Final
Environmental Assessment/Initial Study

Sweeney/McCune Creek Outflow Recovery and Automation Project

Solano County, California

Prepared for:

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EXECUTIVE SUMMARY

The Solano Irrigation District (District), in cooperation with Bureau of Reclamation (Reclamation), proposes to construct a long crested weir within the confluence of Sweeney Creek and McCune Creek, within unincorporated Solano County, California. The purpose of the proposed project is to recover substantial surface water outflow for redistribution within the Solano Irrigation District boundaries by installing a long crested weir, along with integrated flume meters and automated discharge gates, within the channels.

Sweeney Creek and McCune Creek confluence is located approximately 0.55 miles south of Lincoln Highway via farm roads within unincorporated Solano County. The weir would be constructed in a manner to allow any natural drainage flows occurring during the non-irrigation season to simply pass through or flow across the structures. The proposed project structure would provide control and automation capabilities to regulate flow rates to pass by the check structure. The portion of the long crested weir within Sweeney Creek is approximately 139 feet x 57 feet long, and the portion of the long crested weir within McCune Creek is approximately 72 feet x 59 feet long. The weir foot print requires an approximate excavation depth of 7.5 feet, and includes two outlets, slip gate controls, flume meters, and a SCADA system for automation and communications.

The proposed project is anticipated to be funded through local and federal funds.

This environmental document is prepared in conformance with the requirements of the California Environmental Quality Act (CEQA) Public Resources Code 21000-21178. The District is the Lead Agency for CEQA implementation, and Reclamation is the lead agency for NEPA implementation. The requirements of NEPA and CEQA are not necessarily the same, however, both require the consideration of potential environmental impacts in the evaluation of a proposed agency action. CEQ regulations (40 CFR 1508.27) provide NEPA guidance as to the requirement to evaluate impacts in an environmental document. General NEPA procedures are set forth in the CEQ regulations (40 CFR 1500-1508). Under CEQA, the concept of environmental “impacts” or environmental “effects” (the terms are used synonymously), as well as the determination of the significance of those impacts, is focused on changes in the existing physical conditions in the affected environment. Under NEPA, significance requires consideration of both context and intensity (40 CFR 1508.27).

The proposed project’s impact analyses consider the type, size, location, and intensity of the potential effects associated with the proposed project’s activities. The criteria and thresholds used to identify potentially significant effects on the environment, for the most part, apply to CEQA in accordance with Public Resources Code section 21082.2 and CEQA Guidelines sections 15064 and 15065.

CEQA mitigation measures that would reduce significant impacts associated with implementation of the proposed project to less than significant levels are identified after each impact discussion. Although these measures are referred to as mitigation measures, they are considered project design features for purposes of NEPA. This Environmental Assessment/Initial Study (EA/IS) meets all NEPA and CEQA requirements for environmental analyses and disclosure of potential impacts.

List of Abbreviations

AB .....Assembly Bill
APE .....Area of Potential Effects
BMPs.....Best Management Practices
BSA .....Biological Study Area
CAA.....Clean Air Act
CAAQS.....California Ambient Air Quality Standards
CARB .....California Air Resources Board
CDFW .....California Department of Fish and Wildlife
CERFA .....Community Environmental Response Facilitation Act (CERFA) of 1992
CESA .....California Endangered Species Act
CEQA.....California Environmental Quality Act
CH4 .....Methane
CNDDB .....California Natural Diversity Database
CNEL.....Community Noise Equivalent Level
CNPS .....California Native Plant Society
CO.....carbon monoxide
CO2.....carbon dioxide
CRHR.....California Register of Historic Resources
CWA.....Clean Water Act
dBA .....Decibel A-weighted
DO .....Dissolved oxygen
DOC .....Department of Conservation
DSOD.....Division of Safety of Dams
EA/IS .....Environmental Assessment/Initial Study
EIR .....Environmental Impact Report
E.O. .....Executive Order
EPA.....Environmental Protection Agency
ESA.....Environmentally Sensitive Area
FCAA.....Federal Clean Air Act
FESA.....Federal Endangered Species Act
FIRM .....Flood Insurance Rate Map
FMMP.....Farmland Mapping and Monitoring Program
FTA .....Federal Transit Administration
GHG .....greenhouse gases
HCP.....Habitat Conservation Plan
H2S .....Hydrogen Sulfide
HFC.....Hydrofluorocarbons
IPCC.....Intergovernmental Panel on Climate Change
Lb .....Pound
Ldn .....day-night average sound level
Leq .....equivalent continuous sound level
LOS.....Level of Service
MBTA .....Migratory Bird Treaty Act

MND .....Mitigated Negative Declaration
Mph .....miles per hour
MPRO .....Mid-Pacific Regional Office
MRZ .....Mineral Resource Zone
NAAQS.....National Ambient Air Quality Standards
NAHC .....Native American Heritage Commission
NEPA .....National Environmental Protection Act
NES.....Natural Environment Study
NRCS .....Natural Resources Conservation Service
NHPA .....National Historic Preservation Act
NMFS .....National Marine Fisheries Service
NO2.....nitrogen dioxide
NOX .....nitrogen oxides
NOA .....Naturally Occurring Asbestos
NOAA.....National Oceanic and Atmospheric Administration
NPDES.....National Pollutant Discharge Elimination System
NWIC.....North West Information Center
O3 .....Ozone
PG&E .....Pacific Gas and Electric
PA .....Programmatic Agreement
Pb.....Lead
PM.....particulate matter
ppm .....parts per million
PRC.....Public Resources Code
RP .....Recreations-Parks
RTP .....Regional Transportation Plan
RWQCB .....Regional Water Quality Control Board
ROW .....Right-Of-Way
SCADA.....Supervisory Control and Data Acquisition
SCWA .....Solano County Water Agency
SID .....Solano Irrigation District
SF6.....Sulfur hexafluoride
SHPO .....State Historic Preservation Officer
SIP .....State Implementation Plan
SO2 .....sulfur dioxide
SWRCB.....State Water Resources Control Board
SWMP .....Storm Water Management Plan
SWPPP .....Storm Water Pollution Prevention Plan
TAC .....Toxic Air Contaminants
TCR.....Tribal Cultural Resource
USACE .....United States Army Corps of Engineers
USFWS .....United States Fish and Wildlife Service
USGS .....United States Geologic Survey
VOC .....Volatile Organic Compound
YSAQMD.....Yolo-Solano Air Quality Management District

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1. Purpose and Need for Action

1.1. Introduction

The Solano Irrigation District (District), in cooperation with Bureau of Reclamation (Reclamation), proposes to construct a long crested weir within the confluence of Sweeney Creek and McCune Creek, within unincorporated Solano County, California (proposed project). The purpose of the proposed project is to recover substantial surface water outflow for redistribution within the Solano Irrigation District boundaries by installing a long crested weir, along with integrated flume meters and automated discharge gates, within the channels.

Sweeney Creek and McCune Creek confluence is located approximately 0.55 miles south of Lincoln Highway via farm roads within unincorporated Solano County. The weir would be constructed in a manner to allow any natural drainage flows occurring during the non-irrigation season to simply pass through or flow across the structures. The proposed project structure would provide control and automation capabilities to regulate flow rates to pass by the check structure. The portion of the long crested weir within Sweeney Creek is approximately 139’ x 57’ long, and the portion of the long crested weir within McCune Creek is approximately 72’x 59’ long. The weir foot print requires an approximate excavation depth of 7.5 feet, and includes two outlets, slip gate controls, flume meters, and a SCADA system for automation and communications.

The total estimated cost to implement the Build Alternative is approximately $1.6m. The proposed project is partially funded through the Bureau of Reclamation Assistance Agreement with local funding contributions from the District and other locally generated funds.

1.2. Purpose

The purpose of the proposed project is to:

- Assist the District with fulfilling its public purpose of conserving up to an estimated 12,360 AF (AF) of water per year for redistribution;
- Lead to increased water use efficiency for adjacent land owners through the use of drip and micro sprinkler systems; and
- Improve water management through measurement using supervisory control and data acquisition (SCADA) controlled automated gates to measure flow where water savings are not currently quantifiable.

1.3. Need

Currently, Sweeney Creek and McCune Creek are unregulated drainage channels that provide approximately 32,000 acre feet of water per year to adjacent farmlands through Maine Prairie Water District for agricultural purposes. During the irrigation season, tail-water runoff from farm fields and operational spills enter the channels. Much of the drainage water that is not recovered within the channels travels eastward and eventually discharges into the Sacramento River, resulting in an unquantifiable loss of potential water for re-use per year.

The proposed project is needed to assist the District in fulfilling its public purpose by conserving up to an estimated 12,360 AF of water per year. The water will be primarily re-used via irrigation applications by drip and micro-sprinkler systems thereby increasing water use efficiency. The Sweeney and McCune Creek weir, flume meters and automated gate would provide the District the opportunity to impound and measure downstream water deliveries as well as recover a portion of District drainage for re-use and water conservation. This proposed project would improve water management through measurement using supervisory control and data acquisition (SCADA) controlled automated gates, along with the long crested weir, to measure flow where water savings are not currently quantifiable. In addition, by providing the recovered outflow from this proposed project to the District, the District's operation of their deep groundwater wells would be reduced resulting in the reduction of energy consumption and groundwater pumping.

1.4. Reclamation's Legal and Statutory Authorities

Reclamation will provide funding for this proposed project through an Assistance Agreement pursuant to Public Law. 111-11SEC. 9504 (a)(1) and (3) Water Management Improvement. The Federal funding contribution to the District for this proposed project is $360,000.00. As a result of Federal funding, Reclamation is the lead for NEPA implementation. This EA/IS has been prepared to examine the impacts on environmental resources as a result of the continued delivery of water to adjacent land owners for agricultural purposes. The water would continue to be delivered for agricultural purposes within Reclamation's existing water right place of use. The water would be delivered within the current contractor service area boundaries using existing facilities. Coordination with the Bureau of Reclamation will continue throughout the duration of the proposed project until completion.

1.5. Alternatives

Two alternatives are being considered for this proposed project—the proposed project Alternative (see Figure 1. Project Vicinity, Figure 2. Project Location,

Figure 3. Project Features, and Figure 4. Preliminary Plan Weir Overview) and the No Action Alternative.

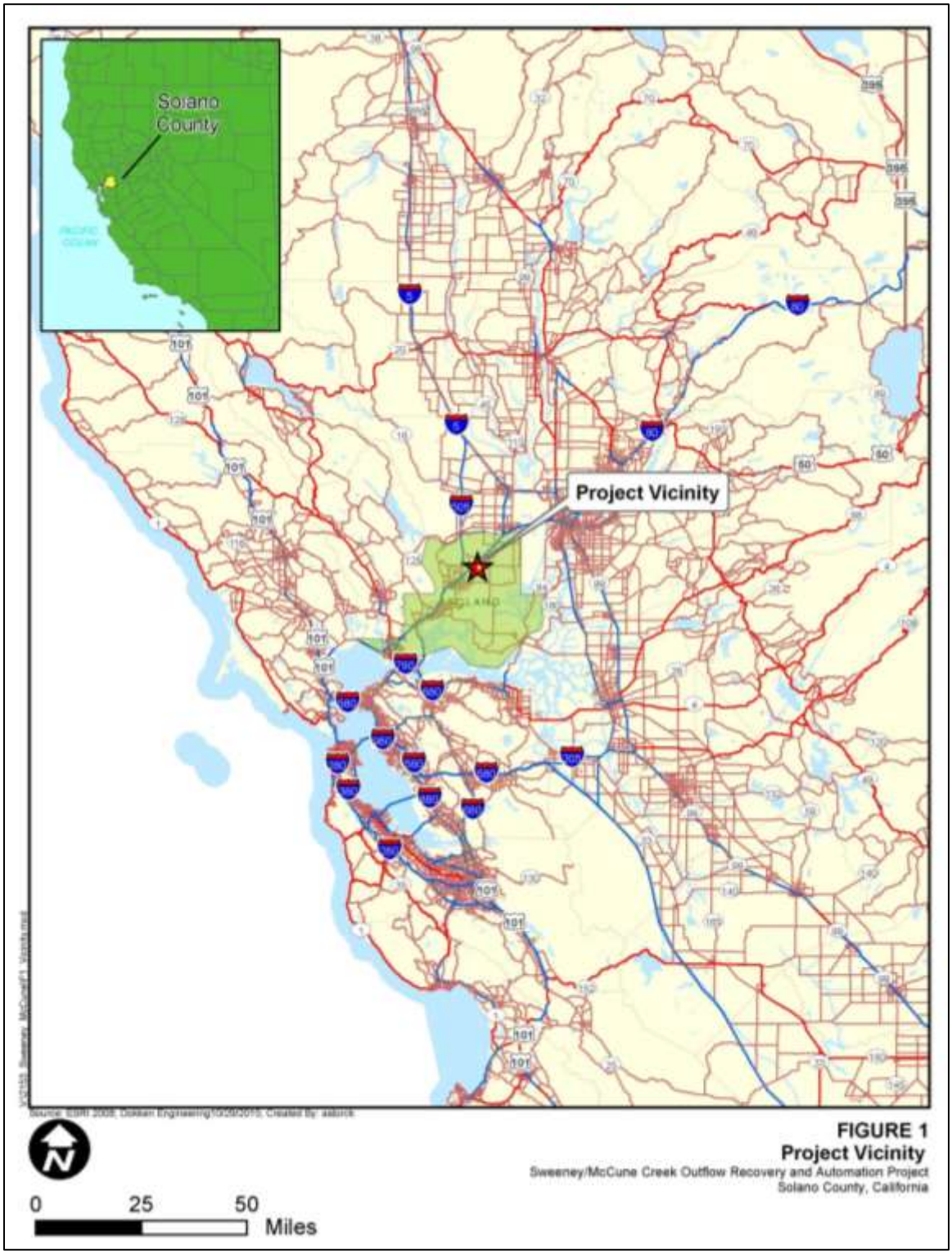

Figure 1: Project Vicinity

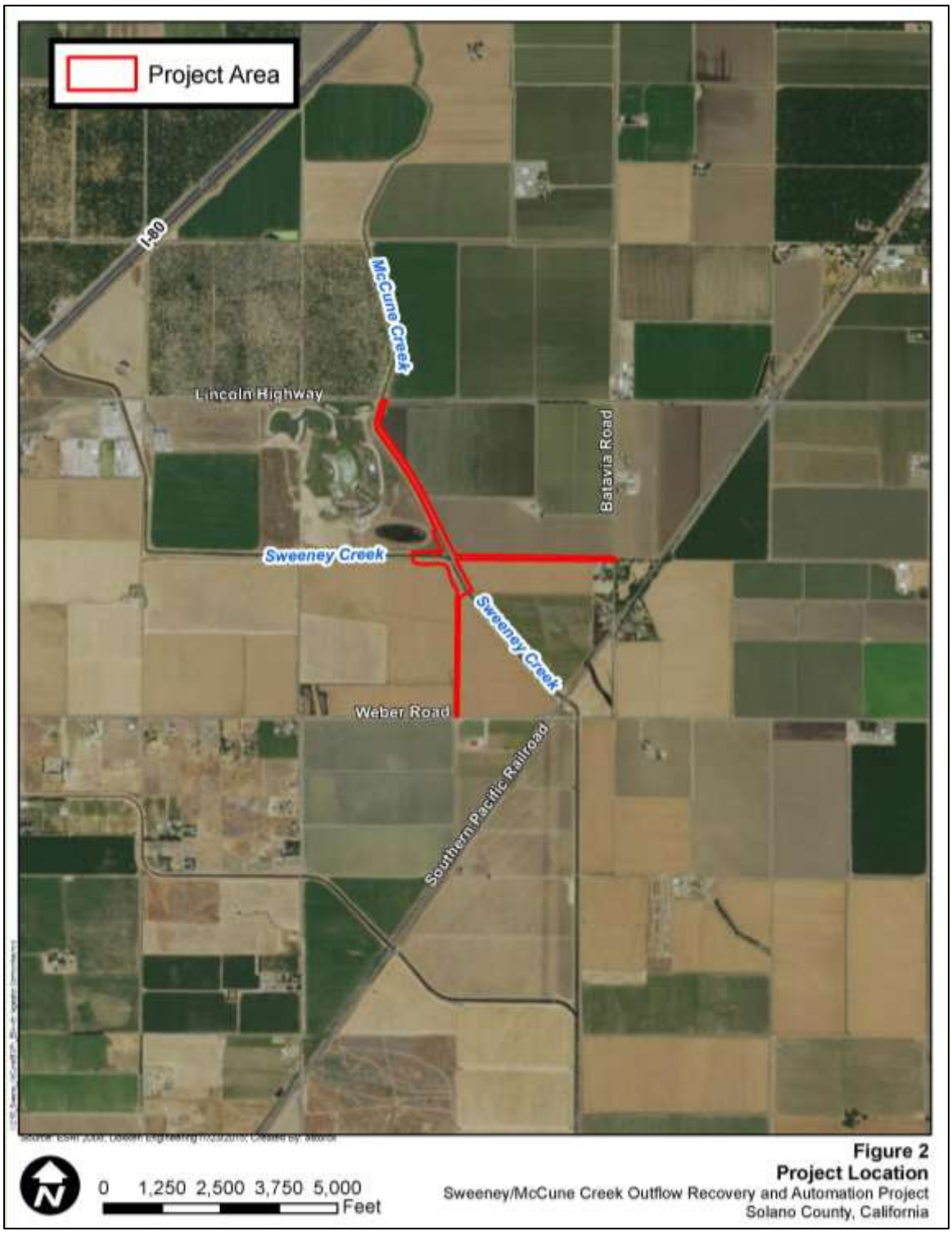

Figure 2: Project Location

Figure 3: Project Features

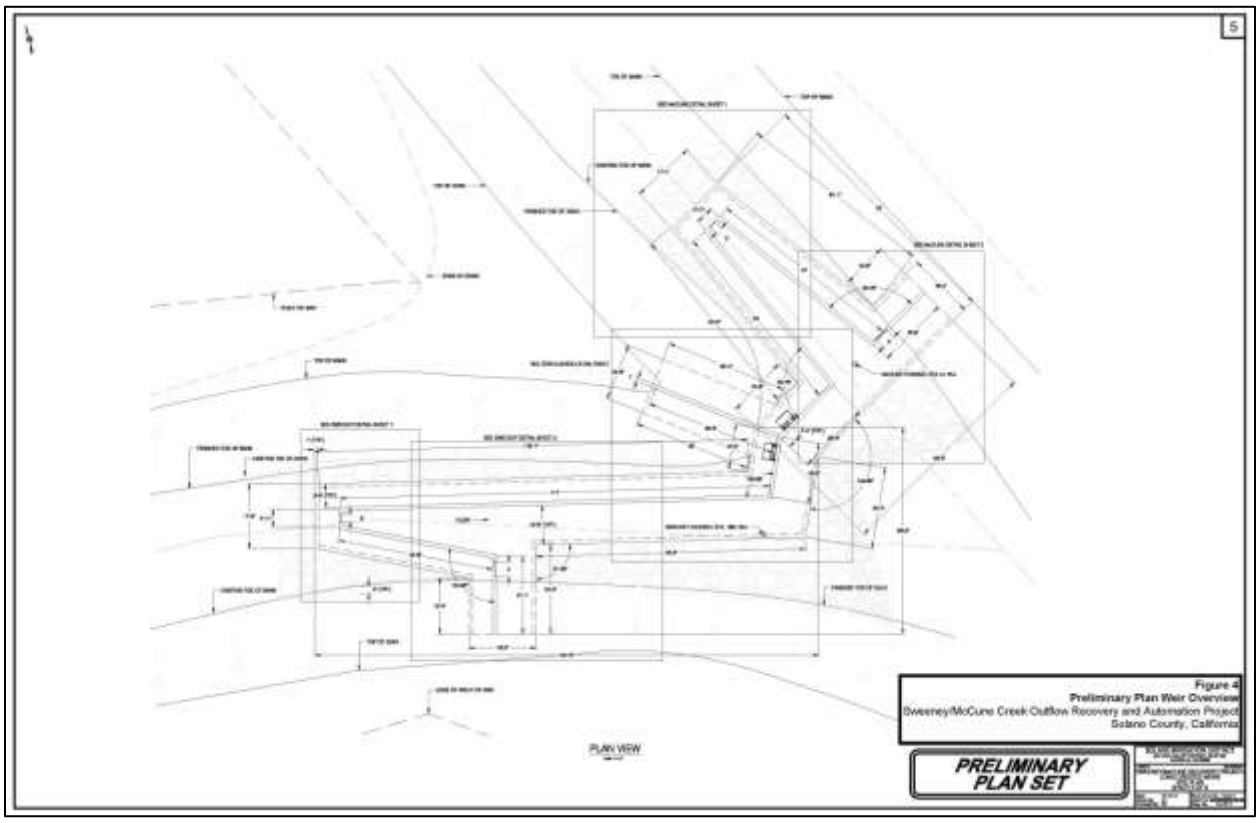

Figure 4: Preliminary Plan Set

1.5.1. Description of Proposed Project

The proposed action would construct a long crested weir within the confluence of Sweeney Creek and McCune Creek The weir would be constructed in a manner to allow any natural drainage flows occurring during the non-irrigation season to simply pass through or flow across the structures. The proposed project structure would provide control and automation capabilities to regulate flow rates to pass by the check structure. The portion of the long crested weir within Sweeney Creek is approximately 139 feet x 57 feet long, and the portion of the long crested weir within McCune Creek is approximately 72 feet x 59 feet long. The weir foot print requires an approximate excavation depth of 7.5 feet, and includes two outlets, slip gate controls, flume meters, and a SCADA system for automation and communications.

To allow equipment to access the proposed project site, access would be through farm roads located south of the proposed project area via Weber Road approximately 2.5 miles east of I-80, east of the proposed project area via Batavia Road approximately 0.5 miles north of the intersection of Batavia Road and Weber Road, and north of the proposed project via Midway Road approximately 1.25 miles east of I-80. Additional components of the proposed project include equipment and material storage/staging areas. Temporary ramps will be constructed within the channel to the north and south of the proposed weir

locations to allow for equipment passage. Ramp installation within the channel would take place after the channels are dewatered. During construction, water within the channel will bypass the dewatered area through use of gravity pipelines. Best management practices and measures would be used to minimize impacts to the channel and adjacent farm lands. The proposed project would not affect traffic or regular irrigation activities. Construction and equipment staging is proposed to be located on farm roads adjacent to the channels. Construction is anticipated to start May 2016 and last a total of 2 months.

1.5.2. No-Action Alternative

The State CEQA Guidelines (Section 15126[e]) require consideration of a No-Action alternative that represents the existing conditions, as well as what would reasonably be expected to occur in the foreseeable future if the proposed project were not approved. Under the No-Action, or “Do Nothing” Alternative, a long crested weir would not be installed within Sweeney Creek and McCune Creek confluence. Surface water outflow would not be recovered for redistribution and as a result water management and savings would continue to be unquantifiable.

1.6. Permits and Approvals Needed

Environmental findings within the proposed project include impacts to waters of the U.S. and State, biological resources, and water quality. The following consultations and environmental permits will be obtained prior to the start of construction.

State Water Resources Control Board - Section 401 Certification

California Department of Fish and Wildlife - 1602 Streambed Alteration Agreement

U.S. Army Corps of Engineers - Section 404 Nationwide Permit

Regional Water Quality Control Board - National Pollutant Discharge Elimination 402 General Permit for Storm Water

2. Analysis of the Proposed Project

2.1. Resources Not Analyzed in Detail

This section of the EA/IS includes the NEPA and CEQA analysis portion of the potentially affected environment and the environmental consequences involved with the proposed project. Impacts on several environmental resources were examined and found to be either minor or non-existent. Because of this, the following resources were eliminated from further discussion from in this EA/IS:

- Coastal Zones—The proposed project is approximately 25 miles inland from the Pacific Ocean and 45 miles from the San Francisco Bay Area. This is well outside the Coastal Zone.
- Wild and Scenic Rivers— No National Wild and Scenic Rivers or California Wild and Scenic Rivers are at or near the proposed project site. Sweeney and McCune creek eventually discharge into the Sacramento River. The nearest National Wild and Scenic River and California Wild and Scenic River is the American River about 30 miles northeast of the proposed project site.
- Timberlands—No Timber Production Zones are in the vicinity of the proposed project; the nearest is 30 miles to the west of the proposed project area.
- Section 4(f)—No Section 4(f) resources would be affected. No parks are in the vicinity, and cultural resources evaluated do not meet the definition of a Section 4(f) Resource.
- Parks and Recreational Facilities—There are no parks or recreational facilities within the proposed project vicinity.
- Growth—The proposed project is not the type that warrants further analysis because it does not increase capacity or increase accessibility and is on an existing facility.
- Relocations and Real Property Acquisition – No property acquisition will be required for this proposed project.
- Transportation and Traffic – The proposed project is a water distribution project and will not affect traffic or transportation.
- Environmental Justice – The proposed project is a water distribution project and will not disproportionately affect the health or environment of minority and low-income populations.
- Utilities and Service Systems – The proposed project is a water distribution proposed project and will not impact utilities or service systems.
- Mineral Resources – There are no known mineral resources within the proposed project area. The County's General Plan (2008) indicates the nearest Mineral Resource Zone is located approximately 7 miles southwest.
- Hazards and Hazardous Materials – The proposed project is a water distribution project and will not create a significant hazard to the public or the environment There are no current or historical clean-up sites or hazardous waste facilities in

proximity to the proposed project area. The closest occurrence is approximately 0.6 mile north west of the proposed project area (EDR, 2015).

- Indian Trust Assets and Indian Sacred Sites – Indian Trust Assets are legal interests in property/lands held in trust by the United States for Indian Tribes or individuals. Tribal lands are lands that have been deeded to tribes or upon which tribes have a historical claim. There are no Indian Trust Assets within proximity to the proposed project area. In addition, the proposed project is not located on or would impact federal lands and therefore could not affect Indian Sacred Sites on federal lands.
- Socioeconomics – The proposed project is a water distribution project within an existing canal and will not impact ways in which people live, work, or play as members of society, nor will it cause any impacts to the surrounding overarching society as a whole.

2.2. Human Environment

2.2.1. Existing and Future Land Use

Regulatory Setting

The California Environmental Quality Act (CEQA) requires the Lead Agency to examine the impacts of a project on the physical conditions that exist within the area that would be affected by the proposed project. CEQA also requires a discussion of any inconsistency between the proposed project and applicable general plans and regional plans.

An inconsistency between the proposed project and an adopted plan for land use development in a community would not constitute a physical change in the environment. When a project diverges from an adopted plan, however, it may affect planning in the community regarding infrastructure and services, and the new demands generated by the proposed project may result in later physical changes in response to the proposed project.

In the same manner, the fact that project brings new people or demand for housing to a community does not, by itself, change the physical conditions. An increase in population may, however, generate changes in retail demand or demand for governmental services, and the demand for housing may generate new activity in residential development. Physical environmental impacts that could result from implementing the proposed project are discussed in the appropriate technical sections.

This section of the document identifies the applicable land use designations, plans and policies, and permissible densities and intensities of use, and discusses any inconsistencies between these plans and the proposed project.

This section also discusses agricultural resources and the effect of the proposed project on these resources.

Affected Environment

According to the County of Solano 2008 General Plan, the proposed project area land use is within unincorporated Solano County and planned for Agriculture, Agricultural Reserve and Public/Quasi Public use, and is currently zoned as A-40 Exclusive Agriculture (Figure 5).

The land on the north side of the proposed project area is federally owned by the Sacramento Valley National Cemetery, and the land on the south side of the proposed project area is privately owned for agricultural uses. The proposed project site is also located within the Solano Habitat Conservation Plan.

Environmental Consequences

The proposed project would not divide an established community. While there are several rural residential neighborhoods located to the south and north of the proposed project site, the proposed project and temporary construction activities would not affect access to the residences.

The proposed project would not conflict with applicable land use plans, policies, or regulations of an agency with jurisdiction over the proposed project adopted for the purpose of avoiding or mitigation of an environmental effect. As included in the City's General Plan, maintenance of established irrigation channels and agricultural use is planned for this site.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are proposed.

Findings

The proposed project would have no impact relating to land use and planning.

Figure 5: Land Use

2.2.2. Agriculture and Forest Resources

Regulatory Setting

Federal

The Farmland Protection Policy Act (FPPA) is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that federal programs are administered in a matter that is compatible with state and local units of government, and private programs and policies to protect farmland (7 U.S.C. § 4201). The NRCS, responsible for the implementation of the FPPA, categorizes farmland in a number of ways. These categories include: prime farmland, farmland of statewide importance, and unique farmland. Prime farmland is considered to have the best possible features to sustain long-term productivity. Farmland of statewide importance includes farmland similar to prime farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Unique farmland is characterized by inferior soils and generally needs irrigation depending on climate.

State

The FMMP, which monitors the conversion of the state's farmland to and from agricultural use, was established by the DOC, under the Division of Land Resource Protection. The program maintains an inventory of state agricultural land and updates its "Important Farmland Series Maps" every two years. The FMMP is an informational service only and does not constitute state regulation of local land use decisions.

The four categories of farmland, which include Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance, are considered valuable and any conversion of land within these categories is typically considered to be an adverse impact. The DOC provides the following definitions for these categories of farmland:

- Farmland with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- Farmland with a good combination of physical and chemical features but with minor shortcomings such as greater slopes or with less ability to hold and store moisture.
- Land on which the existing vegetation is suited to the grazing of livestock.

Williamson Act

The Williamson Act is a State program that was implemented to preserve agricultural land. Under the provisions of the Williamson Act (California Land Conservation Act 1965, Section 51200), landowners contract with the county to maintain agricultural or open space use of their lands in return for reduced property tax assessments. The contract is self-renewing; however, the landowner may notify the county at any time of intent to withdraw the land from its preserve status. Withdrawal from a Williamson Act contract involves a gradual tax adjustment to full market value over a ten-year period before protected agricultural/open space land can be converted to urban uses (DOC, 2009). In certain situations, immediate termination is sometimes granted.

In determining whether impacts to agricultural resources are significant environmental impacts, lead agencies may refer to the California Agricultural Land Evaluation and Site assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental impacts, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the State's inventory of forest land, including the forest and Range Assessment Project and the Forest Legacy Assessment Project; the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Impacts to agricultural or forest resources are considered significant if the proposed project would:

- Convert Prime farmland, Unique farmland, or Farmland of Statewide Importance to non-agricultural use;
- Conflict with existing zoning for agricultural use, or a Williamson Act contract;
- Conflict with existing zoning for, or cause rezoning of, forest land, timberland or timberland zoned Timberland Production;
- Result in the loss of forest land or conversion of forest land to non-forest use; and/or
- Involve other changes in the existing environment, which due to their location or nature, could result in conversion of farmland, to nonagricultural use.

Affected Environment

The proposed project area is located within prime farmland and unique farmland. There are no Williamson Act contracts that affect the proposed project site. No forest land, timberland, or timberland zoned Timberland Production occurs within proximity to the proposed project site. The closest forest resources are located approximately 30 miles west of the proposed project area.

Environmental Consequences

The proposed project area is located within prime farmland and unique farmland though the proposed project's activities would not convert or impact any prime farmland or unique farmland. In addition, due to the nature of the proposed project, construction impacts would only occur within the channels and on adjacent, previously disturbed farm access roads which are not zoned for agricultural uses and fall under the SID ROW easement.

Avoidance, Minimization, and/or Mitigation Measures

None.

Findings

The proposed project would have no impacts relating to Agriculture or Forest Resources.

2.2.3. Visual/Aesthetics

Regulatory Setting

The National Environmental Protection Act establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings (42 United States Code 4331[b][2]).

The California Environmental Quality Act establishes that it is the policy of the state to take all action necessary to provide the people of the state "with…enjoyment of aesthetic, natural, scenic and historic environmental qualities" (CA Public Resources Code Section 21001[b]).

For purposes of this document, the significance criteria used to evaluate the proposed project impacts to aesthetics are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines, thresholds of significance adopted by the City in applicable general plans and previous environmental documents, and professional judgment. A significant impact related to aesthetics would occur if the proposed project would:

- Substantially degrade the existing visual character or quality of the site and its surroundings; or
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Affected Environment

Nearby roads are not designated Scenic Highways in the National Scenic Byways Program nor are they State Scenic Highways or scenic corridors (Caltrans 2015). The proposed project corridor is defined as the area of land that is visible from, adjacent to, and outside the highway right-of-way, and is determined by topography, vegetation, and viewing distance.

The proposed project area is within the Sacramento Valley in the California Dry Steppe Province. This province lies within the Central Valley of California, a flat alluvial plain between the Sierra Nevada and the Coast Ranges.

According to the 2008 Solano County General Plan EIR, agricultural landscapes, the Sacramento–San Joaquin Delta (Delta) and marshlands, and oak- and grass-covered hills are the primary aesthetic resources in the County (Solano County 2008a). Prominent scenic resources in the County include marshlands and Delta waters located to the south, the Coast Range extending in a north–south direction north and west of Fairfield, meandering hills between Cordelia and Benicia, and expanses of agricultural lands located primarily in the eastern half of the County. Agricultural lands account for more land than any other land use which supports wildlife habitats and migration corridors, provides open space and recreational amenities for residents and visitors, and acts as a separator defining the County's cities. The land cover within the proposed project area is characterized by invasive ruderal vegetation along the banks of the channels, and freshwater emergent vegetation within the channels.

The proposed project area currently contains areas developed with rural residential homes, farm lands, and the Sacramento Valley National Cemetery. The proposed project area has historically been used for agriculture, and is considered prime farm land. The topography of the proposed project area is flat, and lies approximately 54 to 62 feet above sea level within the Dixon USGS 7.5 minute quadrangle.

The proposed project area is currently zoned for Exclusive Agriculture (A-40). Sweeney and McCune channels are bounded by Agricultural land to the south, east and west of the proposed project, and the Sacramento Valley National Cemetery to the north. See Figures 6 and 7 for a typical view of the channels and agricultural settings. The nearest viewer is the Sacramento Valley National Cemetery located 0.4 miles North West of the proposed project area. The nearest rural residential home is located approximately 0.5 miles east of the Project area.

Figure 6: Existing Views at the Confluence of Sweeney Creek and McCune Creeks, Facing Southwest.

Figure 7: Representative Agricultural Fields South of Sweeney Creek, Facing Southeast

Environmental Consequences

Overall visual impacts would be low, considering viewers (rural residents) are anticipated to have a low response to the change in the view because of the proposed project area being located within the channel. The proposed project is consistent with current land use, complies with Solano County ordinances, and will not adversely affect any viewer group. Additionally, the proposed project area is not within proximity to a State Scenic Highway or National Scenic Byway.

The proposed project would not create a source of glare that would cause a public hazard or annoyance. The weir would be of materials typically seen by rural residents. No substantially reflective surfaces are proposed. Emergent vegetation along the channel would be removed to allow for construction activities; however, the channel would be restored after construction using native seeding. The proposed project would not include the construction of structures that could reflect or concentrate sunlight, thereby increasing glare. The proposed project would not create a new source of light that would be cast onto agricultural or residential uses.

Construction of the proposed project would temporarily change views experienced by rural residents in the proposed project area since construction equipment would be visible from neighboring areas, however due to the remote location of the proposed project, new light sources would not be cast upon agricultural or rural residences. Temporary impacts due to proposed project construction would be short-term and would cease upon project completion.

Avoidance, Minimization, and/or Mitigation Measures

None.

Findings

The proposed project would have less than significant impacts relating to visual/aesthetics.

2.2.4. Cultural Resources

Regulatory Setting

The term “cultural resources” as used in this document refers to all “built environment” resources (structures, bridges, railroads, water conveyance systems, etc.), culturally important resources, and archaeological resources (both prehistoric and historic), regardless of significance. Laws and regulations dealing with cultural resources include:

National Historic Preservation Act (NHPA)

The National Historic Preservation Act (NHPA) of 1966, as amended, is the primary Federal legislation which outlines the Federal government's responsibility to cultural resources. More specifically, Section 106 of the NHPA and its implementing regulations located at 36 CFR Part 800, outline the Federal government's responsibility in identifying and evaluating cultural resources.

Section 106 of the NHPA requires the Federal government to take into account the effects of an undertaking on cultural resources listed on and eligible for listing on the National Register of Historic Places (National Register) and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment. Those resources that are on or eligible for inclusion in the National Register are referred to as historic properties. The 36 CFR Part 800 regulations describe the Section 106 process. They outline the steps the Federal agency takes to identifying cultural resources and the level of effect that the proposed undertaking will have on historic properties. It is the initiating of an undertaking that begins the Section 106 process. Once an undertaking is initiated the Federal agency must first determine if the action is the type of action that has the potential to affect historic properties. If the action is the type of action that has the potential to affect historic properties, the Federal agency must 1) identify the APE, 2) determine if historic properties are present within the APE, 3) determine the effect that the undertaking will have on historic properties, and 4) consult with the appropriate State Historic Preservation Officer (SHPO) to seek concurrence on Federal agencies findings. In addition, the Federal agency is required through the Section 106 process to consult with Native American tribes if the undertaking may affect historic properties to which Native American tribes have attached religious and cultural significance. If the undertaking would result in adverse effects to historic properties, these adverse effects must be resolved in consultation with the SHPO and other parties identified during the Section 106 process before the undertaking. For the purposes of this proposed project, the providing of Federal funds constitutes an undertaking as defined in 36 CFR § 800.16(y) and involves the type of activity that has the potential to cause effects on historic properties.

Historical Resources (CEQA)

CEQA established statutory requirements for establishing the significance of historical resources in PRC Section 21084.1. The CEQA Guidelines (Section 10564.5[c]) also require consideration of potential proposed project impacts to "unique" archaeological sites that do not qualify as historical resources. The statutory requirements for unique archaeological sites that do not qualify as historical resources are established in PRC Section 21083.2. These two PRC sections operate independently to ensure that significant potential impacts on historical and archaeological resources are considered as part of a project's environmental analysis. Historical resources, as defined in Section 15064.5 as

defined in the CEQA regulations, include 1) cultural resources listed in or eligible for listing in the California Register of Historical Resources (California Register); 2) cultural resources included in a local register of historical resources; 3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in one of several historic themes important to California history and development.

Under CEQA, a project may have a significant effect on the environment if the project could result in a substantial adverse change in the significance of a historical resource, meaning the physical demolition, destruction, relocation, or alteration of the resource would be materially impaired. This would include any action that would demolish or adversely alter the physical characteristics of an historical resource that convey its historic significance and qualify it for inclusion in the California Register or in a local register or survey that meets the requirements of PRC Section 5020.1(l) and 5024.1(g). PRC Section 5024 also requires state agencies to identify and protect state-owned resources that meet National Register of Historic Place (National Register) listing criteria. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the State Historic Preservation Officer (SHPO) before altering, transferring, relocation, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the National Register or are registered or eligible for registration as California Historical Landmarks.

CEQA and the CEQA Guidelines also recommend provisions be made for the accidental discovery of archaeological sites, historical resources, or Native American human remains during construction (PRC Section 21083.2(i) CCR Section 15064.5 [d and f]).

Assembly Bill 52

Effective July 1, 2015, CEQA was revised to include early consultation with California Native American tribes and consideration of tribal cultural resources (TCRs). These changes were enacted through Assembly Bill 52 (AB 52). By including TCRs early in the CEQA process, AB 52 intends to ensure that local and Tribal governments, public agencies, and project proponents would have information available, early in the project planning process, to identify and address potential adverse impacts to TCRs. CEQA now establishes that a "Project with an effect that may cause a substantial adverse change in the significance of a TCR is a Project that may have a significant effect on the environment" (PRC § 21084.2).

To help determine whether a project may have such an adverse effect, the PRC requires a lead agency to consult with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed project. That consultation must take place prior to the determination of whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a Project (PRC §

21080.3.1). Consultation must consist of the lead agency providing formal notification, in writing, to the tribes that have requested notification or proposed projects within their traditionally and culturally affiliated area. AB 52 stipulates that the Native American Heritage Commission (NAHC) shall assist the lead agency in identifying the California Native American tribes that are traditionally and culturally affiliated within the proposed project area. If the tribe wishes to engage in consultation on the proposed project, the tribe must respond to the lead agency within 30 days of receipt of the formal notification. Once the lead agency receives the tribe's request to consult, the lead agency must then begin the consultation process within 30 days. If a lead agency determines that a project may cause a substantial adverse change to TCRs, the lead agency must consider measures to mitigate that impact. Consultation concludes when either: 1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a TCR, or 2) a party, activing in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PRC § 21080.3.2). Under existing law, environmental documents must not include information about the locations of an archaeological site or sacred lands or any other information that is exempt from public disclosure pursuant to the Public Records act. TCRs are also exempt from disclosure. The term "tribal cultural resource" refers to either of the following:

Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

- Included or determined to be eligible for inclusion in the California Register of Historical Resources
- Included in a local register of historical resources as defined in subdivision (k) of California Public Resources Code (PRC) Section 5020.1
- A resource determined by a California lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of the PRC Section 5024.1.

Affected Environment

The area of potential effects (APE) was defined to include all ground disturbing activities required for construction of the 139 foot by 57 foot structure footprint within Sweeney Creek and 72 foot by 59 foot structure footprint within McCune Creek. The structure footprint includes the weir, two 48-inch diameter outlets, slip gate controls, flume meters, and a SCADA system. Gabion rock will be added on all sides of the structures to protect against scouring (Figures 8, 9. 10). The APE also includes staging areas, vehicle access along existing farm roads, vegetation clearing within the creek channels, and construction of temporary ramps within the creek channels to allow for construction of the weir (see Figure 4). Ramp installation within the channel would take place after the channels are dewatered using water diversion pumps. The vertical extent of the APE would extend, at minimum, one foot below existing creek bed to install the concrete floor of the

weir and, at maximum, nine feet below existing stream/channel bed to install gabion rock and the concrete footing for the weir.

The APE amounts to approximately 18.5 acres and is located within Section 33 of Township 7 North, Range 1 East, of the Mount Diablo Meridian as depicted on the Dixon, California United States Geological Survey (USGS) 7.5 minute quadrangle.

Figure 8: Project Area of Potential Effects

Figure 9: Project Area of Potential Effects (Continued)

Figure 10: Project Area of Potential Effects (Continued)

Cultural resource investigations were conducted in an effort to identify historic properties under Section 106 of the NHPA, historical resources under CEQA, and TCRs under AB 52. These investigations consisted of background research, a search of previously recorded archaeological site records and cultural resource identification reports on file at the California Historical Resources Information System North West Information Center (NWIC), efforts to coordinate with Native American representatives, and a pedestrian ground surface survey. The results of these efforts are summarized below.

A record search for a one-mile study area surrounding the project was requested from the NWIC on May 7, 2015. The record search was conducted by Lisa C. Hagel, Researcher at the NWIC, and results were provided on June 1, 2015. The search examined the National Register, the California Register of Historical Resources, the Directory of Properties in the Historic Property Data File, the California Historic Landmarks (1996), the California Inventory of Historic Resources (1976), and the California Points of Historical Interest listing (May 1992 and updates). Additional research efforts conducted outside the NWIC included a review of the Caltrans State and Local Bridge Survey (1989 and updates), historic USGS topographic maps, and other pertinent historic data specific to Solano County.

The NWIC identified two previous cultural resource investigations previously conducted within the project area. This included a 1964 Archaeological Survey of the Ulatis Creek Soil Conservation Service Watershed Project (Curtice) and a 2005 Cultural Resources Investigation of the Proposed Sacramento Area National Cemetery (Dougherty et al.). These previous surveys covered

approximately 50 percent of the current APE. No previously recorded cultural resources have been recorded within the APE. Reclamation cultural resource staff conducted an internal search of reports, archaeological records, and historic aerial imagery and maps on file at the Mid-Pacific Regional Office (MPRO). No information specific to the APE or project vicinity was available.

On May 13, 2015 and June 11, 2015 Dokken Engineering archaeologist Dr. Brian Marks conducted a ground surface inventory of the APE. Five-meter and ten-meter wide pedestrian transects were used, where appropriate, to inspect the ground surface. All cut banks, burrow holes, and other exposed sub-surface areas were visually inspected for the presence of archaeological resources, soil color change, and/or staining that could indicate past human activity or buried deposits. Three cultural resources were noted – concrete bridge abutments, an irrigation ditch, and the Sweeney and McCune Creek Channels.

Native American Consultation

On May 7, 2015, Dokken Engineering sent a letter and a map depicting the project vicinity to the NAHC in West Sacramento, asking the commission to review the sacred land files for any Native American cultural resources that might be affected by the project. The request to the NAHC seeks to identify any Native American cultural resources within or adjacent to the project area. A list of Native American individuals who might have information or concerns about the project was also requested. On June 11, 2015, Debbie Pilas-Treadway (NAHC Environmental Specialist III), informed Dokken Engineering via fax that a review of the sacred lands file failed to indicate the presence of Native American cultural resources in the “immediate project area”.

On July 6, 2014 AB 52 initial consultation letters were sent to the Native American individuals on the list provided by the NAHC. The letters provided a summary of the project and requested information regarding comments or concerns the Native American community might have about the project. Letters were sent to the following individuals and organizations:

- Kesner Flores;
- Chairperson Leland Kinter, Yocha DeHe Wintun Nation;
- Natural Cultural Renewal Committee, Yocha Dehe Wintun Nation; and
- Chairperson Charlie Wright, Cortina Band of Indians.

A follow-up telephone call was placed to all letter recipients who did not reply within 30 days of the letter. A voice mail message with project details and contact information was left for all four letter recipients. Only one tribe replied to these AB 52 consultation efforts – the Yocha Dehe Wintun Nation. See below for summary of consultation.

In addition to the AB 52 Consultation efforts, pursuant to the regulations at 36 CFR § 800.3(f)(2), Reclamation identified the Yocha Dehe Wintun Nation (Yocha Dehe) and the Cortina Band of Indians as Indian tribes who might attach religious and cultural significance to historic properties within the APE. Reclamation sent initial Section 106 consultation letters to the tribes on September 16, 2015, inviting their participation in the Section 106 process. Of the two tribes contacted, only the Yocha Dehe Wintun Nation replied. See below for summary of consultation.

Yocha Dehe Wintun Nation. A letter was received from the Yocha Dehe Wintun Nation. The letter stated that the project lies within the aboriginal territories of the Yocha Dehe Wintun Nation. The tribe has concerns that the project could impact undiscovered archaeological deposits. The letter further stated that the Yocha Dehe Wintun Nation would like a project area field visit to evaluate cultural concerns. A field meeting to discuss the Yocha Dehe Wintun Nation's concerns occurred on October 02, 2015 and was held with SID and Reclamation. The meeting discussed the proposed project design features, the records search results, the results of the cultural survey, and overall cultural resource sensitivity within the project area. The Yocha Dehe Wintun Nation did not identify any known prehistoric-era archaeological sites or TCRs within the project area; however, as the confluence of two water sources attracts human occupation and as the Sweeney and McCune creeks were channelized during modern times, the Yocha Dehe Wintun Nation expressed concern that there is a potential for buried prehistoric-era resources to be present beneath the existing creek channel beds. They requested that a Tribal Monitor be present during construction activities within the creek channels and that all construction workers receive cultural resource identification and sensitivity training. Coordination with the Yocha Dehe Wintun Nation shall continue throughout the duration of the project.

Environmental Consequences

Three cultural resources were identified during the pedestrian surface survey and evaluated for listing eligibility on the NRHP and CRHR. All three were determined to be ineligible for listing due to insufficient age or lack of integrity. Further, no TCRs were identified by the Yocha Dehe Wintun Nation or any other tribe. As such, the proposed project would have no impact on historical resources as defined in PRC §15064.5, "unique" archaeological resources as defined in PRC §21083.2, TCRs as defined in PRC § 2107.4(a), or historic properties as defined in CFR § 800.16(l)(1). Reclamation submitted a cultural resources inventory report to the SHPO on November 2, 2015 requesting their concurrence on a No Historic Properties Affect finding, pursuant to 36 CFR § 800.4(d)(1). A letter of concurrence was received from the SHPO on November 30, 2015 and included as Appendix A.

While there is no physical or archival indication of buried archaeological sites within the project area, the Yocha Dehe Wintun Nation expressed concerns regarding buried site potential within the creek channel beds, although they are unaware of any known sites within the project area. To address their concerns, SID will invite Yocha Dehe Wintun Nation to a pre-construction meeting to address cultural sensitivity for construction crews excavating within the creek channels. In addition, the SID will inform the Yocha Dehe Wintun Nation of the construction schedule to ensure the tribe has an opportunity to monitor the initial ground disturbance within the creek channels.

With any proposed project requiring ground disturbance, there is always the possibility that unmarked burials may be unearthed during construction. This impact is considered potentially significant. Implementation of Mitigation Measures CR-1 though CR-3 would reduce this impact to a less-than significant level.

Avoidance, Minimization, and/or Mitigation Measures

CR-1: If previously unidentified cultural materials are unearthed during construction, work shall be halted in that area until a qualified archaeologist can assess the significance of the find and develop a plan for documentation and removal of resources if necessary. Additional archaeological survey will be needed if project limits are extended beyond the present survey limits.

CR-2: Section 5097.94 of the Public Resources Code and Section 7050.5 of the California Health and Safety Code protect Native American burials, skeletal remains and grave goods, regardless of age and provide method and means for the appropriate handling of such remains. If human remains are encountered, work should halt in that vicinity and the county coroner should be notified immediately. At the same time, an archaeologist should be contacted to evaluate the situation. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within twenty-four hours of such identification. CEQA details steps to be taken if human burials are of Native American origin.

CR-3: Solano Irrigation District will invite Yocha Dehe Wintun Nation to a pre-construction meeting to address cultural sensitivity for construction crews excavating within the creek channels. In addition, Solano Irrigation District will inform the Yocha Dehe Wintun Nation of the construction schedule to ensure the tribe has an opportunity to monitor the initial ground disturbance within the creek channels.

Findings

The proposed project would have less than significant impacts with mitigation incorporated relating to cultural resources.

2.3. Physical Environment

2.3.1. *Hydrology and Water Quality*

Regulatory Setting

Section 401 of the Clean Water Act (CWA) requires water quality certification from the State Water Resources Control Board (SWRCB) or from a Regional Water Quality Control Board (RWQCB) when the project requires a CWA Section 404 permit. Section 404 of the CWA requires a permit from the U.S. Army Corps of Engineers (USACE) to discharge dredged or fill material into waters of the United States.

Along with CWA Section 401, CWA Section 402 establishes the National Pollutant Discharge Elimination System (NPDES) permit for the discharge of any pollutant into waters of the United States. The federal Environmental Protection Agency has delegated administration of the NPDES program to the SWRCB and nine RWQCBs. The SWRCB and RWQCB also regulate other waste discharges to land within California through the issuance of waste discharge requirements under authority of the Porter-Cologne Water Quality Act. All construction projects over 1 acre require a Storm Water Pollution Prevention Plan (SWPPP) to be prepared and implemented during construction. All construction activities less than 1 acre require a Water Pollution Control Program.

For purposes of this document, impacts to hydrology and water quality may be considered significant if construction and/or implementation of the proposed project would result in the following impacts that remain significant after implementation of General Plan policies or mitigation from the General Plan MEIR:

- Substantially degrade water quality and violate any water quality objectives set by the State Water Resources Control Board, due to increases in sediments and other contaminants generated by construction and/or development of the Specific Plan or
- Substantially increase the exposure of people and/or property to the risk of injury and damage in the event of a 100-year flood.

Affected Environment

Hydrology

The proposed project area is located within the Lower Sacramento Watershed and is comprised of Sweeney Creek and McCune Creek. Approximately 1.7 acres (1,850 linear feet) of Sweeney Creek and approximately 3.50 acres (4,000 linear feet) of McCune Creek reside within the proposed project area. McCune Creek originates from Putah Creek east of Lake Solano and Sweeney Creek originates in the English Hills. Both creeks naturally flow southeast until becoming channelized prior to the proposed project area and their confluence (USFWS 2015b). Downstream of the confluence, Sweeney Creek joins Ulatis Creek through the Cache Slough to eventually the Sacramento Deep Water Shipping Channel. Kilkinney Canal, a non-jurisdictional feature, is also within proximity to the proposed project area and is located directly southwest of Sweeney Creek. Four irrigation ditches surround the BSA for agricultural runoff.

Groundwater

The proposed project area is situated over the Solano subbasin within the Sacramento Valley Basin, which is the largest groundwater basin within the county (2008). This basin starts from the foothills above Vacaville and extends to the Sacramento River and from Putah Creek to the north to the boundaries of Fairfield to the south. Groundwater in this area is recharged primarily by rainwater that infiltrates through stream and river bottoms.

Public agencies that overlie the Solano Subbasin, including SID, have developed groundwater management plans as specified in Assembly Bill (AB) 3030 (Chapter 947, Statutes of 1992), a state law that authorizes local agencies to prepare groundwater management plans. Solano County Water Agency (SCWA) prepares biannual reports on groundwater levels for the groundwater basin. Groundwater level data come from DWR and local public agencies that utilize the groundwater basin. These reports show no trend of groundwater overdraft with current levels of groundwater use (SCWA 2005b). Further, the groundwater within the Solano Subbasin is considered to be of generally good quality.

Flooding

The proposed project area within the channel lies within Zone AE and A which indicates inundation by the 1 percent annual flood event of the Federal Emergency Management Agency (FEMA) 100-year flood zone (Appendix B), however the proposed project area adjacent to the channel lies within Zone X which indicates an area of minimal flood hazard.

Environmental Consequences

Construction activities associated with the proposed project would include disturbances to the ground surface from earthwork, including building an earthen ramp for equipment access within the channels and excavation of the channels for weir installation within Sweeney and McCune Creeks. Removal of some of the existing riparian vegetation would be required due to temporary dams and dewatering activities, which could increase the potential for slope erosion, however since the water would be diverted during all construction activities no impacts to water quality from erosion would occur. In addition, standard BMPs would be included to avoid or minimize the release of pollutants, including sediments and chemical toxins, into the environment during construction.

Materials used during construction of the proposed project (e.g., concrete curing compounds) could have chemicals that are potentially harmful to aquatic resources and water quality. Accidents or improper use of these materials could result in the release of contaminants into the environment, including the creeks themselves. Additionally, oil and other petroleum products used to maintain and operate construction equipment could be accidentally released. However, standard BMPs would be included in the proposed project to avoid or minimize the release of pollutants, including chemical toxins, into the environment during construction.

The proposed project would be constructed in accordance with applicable water quality regulations and would not be expected to result in substantial water quality impacts during construction.

As previously noted, Kilkinney Canal and four irrigation ditches are located directly adjacent to the proposed project work area. Although there is potential for a slight increase in polluted runoff due to proximity to the construction staging area, proposed project impacts to water quality within Kilkinney Canal and the surrounding irrigation ditches would be minimal. Standard BMPs would be included in the proposed project to avoid or minimize the release of pollutants, including chemical toxins, into the environment during construction.

The proposed project would not place housing within a 100-year flood hazard area. The proposed project consists of installing the weir within the channel for water recovery and automation, and will not substantially increase the exposure of people and/or property to the risk of injury and damage in the event of a 100-year flood. In addition, all necessary permits from the pertinent regulatory agencies would be obtained and the associated requirements of each permit would be implemented for the proposed project. Construction is estimated to last for 2 months and will be completed during the dry season.

Avoidance, Minimization, and/or Mitigation Measures

Short term impacts to surface water quality could occur during construction of the proposed project. Since the majority of the construction will take place within Sweeney and McCune Creeks, it is important that any water features are protected from increases in sediment load, turbidity, and total dissolved solids generated during construction. While the proposed project would require a Section 1602 Streambed Alteration Agreement through the CDFW to ensure protection from impacts to the streambed, along with a Water Quality Certification (401) from the RWQCB and a Nationwide Permit for impacts to Waters of the U.S. (404) from the U.S. Army Corps of Engineers, the following measures are recommended for inclusion on applicable plans prepared for the proposed project.

BMPs will be incorporated into proposed project design and proposed project management to minimize impacts on the environment including reduction of sedimentation and release of pollutants (oil, fuel, etc.). Examples of minimization efforts include the use of silt fencing, temporary energy dissipation facilities, and wattles. Implementation of BMPs will reduce the potential for impacts from occurring outside of the construction footprint. All BMPs and other measures will be prepared in consultation with the proposed project engineer, SID, the RWQCB, and other regulatory agencies.

WQ-1: The following measures will be implemented to ensure best management practices:

- The area of construction and disturbance would be limited to as small an area as feasible to reduce erosion and sedimentation.
- Measures would be implemented during land-disturbing activities to reduce erosion and sedimentation. These measures may include mulches, soil binders and erosion control blankets, silt fencing, fiber rolls, temporary berms, sediment de-silting basins, sediment traps, and check dams.
- Existing vegetation would be protected where feasible to reduce erosion and sedimentation. Vegetation would be preserved by installing temporary fencing, or other protection devices, around areas to be protected.
- Exposed soils would be covered by loose bulk materials or other materials to reduce erosion and runoff during rainfall events.
- Exposed soils would be stabilized, through watering or other measures, to prevent the movement of dust at the proposed project site caused by wind and construction activities such as traffic and grading activities.
- All construction roadway areas would be properly protected to prevent excess erosion, sedimentation, and water pollution.

- All vehicle and equipment maintenance procedures would be conducted outside of the channels.
- All concrete curing activities would be conducted to minimize spray drift and prevent curing compounds from entering the waterway directly or indirectly.
- All construction materials, vehicles, stockpiles, and staging areas would be situated outside of the channel. All stockpiles would be covered, as feasible.
- Energy dissipaters and erosion control pads would be provided at the bottom of slope drains. Other flow conveyance control mechanisms may include earth dikes, swales, or ditches. Stream bank stabilization measures would also be implemented.
- All erosion control measures and storm water control measures would be properly maintained until the site has returned to a pre-construction state.
- All disturbed areas would be restored to pre-construction contours and revegetated, either through hydroseeding or other means, with native or approved non-invasive exotic species.
- All construction materials would be hauled off-site after completion of construction.

WQ-2: The proposed project would require a NPDES General Construction Permit for Discharges of storm water associated with construction activities (Construction General Permit 2012-0006-DWQ). A SWPPP would also be developed and implemented as part of the Construction General Permit.

WQ-3: The construction contractor shall adhere to the SWRCB Order No. 2012-0006-DWQ NPDES Permit pursuant to Section 402 of the CWA. This permit authorizes storm water and authorized non-storm water discharges from construction activities. As part of this Permit requirement, a SWPPP shall be prepared prior to construction consistent with the requirements of the RWQCB. This SWPPP will incorporate all applicable BMPs to ensure that adequate measures are taken during construction to minimize impacts to water quality.

Findings

The proposed project would have less than significant impacts with mitigation incorporated relating to hydrology and water quality.

2.3.2. Geology and Soils

Regulatory Setting

For geologic and topographic features, a key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects "outstanding examples of major geological features." Topographic and geologic features are also protected under the CEQA.

This section also discusses geology, soils, and seismic concerns as they relate to public safety and proposed project design. Earthquakes are prime considerations in the design and retrofit of structures.

Executive Order (EO) 12699, Seismic Safety of Federal and Federally Assisted or Regulated New Building Construction, requires newly constructed buildings to meet standards for seismic safety set by the National Earthquake Hazard Reduction Program. However, EO 12699 applies only to construction of new buildings that are to be used or intended for sheltering persons or property and therefore is not applicable to the proposed action.

For the purposes of this document, an impact is considered significant if it allows a project to be built that will either introduce geologic or seismic hazards by allowing the construction of the proposed project on such a site without protection against those hazards.

Affected Environment

The proposed project area is in the Great Valley physiographic province, a broad, trough-shaped, alluvial plain in central California (California Geological Survey 2002). The proposed project area is near the Sacramento Valley in the northern part of the Great Valley province. Elevations in the proposed project area are between 54 and 62 feet above mean sea level.

Unless otherwise noted, the following information is from the Solano County General Plan (2008) and a custom soils report from Natural Resources Conservation Service (2014).

Soils in the proposed project area consist of low to moderate plasticity native fine sandy clays and clays with occasional layers of sandy silt, clayey sand, and clayey gravel and are underlain by claystone, siltstone, and sandstone bedrock.

The proposed project is not located within an Alquist Priolo Earthquake Fault Zone. The nearest seismic source is the Vaca-Kirby Hills Fault system which is approximately 10 miles to the west.

In the Vacaville planning area, as in most of the Bay Area, liquefaction potential and landsliding due to seismic activity are significant constraints to development. USGS geologic mapping and maps should be consulted for specific locations of fault activity and ground instability.

Landslides usually occur in locations with steep slopes and unstable soils. As with liquefaction, the proposed project area has not yet been mapped by the Seismic Hazards Zonation Program to determine landslide potential. In 2011, the State Department of Conservation issued a map showing Susceptibility to Deep-Seated Landslides in California. The map takes previously known landslides, average annual rainfall, and earthquake shaking potential, as well as rock strength and slope class into account. Solano County is mostly rated as having no landslide susceptibility, with a few pockets of low to moderate susceptibility.

The proposed project area is situated on flat or very gently sloping topography where the potential for slope failure is minimal to low.

Environmental Consequences

The proposed project would not expose people or structures to potential substantial adverse effects, involving rupture of a known fault, strong seismic ground shaking, seismic-related ground failure, or landslides. The proposed project is not on an Alquist Priolo Earthquake Fault Zone requiring special study for fault rupture hazard. Seismic ground shaking is unlikely based on the distance and recent occurrence of activity of the nearest fault system, the Vaca-Kirby Hills Fault system which is 10 miles to the south west. The Vaca Fault has not experienced displacement within the past 11,700 years, and there is no evidence for displacement along the Kirby Hills Fault during the last 700,000 years. The Green Valley Fault system, which lies 12 miles to the southwest of Vacaville, has been active within the past 200 years. While more likely than either of the two previous faults to have seismic impacts on Vacaville, the USGS, a federal science organization that examines natural resources, natural hazards, and our environment, estimates the probability of a magnitude 6.7 or greater earthquake along this fault prior to 2036 to be only 3 percent. The Rogers Creek Fault, part of the Hayward Fault System, lies roughly 24 miles to the southwest of Vacaville and has an estimated 16% probability of producing a magnitude 6.7 or greater earthquake prior to 2036.

Seismic-related failure, including liquefaction, is also a less than significant impact because the potential is believed to be slight at this predominantly flat, low-seismicity site. No impact from landslides would occur with the proposed project. The weir will be designed consistent with current California Building Code standards. Failure of a weir in a seismic event is unlikely; however, if a weir failed when the channel was full, areas adjacent to the channel and downstream would not be inundated, as the height of the weir is only two-thirds the depth of the channels. The channels currently have the capacity to direct any impounded water along its natural course towards the Delta. Any inundation would be commensurate with what is currently experienced during major storm events.

Erosion and loss of top soil would be a less than significant impact with mitigation. Grading and earthwork during construction may result in erosion and

sedimentation. This impact would be mitigated through implementation of the Stormwater Pollution Prevention Plan (SWPPP) which would incorporate erosion control methods. Measure GEO-1 details this.

The proposed project is not on a geologic unit or soil that is unstable or that would become unstable as a result of the proposed project. On-or off-site landslide, lateral spreading, subsidence, liquefaction or collapse is not anticipated. No mitigation is required.

Avoidance, Minimization, and/or Mitigation Measures

GEO-1: Solano Irrigation District and contractor shall implement a SWPPP to include erosion control methods. This SWPPP shall be prepared for the Section 402 permit, *NPDES General Permit for Discharges of Storm Water Associated with Construction Activity*.

Findings

The proposed project would have less than significant impacts with mitigation incorporated relating to geology and soils.

2.3.3. Air Quality

Regulatory Setting

The Federal Clean Air Act (FCAA), as amended in 1990, is the primary federal law that governs air quality while the California Clean Air Act (CCAA) is its companion state law. These laws and related regulations by the United States Environmental Protection Agency (EPA) and California Air Resources Board (CARB) set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and state ambient air quality standards (Figure 11) have been established for six transportation-related criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO2), ozone (O3), particulate matter (PM), which is broken down for regulatory purposes into particles of 10 micrometers or smaller (PM10) and particles of 2.5 micrometers and smaller (PM2.5), and sulfur dioxide (SO2). In addition, national and state standards exist for lead (Pb) and state standards exist for visibility reducing particles, sulfates, hydrogen sulfide (H2S), and vinyl chloride. The NAAQS and state standards are set at levels that protect public health with a margin of safety, and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants;

Air quality within the proposed project area is regulated by EPA, CARB, and the Yolo/Solano Air Quality Management District (YSAQMD). Each of these agencies develops rules, regulations, policies, and/or goals to comply with

applicable legislation. Although EPA regulations may not be superseded, both state and local regulations may be more stringent.

YSAQMD attains and maintains air quality conditions within the proposed project area, in the northeastern portion of Solano County, through comprehensive programs of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean-air strategy of YSAQMD involves the preparation of plans and programs for the attainment of ambient-air-quality standards, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. The districts also inspect stationary sources, respond to citizen complaints, monitor ambient air quality and meteorological conditions, and implement other programs and regulations required by the CAA, CAAA, and CCAA.

In 2007, YSAQMD released a revision to the previously adopted guidelines document for assessment and mitigation of air quality impacts under CEQA. The revised handbook (YSAQMD 2007) is an advisory document that provides lead agencies, consultants, and project applicants with uniform procedures for addressing air quality in environmental documents. The handbook and the Solano County General Plan (2008) were used to determine potential air quality impacts for the proposed project.

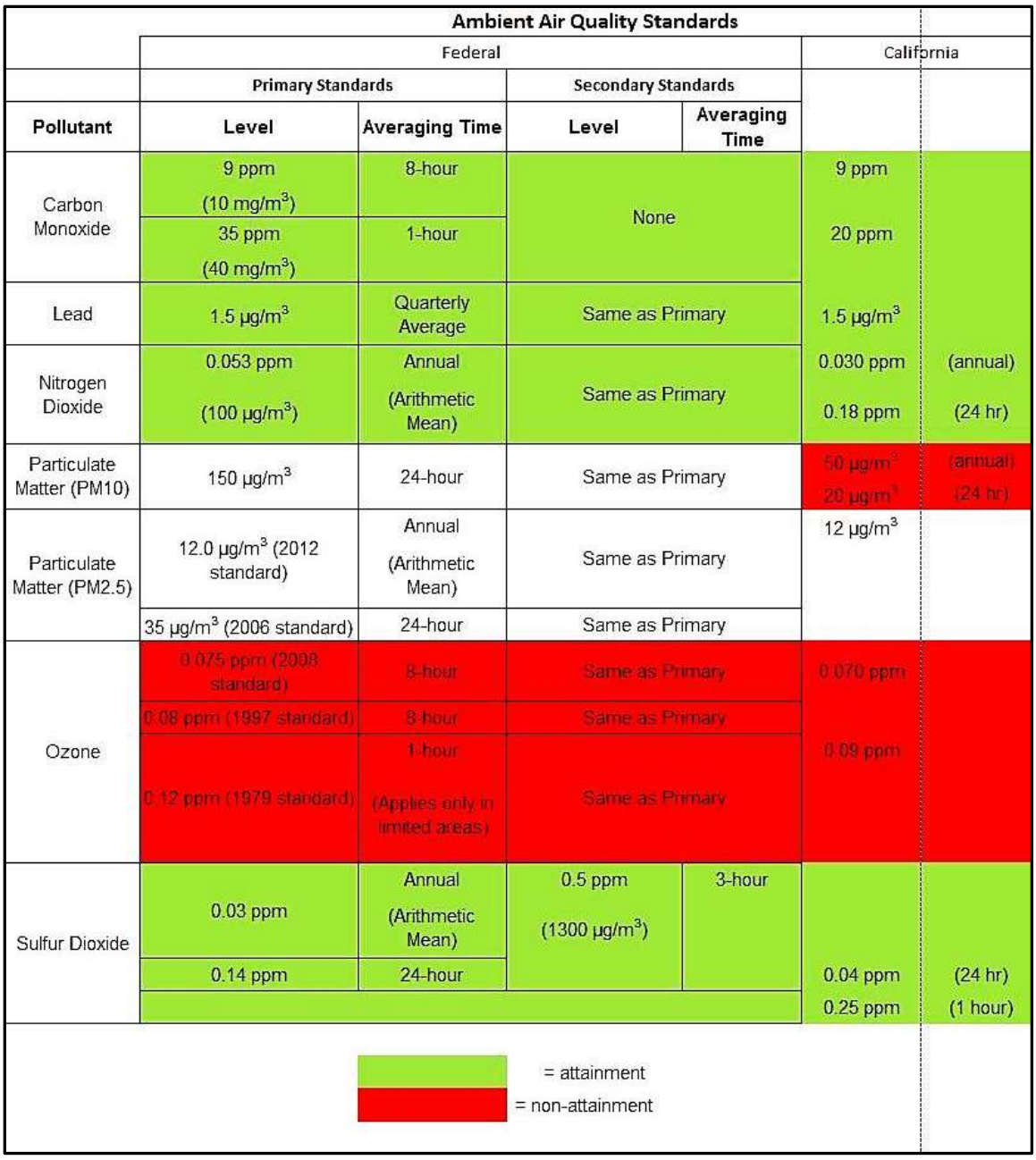

Figure 11: Ambient Air Quality Standards Table

For purposes of this document, air quality impacts may be considered significant if construction and/or implementation of the proposed project would result in the following impacts that remain significant after implementation of General Plan policies or mitigation from the General Plan MEIR:

- Violation of any air quality standard or contribute substantially to an existing or projected air quality violation;
- PM_{10} concentrations equal to or greater than five percent of the State ambient air quality standard (i.e., 50 micrograms/cubic meter for 24 hours) in areas where there is evidence of existing or projected violations of this standard. However, if project emissions of NO_x and ROG are below the emission thresholds given above, then the project would not result in violations of the PM_{10} ambient air quality standards;
- CO concentrations that exceed the 1-hour state ambient air quality standard (i.e., 35.0 ppm) or the 8-hour state ambient standard (i.e., 9.0 ppm); or
- Exposure of sensitive receptors to substantial pollutant concentrations.

Ambient air quality standards have not been established for toxic air contaminants (TAC). TAC exposure is deemed to be significant if:

- TAC exposures create a risk of 10 in 1 million for stationary sources, or substantially increase the risk of exposure to TACs from mobile sources.

A project is considered to have a significant effect relating to greenhouse gas emissions if it fails to satisfy the requirements of the City's Climate Action Plan.

Affected Environment

The California Environmental Protection Agency's (CalEPA) Air Resources Board (ARB) air quality monitoring program collects accurate real-time measurements of ambient level pollutants at over 40 sites located throughout the state. The data generated are used to define the nature and severity of pollution in California, determine which areas of California are in attainment or nonattainment, identify pollution trends in the state, support agricultural burn forecasting, and develop air models and emission inventories.

State law requires the ARB to designate areas of the state as attainment, nonattainment, nonattainment-transitional, or unclassified for each California Ambient Air Quality Standard (CAAQS). An area is designated attainment for a given criteria pollutant if the state standard for that pollutant was not violated at any site in the area during a three-year period. An area is designated nonattainment for a given pollutant if there was at least one violation of a state standard for that pollutant in the area. A pollutant is designated nonattainment-transitional if the area is close to attaining the standard for that pollutant. A pollutant is designated unclassified if the data are incomplete and do not support

a designation of attainment or nonattainment. To identify the severity of the problem and the extent of planning required, nonattainment areas are assigned a classification that is commensurate with the severity of their air quality problem (e.g., moderate, serious, severe, extreme).

Size of the CAAQS designated areas may vary depending on the pollutant, the location of contributing emission sources, the meteorology, and the topographic features. Currently, areas for ozone, nitrogen dioxide, PM_{10}, sulfates, and visibility reducing particles are designated at the air basin level. Areas for carbon monoxide, sulfur dioxide, lead, and hydrogen sulfide are designated at the county level. Each year, the Board reviews the area designations and updates them as appropriate, based on the three most recent complete and validated calendar years of air quality data.

The Federal Clean Air Act requires the EPA to designate areas as attainment, nonattainment, or unclassified for the NAAQS. These designations are similar to their state-level counterparts. Areas that were nonattainment but have recently achieved attainment are referred to as maintenance areas.

See figure 12 for a summary of the NAAQS and CAAQS attainment status in the vicinity of the proposed project for Solano County.

Pollutant	Averaging Time	State Standards	National Standards
Ozone (O_3)	1-Hour 8-Hour	Non-attainment Non-attainment	N/A Non-attainment
Carbon Monoxide (CO)	1-Hour 8-Hour	Attainment Attainment	Unclassified/Attainment Unclassified/Attainment
Nitrogen Dioxide (NO_2)	1-Hour Annual	Attainment N/A	N/A Attainment
Sulfur Dioxide (SO_2)	1-Hour 24-Hour Annual	Attainment Attainment N/A	N/A Attainment Attainment
Coarse Particulate Matter (PM_{10})	24-Hour Annual Average	Non-attainment Non-attainment	Unclassified N/A
Fine Particulate Matter ($PM_{2.5}$)	24-Hour Annual Average	N/A N/A	Unclassified Unclassified
Sulfates	24-Hour	Attainment	N/A
Lead	30-Day Average Calendar Quarter	Attainment N/A	N/A Attainment
Hydrogen Sulfide	1-Hour	Attainment	N/A
Vinyl Chloride	24-Hour	Attainment	N/A
Visibility Reducing Particles	8-Hour	Attainment	N/A

Figure 12: YSAQMD Attainment Designation Status Table

[Notes: N/A – Not applicable, state of federal standard does not exist for the combination of pollution and averaging time. Unclassified areas are those for which air monitoring has not been conducted but which are assumed to be in attainment.]

Environmental Consequences

Construction air quality impacts are generally attributable to dust generated by equipment and vehicles. Fugitive dust is emitted both during construction activity and as a result of wind erosion over exposed earth surfaces. Clearing and earth moving activities do comprise major sources of construction dust emissions, but traffic and general disturbances of soil surfaces also generate significant dust emissions. Further, dust generation is dependent on soil type and soil moisture.

Adverse effects of construction activities include increased dust-fall and locally elevated levels of total suspended particulate. Dust-fall can be a nuisance to neighboring properties or previously completed developments surrounding or within the proposed project area and may require frequent washing during the construction period. Further, asphalt-paving materials used during construction will present temporary, minor sources of hydrocarbons that are precursors of ozone.

The proposed project's construction is anticipated to take 2 months. The proposed project's construction emissions were estimated using the Roadway Construction Emissions Model by the Sacramento Metropolitan Air Quality Management District (SMAQMD 2015), which is the accepted model for all CEQA roadway projects throughout California. As summarized in Table 2, construction activities from the proposed project would not exceed emission thresholds established by the YSAQMD. The model printout is also included in Appendix C. In addition, the proposed project's emissions would be below the YSAQMD Rule 10.3 de minimis levels and therefore a full conformity analysis is not required.

Table 1: Construction Emissions and Local Thresholds

Items	Project Construction Emissions	YSAQMD Air Quality Significance Thresholds
NO_x	1.8 tons/year	10 tons/year
ROG	0.189 tons/year	10 tons/year
PM_{10}	13 lbs/day	80 lbs/day
CO	31.6 lbs/day	Violation of CAAQS for CO

Construction activities for large development projects are estimated by the EPA to add 1.09 tonne (1.2 tons) of fugitive dust per acre of soil disturbed per month of activity. If water or other soil stabilizers are used to control dust, the emissions can be reduced by up to 50 percent. Fugitive dust would be controlled during construction per measure AQ-1 and AQ-2.

In addition to dust-related PM_{10} emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO_2,

NOx, VOCs and some soot particulate (PM_{10} and $PM_{2.5}$) in exhaust emissions. Construction activities will not increase traffic congestion in the area, so CO and other emissions from traffic would not temporary increase slightly in the immediate area surrounding the construction site.

Emissions from construction would have a less than significant impact and would not violate any air quality standard or contribute substantially to an existing or projected air quality violation, nor would it result in a cumulatively considerable net increase of any criteria pollutant. Further, the proposed project would have a less than significant impact regarding exposing sensitive receptors to pollutant concentrations or objectionable odors.

Naturally Occurring Asbestos

Naturally Occurring Asbestos (NOA) can occur in serpentine rock. The most common forms of NOA minerals are chrysotile, actinolite, and tremolite. A review of the "General Location Guide for Ultramafic Rocks in California – Areas likely to Contain Naturally Occurring Asbestos" (CGS Open-file Report 2000-19, 2000) indicated that NOA does not occur within Solano County. The closest known occurrence of NOA is approximately 23 miles northwest of the proposed project area in Napa County. The proposed project site is not located in a region where NOA is documented to occur, and earthen material excavated from portions of the proposed project Site will not likely include NOA-containing rock and soil.

Avoidance, Minimization, and/or Mitigation Measures

The following measures would be implemented as part of the proposed project to minimize short term construction related air quality emissions:

AQ-1: Route and schedule construction traffic to avoid peak travel times as much as possible to reduce congestion and related air quality impacts caused by idling vehicles along local roads.

AQ-2: The following fugitive dust mitigation measures will be followed:

- Water all active construction areas to contain dust as necessary. Frequency of application should be based on the type of operation, soil and wind exposure;
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard; and
- Enclose, cover, or water three times daily exposed stockpiles, such as dirt, sand, etc.

AQ-3: The following Basic Construction Emission Control Practices describe exhaust emission control from diesel powered fleets working at a construction site. California regulations limit idling from both on-road and off-road diesel powered equipment. The California Air Resources Board enforces the idling limitations:

- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [required by California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site. Although not required by local or state regulation, many construction companies have equipment inspection and maintenance programs to ensure work and fuel efficiencies.
- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.

Findings

The proposed project would have less than significant impacts with mitigation incorporated relating to air quality.

2.3.4. Noise

Regulatory Setting

CEQA, along with local regulations and standards, provide the broad basis for analyzing and abating traffic noise impacts. The intent of these laws is to promote the general welfare and to foster a healthy environment. The following information was taken from the Solano County General Plan noise standards.

California Environmental Quality Act

CEQA requires a strictly baseline versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the proposed project unless those measures are not feasible.

Local Regulations and Standards

Solano County has established noise-level performance standards for projects affected by non-transportation sources and transportation sources. Noise is generally characterized as an equivalent continuous sound level (Leq) averaged over time, day-night average sound level (Ldn), or CNEL (Community Noise Equivalent Level).

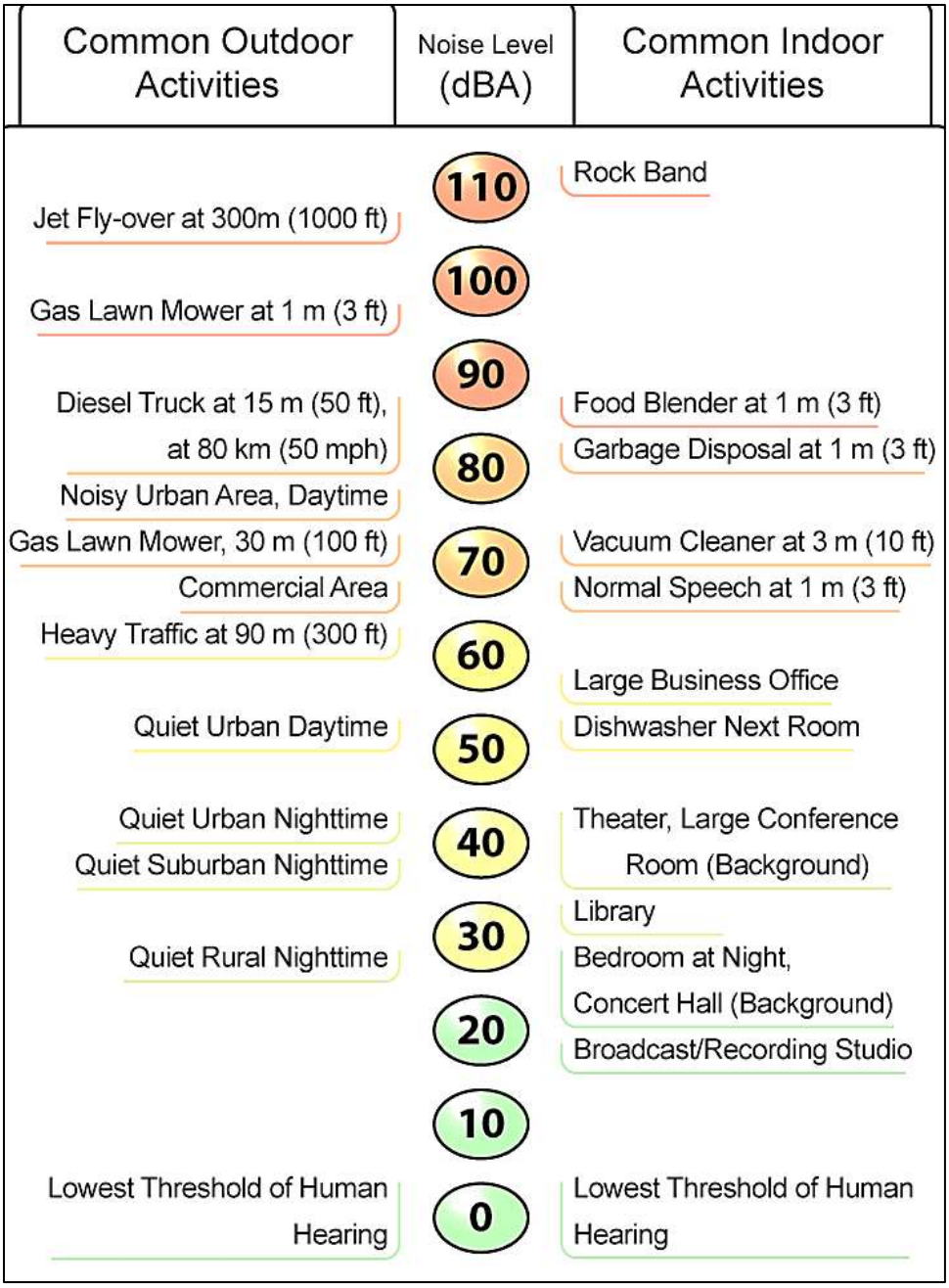

Figure 13: Noise Level Performance Standards Table

Noise standards for industrial, manufacturing, and agricultural noise sources in Solano County are defined in the General Plan Noise Element and shown in Figure 14.

Land Use Category	Community Noise Exposure (L_{dn} or CNEL, dBA)			
	Normally Acceptable[1]	Conditionally Acceptable[2]	Normally Unacceptable[3]	Clearly Unacceptable[4]
Industrial, Manufacturing, Utilities, Agriculture	<75	70–80	75+	

Notes:

CNEL = community noise equivalent level; dBA = A-weighted decibel; L_{dn} = day-night average noise level

[1] Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

[2] New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

[3] New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Outdoor areas must be shielded.

[4] New construction or development should generally not be undertaken.

[5] These standards are not applicable for development within the airport compatibility review area. Development in the airport compatibility review areas are subject to standards in the applicable airport land use plan.

Source: State of California Governor's Office of Planning and Research 2003, EDAW 2007

Figure 14: Land Use Noise Compatibility Guidelines

Under the Solano County Municipal Code, noise sources associated with construction are exempt from the County's exterior noise level standards, provided such activities do not take place before 7 a.m. or after 6 p.m. on any day except Saturday or Sunday, or before 8 a.m. or after 5 p.m. on Saturday or Sunday.

For purposes of this document, impacts due to noise may be considered significant if construction and/or implementation of the proposed project would result in the following impacts that remain significant after implementation of General Plan policies or mitigation from the General Plan MEIR:

- Result in exterior noise levels in the proposed project area that are above the upper value of the normally acceptable category for various land uses due to the proposed project's noise level increases;
- Result in residential interior noise levels of 45 dBA Ldn or greater caused by noise level increases due to the proposed project;
- Result in construction noise levels that exceed the standards in the City of Sacramento Noise Ordinance;
- Permit existing and/or planned residential and commercial areas to be exposed to vibration-peak-particle velocities greater than 0.5 inches per second due to proposed project construction;

- Permit adjacent residential and commercial areas to be exposed to vibration peak particle velocities greater than 0.5 inches per second due to highway traffic and rail operations; or
- Permit historic buildings and archaeological sites to be exposed to vibration-peak-particle velocities greater than 0.2 inches per second due to proposed project construction and highway traffic.

Affected Environment

The noise environment near the proposed project is dominated by farming and agricultural sources. Background noise levels are influenced by adjacent rural residential streets, including Midway Road, Weber Road, and Batavia Road. Agricultural and rural residential use remains the dominant noise source at the proposed project site.

Environmental Consequences

Based on the noise standards discussed in the General Plan, the proposed project would not have a significant impact on noise. The proposed weir would not generate any additional noise.

During construction of the proposed project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Figure 13 summarizes noise levels produced by construction equipment that is commonly used on construction projects. Construction equipment is expected to generate noise levels ranging from 70 to 90 dB at a distance of 50 feet, and noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance.

Table 2: Construction Equipment Noise

Equipmen	Maximum Noise Level (dBA at 50 feet)
Scrapers	89
Bulldozers	85
Heavy Trucks	88
Backhoe	80
Pneumatic Tools	85
Concrete Pump	82

Source: Federal Transit Administration 1995

No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with County of Solano exterior noise standards. Under Solano County's Municipal Code, noise sources associated with construction are exempt from the County's exterior noise level standards, provided such activities do not take place before 7 a.m. or after 6 p.m. on any day except Saturday or Sunday, or before 8 a.m. or after 5 p.m. on

Saturday or Sunday. To minimize the construction-generated noise, mitigation measures **NOI-1** would be followed to minimize construction related noise.

Avoidance, Minimization, and/or Abatement Measures

The following avoidance, minimization, and/or mitigation measures are proposed:

NOI-1: The following shall apply to all construction generated noise:

- Do not exceed 60 dBA at 50 feet from the job site activities from 6:00 P.M. to 7:00 A.M. on weekdays, or from 5:00 PM to 8:00 AM on Saturday and Sundays.
- Equip all internal combustion engine with the manufacturer recommended muffler.
- Do not operate an internal combustion engine on the job site without the appropriate muffler.

Findings

The proposed project would have less than significant impacts with mitigation incorporated relating to noise.

2.3.5. Biological Environment

2.3.5.1. Natural Communities

Regulatory Setting

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

There is no designated critical habitat in the proposed project area.

Affected Environment

The approximate 60 acre BSA shown in Figure 16 was delineated with approximately 50 foot buffer around all permanent and temporary impacts, including proposed right-of-way, construction easements, cut and fill limits, and potential staging areas. The BSA is larger than the APE defined for cultural purposes as biological resources could be impacted by all proposed project activities and not just all ground disturbing activities. The BSA occurs

at an elevation ranging from 54 to 62 feet above sea level within the Dixon USGS 7.5 minute quadrangle and includes Sweeney Creek and McCune Creek. Much of the BSA is within disturbed areas comprised of irrigated agriculture and access roadways. The dominate soil type in the proposed project area are composed of well drained, Reiff fine sandy loam soils (NRCS 2015). Vegetation communities along the creek channels include invasive ruderal vegetation along their banks and freshwater emergent vegetation in-channel.

Two biological communities, in addition to waters, occur in the BSA. The 60 acres within the BSA include: Irrigated agriculture (34 acres) and ruderal/disturbed nonnative annual grassland communities (22 acres) (Figure 15).

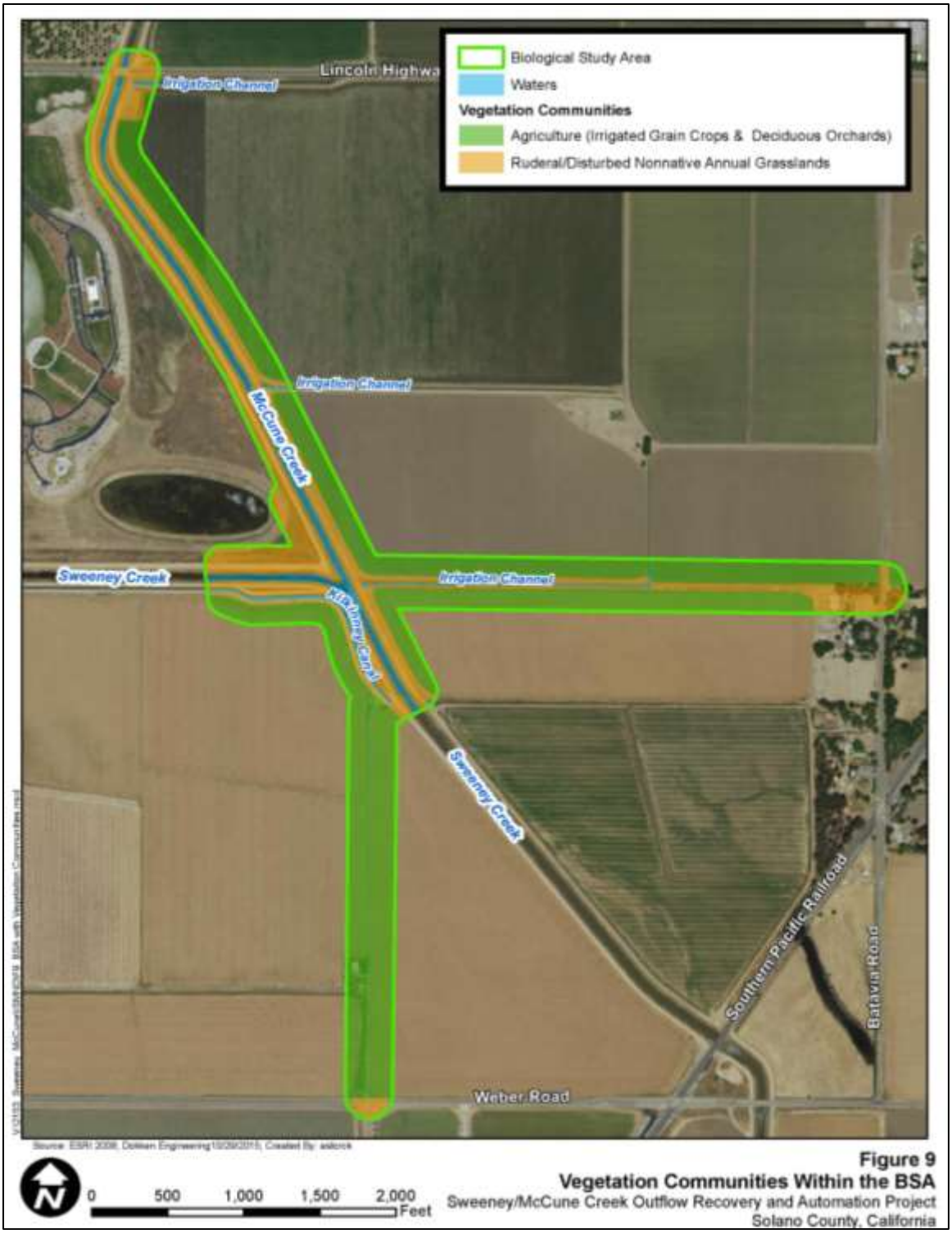

Figure 15: Vegetation Communities in the BSA

Annual grassland is an herbaceous community dominated by non-native naturalized grasses with intermixed perennial and annual forbs, and exhibits low levels of diversity. Non-native annual grasslands in the proposed project area appear to have been plowed or disturbed in the past and are somewhat degraded. Dominant grasses were non-native and included annual beard grass (Polypogon monspeliensis), ripgut brome (Bromus diandrus), harding grass (Phalaris aquatic), and Italian rye grass (Festuca perennis). The dominant ruderal vegetation adjacent to channels and agriculture access roadways within hardscape and compacted soils were also non-native and consisted of yellow star-thistle (Centaurea solstitialis), black mustard (Brassica nigra), sow thistle (Sonchus asper), and poison hemlock (Conium maculatum).

Agriculture fields containing irrigated grain crops and deciduous orchards are also found within the BSA and surrounding area (CDFG 1988) (see Figure 4). Sunflowers (Helianthus annuus) and almond (Prunus dulcis) orchards dominate the agriculture fields (see Figure 5). The agriculture fields are commonly irrigated, heavily disturbed and frequently maintained allowing low diversity of vegetation. Non-native, highly invasive vegetation including cheeseweed (Malva parviflora), common mallow (Malva neglecta), and western morning glory (Calystegia occidentalis) are common in these areas where disturbance has occurred (along boarders and between agriculture crops). Agriculture crops makes up approximately 56% of the proposed project area.

Environmental Consequences

The proposed project would result in direct impacts to Waters of the U.S. and Non-Native Annual Grassland communities. Impacts to Waters of the U.S. will be discussed in section 2.3.2. The proposed project would not result in direct impacts to Agriculture. Measure **BIO-1** would be implemented to minimize and avoid impacts.

Avoidance, Minimization, and/or Mitigation Measures

BIO-1: Temporary construction staging areas and access roads will be strategically placed to avoid and/or minimize impacts. Environmentally Sensitive Area (ESA) fencing will be installed in coordination with a biologist in order to minimize soil disturbance and erosion around the proposed project area.

Findings

The proposed project would have less than significant impacts with mitigation incorporated relating to natural communities.

2.3.5.2. Wetlands and Other Waters

Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Clean Water Act (33 U.S. Code [USC] 1344) is the primary law regulating wetlands and surface waters. The Clean Water Act regulates the discharge of dredged or fill material into waters of the U.S., including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the Clean Water Act, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act.

Section 404 of the Clean Water Act establishes a regulatory program that states that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers (USACE) with oversight by the EPA.

The Executive Order for the Protection of Wetlands (E.O. 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this executive order states that a federal agency cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: 1) that there is no practicable alternative to the construction and 2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated primarily by the California Department of Fish and Wildlife (CDFW), the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCB). In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Wildlife Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFW before beginning construction. If CDFW determines that the proposed project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFW jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the

USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFW.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The RWQCBs also issue water quality certifications in compliance with Section 401 of the Clean Water Act. Please see Section 2.3.1, Hydrology and Water Quality, for additional details.

Affected Environment

As part of the Biological Technical Report (2015), a preliminary jurisdictional delineation was conducted in May 2015 to identify jurisdictional water of the United States and State of California within the BSA. Jurisdictional features within the proposed project area include Sweeney Creek and McCune Creek.

Sweeney Creek

The surveys conducted by Dokken Engineering biologists in May 2015 identified approximately 1.05 acre (1,850 linear feet) of Sweeney Creek, a confined irrigation channel, within the proposed project area. The channel ranges from 38-50 feet wide and ranges in depth depending on irrigation demands. During the time of surveys, depth of the channel ranged from 1-3 feet. In-channel emergent vegetation was also observed on the margins and within the channel; however, no wetlands were observed. Additionally, rip-rap was observed near the confluence with McCune Creek as well as in sections along the banks near irrigation outflows.

McCune Creek

The surveys conducted by Dokken Engineering biologists in May 2015 also identified approximately 2.00 acre (3,900 linear feet) of McCune Creek, a confined irrigation channel, within the proposed project area. The channel ranges from 30-38 feet wide and ranges in depth depending on irrigation demands. In-channel emergent vegetation was observed on the margins within the channel; however, no wetlands were observed. During the time of surveys, turbidity occurred in the channel due to high levels of inlet water from upstream irrigation channels. Additionally, rip-rap was observed near the confluence with Sweeney Creek as well as in sections along the banks near irrigation outflows.

Environmental Consequences

Temporary and permanent impacts to jurisdictional waters are anticipated to occur within Sweeney and McCune Creeks (Table 3 and Figure 16). The impacts would include 1.00 acre of temporary impacts to Sweeney Creek and McCune Creek, and permanent impacts of 0.09 acre to Sweeney Creek and

0.07 acre of McCune Creek. The permanent impacts for both channels include the concrete slab of the weir structures and 0.05 acre of rip rap for scour protection The proposed project has been designed to minimize all temporary and permanent impacts to the maximum extent practicable through the use of BMPs, implementations of regulatory permit conditions, ESA fencing and avoidance and minimization measures **BIO-1** through **BIO-9**. Mitigation provided by the proposed project would ensure no net loss in water of the U.S and State within the region; therefore, no cumulative impacts attributed to the proposed project would be anticipated.

Table 3: Impacts to Jurisdictional Waters

Jurisdictional Waters	Water of the U.S. Permanent Impact	Water of the U.S. Temporary Impact	Water of the State. Permanent Impact	Water of the State. Temporary Impact
Sweeney Creek	0.09 acre	0.65 acre	0.09 acre	0.65 acre
McCune Creek	0.07 acre	0.35 acre	0.07 acre	0.35 acre
Total	0.16 acre	1.00 acre	0.16 acre	1.00 acre

Temporarily impacted areas of waters of the U.S. and State will be re-contoured to natural conditions and vegetation will be allowed to return to pre-project conditions. Permanent impacts to water of the U.S. and State will be mitigated at a 2:1 ratio. Exact mitigation ratios and locations will be determined during the environmental permitting phase of the proposed project.

Avoidance, Minimization, and/or Mitigation Measures

The proposed project has been designed to avoid and minimize temporary and permanent impacts to Waters of the U.S. and Waters of the State to the maximum extent practicable. Prior to construction, regulatory permits will be obtained from USACE, CDFW, and RWQCB. The following avoidance and minimization measures and Best Management Practices (BMPs) will be implemented to minimize construction impacts to Waters of the U.S. and Waters of the State within the BSA and regional water quality:

BIO-2: Erosion Control Measures must be implemented during construction. To minimize the mobilization of sediment to adjacent water bodies, the following erosion-control and sediment-control measures will be included in the construction specifications:

- Soil exposure must be minimized through the use of temporary BMPs, groundcover, and stabilization measures;

- The contractor must conduct periodic maintenance of erosion- and sediment-control measures.

Figure 16: Water Impact

BIO-3: To conform to water quality requirements, the (SWPPP) must include the following:

- Vehicle maintenance, staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants must be a minimum of 100 feet from aquatic habitats. Any necessary equipment washing must occur where the water cannot flow into Sweeney Creek or McCune Creek. The project proponent will prepare a spill prevention and clean-up plan;
- Construction equipment will not be operated in flowing water;
- Construction work must be conducted according to site-specific construction plans that minimize the potential for sediment input to Sweeney Creek and McCune Creek;
- Raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life must be prevented from contaminating the soil or entering Sweeney Creek and McCune Creek;
- Equipment used in and around Sweeney Creek and McCune Creek must be in good working order and free of dripping or leaking engine fluids; and,
- Any surplus concrete rubble, asphalt, or other debris from construction must be taken to a County approved disposal site.

BIO-4: Upon completion of construction activities, any barriers to surface water flow must be removed in a manner that would allow flow to resume with the least disturbance to the substrate.

BIO-5: Vegetation clearing must only occur within the delineated project boundaries. Vegetation should be removed in the late fall through winter months, to the greatest extent practicable.

BIO-6: Clean Water Act Section 401 and 404 permits and the California Department of Fish and Wildlife 1602 Streambed Alteration Agreement Permit will be obtained prior to construction.

BIO-7: Native fill will be utilized whenever possible.

BIO-8: Temporary staging areas, storage areas, and access roads involved with this proposed project will take place, to the extent feasible, in the area of direct impact.

BIO-9: All hydroseed and plant mixes must consist of a biologist approved plant palate seed mix from native, locally adapted species.

Findings

The proposed project would have less than significant impacts with mitigation incorporated relating to wetlands and other waters.

2.3.5.3. Plant Species

Regulatory Setting

The U.S. Fish and Wildlife Service (USFWS) and CDFW share regulatory responsibility for the protection of special-status plant species. “Special-status” species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). Please see Section 2.3.5 on threatened and endangered species in this document for detailed information.

This section of the document discusses all the other special-status plant species, including CDFW fully protected species and species of special concern, USFWS candidate species, and non-listed California Native Plant Society (CNPS) rare and endangered plants.

The regulatory requirements for FESA can be found at 16 USC, Section 1531, et seq. See also 50 CFR Part 402. The regulatory requirements for CESA can be found at California Fish and Wildlife Code, Section 2050, et seq. Projects are also subject to the Native Plant Protection Act, found at Fish and Wildlife Code, Section 1900-1913, and the California Environmental Quality Act, Public Resources Code, Sections 2100-21177.

Affected Environment

The Biological Technical Report (2015) serves as basis for much of this section. Preliminary literature research determined 31 special status plant species had the potential to occur in the vicinity of the proposed project. Surveys conducted on May 13, 2015 by Dokken Engineering biologists Carolynn Daman and Scott Salembier, included a habitat assessment and focused surveys for special status plant species. Based on these surveys and further literature research, habitat conditions within the BSA were determined to be potentially suitable for the following 3 species: legenere (Legernere limosa), Woolly rose-mallow (Hibiscus lasiocarpos var. occidentalis), and showy rancheria clover (Trifolium amoenum).

Focused surveys for rare plants were specifically timed to fall within the legenere, woolly rose-mallow and showy Rancheria clover blooming season. May was determined to be the most appropriate survey month as May firmly falls within the recognized blooming season for legenere and showy Rancheria clover. Woolly rose-mallow blooming season is traditionally June-September; however, with the drought year vegetation bloomed earlier than expected therefore surveys for woolly rose-mallow was conducted in May. The rare plant blooming surveys were comprehensive in nature and utilized the Jepson Herbarium manual, CNPS, Calflora and other references to compile a floral inventory of all species observed during the course of the survey. While any given survey does not guarantee a specimen will be blooming, surveys were conducted at a time when all rare species with potential to occur would be vegetatively visible. Although many species cannot be positively identified by vegetative characteristics alone, vegetative characterizes often can positively identify a genus. Therefore, any unknown specimen with vegetation consistent with that of the focused rare plant species would have been documented during the comprehensive floral survey.

Environmental Consequences

All special status plant species are presumed absent from the BSA. The proposed project would have no impacts to special status plant species.

Avoidance, Minimization, and/or Mitigation Measures

None required.

Findings

The proposed project would have no impacts on special status plant species.

2.3.5.4. Animal Species

Regulatory Setting

Many state and federal laws regulate impacts to sensitive wildlife. The USFWS, the National Oceanic and Atmospheric Administration (NOAA) Fisheries and the CDFW are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with wildlife not listed or proposed for listing under the state or federal Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.3.5 in this document. All other special-status animal species are discussed here, including CDFW species of special concern and migratory birds.

Federal laws and regulations pertaining to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act
- Federal Endangered Species Act

State laws and regulations pertaining to wildlife include the following:

- California Environmental Quality Act
- Sections 1600 – 1603 of the Fish and Wildlife Code
- Section 4150 and 4152 of the Fish and Wildlife Code
- California Endangered Species Act

Affected Environment

The Biological Technical Report (2015) serves as basis for much of this section. A search of USFWS, CDFW, and CNPS databases indicated 16 special-status animal species with potential to occur within or near the BSA (Appendix D).

Of the 16 special-status animal species with potential to occur within or near the BSA, 12 species are not expected, while four species have a low to moderate potential to occur and two species were observed during biological surveys. Appendix D includes these species further in detail.

The four wildlife species with a low to moderate potential to occur are Swainson's hawk (Buteo swainsoni), white-tailed kite (Elanus leucurus), burrowing owl (Athene cunicularia) and western pond turtle (Emys marmorata). Swainson's hawk is a State threatened species and will be discussed further in section 2.3.5.

Burrowing Owl

Burrowing owl is not listed as a Federally or State listed species, but is a CDFW Species of Special Concern and is protected under the MBTA. The burrowing owl is a small, migratory owl found in various habitats throughout North America. Habitat requirements for burrowing owls consist of arid, open areas with sparse vegetation cover such as deserts, abandoned agricultural areas, grasslands, and disturbed open habitats. Friable soils are also important habitat requirements for this species. Though habitat loss due to urbanization is a contributing factor to population declines, burrowing owls seem to be highly tolerant of nearby human impacts when suitable habitat is present and maintained and when owls are not breeding (Shuford and Gardali 2008). Burrowing owls rely on California ground squirrels (Spermophilus beecheyi) and other burrowing mammals for burrow construction. Although

active throughout the day, burrowing owls mainly forage nocturnally for small vertebrate and invertebrate prey items such as small mammals, lizards, birds, and beetles (Shuford and Gardali 2008).

The BSA has potentially suitable habitat (ruderal/disturbed non-native annual grassland) for the species since it includes open areas with sparse vegetation, abandoned mammal burrows and an agricultural plot with moderate prey availability. Several burrowing owls have been documented within 5 miles of the proposed project site in similar environments to the proposed project area. The closest CNDDB occurrence from 2007 is approximately 1.6 miles west of the BSA.

Western Pond Turtle

The western pond turtle is not a State or Federally listed species, but is a CDFW Species of Special Concern. The western pond turtle is a semi-aquatic turtle, inhabiting ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. The species requires suitable basking sites such as logs, rocks and exposed banks and associated upland habitat consisting of sandy banks or grassy open fields for reproduction. The species is omnivorous, consuming aquatic wildlife and vegetation for dietary requirements. The western pond turtle is known to hibernate underwater beneath muddy bottomed waters during colder climates, and nesting occurs from late April to August (Zeiner 1990).

No records of western pond turtle are known within the proposed project vicinity; however, western pond turtle was observed basking during biological surveys within McCune Creek upstream of the proposed project impact area. Both Sweeney Creek and McCune Creek provide potential basking habitat (exposed rocks), nesting habitat (upland grasslands), foraging habitat and a migration corridor throughout the area for western pond turtle. a pre-construction survey will be conducted and additional measures would be implemented if the species is found.

White-Tailed Kite

White-tailed kite is a fully protected species under California Fish and Game Code Section 3511 and the MBTA. The species has a restricted distribution in the United States, occurring only in California and western Oregon and along the Texas coast (American Ornithologists' Union 1983). The species is fairly common in California's Central Valley margins with scattered oaks and river bottomlands. White-tailed kites nest in riparian and oak woodlands and forage in nearby grasslands, pastures, agricultural fields, and wetlands. They use nearby treetops for perching and nesting sites. Voles and mice are common prey species.

The BSA has potentially suitable foraging and nesting habitat for white-tailed kite. Several nesting site have been documented within a 5 mile of the proposed project area. The nearest CNDDB occurrence is approximately 0.5 miles east with suitable nesting habitat. Potential nesting habitat (several eucalyptus trees along Batavia Road) exists within the eastern edge of the BSA. The species was not observed during biological surveys May 13, 2015.

Environmental Consequences

White-tailed Kite

No white-tailed kite was observed within the proposed project area or vicinity; however, potential foraging and nesting habitat exists within the proposed project area. No impact to white-tailed kite foraging or nesting habitat is anticipated. No tree removal will occur within the proposed project area. Potential foraging and nesting white-tailed kite habitat is located well outside the permanent impact areas; therefore, potential impacts are very low. Implementation of avoidance and minimization measures BIO-10, BIO-11, BIO - 13 and BIO-14 during the nesting season will prevent impacts to white-tailed kite.

Burrowing Owl

Although no sign of burrowing owls or burrowing owl activity was observed during the field surveys, there are known occurrences within 5 miles of the proposed project area and potentially suitable burrowing owl habitat is within the BSA. Potential suitable burrowing owl habitat is located outside all permanent impact areas; therefore, potential impacts are very low. Implementations of BIO-10, BIO-11, BIO-15, BIO-16 and BIO-20 will reduce any potential for impact to burrowing owls.

Western Pond Turtle

Western pond turtle was observed with McCune Creek; therefore, the species has potential to be within the proposed project area foraging, basking, or nesting. Temporary impacts of 1.00 acre and approximately 0.16 acres of permanent impacts to western pond turtle foraging, basking and migration habitat are anticipated. Implementation of avoidance and minimization measures BIO-10, BIO-11, BIO-17 through BIO-19 will reduce any potential for impact to western pond turtle.

With the implementation of avoidance and minimization measures, impacts to white-tailed kite, Swainson’s hawk, burrowing owl and western pond turtle are not anticipated. Compensatory mitigation is not required or proposed. If burrowing owls are found within the proposed project area mitigation measure BIO-21 will be implemented.

Sensitive Birds

Native birds, protected under the MBTA and similar provisions under CFG code, have the potential to nest within the BSA and the proposed project area. During May 2015 biological surveys, nesting birds were not observed within the BSA but habitat is present. Measures BIO-10, BIO-11, BIO-13 and BIO-14 will ensure protection of migratory nesting birds and sensitive birds during project construction.

Avoidance, Minimization, and/or Abatement Measures

To avoid all proposed project impacts to sensitive wildlife species, all measures in permits would be implemented including:

BIO-10: Before any activities begin on the proposed project, the project biologist will conduct environmental awareness training for all construction personnel. At a minimum, the training will include a description of sensitive species with potential to occur, including white-tailed kite, burrowing owl, Swainson's hawk, and western pond turtle and their habitat, the project specific measures being implemented to conserve the species, and the boundaries within which the proposed project may be accomplished.

BIO-11: If sensitive species are encountered during the course of construction, construction will temporarily stop within the area of discovery. The project biologist will be contacted immediately for further guidance. Work will not resume in the area of discovery until the project biologist has cleared the area or the animal has passively left the construction area unharmed.

BIO-12: All food-related trash must be disposed into closed containers and must be removed from the proposed project area daily. Construction personnel must not feed or otherwise attract wildlife to the proposed project area.

BIO-13: If possible, vegetation removal should occur outside the breeding season for all bird species (March 1st –September 1st).

BIO-14: If vegetation removal is to take place during the nesting season (March 1st –September 1st), a pre-construction nesting bird survey must be conducted within 7 days prior to vegetation removal. Within 2 weeks of the nesting bird survey, all vegetation cleared by the biologist will be removed by the contractor.

A minimum 100 foot no-disturbance buffer will be established around any active nest of migratory birds and a minimum 300 foot no-disturbance buffer will be established around any nesting raptor species. The contractor must immediately stop work in the nesting area until the appropriate buffer is established and is prohibited from conducting work that could disturb the birds (as determined by the project biologist and in coordination with wildlife agencies) in the buffer area until a qualified biologist determines the young have fledged. A reduced buffer can be established if determined appropriate by the project biologist and approved by CDFW.

BIO-15: Qualified biologists will conduct a pre-construction survey for burrowing owl within 1-2 weeks of the start of construction. If burrowing owls are not detected, no further mitigation will be required.

If burrowing owls are observed within 500 feet of the proposed project area, the following measures will be implemented:

BIO-16: Occupied burrows will not be disturbed during the breeding season (February 1st to August 31st) unless a qualified biologist approved by the CDFW verifies through non-invasive methods that either: 1) the birds have not begun egg-laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival. If avoidance of active nests is preferred, the biologist will consult with the CDFW to determine appropriate buffer widths and acreage of foraging habitat to be permanently preserved contiguous with the occupied burrow site. The Contractor will not disturb identified burrowing owl burrows until the qualified biologist verifies it has been cleared.

BIO-17: To avoid impacts to western pond turtles, the project biologist will conduct a pre-construction survey of Sweeney Creek and McCune Creek and adjacent banks and upland habitats within the proposed project area. Surveys will be conducted no more than 24 hours prior to onset of construction. During April-August the biologist should look specifically for nests within upland habitats including grasslands. During initial ground disturbing activities within Sweeney Creek and McCune Creek, a qualified biologist will be present. If a turtle is located within the construction area, a qualified biologist will capture the turtle and relocate it to an appropriate habitat a safe distance from the construction site.

BIO-18: Pump intakes used to dewater the proposed project area will be screened and equipped with an energy dissipater to protect aquatic species. The energy dissipater should be large enough to reduce

approach velocity to 0.33 feet per second or less and be enclosed with ½ inch metal screen. The surface area of the energy dissipater shall be determined by dividing the maximum diverted flow, by the allowable approach velocity (example: 1.0 ft3 per second/0.33 feet per second = 3.0 ft2 surface area).

BIO-19: Construction personnel will operate vehicles at a speed no greater than 15 mph on unpaved roads within the proposed project area.

BIO-20: Should destruction of occupied burrowing owl burrows be unavoidable during the non-breeding season (September 1st – January 31st) either, unsuitable burrows will be enhanced (enlarged or cleared of debris) or new burrows will be created (by installing artificial burrows) at a ratio of 2:1 on lands approved by the CDFW. Newly created burrows will follow guidelines established by the CDFW.

BIO-21: Prior to arrival at the proposed project site and prior to leaving the proposed project site, construction equipment that may contain invasive plants and/or seeds will be cleaned to reduce the spreading of noxious weeds.

Findings

The propose project would have less than significant impacts with mitigation incorporated relating to animal species.

2.3.5.5. Threatened and Endangered Species

Regulatory Setting

The primary federal law protecting threatened and endangered species is FESA: 16 USC Section 1531, et seq. See also 50 CFR Part 402. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies are required to consult with the USFWS and the National Marine Fisheries Service (NMFS Fisheries) to ensure that they are not undertaking, funding, permitting or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated Critical Habitat. Critical Habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 is a Biological Opinion or an Incidental Take statement. Section 3 of FESA defines take as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct.”

California has enacted a similar law at the state level, the CESA, California Fish and Wildlife Code, Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project caused losses of listed species populations and their essential habitats. The CDFW is the agency responsible for implementing CESA. Section 2081 of the Fish and Wildlife Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Wildlife Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFW. For projects requiring a Biological Opinion under Section 7 of the FESA, CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Wildlife Code.

Affected Environment

The Biological Technical Report (2015) serves as basis for much of this section. Based on the Biological Technical Report findings and field surveys, one threatened species is presumed present within the BSA. Swainson's hawk (Buteo swainsoni), a State Threatened species, is presumed present within the BSA due to presence of suitable foraging and nesting habitat.

Swainson's hawk is State-listed as threatened and protected under the MBTA. Swainson's hawk migrates annually from wintering areas in South America to breeding locations in northwestern Canada, the western United States, and Mexico. In California, Swainson's hawks nest throughout the Central Valley in large trees in riparian habitats and in isolated trees in or adjacent to agricultural fields. The breeding season extends from late March through late August, with peak activity from late May through July (England et al. 1997). In the Central Valley, Swainson's hawks forage in large, open agricultural habitats, including alfalfa and hay fields (CDFG 1994). The breeding population in California has declined by an estimated 91% since 1900; this decline is attributed to the loss of riparian nesting habitats and the conversion of native grassland and woodland habitats to agriculture and urban development (CDFG 1994).

Numerous Swainson's hawk nesting records are known within a 5-mile radius of the study area (CNDDB 2015). During the May 13, 2015 surveys a pair of Swainson's hawks were observed flying over the BSA and nesting approximately 0.80 miles north of the proposed project site. Irrigated agriculture fields provides suitable foraging habitat and nesting habitat (several eucalyptus trees along Batavia Road) are present within the eastern edge of the proposed project area. To date no recorded nest sites have occurred in the proposed project area (CNDDB 2015).

Environmental Consequences

Swainson's hawk was observed within the vicinity of the proposed project area; therefore, the species has potential to be within the proposed project area foraging or nesting. However, no impact to Swainson's hawk foraging habitat or nesting habitat are anticipated. No tree removal will occur within the proposed project area. Potential foraging and nesting Swainson's hawk habitat is located well outside the permanent impact areas; therefore, potential impacts are very low. Implementation of avoidance and minimization measures BIO-22 during the nesting season will prevent impacts to Swainson's hawk.

Avoidance, Minimization, and/or Mitigation Measures

BIO-22: A protocol level pre-construction survey will be conducted for Swainson's hawk. This entails surveying all suitable nesting sites within a ¼ mile radius of the proposed project area for evidence of Swainson's hawk activity according to the protocol survey methods recommended by the Swainson's Hawk Technical Advisory Committee. If active nesting is identified within the ¼ mile radius, coordination with CDFW is required.

Findings

The proposed project would have less than significant impacts with mitigation incorporated relating to threatened and endangered species.

3. Cumulative Effects and Other CEQA/NEPA Considerations

3.1. Cumulative Impacts

Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this proposed project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the proposed project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the proposed project, such as changes in community character, traffic patterns, housing availability, and employment.

California Environmental Quality Act (CEQA) Guidelines Section 15130 describes when a cumulative impact analysis is necessary and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under CEQA can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts under the National Environmental Policy Act (NEPA) can be found in 40 Code of Federal Regulations (CFR), Section 1508.7 of the Council on Environmental Quality (CEQ) Regulations.

3.1.1. Methodology and Analysis

The cumulative impact analysis included in this section is based on known projects that are currently proposed, approved, or under construction within a two-mile radius of the proposed project area. No projects are currently planned within a two-mile radius of the proposed project area.

Resource areas for which the proposed project could cause direct or indirect impacts are evaluated for potential cumulative impacts. These resource areas are listed below:

- Wetlands and Other Waters – Jurisdictional waters within the Biological Study Area include both Sweeney and McCune creek.
- Animal Species – The proposed project has the potential for burrowing, western pond turtle and white-tailed kite to occur.
- Threatened and Endangered Species – The proposed project has the potential for Swainson's hawk to occur.

3.1.2. Irreversible and Irretrievable Commitments of Resources

Actions requiring federal approval are generally subject to laws and permit processes requiring consideration of and mitigation for impacts to special-status species and their habitats, wetlands/water of the U.S., water quality, cultural resources, and parklands. These laws and requirements assure that impacts of such undertakings would be fully mitigated. Minimization and mitigation for these projects ensure that they have no contribution to cumulative impacts.

As a result of the planned proposed project, there are several environmental resources that could be subject to cumulative impacts. Only environmental resources that have potential to incur project-specific impacts are discussed below.

Wetlands and Other Waters

Resource Study Area

The resource study area for proposed project-related waters impacts includes the proposed project site and properties immediately adjacent.

Direct Impacts to Resources of Concern

The proposed project would result in permanent and temporary impacts to Waters of the U.S. and Waters of the State due to construction of the channel weir. The effects would include permanent impacts of 0.09 acre to Sweeney Creek and 0.07 acre of McCune Creek. The permanent impacts for both channels include the concrete slab of the weir structures and 0.05 acre of rip rap for scour protection. Approximately 1.00 acre of temporary impacts to jurisdictional water is anticipated from construction disturbance (temporary ramps, access, and temporary water diversion). Temporary disturbed areas will be returned to pre-construction conditions.

Indirect Impacts to Resources of Concern

There will be no indirect impacts to wetlands and other waters as a result of this proposed project.

Cumulative Impacts

No cumulative significant impacts to wetlands and other waters are expected because the proposed project would implement mitigation measures per USACE Section 404 permit requirements, therefore no cumulative impacts would occur as a result of the proposed project.

Animal Species
Resource Study Area

The resource study area for proposed project-related animal species impacts includes the proposed project site and properties immediately adjacent.

Direct Impacts to Resources of Concern

There will be no direct impacts to White-tailed kite, western pond turtle, and burrowing owl.

Indirect Impacts to Resources of Concern

Indirect impacts to White-tailed kite, western pond turtle and burrowing owl habitat could result from loss of habitat and construction related disturbance, however, activities would be confined to as small an area as possible. Environmentally Sensitive Area fencing would be used to protect sensitive habitat wherever possible. Vegetation would be trimmed, rather than removed, where possible. The proposed project would also be required (by USFWS, USACE, CDFW, and local jurisdictions) to avoid, minimize, and/or mitigate for construction impacts on habitats that are potentially suitable for protected species or species of special concern.

Cumulative Impacts

No White-tailed kite, western pond turtles or burrowing owls were observed during biological surveys; however potential nesting habitat for White-tailed kite consisting of several eucalyptus trees exists along the eastern edge of the BSA approximately 0.5 miles from the proposed project area. The proposed project will utilize measures listed within Section 2.3.5.4 to minimize, avoid, and mitigate potential impacts to these species and migratory birds. Construction would not have a cumulatively considerable contribution to the decline of sensitive habitats in the region. Additionally, there are no other planned projects within 2 miles of the proposed project site; therefore no cumulative impacts to animal species habitats would occur.

Resource Study Area

The resource study area for proposed project-related animal species impacts includes the proposed project site and properties immediately adjacent.

Direct Impacts to Resources of Concern

There will be no direct impacts to Swainson's hawk.

Indirect Impacts to Resources of Concern

Indirect impacts to Swainson's hawk habitat could result from loss of habitat and construction related disturbance, however, activities would be confined to as small an area as possible. Pre-construction nesting bird surveys will occur one week prior to the start of construction. In addition, Environmentally Sensitive Area fencing would be used to protect sensitive habitat wherever possible. Vegetation would be trimmed, rather than removed, where possible. The proposed project would also be required (by USFWS, USACE, CDFW, and local jurisdictions) to avoid, minimize, and/or mitigate for construction impacts on habitats that are potentially suitable for threatened or endangered species and migratory birds.

Cumulative Impacts

A Swainson's hawk was observed during biological surveys; however, the proposed project will utilize measures listed within Section 2.3.5.5 to minimize, avoid, and mitigate potential impacts to Swainson's hawk. Construction would not have a cumulatively considerable contribution to the decline of Swainson's hawk habitat in the region. Additionally, there are no other planned projects within 2 miles of the proposed project site; therefore no cumulative impacts to threatened or endangered species would occur.

3.1.3. Growth Inducing Impacts

The proposed project will recapture water for distribution for agricultural purposes. Water distribution and storage capability will remain the same. There will be no growth inducing impacts as a result of this proposed project.

3.1.4. Environmental Commitments and Mitigation Measures

AQ-1: Route and schedule construction traffic to avoid peak travel times as much as possible to reduce congestion and related air quality impacts caused by idling vehicles along local roads.

AQ-2: The following fugitive dust mitigation measures will be followed:

- Water all active construction areas to contain dust as necessary. Frequency of application should be based on the type of operation, soil and wind exposure;
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard; and
- Enclose, cover, or water three times daily exposed stockpiles, such as dirt, sand, etc.

AQ-3: Basic Construction Emission Control Practices
The following practices describe exhaust emission control from diesel powered fleets working at a construction site. California regulations limit idling from both on-road and off-road diesel powered equipment. The California Air Resources Board enforces the idling limitations:

- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [required by California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site. Although not required by local or state regulation, many construction companies have equipment inspection and maintenance programs to ensure work and fuel efficiencies.
- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.

BIO-1: Temporary construction staging areas and access roads will be strategically placed to avoid and/or minimize impacts. Environmentally Sensitive Area (ESA) fencing will be installed in coordination with a biologist in order to minimize soil disturbance and erosion around the proposed project area.

BIO-2: Erosion Control Measures must be implemented during construction. To minimize the mobilization of sediment to adjacent water bodies, the following erosion-control and sediment-control measures will be included in the construction specifications:

- Soil exposure must be minimized through the use of temporary BMPs, groundcover, and stabilization measures;
- The contractor must conduct periodic maintenance of erosion- and sediment-control measures.

BIO-3: To conform to water quality requirements, the (SWPPP) must include the following:

- Vehicle maintenance, staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants must be a minimum of 100 feet from aquatic habitats. Any necessary equipment washing must occur where the water cannot flow into Sweeney Creek or McCune Creek. The project proponent will prepare a spill prevention and clean-up plan;
- Construction equipment will not be operated in flowing water;
- Construction work must be conducted according to site-specific construction plans that minimize the potential for sediment input to Sweeney Creek and McCune Creek;
- Raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life must be prevented from contaminating the soil or entering Sweeney Creek and McCune Creek;
- Equipment used in and around Sweeney Creek and McCune Creek must be in good working order and free of dripping or leaking engine fluids; and,
- Any surplus concrete rubble, asphalt, or other debris from construction must be taken to a County approved disposal site.

BIO-4: Upon completion of construction activities, any barriers to surface water flow must be removed in a manner that would allow flow to resume with the least disturbance to the substrate.

BIO-5: Vegetation clearing must only occur within the delineated proposed project boundaries. Vegetation should be removed in the late fall through winter months, to the greatest extent practicable.

BIO-6: Clean Water Act Section 401 and 404 permits and the California Department of Fish and Wildlife 1602 Streambed Alteration Agreement Permit will be obtained prior to construction.

BIO-7: Native fill will be utilized whenever possible.

BIO-8: Temporary staging areas, storage areas, and access roads involved with this proposed project will take place, to the extent feasible, in the area of direct impact.

BIO-9: All hydroseed and plant mixes must consist of a biologist approved plant palate seed mix from native, locally adapted species.

BIO-10: Before any activities begin on the proposed project, the project biologist will conduct environmental awareness training for all construction personnel. At a minimum, the training will include a description of sensitive species with potential to occur, including white-tailed kite, burrowing owl, Swainson's hawk, and western pond turtle and their habitat, the project specific measures being implemented to conserve the species, and the boundaries within which the proposed project may be accomplished.

BIO-11: If sensitive species are encountered during the course of construction, construction will temporarily stop within the area of discovery. The project biologist will be contacted immediately for further guidance. Work will not resume in the area of discovery until the project biologist has cleared the area or the animal has passively left the construction area unharmed.

BIO-12: All food-related trash must be disposed into closed containers and must be removed from the proposed project area daily. Construction personnel must not feed or otherwise attract wildlife to the proposed project area.

BIO-13: If possible, vegetation removal should occur outside the breeding season for all bird species (March 1st –September 1st).

BIO-14: If vegetation removal is to take place during the nesting season (March 1st –September 1st), a pre-construction nesting bird survey must be conducted within 7 days prior to vegetation removal. Within 2 weeks of the nesting bird survey, all vegetation cleared by the biologist will be removed by the contractor.

A minimum 100 foot no-disturbance buffer will be established around any active nest of migratory birds and a minimum 300 foot no-disturbance buffer will be established around any nesting raptor species. The contractor must immediately stop work in the nesting area until the appropriate buffer is established and is prohibited from conducting work that could disturb the birds (as determined by the project biologist and in coordination with wildlife agencies) in the buffer area until a qualified biologist determines the young have fledged. A reduced buffer can be established if determined appropriate by the project biologist and approved by CDFW.

BIO-15: Qualified biologists will conduct a pre-construction survey for burrowing owl within 1-2 weeks of the start of construction. If burrowing owls are not detected, no further mitigation will be required.

If burrowing owls are observed within 500 feet of the proposed project area, the following measures will be implemented:

BIO-16: Occupied burrows will not be disturbed during the breeding season (February 1st to August 31st) unless a qualified biologist approved by the CDFW verifies through non-invasive methods that either: 1) the birds have not begun egg-laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival. If avoidance of active nests is preferred, the biologist will consult with the CDFW to determine appropriate buffer widths and acreage of foraging habitat to be permanently preserved contiguous with the occupied burrow site. The Contractor will not disturb identified burrowing owl burrows until the qualified biologist verifies it has been cleared.

BIO-17: To avoid impacts to western pond turtles, the project biologist will conduct a pre-construction survey of Sweeney Creek and McCune Creek and adjacent banks and upland habitats within the proposed project area. Surveys will be conducted no more than 24 hours prior to onset of construction. During April-August the biologist should look specifically for nests within upland habitats including grasslands. During initial ground disturbing activities within Sweeney Creek and McCune Creek, a qualified biologist will be present. If a turtle is located within the construction area, a qualified biologist will capture the turtle and relocate it to an appropriate habitat a safe distance from the construction site.

BIO-18: Pump intakes used to dewater the proposed project area will be screened and equipped with an energy dissipater to protect aquatic species. The energy dissipater should be large enough to reduce approach velocity to 0.33 feet per second or less and be enclosed with ½ inch metal screen. The surface area of the energy dissipater shall be determined by dividing the maximum diverted flow, by the allowable approach velocity (example: 1.0 ft3 per second/0.33 feet per second = 3.0 ft2 surface area).

BIO-19: Construction personnel will operate vehicles at a speed no greater than 15 mph on unpaved roads within the proposed project area.

BIO-20: Should destruction of occupied burrowing owl burrows be unavoidable during the non-breeding season (September 1st – January 31st) either, unsuitable burrows will be enhanced (enlarged or cleared of debris) or new burrows will be created (by installing artificial burrows) at a ratio of 2:1 on lands approved by

the CDFW. Newly created burrows will follow guidelines established by the CDFW.

BIO-21: Prior to arrival at the proposed project site and prior to leaving the proposed project site, construction equipment that may contain invasive plants and/or seeds will be cleaned to reduce the spreading of noxious weeds.

BIO-22: A protocol level pre-construction survey will be conducted for Swainson's hawk. This entails surveying all suitable nesting sites within a ¼ mile radius of the proposed project area for evidence of Swainson's hawk activity according to the protocol survey methods recommended by the Swainson's Hawk Technical Advisory Committee. If active nesting is identified within the ¼ mile radius, coordination with CDFW is required.

CR-1: If previously unidentified cultural materials are unearthed during construction, work shall be halted in that area until a qualified archaeologist can assess the significance of the find and develop a plan for documentation and removal of resources if necessary. Additional archaeological survey will be needed if proposed project limits are extended beyond the present survey limits.

CR-2: Section 5097.94 of the Public Resources Code and Section 7050.5 of the California Health and Safety Code protect Native American burials, skeletal remains and grave goods, regardless of age and provide method and means for the appropriate handling of such remains. If human remains are encountered, work should halt in that vicinity and the county coroner should be notified immediately. At the same time, an archaeologist should be contacted to evaluate the situation. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within twenty-four hours of such identification. CEQA details steps to be taken if human burials are of Native American origin.

CR-3: Solano Irrigation District will invite Yocha Dehe Wintun Nation to a pre-construction meeting to address cultural sensitivity for construction crews excavating within the creek channels. In addition, Solano Irrigation District will inform the Yocha Dehe Wintun Nation of the construction schedule to ensure the tribe has an opportunity to monitor the initial ground disturbance within the creek channels.

GEO-1: Solano Irrigation District and contractor shall implement a SWPPP to include erosion control methods. This SWPPP shall be prepared

for the Section 402 permit, *NPDES* General *Permit for Discharges of Storm Water Associated with Construction Activity*.

NOI-1: The following shall apply to all construction generated noise:

- Do not exceed 60 dBA at 50 feet from the job site activities from 6:00 P.M. to 7:00 A.M. on weekdays, or from 5:00 PM to 8:00 AM on Saturday and Sundays.
- Equip an internal combustion engine with the manufacturer recommended muffler.
- Do not operate an internal combustion engine on the job site without the appropriate muffler.

WQ-1: The following measures will be implemented to ensure best management practices:

- The area of construction and disturbance would be limited to as small an area as feasible to reduce erosion and sedimentation.
- Measures would be implemented during land-disturbing activities to reduce erosion and sedimentation. These measures may include mulches, soil binders and erosion control blankets, silt fencing, fiber rolls, temporary berms, sediment de-silting basins, sediment traps, and check dams.
- Existing vegetation would be protected where feasible to reduce erosion and sedimentation. Vegetation would be preserved by installing temporary fencing, or other protection devices, around areas to be protected.
- Exposed soils would be covered by loose bulk materials or other materials to reduce erosion and runoff during rainfall events.
- Exposed soils would be stabilized, through watering or other measures, to prevent the movement of dust at the proposed proposed project site caused by wind and construction activities such as traffic and grading activities.
- All construction roadway areas would be properly protected to prevent excess erosion, sedimentation, and water pollution.
- All vehicle and equipment maintenance procedures would be conducted outside of the channels.
- All concrete curing activities would be conducted to minimize spray drift and prevent curing compounds from entering the waterway directly or indirectly.
- All construction materials, vehicles, stockpiles, and staging areas would be situated outside of the channel. All stockpiles would be covered, as feasible.

- Energy dissipaters and erosion control pads would be provided at the bottom of slope drains. Other flow conveyance control mechanisms may include earth dikes, swales, or ditches. Stream bank stabilization measures would also be implemented.
- All erosion control measures and storm water control measures would be properly maintained until the site has returned to a pre-construction state.
- All disturbed areas would be restored to pre-construction contours and revegetated, either through hydroseeding or other means, with native or approved non-invasive exotic species.
- All construction materials would be hauled off-site after completion of construction.

WQ-2: The proposed project would require a NPDES General Construction Permit for Discharges of storm water associated with construction activities (Construction General Permit 2012-0006-DWQ). A SWPPP would also be developed and implemented as part of the Construction General Permit.

WQ-3: The construction contractor shall adhere to the SWRCB Order No. 2012-0006-DWQ NPDES Permit pursuant to Section 402 of the CWA. This permit authorizes storm water and authorized non-storm water discharges from construction activities. As part of this Permit requirement, a SWPPP shall be prepared prior to construction consistent with the requirements of the RWQCB. This SWPPP will incorporate all applicable BMPs to ensure that adequate measures are taken during construction to minimize impacts to water quality.

3.1.5. Significant Effects

All effects due to the proposed project can be reduced to a less than significant level with mitigation incorporated for CEQA. No significant NEPA impacts were identified through this analysis.

4. Climate Change under CEQA

Regulatory Setting

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas (GHG) emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation. In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles) make up the largest source of GHG-emitting sources. The dominant GHG emitted is CO_2, mostly from fossil fuel combustion.

There are typically two terms used when discussing the impacts of climate change: “Greenhouse Gas Mitigation” and “Adaptation.” "Greenhouse Gas Mitigation" is a term for reducing GHG emissions to reduce or "mitigate" the impacts of climate change. “Adaptation" refers to the effort of planning for and adapting to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels).

There are four primary strategies for reducing GHG emissions from transportation sources: 1) improving the transportation system and operational efficiencies, 2) reducing travel activity, 3) transitioning to lower GHG-emitting fuels, and 4) improving vehicle technologies/efficiency. To be most effective, all four strategies should be pursued cooperatively.

State

With the passage of several pieces of legislation including State Senate and Assembly bills and Executive Orders, California launched an innovative and proactive approach to dealing with GHG emissions and climate change.

Assembly Bill 1493 (AB 1493), Pavley, Vehicular Emissions: Greenhouse Gases, 2002: This bill requires the CARB to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year.

Executive Order (EO) S-3-05 (June 1, 2005): The goal of this EO is to reduce California's GHG emissions to 1) year 2000 levels by 2010, 2) year 1990 levels by 2020, and 3) 80 percent below the year 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

Assembly Bill 32 (AB 32), Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 sets the same overall GHG emissions reduction goals as outlined in EO S-3-05, while further mandating that ARB create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases."

Executive Order S-20-06 (October 18, 2006): This order establishes the responsibilities and roles of the Secretary of the California Environmental Protection Agency (Cal EPA) and state agencies with regard to climate change.

Executive Order S-01-07 (January 18, 2007): This order set forth the low carbon fuel standard for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Senate Bill 97 (SB 97) Chapter 185, 2007, Greenhouse Gas Emissions: This bill required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the CEQA Guidelines for addressing GHG emissions. The amendments became effective on March 18, 2010.

Senate Bill 375 (SB 375), Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires the CARB to set regional emissions reduction targets from passenger vehicles. The MPO for each region must then develop a "Sustainable Communities Strategy" (SCS) that integrates transportation, land-use, and housing policies to plan for the achievement of the emissions target for their region.

Senate Bill 391 (SB 391) Chapter 585, 2009 California Transportation Plan: This bill requires the State's long-range transportation plan to meet California's climate change goals under AB 32.

Federal

Although climate change and GHG reduction are a concern at the federal level, currently no regulations or legislation have been enacted specifically addressing GHG emissions reductions and climate change at the project level. The United

States Environmental Protection Agency (U.S. EPA) has not issued explicit guidance or methods to conduct project-level GHG analysis.[1] Addressing climate change mitigation and adaptation up front in the planning process will assist in decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

Climate change and its associated effects are being addressed through various efforts at the federal level to improve fuel economy and energy efficiency, such as the "National Clean Car Program" and EO 13514 - Federal Leadership in Environmental, Energy and Economic Performance.

Executive Order 13514 (October 5, 2009): This order is focused on reducing greenhouse gases internally in federal agency missions, programs and operations, but also directs federal agencies to participate in the Interagency Climate Change Adaptation Task Force, which is engaged in developing a national strategy for adaptation to climate change.

The U.S. EPA's authority to regulate GHG emissions stems from the U.S. Supreme Court decision in Massachusetts v. EPA (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, U.S. EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six greenhouse gases constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing Act and EPA's assessment of the scientific evidence that form the basis for EPA's regulatory actions. U.S. EPA in conjunction with National Highway Traffic Safety Administration (NHTSA) issued the first of a series of GHG emission standards for new cars and light-duty vehicles in April 2010.[2]

The U.S. EPA and the NHTSA are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever GHG regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle GHG regulations.

The final combined standards that made up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards implemented

[1] To date, no national standards have been established regarding mobile source GHGs, nor has U.S. EPA established any ambient standards, criteria or thresholds for GHGs resulting from mobile sources.
[2] http://www.c2es.org/federal/executive/epa/greenhouse-gas-regulation-faq

by this program are expected to reduce GHG emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

On August 28, 2012, U.S. EPA and NHTSA issued a joint Final Rulemaking to extend the National Program for fuel economy standards to model year 2017 through 2025 passenger vehicles. Over the lifetime of the model year 2017-2025 standards this program is Projected to save approximately four billion barrels of oil and two billion metric tons of GHG emissions.

The complementary U.S. EPA and NHTSA standards that make up the Heavy-Duty National Program apply to combination tractors (semi trucks), heavy-duty pickup trucks and vans, and vocational vehicles (including buses and refuse or utility trucks). Together, these standards will cut greenhouse gas emissions and domestic oil use significantly. This program responds to President Barack Obama's 2010 request to jointly establish greenhouse gas emissions and fuel efficiency standards for the medium- and heavy-duty highway vehicle sector. The agencies estimate that the combined standards will reduce CO_2 emissions by about 270 million metric tons and save about 530 million barrels of oil over the life of model year 2014 to 2018 heavy duty vehicles.

Environmental Consequences

An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a proposed project may contribute to a potential impact through its incremental change in emissions when combined with the contributions of all other sources of GHG.[3] In assessing cumulative impacts, it must be determined if a proposed project's incremental effect is "cumulatively considerable" (CEQA Guidelines Sections 15064(h)(1) and 15130). To make this determination, the incremental impacts of the proposed project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult, if not impossible, task.

The AB 32 Scoping Plan mandated by AB 32 includes the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, the ARB released the GHG inventory for California (forecast last updated: October 28, 2010). The forecast is an estimate of the emissions expected to occur in 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used

[3] This approach is supported by the AEP: Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents (March 5, 2007), as well as the South Coast Air Quality Management District (Chapter 6: The CEQA Guide, April 2011) and the U.S. Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

for forecasting emissions is the average of statewide emissions in the GHG inventory for 2006, 2007, and 2008.

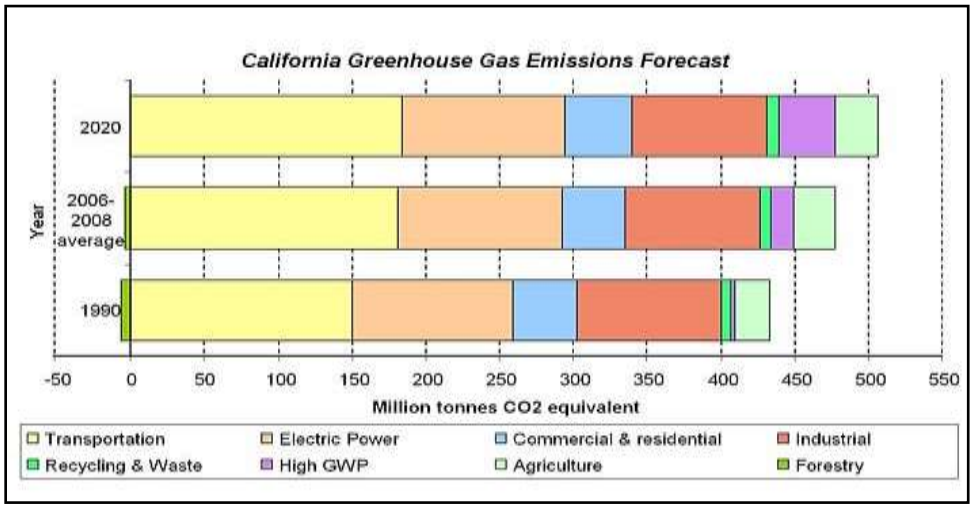

Figure 17: California Greenhouse Gas Emissions Forecast

The proposed project would not impede the County's efforts to comply with AB 32 requirements. Therefore, the projects cumulative impacts related to construction and operation of the proposed project conflicting with applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions would be less than significant. The proposed project would not have any significant additional environmental effects relating to GHG emissions or climate change.

Avoidance, Minimization, and/or Mitigation Measures

None.

Findings

The proposed project would have less than significant impacts relating to climate change.

5. Consultation and Coordination

This chapter summarizes the County's efforts to identify, address and resolve project-related issues through early and continuing coordination.

Consultation and Coordination with Public Agencies

Coordination with the following agencies has been or will be initiated for the Sweeney/McCune Creek Outflow Recovery and Automation Project:

- California Department of Fish and Wildlife (CDFW)
- California Regional Water Quality Control Board (CRWQCB)
- U.S. Army Corps of Engineers (USACE)
- Bureau of Reclamation (Reclamation)
- Native American Heritage Commission (NAHC)

California Department of Fish and Wildlife

Dokken Engineering will submit an application for California Department of Fish and Wildlife Section 1602 Streambed Alteration Agreement upon the approval of the EA/IS.

California Regional Water Quality Control Board

Dokken Engineering will submit an application for California Regional Water Quality Control Board Section 401 Water Quality Certification upon the approval of the EA/IS.

U.S. Army Corps of Engineers

Dokken Engineering will submit an application for Clean Water Act Section 404 under Nationwide Permit 40 upon the approval of the EA/IS.

Bureau of Reclamation

As a result of Federal funding, Reclamation is the lead for NEPA implementation. This EA/IS has been prepared to examine the impacts on environmental resources as a result of the continued delivery of water to adjacent land owners for agricultural purposes. The water would continue to be delivered for agricultural purposes within Reclamation's existing water right place of use. The water would be delivered within the current contractor service area boundaries using existing facilities. Coordination with the Bureau of Reclamation will continue throughout the duration of the proposed project until completion.

Native American Heritage Commission

On July 6, 2014 Dokken Engineering sent initial consultation letters to the Native American individuals on the list provided by the NAHC. The letters provided a summary of the proposed project and requested information regarding comments or concerns the Native American community might have about the proposed project. Letters were sent to the following individuals and organizations:

- Kesner Flores
- Chairperson Leland Kinter, Yocha DeHe Wintun Nation
- Natural Cultural Renewal Committee, Yocha Dehe Wintun Nation
- Chairperson Charlie Wright, Cortina Band of Indians

A follow-up telephone call was placed to all letter recipients who did not reply within 30 days of the letter. A voice mail message with proposed project details and contact information was left for all four letter recipients. Only one tribe replied to these consultation efforts – the Yocha Dehe Wintun Nation who requested a proposed project area field visit to evaluate cultural concerns as well as a copy of the cultural resources report.

A field meeting to discuss the Yocha Dehe Wintun's concerns occurred on October 02, 2015. The meeting discussed the proposed project design features, the records search results, the results of the cultural survey, and overall cultural resource sensitivity within the proposed project area. The Yocha Dehe Wintun Nation did not identify any known prehistoric-era archaeological sites within the proposed project area; however, as the confluence of two water sources attracts human occupation and as the Sweeney and McCune creeks were channelized during modern times, the Yocha Dehe Wintun Nation expressed concern that there is a potential for buried prehistoric-era resources to be present beneath the existing creek channel beds. They requested to view historic maps to better determine the natural course of these streams. It was also requested that a Tribal Monitor be present during construction activities within the creek channels and that all construction workers would receive cultural resource identification and sensitivity training. Coordination with the Yocha Dehe Wintun Nation shall continue throughout the duration of the proposed project.

Public Participation

As part of CEQA, the public comment period for the proposed project provides the opportunity for public comment and participation. The comment period began December 18, 2016 and commenced January 18, 2016. The comment period was properly noticed in the Vacaville Reporter and this EA/IS with Proposed Mitigated Negative Declaration was available for review at the Vacaville Public Library – Town Square located at 1 Town Square Place, Vacaville, CA 95611. Reclamation posted the draft EA/IS for public review and comment on Reclamation's website and through a press release that was

distributed on December 23, 2015. The public review period began on December 23, 2015 and ended on January 22, 2016. No comments were received on the EA/IS during these comment periods.

6. List of Preparers and Reviewers

Bureau of Reclamation – NEPA Lead Agency

Laurie Sharp, Repayment Specialist, Environmental QA/QC

Carolyn Bragg, Biologist, Biological Technical Report Review

Mark Carper, Archaeologist, M.A., Cultural Resources Report Review

Jason Jordan, Biologist, Biological Technical Report Review

Solano Irrigation District – CEQA Lead Agency

Kevin King, P.E., Water and Power Operations Manager, Solano Irrigation District

Matthew Medill, P.E., Superintendent, Water and Power Operations, Solano Irrigation District

Justin Hopkins, P.E., Associate Civil Engineer, Solano Irrigation District

Dokken Engineering – Environmental Consultant

Environmental Document, Biological Technical Report, and Cultural Resources Report.

Namat Hosseinion, Environmental Manager. B.A. and M.A., Archaeology; 17 years environmental planning experience. Contribution: Environmental QA/QC.

Amy Dunay, Environmental Planner/Archaeologist. B.A. and M.A., Archaeology; 10 years of archaeology and cultural resources experience. Contribution: Cultural Resources.

Carolynn Daman, Environmental Planner/Biologist. B.S., Zoology; 9 years of biological studies experience. Contribution: Biological Technical Report.

Amy Storck, Environmental Planner. B.A., Environmental Studies, 8 years of environmental planning experience. Contribution: Environmental Document.

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