:1)	Acres	Cost
Suitable Habitat Impact Totals	0.147	0.0735	0.074	0.222	0.2955	\$16,253
Inactive Season Work						
Mitigation Requirements	Temporary Impacts		Permanent Impacts		Total Mitigation Required/Cost	
	Impact (ac)	(1:1)	Impact (ac)	(4:1)	Acres	Cost
Suitable Habitat Impact Totals	0.147	0.147	0.074	0.296	0.443	\$24,365

Note: Cost based on information provided by Westervelt Ecological Services.

In the event work spans both the inactive and active season, mitigation would be assessed at the ratios listed above, as applicable, and in proportion to the type and area of impact occurring in each period.

The project will incorporate the avoidance and minimization measures (AMMs), standard BMPs and other notification requirements identified in applicable permits into project plans and specifications and/or contract documents. Incorporation of these requirements will protect sensitive natural resources and water quality from project impacts and ensure that the project will not jeopardize the continued existence of GGS species or result in the destruction of critical habitat. Suggested AMMs have been identified in the Biological Resources Assessment (BRA) and Biological Assessment (BA) prepared for the project.

Biological Resources MM-2 Northwestern Pond Turtle Avoidance and Minimization Measures

- Suitable aquatic habitat and upland nesting habitat is present within the BSA. If a northwestern pond turtle is observed in the project area during construction activities, project personnel will temporarily halt project activities until the turtle has moved itself to a safe location outside the limits of the project area, or the turtle will be relocated to suitable aquatic habitat within ¼ mile of the area. If project activities are to occur during the nesting season, (late June-July), a survey will be conducted by a qualified biologist to locate any northwestern pond turtles or their nests before project activities begin. This survey should be conducted no more than two days prior to the start of project activities. If a pond turtle nest is located, the biologist will flag the site and determine whether projects activities can avoid affecting the nest. If the nest cannot be avoided, a no-disturbance buffer zone will be established around the nest in coordination with CDFW. The no-disturbance buffer will remain in place until the young have left the nest.

Biological Resources MM-3 Migratory Birds and Nesting Raptors including Bald Eagle, Greater Sandhill Crane, Loggerhead Shrike, Merlin, Northern Harrier, Osprey, Song Sparrow and Tricolored Blackbird Avoidance and Minimization Measures

Vegetation removal or ground disturbance in areas where nests of birds protected by the MBTA (16 USC §703) and the CFGC (§3503) potentially occur, should be conducted between September 1 and February 28 (i.e. the non-breeding season). If vegetation removal or ground disturbance occurs during the breeding season (i.e. March 1 to August 31) then a qualified biologist shall:

- Conduct a survey for raptors and all other birds protected by the MBTA and map all nests located within 500 feet of construction areas. The survey should be conducted no more than two weeks prior to the start of project activities.
- Develop buffer zones around active nests that are sufficient enough in size to ensure impacts to nesting species are avoided. Project activities shall be prohibited within the buffer zone until young have fledged or the nest fails, as determined by a qualified biologist.

Biological Resources MM-4 Swainson’s Hawk Avoidance and Minimization Measures

Suitable nesting habitat is present within the BSA. Additionally, the species has been previously observed nesting in the BSA by representatives from CDFW. Project activities at individual locations will be minimal and generally restricted to the edges of the canals and the dirt roadway directly adjacent. These small areas in the context of the greater area do not provide the species with suitable foraging habitat as they will forage more readily in grassland, pasture, or fallowed agricultural fields before disturbed dirt roadway or canal banks.

- If feasible, construction activities should be conducted outside of the bird breeding season. (March 1-August 31). If work must occur during bird breeding season, to ensure that no indirect impacts to active nest occur due to any future construction activities, a qualified biologist will conduct a pre-construction survey for Swainson’s hawk and raptor nests. The area to be surveyed will include a 0.5-mile radius including and surrounding the BSA. If active nests are discovered, the District will be notified. No construction will occur until appropriate buffers are established, based upon recommendations by the qualified biologist. The pre-construction survey will be conducted no less than 14-days and no more than 30-days prior to commencement of construction. Should an active nest(s) be discovered, it will be monitored at reasonable intervals, as determined by a qualified biologist. The status of nesting activities shall be included in monthly reports to the District and/or regulatory agencies, as appropriate. Additionally, standard construction BMPs will be implemented which include returning disturbed areas to pre-construction condition which would include reseeded with an appropriate, approved seed mix.

4.5 Cultural Resources

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations, Section 15064.5?			X	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CA Code of Regulations, §15064.5?		X		
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			X	

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
d) Disturb any human remains, including those interred outside of formal cemeteries?			X	

4.5.1 Setting

PAR Environmental Services, Inc. prepared a Cultural Resources Inventory and Evaluation in June 2019 for the proposed project. In support of the Cultural Resources Inventory, PAR staff conducted an archival record search, and a field survey to identify the cultural resources occurring, or potentially occurring, in the project area. The record search included a review of the data housed at the Northeast Information Center at CSU, Chico and a Sacred Lands search with the Native American Heritage Commission (NAHC). The field survey examined ten improvement sites with potential ground disturbing activities.

No archaeological resources were identified during the surveys of the ten improvement sites with potential ground disturbance. Four built environment resources which were comprised all of canal segments were recorded during the survey. The canals are earthen, u-shaped structures built in 1912 and 1924 by the Sutter Butte Canal Company. Three canals – the High Lift Lateral, Low Gravity Lateral, and the Watt Lateral meet the requirements of Criterion A for their role in irrigation, rice growing, and town growth. However, they have been altered from their 1912 appearance that they no longer retain integrity to their period of significance and are recommended as ineligible for inclusion in the National Register of Historic Places or California Register of Historic Resources as individual properties. No historic properties are located within the APE, and a Finding of No Historic Properties Affected is recommended for the Project.

4.5.2 Discussion

- a) **Less than Significant.** Archaeological field surveys were conducted by PAR on March 20, 2019, April 2019, and June 5, 2019 for identifying and recording archaeological resources. The field survey did not result in the identification of any prehistoric, archaeological, paleontological or proto-historic resources within the project site. Four built environment resources, all canals were recorded within the APE for the project. The canals are earthen lined with U-shaped profiles and are lined in various places with cobble, gravel, gunite, or asphalt chunks to prevent bank erosion. Canal lengths vary from 2.18 miles to 10.28 miles. The canals exhibit a variety of widths and depths. The canals were evaluated and recommended not eligible for inclusion in the NRHP, nor eligible for inclusion in the CRHR. These findings are based on a records search, consultation with interested parties and a field survey, conducted by a professional archaeologist.
- b) **Less than Significant With Mitigation Incorporated:** The proposed project would not generate potentially significant impacts to any known cultural resources as stated previously. However, in the event human remains are uncovered during work activities, pursuant to Health and Safety Code (§7050.5), the Coroner must be contacted if human remains are uncovered during construction activities (See item d below). Previously unidentified human remains are subject to regulations set forth at the state and federal levels, including the CA Public Resources Code and the Native American Graves Protection and Repatriation Act (NAGPRA). Incorporation of **Cultural Resources MM-1** will ensure impacts to archaeological resources would be less than significant.

- c) **Less than Significant.** The project footprints have been previously disturbed by the construction of the existing canal; access roads, and water conveyance structures, therefore, no paleontological resources are anticipated to be impacted.
- d) **Less than Significant.** While unlikely, there is the chance that currently unidentified remains could be uncovered during excavation. Per Health and Safety Code §7050.5, all work must cease and the County Coroner must be notified when previously unidentified human remains are discovered. No further disturbances may occur until the Coroner has made findings as to the origins and disposition per Public Resource Code §5097.98. Adherence to the applicable local, state and federal regulations ensures less than significant potential impacts to newly discovered human remains.

4.5.3 Mitigation:

Cultural Resources MM-1

Although no prehistoric sites have been formally recorded or otherwise identified within the project site, the presence of buried cultural resources is always a possibility. Therefore, although unlikely, if unknown resources are discovered during construction and excavation activities, the following Cultural Resources Minimization Measures will be included in all contract documents and construction plans.

- Should archaeological resources be encountered at any point during project excavation and construction activities, all activity around the discovery will cease. The District will retain the services of a qualified archaeologist to examine the findings, assess their significance, and offer proposals for any exploratory procedures deemed appropriate to further investigate and/or mitigate any adverse impacts.
- Should human remains be encountered during excavation activities in the project area, the following procedures shall be followed:
 - Per Health and Safety Code §7050.5(b), the Sutter County Coroner’s Office will be contacted immediately; all work must cease, no further disturbances may occur until the Coroner has made findings as to the origins and disposition per Public Resources Code §5097.98.
 - If the Coroner determines the remains are Native American, the Office will notify the Native American Heritage Commission (NAHC) within 24 hours.
 - Following receipt of the Coroners notice, the NAHC will contact a Most Likely Descendent (MLD). The MLD will then have 48 hours in which to make recommendations to the County and the consulting archaeologist regarding the treatment and/or re-interment of the human remains and any associated grave items.

4.6 Energy

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				X

4.6.1 Discussion

- a) **Less than Significant.** The proposed project will not result in any potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. Construction energy consumption would largely occur from fuel consumption by equipment during project construction, transportation of materials to and from the site, and construction worker trips to and from the project site. Energy consumption during construction related activities would vary substantially depending on the level of activities, length of construction period, construction operations, type of equipment used, and number of personnel present. Despite this variability, the overall scope of construction is minor due to the short time period construction would take place at each site. Increasingly stringent state and federal regulations regarding engine efficiency combined with state, local, and federal regulations limiting engine idling times and recycling of construction debris, would further reduce the amount of transportation fuel demand during construction.
- b) **Less than Significant.** Many of the state and federal regulations regarding energy efficiency focus on increasing building efficiency and renewable energy generation, as well as reducing water consumption and vehicle miles traveled. The proposed project includes conservation measures to meet or exceed the regulatory requirements including limiting idling time of equipment during construction activities. The project will comply with BCAQMD standards regarding engine efficiency and limiting idling time during project construction. Additionally, the project involves improvements to water infrastructure that will aid in the conservation of water resources.

4.6.2 Mitigation: *None Required*

4.7 Geology and Soils

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
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 Alquist-Priolo Earthquake Fault Zoning Map for the area or based on other substantial evidence of a known fault?				X
ii.) Strong seismic ground shaking?				X
iii.) Seismic-related ground failure/liquefaction?				X
iv.) Landslides?				X
b) Substantial soil erosion or the loss of topsoil?			X	
c) Located on a geologic unit or soil that is unstable, or would become unstable as a result of the project, and potentially result in landslide, lateral spreading, subsidence, liquefaction or collapse?				X
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?				X

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
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?				X

4.7.1 Discussion

- a) **No Impact.** The site is not located in an Alquist-Priolo Earthquake fault zone, there are no known active faults underlying, or adjacent to, the project site. The Cleveland Hill fault is located approximately 15 miles southeast of the project site. Because the nearest active fault is located a considerable distance from the project site, the likelihood of a surface rupture at the project site is very low, and would not be a design consideration.

Ground shaking at the project site could occur due to the earthquake potential of the region’s active faults. However, active faults are relatively distant from the project site. As a result, ground shaking due to seismic events is expected to have low intensities at the project site. The California Building Code (CBC) would provide minimum standards to safeguard life or limb, health, property and public welfare by regulating the controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of buildings and structures within Butte County. Among the provisions of the CBC are building design criteria for earthquake conditions in Butte County. Adherence to the CBC during building construction would ensure that potential impacts are less than significant.

The project site is identified as being located within an area considered “Generally Moderate” in respect to liquefaction potential. The CBC regulates the construction of structures, which may be constructed with approval of the proposed project. Adherence to CBC standards at the time of construction of the project ensure that any impacts from an unstable geologic unit or soil are less than significant.

The project area is primarily level with 0-2% slopes. As a result, the landslide potential for the project site and surrounding area is very low. Though the potential for landslides are generally low, shallow slope failures can occur in virtually any sloping terrain during construction activities. Avoidance of potentially sensitive slopes and/or implementation of appropriate engineering and construction measures at the time of project construction would avoid or reduce potential impacts of landslides to a less than significant level.

- b) **Less than Significant.** The project is the replacement of structurally deficient water control structures. During construction-related activities, specific erosion control and surface water protection methods would be implemented within the project site such as straw wattles and silt fencing, and the use of erosion control seeding. The potential water control upgrades are primarily within areas that have been previously disturbed and graded. However, since construction will disturb one or more acres of land activities would be subject to the National Pollutant Discharge Elimination System (NPDES) General Construction Activities Stormwater permit program. This program requires implementation of erosion BMPs during and immediately after construction that are designed to avoid significant erosion. In addition, project operations would be subject to State Water Resources Control Board requirements for the preparation and implementation of a project specific Stormwater Pollution Prevention Plan (SWPPP) to control pollution in stormwater runoff from the project site, which includes excessive erosion and sedimentation. The SWPPP would need to be obtained prior to any soil disturbing activities. The implementation of standard erosion control BMPs during future

construction activities and adherence to State requirements would ensure potential erosion impacts are less than significant.

- c) **No Impact.** The project is the replacement of structurally deficient water control structures. During construction-related activities, specific erosion control and surface water protection methods would be implemented within the project site such as straw wattles and silt fencing, and the use of erosion control seeding. The potential water control upgrades are primarily within areas that have been previously disturbed and graded. However, since construction will disturb one or more acres of land activities would be subject to the National Pollutant Discharge Elimination System (NPDES) General Construction Activities Stormwater permit program. This program requires implementation of erosion control measures during and immediately after construction that are designed to avoid significant erosion. In addition, project operations would be subject to State Water Resources Control Board requirements for the preparation and implementation of a project specific Stormwater Pollution Prevention Plan (SWPPP) to control pollution in stormwater runoff from the project site, which includes excessive erosion and sedimentation. The SWPPP would need to be obtained prior to any soil disturbing activities. The implementation of standard erosion control best management practices (BMPs) during future construction activities and adherence to State requirements would ensure potential erosion impacts are less than significant.
- d) **Less than Significant.** A number of soil types are present within the project area and are typically clay loams 0-2 percent slopes, this soil type has moderate shrink swell potential. However, all design and construction will comply with the California Building Code requirements.
- e) **No Impact.** The project will not utilize septic tanks or an alternative wastewater disposal system on the site. Therefore, the proposed project will not result in an impact due to soils incapable of adequately supporting septic systems.

4.7.2 Mitigation: *None required.*

4.8 Greenhouse Gas Emissions

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Generate greenhouse gas emissions, directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?			X	

4.8.1 Setting

The Butte County Climate Action Plan (CAP) was adopted on February 25, 2014. The CAP provides a framework for the County to reduce GHG emissions while simplifying the review process for new development. Measures and actions identified in the CAP lay the groundwork to achieve the adopted General Plan goals related to climate change, including reducing GHG emissions to 1990 levels by 2020.

A 2006 baseline GHG emission inventory was prepared for unincorporated Butte County. The inventory identified the sources and the amount of GHG emissions produced in the county. Within Butte County, the

leading contributors of GHG emissions are agriculture (43%), transportation (29%), and residential energy (17%).

New projects are evaluated to determine consistency with the CAP and to identify which GHG emission measures would be implemented with project approval. These measures may include reduction of construction equipment idling time.

4.8.2 Discussion

- a) **Less than Significant.** It is anticipated that water control infrastructure replacement activities would generate short-term temporary GHG emissions associated with construction equipment. The BMP's discussed in Section 3, Air Quality, minimize temporary emissions associated with the construction activities.
- b) **Less than Significant.** Although development of the project will result in temporary construction related GHG emissions, the project will implement measures from the BCAQMD that limit construction idling time. As such, the project will not conflict with the County's CAP nor would it conflict with any other identified plans, policies, or regulations adopted for the reduction of greenhouse gas emissions.

4.8.3 **Mitigation:** *None required.*

4.9 Hazards and Hazardous Materials

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
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?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
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?				X
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?				X

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	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?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
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?				X

4.9.1 Discussion

- a) **Less than Significant.** The proposed project would not involve the routine transport, use, or disposal of hazardous materials, and would not result in such impact. Construction activities associated with the project would include refueling and minor onsite maintenance of construction equipment, which could lead to minor fuel or oil spills. The use and handling of hazardous materials during construction activities would occur in accordance with applicable federal, state, and local laws including California Occupational Health and Safety Administration (CalOSHA) requirements. It is not anticipated that large quantities of hazardous materials would be permanently stored or used within the project site. However, if large quantities are stored at the project site, the owner would be required to obtain a Hazardous Materials Business Plan. As previously mentioned, it is more likely small quantities of publicly available materials would be utilized during project construction. These materials would not be used in sufficient quantity or strength to create a substantial risk of fire or explosion, or otherwise pose a substantial risk to human or environmental health.
- b) **Less than Significant.** The proposed project would not result in new land uses when compared to existing conditions. The project would not construct dwellings, occupy structures, or result in land uses that could generate or emit hazardous materials. Project activities are not anticipated to result in a release of hazardous materials into the environment, or to create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions. Additionally, the project will comply with the BCAQMD rules and regulations.
- c) **No Impact.** The proposed project does not involve any emission or handling of any hazardous materials, substances, or waste within one-quarter mile of an existing school. No existing or proposed school facilities are located within a one-quarter mile radius of the project site.
- d) **No Impact.** The project is not included on a list of sites containing hazardous materials, and would not result in a significant hazard to the public or to the environment. The project site is not included on the Cortese list compiled pursuant to Government Code Section 65962.5. The nearest identified site containing hazardous materials is an evaluation site located south of Highway 162 near Highway 99 and the Thermalito Afterbay. The site is approximately 3.5 miles from the nearest project work site.
- e) **Less than Significant.** The proposed project site is not located within two miles of a public airport. The nearest public airport is the Oroville Airport located approximately 5.00 miles northeast of the project area.

- f) **No Impact.** The proposed project site is located approximately three miles north of a small private agricultural airstrip, however, the project would not result in permanent structures that expose people to a safety hazard.
- g) **Less than Significant.** The proposed project does not include any actions within the roadways that would physically interfere with any emergency response or emergency evacuation plans. The project would not result in an increase in traffic, and thus would not significantly reduce the current level of service of the area road network.
- h) **Less than Significant.** The proposed project is located in an area used for agricultural and residential purposes, and is not in the Sutter Buttes or river bottom wildland areas that can be susceptible to wildland fires. Therefore, the proposed project will not expose people or structures to a significant risk of loss, injury, or death involving wildfires.

Mitigation: None required.

4.10 Hydrology and Water Quality

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Violate any water quality standards or waste discharge requirements?			X	
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)?				X
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?				X
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?			X	
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?			X	
f) Otherwise degrade water quality?				X

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
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?				X
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				X
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?				X
j) Inundation by seiche, tsunami, or mudflow?				X

4.10.1 Discussion

- a) **Less Than Significant.** As identified in Section 4.4 of this document (Biological Resources), the project will obtain all appropriate regulatory permits including certification from a RWQCB per Section 401 Water Quality Certification of the Clean Water Act prior to construction activities. Additionally, the project would be required to implement all applicable erosion control BMPs as a condition of RWQCB approval, which include: the installation of straw wattles, and silt fencing, etc. to prevent silt/sediment from entering the water, and re-seeding of disturbed upland areas post construction. As described in the Biological Resources Section of this document (Section 4.4), the project will be required to adhere to the requirements Section 401 of the Clean Water Act, and Section 1600 of the CA Fish and Game Code, as well as the air quality standard mitigation measures for fugitive dust control outlined in Section 4.3, **Air Quality MM-1**. A Section 401 permit is contingent on sufficient evidence that a project would not pose a threat to water quality or quantity leaving the proposed project's site. No additional mitigation measures are necessary.
- b) **No Impact.** The proposed project involves the replacement of water control devices along the District's canals and does not propose activities requiring permanent increases in groundwater use. No new extraction wells or buildings with the potential to increase water usage are proposed.
- c) **Less Than Significant.** Project activities include the replacement of water control structures. The overall direction of drainage on the site will not change. The implementation of standard erosion control measures and BMPs during construction activities will minimize soil erosion and siltation. Additionally, the proposed project will not alter the existing drainage pattern of the site, including through the alteration of the course of the District's canals in a manner that will result in substantial erosion or siltation on- or off-site
- d) **Less than Significant.** The proposed project involves the replacement of water control infrastructure. These devices are already present within the District's canal system and they are being replaced to bring them to modern standards. The placement of the new replacement structures will not alter the existing drainage pattern of the site. Additionally, the project will not result in an increase in runoff rate which would result in flooding on- or off-site.
- e)-j) **No Impact.** The proposed project would not result in significant increases in the surface area of impervious materials, or redirect flood flows. The proposed project is located within several map boundaries (FIRM Map Numbers 06007C0950E, 06007C0975E, 06007C0745e, and 06007C0765E),

the project does not involve the construction of dwelling units and will not place housing within the flood hazard area. Furthermore, the project would not expose people or structures to significant loss, injury, or death involving flooding, including levee or dam failure. There are no anticipated impacts to the proposed project from seiche, tsunami, or mudflow, as no topographical features of water bodies capable of producing such events exist within the project site vicinity.

4.10.2 Mitigation: *None Required*

4.11 Land Use and Planning

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Physically divide an established community?				X
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?				X
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				X

4.11.1 Discussion

a), b) **No impact.** The project involves the replacement of water control structures and will not physically divide an established community. The proposed project would not conflict with an applicable land use plan, policy, or regulation of any agencies with jurisdiction adopted for the purpose of avoiding or mitigating an environmental effect.

c) **No Impact.** The project will not have a substantial 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 project site is located within the boundaries of the proposed Butte Regional Conservation Plan (BRCP). The BRCP has not been completed or adopted at this time; therefore, no impact is anticipated.

4.11.2 Mitigation: *None required.*

4.12 Mineral Resources

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
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?				X
b) Result in the loss of availability of a locally-important mineral resource recovery site on a local general plan, specific plan or other land use plan?				X

4.12.1 Discussion

a), b) No Impact. The California Geological Survey’s (Department of Conservation) map “Fifty-Year Aggregate Demand Compared to Permitted Aggregate Resources” (2012) does not identify extraction facilities near the project site. The General Plan and State of California Division of Mines and Geology Special Publication 132 do not list the site as having any substantial mineral deposits of a significant or substantial nature. Relative to mineral resources, there would be no impact

4.12.2 Mitigation: *None required*

4.13 Noise

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
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?			X	
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			X	
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
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?				X
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?				X

4.13.1 Discussion

a)-d) Less Than Significant. The project is consistent with the Butte County General Plan, Noise Element (Butte County 2010). The nearest residences (sensitive receptor) are located adjacent to portions of the District’s water conveyances near Richvale. There are homes within 1000 feet of the project work limits and individual project sites. The Butte County Noise Ordinance states that construction noise within 1,000 feet of noise-sensitive uses (i.e., residential uses, daycares, schools, convalescent homes, and medical care facilities) is limited to daytime hours between sunrise to sunset on weekdays and non-holidays, 8:00 am and 6:00 pm on Saturdays and holidays, and Sundays between 10:00 a.m. to 6:00 p.m. No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with applicable local noise standards discussed above. Increases in noise is limited to temporary, intermittent construction noise in the immediate project area. The proposed project would not alter land use or traffic, and thus would not increase the ambient noise within the area. Construction activities are limited to the hours allowed by the County Ordinance. No permanent increase in ambient noise will take place due to the

project. Noise impacts will take place during the construction period and they will be temporary and limited to daytime hours as stated above. No mitigation measures are necessary.

- e) **Less than Significant:** The proposed project is not located within an airport land use plan area and is located approximately 5.00 miles from the Oroville Airport. The proposed project will not expose people residing or working in the project area to excessive noise levels. A less than significant impact is anticipated.
- f) **No Impact:** The proposed project is not located within two miles of a private airstrip and people residing or working in the project area will not be exposed to excessive noise levels generated by private airstrips.

4.13.2 Mitigation: *None Required*

4.14 Population and Housing

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
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)?				X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

4.14.1 Discussion

a)-c) **No Impact:** The proposed project is a water delivery infrastructure replacement project located in a relatively rural portion of Butte County. The proposed project will not induce substantial population growth in the area, directly or indirectly, or displace a substantial number of people or existing housing. The project will not displace people or housing nor necessitate the construction of replacement housing elsewhere. Therefore, the project will not impact population or housing.

4.14.2 Mitigation: *None required*

4.15 Public Services

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:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Fire protection?				X

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:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
b) Police protection?				X
c) Schools?				X
d) Parks?				X
e) Other public facilities?				X

4.15.1 Discussion

a)-e) No Impact. The proposed project would not construct buildings, businesses or other facilities that would result in an increased population in the area. There would be no long-term demands on public services such as fire protection, police protection, schools, or parks generated by this project. No changes in fire protection or police protection are proposed as part of this project. Therefore, the proposed project is not anticipated to impact public services.

4.15.2 Mitigation: *None required*

4.16 Recreation

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
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?				X
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?				X

4.16.1 Discussion

a), b) No Impact. The proposed project will not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility will occur or be accelerated nor will the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. This proposed project will not result in residential development. There are no existing neighborhoods or regional parks in the vicinity of the project site and the project does not proposed recreational facilities or require the expansion of existing recreational facilities; therefore, no impacts are anticipated.

4.16.2 Mitigation: *None required*

4.17 Traffic and Transportation

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
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?				X
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?				X
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?				X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
e) Result in inadequate emergency access?			X	
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?				X

4.17.1 Discussion

- a) **No Impact.** The proposed project is a water control infrastructure modernization project and will not conflict with an applicable plan, ordinance or policy regarding the effectiveness of the performance of the circulation system. The proposed project would not generate additional traffic, as it would not construct facilities that would generate additional vehicular traffic such as a retail center or residential subdivision.

- b) **No Impact.** The project is not expected to result in additional vehicular trips, or to impact levels of service and trip distributions within the project area. The proposed project will not conflict with an applicable congestion management program and will not affect travel demand measures. The proposed project would generate less than significant impacts to traffic and transportation.

- c) **No Impact.** The proposed project will not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that will result in substantial safety risks. The project site is not located in the vicinity of a public airport which is approximately 5.00 miles northeast of the project area. This project will not obstruct air traffic patterns. As a result, no impact is anticipated.
- d) **No Impact.** The proposed project would replace water control structures within the District’s canals. The proposed project will not increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment). No impacts are anticipated.
- e) **No Impact.** The project will be required to adhere to pertinent local and state construction site regulations. Thus, temporary traffic control activities during the construction phase of the proposed project would not prevent emergency vehicle movement throughout the area. The proposed improvements, which would bring the existing facilities in the project site up to current design standards, would provide safer passage for emergency vehicles. Therefore, relative to emergency access, impacts would be less than significant.
- f) **No Impact.** The proposed project will not conflict with an applicable plan, ordinance or policy regarding public transit, bicycle or pedestrian facilities because the project site is located in a rural area that does not have any provisions for alternative transportation. No impact is anticipated.

4.17.2 Mitigation: *None required*

4.18 Tribal Cultural Resources

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:			X	
i.) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or			X	
ii.) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe			X	

4.18.1 Discussion

- a) **Less than Significant.** As part of the ASR prepared for the project by the PAR, a sacred lands file request with the NAHC and Native American Consultation with the identified tribes was conducted. An NAHC search of the Sacred Lands File came back negative for tribal cultural resources within the APE. The Bureau of Reclamation under Section 106 is responsible for Tribal Consultation.

4.19 Utilities and Service Systems

Would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Exceed wastewater treatment requirements of the applicable Water Quality Control Board?				X
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?				X
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?				X
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
e) Result in a determination by the wastewater treatment provider which serves/may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				X
g) Comply with federal, state, and local statutes and regulations related to solid waste?				X

4.19.1 Discussion

a)-e) **No Impact.** This project proposes replacing existing water delivery infrastructure, with new modern structures similar to the existing. The new modern water delivery infrastructure will not significantly increase the amount of impervious surfaces in the area, and will not increase the surface runoff of the area. The project will not require additional water supplies or entitlements. The project will not result in exceeding wastewater treatment requirements for the applicable RWQCB or result in the need for new wastewater treatment facilities because the project is not a use that generates wastewater.

f), g) **No Impact.** The proposed project would not generate impacts relative to landfill capacity, wastewater treatment or solid waste generation. Therefore, there would be no impact.

4.19.2 Mitigation: *None required*

4.20 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				X
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				X
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				X

4.20.1 Setting

The project site has not been designated as a fire hazard by the State Department of Forestry and Fire Protection. The project site is also within a designated Federal or Local Responsibility Area (LRA), which means the local jurisdiction has fiscal responsibility for preventing and suppressing wildfires.

4.20.2 Discussion

- a) **No Impact.** The project improvement sites are located along the District’s canals and are accessed via access routes along the canal top. The project will not impair an adopted emergency response plan or evacuation plan.
- b) **No Impact.** The project site is located in the Central Valley and as such the topography of the site is flat to gently sloping and will not expose project occupants to pollution concentrations from a wildfire. Additionally, the project is in an area surrounded by rice agriculture that typically holds water. Fires in the area are limited in size and contained quickly due to the conditions in the area. No conditions or factors have been identified in the project area that would exacerbate wildfire risks
- c) **No Impact.** The proposed project involves improvements to water control structures. The project does not involve the construction of infrastructure that would exacerbate fire risk. Due to the existing conditions of the site project construction would not exacerbate a fire risk.
- d) **No Impact.** The proposed project is located within the Central Valley that contains slopes between 0 and 2 percent. The project area does not exhibit landslide potential, therefore, no impacts from post fire instability or drainage changes have been identified.

4.20.3 Mitigation: *None Required*

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5 Mandatory Findings of Significance

Mandatory Findings of Significance	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	No Impact
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?		X		
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)?				X
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?				X

5.1.1 Discussion

- a) **Less Than Significant with Mitigation Incorporated.** With the implementation of the mitigation measures included in this Initial Study, **Air Quality MM-1, Biological Resources MM-1 through MM-4 and Cultural Resources MM-1**, the proposed project would not degrade the environment; result in an adverse impact on fish, wildlife, or plant species including special status species, or prehistoric or historic resources.

- b) **No Impact.** The project is the replacement of water control structures within the Richvale Irrigation District. The project does not involve the addition of new expanded structures, facilities, or growth inducing effects, which would be considered cumulatively considerable with regards to past or future projects.

- c) **No Impact.** Based on the preceding environmental analysis and adherence to applicable local, state and federal regulations, as noted in this document, the proposed project would not result in potentially significant cumulative, direct or indirect adverse effects on human beings.

6 Preparers and References

6.1 Report Preparation and Review

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6.2 References

Baldwin, B.G., D.H Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. 2012. *The Jepson Manual: Vascular Plants of California, Second Edition*. University of California Press, Berkeley, CA.

Butte County Association of Governments. *Butte Regional Conservation Plan, Formal Public Draft*. Available at www.buttehcp.com/BRCP-Documents/Formal-Public-Draft_BRCP/index.html

Butte County. 2014. *Butte County Climate Action Plan*. Oroville, CA. February 25, 2014. Available at www.buttecap.net

Butte County. 2010. *Butte County 2030 General Plan and Environmental Impact Report*. Butte County, CA

Butte County Air Quality Management District. 2014. *CEQA Air Quality Handbook*. October 2014.

Butte County. 2000. *Butte County Airport Land Use Compatibility Plan*. Butte County Land Use Commission. Adopted December 2000.

California Department of Conservation. *Fault-Rupture Hazard Zones in California*. Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zone Maps. Special Publication 42. Interim Revision. 2007.

California Department of Conservation. *Fault Activity Map of California Map*. Accessed August 2018. Available at: maps.conservation.ca.gov/cgs/fam/

California Department of Conservation. *California Important Farmland Finder*. Accessed August 2018. Available at: maps.conservation.ca.gov/ciff/ciff.html

California Department of Conservation. 2012. *Fifty-Year Aggregate Demand Compared to Permitted Aggregate Reserves*. Available at www.conservation.ca.gov/cgs/information/publications/ms/Documents/MS_52_2012.pdf

California Department of Toxic Substance Control. 2009. *Envirostor Database*. Accessed August 2018. Available at: <http://www.envirostor.dtsc.ca.gov/public>

Federal Emergency Management Agency. 2016. *FEMA Flood Map Service Center*. Accessed September 2018. Maps 06007C0975E, 06007C0950E, 06007C0745E, 06007C0765E. Available at: <https://msc.fema.gov/portal>

Northern California Water Association. 2014. *Feather River Regional Agricultural Water Management Plan*.

NorthStar. 2019. *Biological Resources Assessment*.

NorthStar. 2019. *Biological Assessment*.

PAR Environmental Services, Inc. 2019. *Cultural Resources Inventory and Evaluation for The Biggs-West Gridley Water District On-Farm Delivery Management Program, Butte County, California*.

Public Resources Code, California (as amended). *California Environmental Quality Act. Division 13, §21000 et seq.* Sacramento, CA

Regulations, Code of (CA) (as amended). *Title 14, Division 6, §15000 et seq. Guidelines for California Environmental Quality Act.* Sacramento, CA

State Water Resources Control Board. *Geotracker Database.* Available at <https://geotracker.waterboards.ca.gov>

Swaim Biological, Inc. 2019. *Giant Garter Snake Habitat Assessment for the Richvale Irrigation District On Farm Delivery Management Program.*

Western Regional Climate Center. 2018. *Marysville, California, Period of Record General Climate Summary-Temperature and Precipitation, Station (0445385) MARYSVILLE, From Year=1897 to Year=2007.*

U.S. Department of Agriculture. 2019. *Web Soil Survey.* Available online at: websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

7 Acronyms and Abbreviations

Agencies, Boards, Commissions, Districts:

BCAQMD	Butte County Air Quality Management District
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CDWR	California Department of Water Resources
DTSC	(California) Department of Toxic Substances Control
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
NAHC	Native American Heritage Commission
NSVAB	Northern Sacramento Valley Air Board
RWQCB	Regional Water Quality Control Board
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

Guidelines, Policies, Programs, Regulations:

CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CWA	Clean Water Act
ESA	Endangered Species Act
FGC	Fish and Game Code
MBTA	Migratory Bird Treaty Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NPDES	National Pollution Discharge Elimination System
NRHP	National Registry of Historic Places
SIP	State Implementation Plan

Miscellaneous:

APE	Area of Potential Effect
ASR	Archaeological Survey Report
BA	Biological Assessment
BMPs	Best Management Practices
BRA	Biological Resources Assessment
BSA	Biological Study Area
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon Monoxide
District	Richvale Irrigation District
ESAs	Environmentally Sensitive Areas
FIRM	Flood Insurance Rate Map
GGS	Giant Garter Snake
GHG	Greenhouse Gases
MLD	Most Likely Descendant
NOx	Nitrogen oxides

PM_{10 / 2.5}Particulate Matter less than 10 / 2.5 Microns
ROG Reactive Organic Gases
RPWRelatively Permanent Waters

8 Mitigation Monitoring and Reporting Program

MM No.	Mitigation Measure	Timeframe for Implementation	Responsible Monitoring Agency	Verification of Compliance		
				Agency & Initials	Date	Notes
AIR QUALITY						
Air Quality MM-1	<p>The following best practice measures to reduce impacts to air quality will be incorporated into the project during construction. These measures are intended to reduce criteria air pollutants that may originate from the site during the course of construction operations.</p> <p><u>Diesel PM Exhaust from Construction Equipment and Commercial On-Road Vehicles Greater than 10,000 Pounds</u></p> <ul style="list-style-type: none"> • All on- and off-road equipment shall not idle for more than five minutes. Signs shall be posted in the designated queuing areas and/or job sites to remind drivers and operators of the five-minute idling limit. • Idling, staging and queuing of diesel equipment within 1,000 feet of sensitive receptors is prohibited. • All construction equipment shall be maintained in proper tune according to the manufacturer's specifications. Equipment must be checked by a certified mechanic and determined to be running in proper condition before the start of work. • Install diesel particulate filters or implement other CARB-verified diesel emission control strategies. • Shall not operate a diesel-fueled auxiliary power system (APS) to power a heater, air conditioner, or any ancillary equipment on that vehicle during sleeping or resting in a sleeper berth for greater than 5 minutes at any location when within 100 feet of a restricted areas. • To the extent feasible, truck trips shall be scheduled during non-peak hours to reduce peak hour emissions. 	Fugitive Dust Control Plan - Prior to initiation of construction.	Richvale Irrigation District			

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	<p><u>Fugitive Dust</u></p> <p>Construction activities can generate fugitive dust that can be a nuisance to local residents and businesses near a construction site. Dust complaints could result in a violation of the District’s “Nuisance” and “Fugitive Dust” Rules 200 and 205, respectively. The following is a list of measures that may be required throughout the duration of the construction activities:</p> <ul style="list-style-type: none"> • Reduce the amount of the disturbed area where possible. • Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. An adequate water supply source must be identified. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible. • All dirt stockpile areas should be sprayed daily as needed, covered, or a District approved alternative method will be used. • Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following completion of any soil disturbing activities. • Exposed ground areas that will be reworked at dates greater than one month after initial grading should be sown with a fast-germinating non-invasive grass seed and watered until vegetation is established. • All disturbed soil areas not subject to re-vegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the Butte County Air Quality Management District. • Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site. • All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of 					

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	<p>freeboard (minimum vertical distance between top of load and top of trailer) in accordance with local regulations.</p> <ul style="list-style-type: none"> • Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site. • Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible. • Post a sign in prominent location visible to the public with the telephone numbers of the contractor and the Butte County Air Quality Management District - (530) 332-9400 for any questions or concerns about dust from the project.” <p>All fugitive dust mitigation measures required should be shown on grading and building plans. In addition, the contractor or builder should designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holidays and weekend period when work may not be in progress. The name and telephone number of such persons shall be provided to the District prior to land use clearance for map recordation and finished grading of the area.</p> <p>Please note that violations of District Regulations are enforceable under the provisions of California Health and Safety Code Section 42400, which provides for civil or criminal penalties of up to \$25,000 per violation.</p> <ul style="list-style-type: none"> • 					
BIOLOGICAL RESOURCES						
	<p>Biological Resources MM-1 Obtain Regulatory Permits and Implement Avoidance and Minimization Measures</p> <ul style="list-style-type: none"> • The project will obtain the following permits, as necessary and applicable: <ul style="list-style-type: none"> ○ USFWS Section 7 ESA Informal Consultation ○ F.G.C. Section 1602 Streambed Alteration 	<p>Obtain Permits - Prior to initiation of construction.</p> <p>Purchase Compensatory Mitigation (if applicable) – Prior</p>	Richvale Irrigation District			

MM No.	Mitigation Measure	Timeframe for Implementation	Responsible Monitoring Agency	Verification of Compliance		
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	<p>Agreement from CDFW</p> <ul style="list-style-type: none"> ○ F.G.C. Section 2080.1 Notification and Consistency Determination from CDFW • Given the GGS habitat located within the project boundaries, the purchase of compensatory mitigation will likely be required by USFWS and/or CDFW. If the purchase of mitigation credits is deemed applicable and necessary by USFWS and/or CDFW during the ESA Section 7 consultation process and/or Fish and Game Code Section 2080.1 consistency determination process, the District shall purchase compensatory mitigation for permanent loss of suitable aquatic and upland habitat for GGS. Mitigation credits would be purchased at the ratio identified by USFWS and/or CDFW. If mitigation credits for permanent impacts to GGS habitat are required, then the following compensatory mitigation is proposed: Temporarily impacted habitat along the canal is anticipated to readily reestablish following construction activities. Additionally, to hasten revegetation, upland areas adjacent to the canals will be hydroseeded with a mixture of native species to promote reestablishment of bankside vegetation. Once construction is completed and pre-construction conditions (topography and hydrology) are reestablished they should revert to pre-construction vegetation character within a few months to a year following completion of project activities. <p>Several improvement types including Types 1, 2, 8, and spills were considered low impact due to their small nature, shallow depth of excavation, and likelihood for timely restoration. Therefore, the following mitigation is proposed for work in the active and inactive season.</p> <p>If work is to occur during the GGS active season the low impact sites (Types 1, 2, 8, and spills) totaling 0.222 acres of temporary impact will be restored and returned to pre-construction conditions. All other sites totaling 0.549 acres of temporary impact will be mitigated at a ratio of 0.5:1 for a total compensation for temporary impacts of 0.27 acres. Permanent impacts totaling 0.06 acres will be mitigated at a ratio of 3:1 for a total compensation for permanent impacts of 0.18 acres. The total</p>	<p>to initiation of construction.</p> <p>AMMs – Include in specifications and contract documents.</p>				

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	<p>number of acres (temporary impact and permanent impact) of mitigation would be 0.45 acres.</p> <p>If work is to occur during the GGS inactive season, temporary impacts at the low impact sites (Types 1, 2, 8, and spills) would be mitigated at a ratio of 0.5:1 for a compensation acreage of 0.111. Temporary impacts at all other sites would be mitigated at a 1:1 ratio for a compensation acreage of 0.549 acres. Permanent impacts would be mitigated at a 4:1 ratio for a compensation acreage of 0.24 acres. The total compensation for temporary and permanent impacts during inactive season construction would be 0.9 acres. The following table summarizes the proposed mitigation for the project.</p> <p>The project will incorporate the avoidance and minimization measures (AMMs), standard BMPs and other notification requirements identified in applicable permits into project plans and specifications and/or contract documents. Incorporation of these requirements will protect sensitive natural resources and water quality from project impacts and ensure that the project will not jeopardize the continued existence of GGS species or result in the destruction of critical habitat. Suggested AMMs have been identified in the Biological Resources Assessment (BRA) and Biological Assessment (BA) prepared for the project.</p>					
	<p>Biological Resources MM-2 Northwestern Pond Turtle Avoidance and Minimization Measures</p> <ul style="list-style-type: none"> Suitable aquatic habitat and upland nesting habitat is present within the BSA. If a northwestern pond turtle is observed in the project area during construction activities, project personnel will temporarily halt project activities until the turtle has moved itself to a safe location outside the limits of the project area, or the turtle will be relocated to suitable aquatic habitat within ¼ mile of the area. If project activities are to occur during the nesting season, (late June-July), a survey will be conducted by a qualified biologist to locate any northwestern pond turtles or their nests before project activities begin. This survey should be conducted no more than two days prior to the start of project activities. If a pond turtle nest is located, the biologist will flag the site and determine whether projects activities can avoid affecting the nest. If the nest cannot be avoided, a no-disturbance buffer zone will be 	Prior to initiation of construction.	Richvale Irrigation District			

MM No.	Mitigation Measure	Timeframe for Implementation	Responsible Monitoring Agency	Verification of Compliance		
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	established around the nest in coordination with CDFW. The no-disturbance buffer will remain in place until the young have left the nest					
	<p>Biological Resources MM-3 Migratory Birds and Nesting Raptors including Bald Eagle, Greater Sandhill Crane, Loggerhead Shrike, Merlin, Northern Harrier, Osprey, Song Sparrow (Modesto Population) and Tricolored Blackbird Avoidance and Minimization Measures</p> <p>Vegetation removal or ground disturbance in areas where nests of birds protected by the MBTA (16 USC §703) and the CFGC (§3503) potentially occur, should be conducted between September 1 and February 28 (i.e. the non-breeding season). If vegetation removal or ground disturbance occurs during the breeding season (i.e. March 1 to August 31) then a qualified biologist shall:</p> <ul style="list-style-type: none"> • Conduct a survey for raptors and all other birds protected by the MBTA and map all nests located within 500 feet of construction areas. The survey should be conducted no more than two weeks prior to the start of project activities. ○ Develop buffer zones around active nests that are sufficient enough in size to ensure impacts to nesting species are avoided. Project activities shall be prohibited within the buffer zone until young have fledged or the nest fails, as determined by a qualified biologist 	Prior to initiation of construction.	Richvale Irrigation District			
	<p>Biological Resources MM-4 Swainson's Hawk Avoidance and Minimization Measures</p> <p>Suitable nesting habitat is present within the BSA. Additionally, the species has been previously observed nesting in the BSA by representatives from CDFW. Project activities at individual locations will be minimal and generally restricted to the edges of the canals and the dirt roadway directly adjacent. These small areas in the context of the greater area do not provide the species with suitable foraging habitat as they will forage more readily in grassland, pasture, or fallowed agricultural fields before disturbed dirt roadway or canal banks.</p>	Prior to initiation of construction	Richvale Irrigation District			

MM No.	Mitigation Measure	Timeframe for Implementation	Responsible Monitoring Agency	Verification of Compliance		
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	If feasible, construction activities should be conducted outside of the bird breeding season. (March 1-August 31). If work must occur during bird breeding season, to ensure that no indirect impacts to active nest occur due to any future construction activities, a qualified biologist will conduct a pre-construction survey for Swainson's hawk and raptor nests. The area to be surveyed will include a 0.5-mile radius including and surrounding the BSA. If active nests are discovered, the District will be notified. No construction will occur until appropriate buffers are established, based upon recommendations by the qualified biologist. The pre-construction survey will be conducted no less than 14-days and no more than 30-days prior to commencement of construction. Should an active nest(s) be discovered, it will be monitored at reasonable intervals, as determined by a qualified biologist. The status of nesting activities shall be included in monthly reports to the District and/or regulatory agencies, as appropriate. Additionally, standard construction BMPs will be implemented which include returning disturbed areas to pre-construction condition which would include reseeded with an appropriate, approved seed mix.					
CULTURAL RESOURCES						
	<p>Cultural Resources MM-1</p> <p>Although no prehistoric sites have been formally recorded or otherwise identified within the project site, the presence of buried cultural resources is always a possibility. Therefore, although unlikely, if unknown resources are discovered during construction and excavation activities, the following Cultural Resources Minimization Measures will be included in all contract documents and construction plans.</p> <ul style="list-style-type: none"> Should archaeological resources be encountered at any point during project excavation and construction activities, all activity around the discovery will cease. The District will retain the services of a qualified archaeologist to examine the findings, assess their significance, and offer proposals for any exploratory procedures deemed appropriate to further investigate and/or mitigate any adverse impacts. Should human remains be encountered during excavation activities in the project area, the following procedures shall 	During construction, if resources are discovered.	Richvale Irrigation District			

MM No.	Mitigation Measure	Timeframe for Implementation	Responsible Monitoring Agency	Verification of Compliance		
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	<p>be followed:</p> <ul style="list-style-type: none"> ○ Per Health and Safety Code §7050.5(b), the Butte County Coroner's Office will be contacted immediately; all work must cease, no further disturbances may occur until the Coroner has made findings as to the origins and disposition per Public Resources Code §5097.98. ○ If the Coroner determines the remains are Native American, the Office will notify the Native American Heritage Commission (NAHC) within 24 hours. ○ Following receipt of the Coroners notice, the NAHC will contact a Most Likely Descendent (MLD). The MLD will then have 48 hours in which to make recommendations to the District and the consulting archaeologist regarding the treatment and/or re-interment of the human remains and any associated grave items. 					

Appendix A
Biological Resources Assessment

Appendix B
Giant Garter Snake Habitat Assessment

Appendix C
Project Work Locations
