RECLAMATION

Managing Water in the West

Draft Environmental Assessment

South San Joaquin Irrigation District Division 9 Irrigation Enhancement Project

June 2011

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

Mission Statements

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

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

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List of Acronyms and Abbreviations

AF	Acre-feet
APE	Area of Potential Effect
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
Corps	U.S. Army Corps of Engineers
EA	Environmental Assessment
EPA	U.S. Environmental Protection Agency
GHG	greenhouse gas
gpm	gallons per minute
IS	Initial Study
MND	Mitigated Negative Declaration
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
PM2.5	particulate matter less than 2.5 micrometers in diameter
Project	Division 9 Irrigation Enhancement Project
Reclamation	Bureau of Reclamation
Service	U.S. Fish and Wildlife Service
SJMSCP	San Joaquin County Multi-Species Habitat Conservation and Open Space Plan
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SSJID	South San Joaquin Irrigation District
SWPPP	Storm Water Pollution Prevention Plan

Section 1 Purpose and Need for Action

1.1 Introduction

In conformance with the National Environmental Policy Act of 1969 (NEPA), as amended, the Bureau of Reclamation (Reclamation) has prepared this Environmental Assessment (EA) to evaluate and disclose any potential environmental impacts associated with implementation of the South San Joaquin Irrigation District's (SSJID) Division 9 Irrigation Enhancement Project. Reclamation proposes to disburse grant funds to SSJID to support construction of the proposed project. The location of the proposed project and service area is Division 9 of the existing SSJID irrigation system, which encompasses approximately 3,800 acres west of the City of Ripon in an unincorporated area of southern San Joaquin County in California. Figures 1-1 and 1-2 show the location of the project.

This EA:

(1) Describes the existing environmental resources in the project area;

(2) Evaluates the effects of the No Action and Proposed Action alternatives on the resources; and

(3) Proposes measures to avoid, minimize, or mitigate any adverse effects.

This EA is in compliance with NEPA and Council on Environmental Quality (CEQ) regulations (40 CFR 1500-1508). Reclamation has also prepared a Finding of No Significant Impact (FONSI), which explains why the Proposed Action would not have any significant effects on the human or natural environment.

In 2009, SSJID prepared an Initial Study/Mitigated Negative Declaration (IS/MND) for the project pursuant to the California Environmental Quality Act (CEQA; California Public Resources Code Section 21000 *et seq.*, as amended), in order to satisfy California requirements for environmental impact assessment. SSJID adopted the IS/MND in August 2009. Where appropriate, this EA will refer to the IS/MND in its assessment of environmental impacts.

Under CEQA, lead agencies for projects are required to mitigate any significant environmental impacts identified with a project, if feasible. The IS/MND identified several environmental impacts associated with the project and recommended mitigation measures for these impacts, which were adopted along with the IS/MND. Where appropriate, this EA describes these mitigation measures, and considers them part of the project for evaluation purposes.

1.2 Purpose and Need

The United States faces an increasing set of water resource challenges. Aging infrastructure, rapid population growth, depletion of groundwater resources, impaired water quality associated with particular land uses and land covers, water needs for both human and environmental uses, and climate variability and change all play a role in determining the amount of fresh water available at any given place and time. Water shortages and water-use conflicts have become more commonplace in many areas of the United States, even in normal water years. As competition for water resources grows—for irrigation of crops, growing cities and communities, energy production, and the environment— the need for information and tools to aid water resource managers also grows. Water issues and challenges are increasing across the nation, but particularly in the western United States due to prolonged drought.

These water issues are exacerbating the challenges facing traditional water management approaches, which by themselves no longer meet today's needs. The Department of the Interior's (DOI) WaterSMART (Sustain and Manage America's Resources for Tomorrow) program establishes a framework to provide Federal leadership and assistance on the efficient use of water, integrating water and energy policies to support the sustainable use of all natural resources, and coordinating the water conservation activities of various Department bureaus and offices. Through the program, DOI is working to achieve a sustainable water strategy to meet the nation's water needs. With WaterSMART Grants, Reclamation provides cost-shared funding on a competitive basis for on-the-ground water conservation and energy efficiency projects. The WaterSMART Grant Program is under the authority of Section 9504(a) of the Secure Water Act, Subtitle F of Title IX of the Omnibus Public Land Management Act of 2009, P.L. 111-11 (42 USC 10364).

The purpose of the Proposed Action is for Reclamation to further the goals and objectives of the WaterSMART program as they apply to water management operations in the SSJID. Reclamation intends to do so by providing grant funding for the installation of a new pressurized irrigation system in SSJID Division 9, which would consist of 12.6 miles of underground, pressurized PVC pipeline, along with two storage basins with a total capacity of approximately 80 acre-feet (AF). Each basin would be equipped with a pump station and a groundwater well to provide an alternative water supply in years when SSJID has inadequate surface water supplies for its users.

The purpose of this pressurized system is to provide an alternative to the existing gravity flood irrigation system in Division 9. The existing system does not provide the capability for landowners in Division 9 to utilize sprinkler or drip irrigation systems. To provide for such systems presently, farmers must either access groundwater at individual wells, or install and operate pumps and filtration systems to deliver the required quantities of water at the required pressure.

The new pressurized irrigation system would allow farmers to more readily utilize sprinkler or drip irrigation systems for their fields. Such systems use less water than the current flood irrigation system, thereby reducing demands on local water supplies. Farmers could dispense with individual wells, thereby reducing demand on local groundwater supplies. Sprinkler and drip systems are more energy-efficient, which would reduce the energy demand from local agricultural operations. Many of the pumps currently used are diesel-powered, so the new system would remove such pumps from use, thereby improving air quality and reducing greenhouse gas emissions. SSJID has indicated that, if the new system operates to expectations, it would eventually expand this type of service to the entire service area.

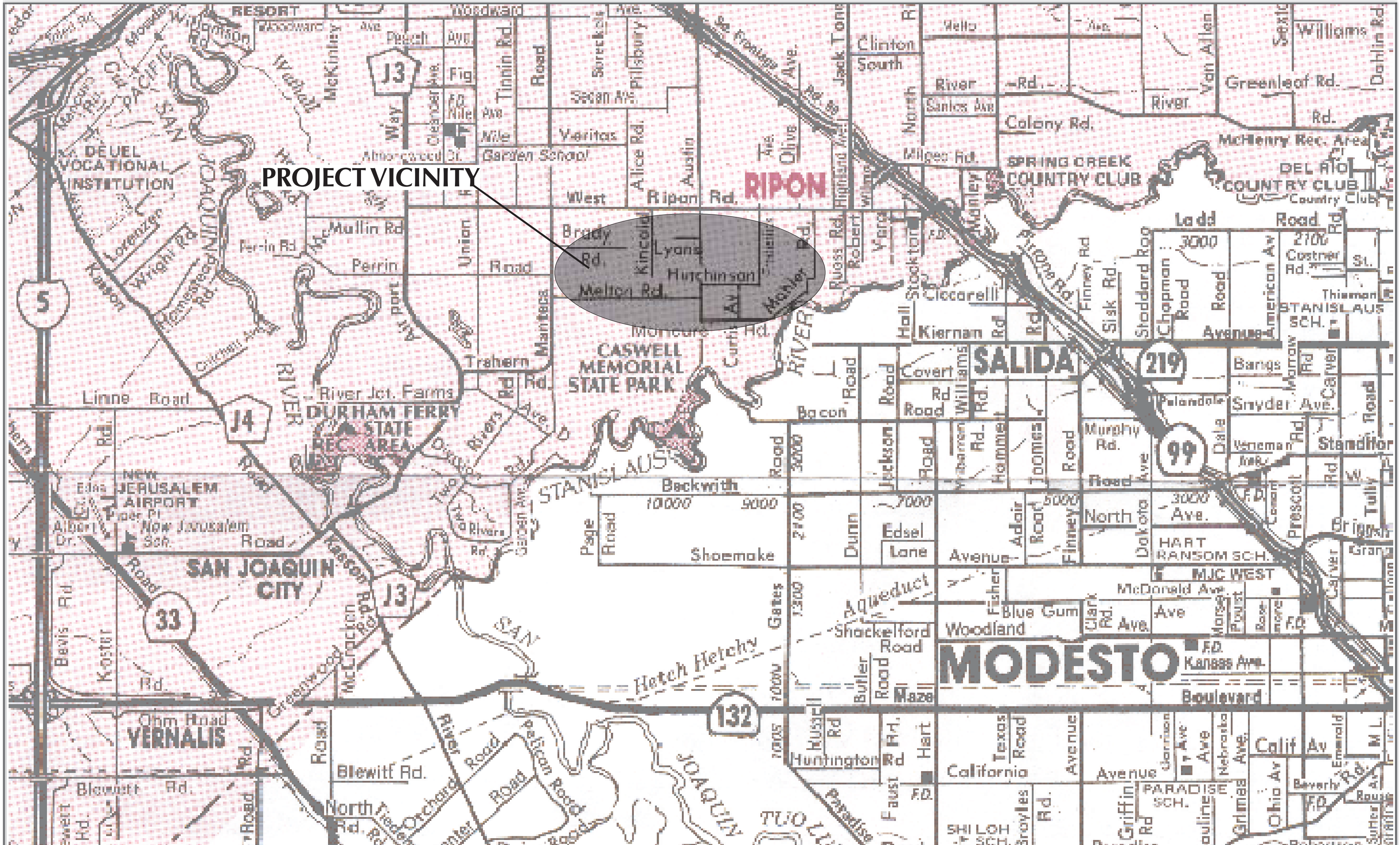
1.3 Potential Resource Issues

The resource areas listed below have the potential to be affected by the Proposed Action and are discussed further in Section 3.

- Surface Water Resources
- Groundwater Resources
- Biological Resources
- Cultural Resources
- Air Quality
- Noise
- Hazardous Materials
- Land Use and Farmland
- Transportation
- Indian Trust Assets
- Environmental Justice
- Climate Change

1.4 Resources Not Analyzed in Detail

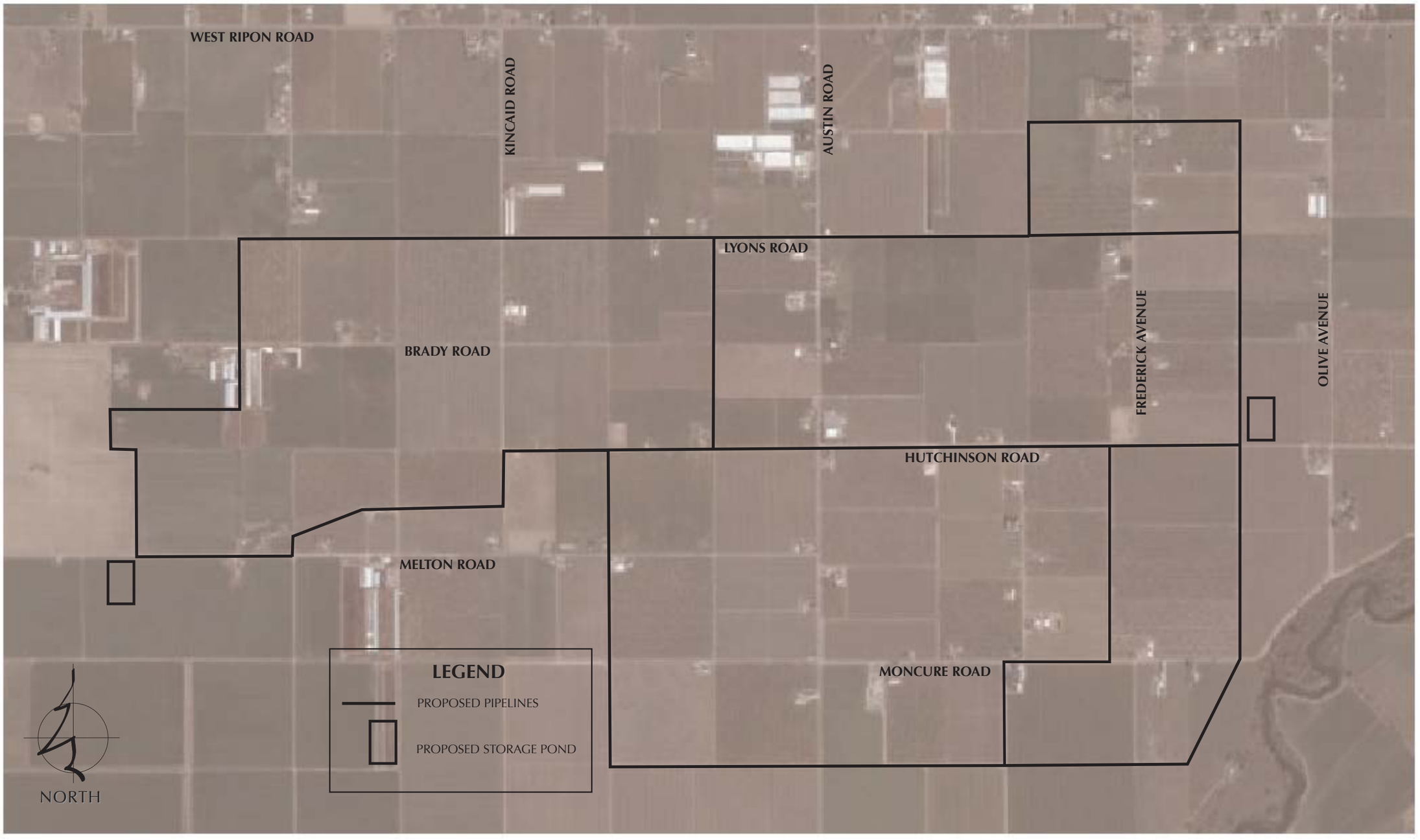
It was determined that the following resources would not be impacted by the Proposed Action and are therefore not analyzed in this EA: geology and soils, fisheries, recreation, visual resources and growth.



NORTH SOURCE: CITY OF RIPON CHAMBER OF COMMERCE MAP

INSITE ENVIRONMENTAL, INC.

Figure 1-1
Project Site Location



Source: GOOGLE EARTH

Figure **1-2**
AERIAL PHOTO

Section 2 Alternatives Including Proposed Action

2.1 No Action Alternative

The No Action Alternative would consist of Reclamation not providing grant funding for the proposed project. Although it is possible that SSJID may find alternative sources of funding for the project, for the purposes of this EA, the consequence of Reclamation not funding the project would be no construction of the project. The irrigation system currently in place would continue to operate. SSJID would continue to provide irrigation service to Division 9 via an existing gravity flood irrigation system that dates to the formation of the District; existing irrigation lines and valve systems would continue to be operated manually. Flood irrigation service within Division 9 is obtained by operating these valves, which allow irrigation waters to flow across the ground surface into the adjoining orchards. Storm water and excess irrigation water within Division 9 are currently either left to percolate into the soil, or are collected in the gravity system and discharged, under permit, into the Stanislaus River.

2.2 Proposed Action Alternative

The Proposed Action Alternative consists of providing grant funds to support the construction and operation of a pressurized irrigation water system serving lands within SSJID Division 9. The proposed water system would consist of a network of pressure pipeline and two water storage basins, each of which would be individually equipped with a pump station and groundwater well. Pump stations and groundwater wells would be housed in open-topped cast-in-place concrete structures ranging up to about 2,000 square feet in area. Figure 2-1 illustrates the proposed pressurized system, and Figure 2-2 shows the cross sections of the proposed storage basins. The proposed project would be supplied by SSJID's existing surface water supply, although the new groundwater wells at both basins (one well at each basin) would provide supplemental groundwater to the proposed pressure system during dry years, when surface water supply is not adequate.

Inflow to Division 9 would be redirected from SSJID's existing gravity system into a proposed eastern storage basin, with a proposed maximum capacity of 50 AF at a proposed depth of 12 feet. The basin, with a footprint of 6.9 acres, would be excavated 10 feet below ground level, and basin levees would rise four feet above the existing ground level. A pump station would be installed on one side of the basin with two sets of pumps - pressurized system pumps and low-head flood system pumps. The low-head pumps would consist of three electrically operated pumps, each with a capacity of 8,000 gallons per minute (gpm). These pumps would provide adequate water head for SSJID's existing flood irrigation customers. The pressurized system pumps would consist of a bank of six short-coupled turbine pumps that would maintain pressure throughout the entire pressurized system. The first two primer pumps would have a capacity of 1,000

gpm each. The remaining four pumps would be activated as demand requires. The maximum pumping capacity for the pressurized system would be 12,000 gpm.

The proposed pressure system would distribute water to the 3,800-acre service area in Division 9 through 12.6 miles of 18- and 24-inch diameter pressure pipeline. The backbone of the distribution system would be three 24-inch PVC pipelines extending west from the eastern storage basin. These backbone pipelines would be looped by 24-inch, north-south lines, with one 18-inch pipeline loop located in the northeastern portion of the project area. The proposed pressure system would be used for irrigation purposes during the summer and potentially for frost protection during the winter. Metered turnouts - each consisting of a gate valve, a check valve, a PVC riser/cap and magmeter - would be provided along all pipeline segments to allow individual agricultural properties to access pressurized irrigation water. The pipeline system would include a set of isolation and pressure valves for ease of maintenance and improved reliability. The pipelines would be located primarily within existing SSJID easements, adjacent to existing SSJID gravity lines. Existing SSJID rights-of-way follow public roads and existing farm roads. New right-of-way acquisition would be required for two sections of pipeline totaling 3,000 linear feet.

The proposed western storage basin would be supplied by capture of agricultural runoff generated during the irrigation season and storm runoff. This basin, with a footprint of 5.7 acres, would have a proposed maximum capacity of 30 AF at a proposed depth of 10 feet. It would be excavated four feet below ground level, and basin levees would rise eight feet above the existing ground level. The western storage basin would have a pump station along one of its sides consisting of three pumps with flows of 1,000, 2,500 and 3,000 gpm, respectively. The pump station would return accumulated irrigation runoff to the pressure system, recycling this water, which was formerly discharged to the Stanislaus River. The western pump station would also help maintain system pressure in the western portion of the project. The western storage basin would have an outlet to release excess drainage to the Stanislaus River when necessary. Currently, agricultural drainage and irrigation spill waters from the Division 9 irrigation system are discharged into the Stanislaus River under permit from the Regional Water Quality Control Board, and discharge under the proposed project would be subject to this permit.

Construction of the two proposed storage basins would involve a total land disturbance of 12.6 acres (6.9 acres eastern basin and 5.7 acres western basin). The basins would be constructed using traditional methods, with excavation then placement and compaction of the excavated soil to form the basin levees. Construction of proposed pipelines is expected to proceed conventionally, with trench excavation by backhoe or excavator, bedding and pipeline placement, and backfill of the trench. Proposed pipelines would be placed with a minimum cover depth of three feet. The proposed pipeline would require 15 crossings of existing public roadways. These project segments would also be constructed using conventional open trench construction, but pavement sawing and removal would be necessary where the alignment crosses a paved road. Repavement of the crossing would follow completion of construction. Pipelines would be placed below street grade with a minimum cover depth of three feet.

RIPON ROAD
RIPON ROAD
BROWN ROAD
MANTECA ROAD
1
PROPOSED PIPELINE NOT WITHIN THE EXISTING SSJID EASEMENT
2
LYONS ROAD
NORTH PRESSURE MAIN
OLIVE AVENUE
MOHLER ROAD
BRADY ROAD
KINCAID ROAD
4
FREDERICK AVENUE
DOAK BOULEVARD EXTENSION
PERRIN ROAD
PROPOSED PIPELINE NOT WITHIN THE EXISTING SSJID EASEMENT
3
BRADY ROAD
MIDDLE PRESSURE MAIN
5
6
MONCURE ROAD
WEST STORAGE BASIN
EAST STORAGE BASIN
SSJID AND DISTRICT 9 BOUNDARY
SOUTH PRESSURE MAIN
AUSTIN RD
CITY OF RIPON SPERE OF INFLUENCE
TRAHERN ROAD

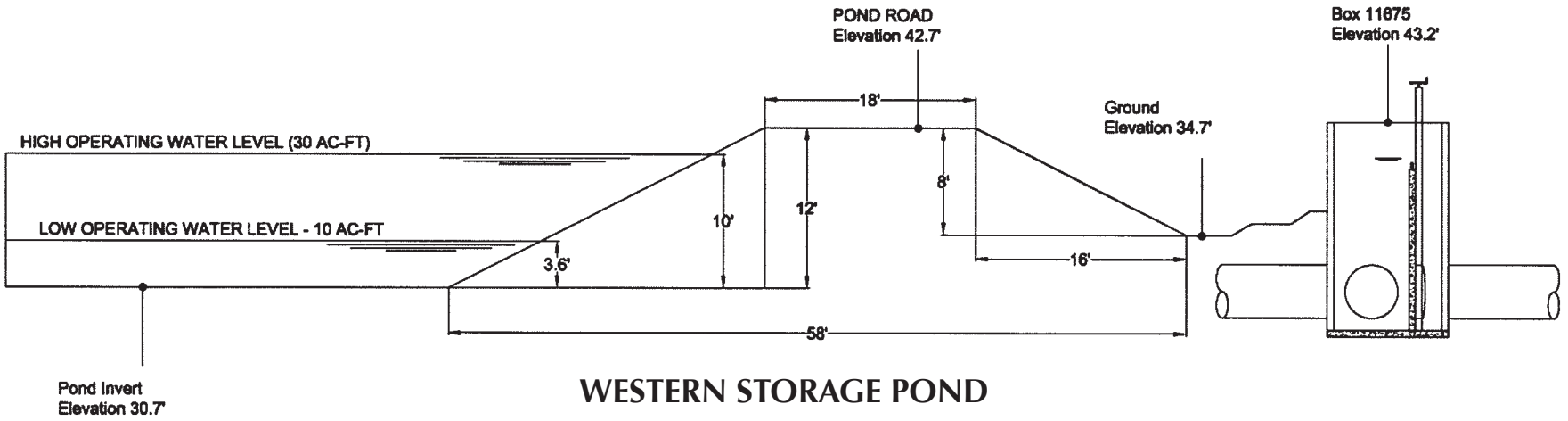
LEGEND

HOUSES
PUBLIC ROADS
Existing Gravity System
Proposed 18" Pipe Network
Proposed 24" Pipe Network
Zone Boundary
Division Boundary

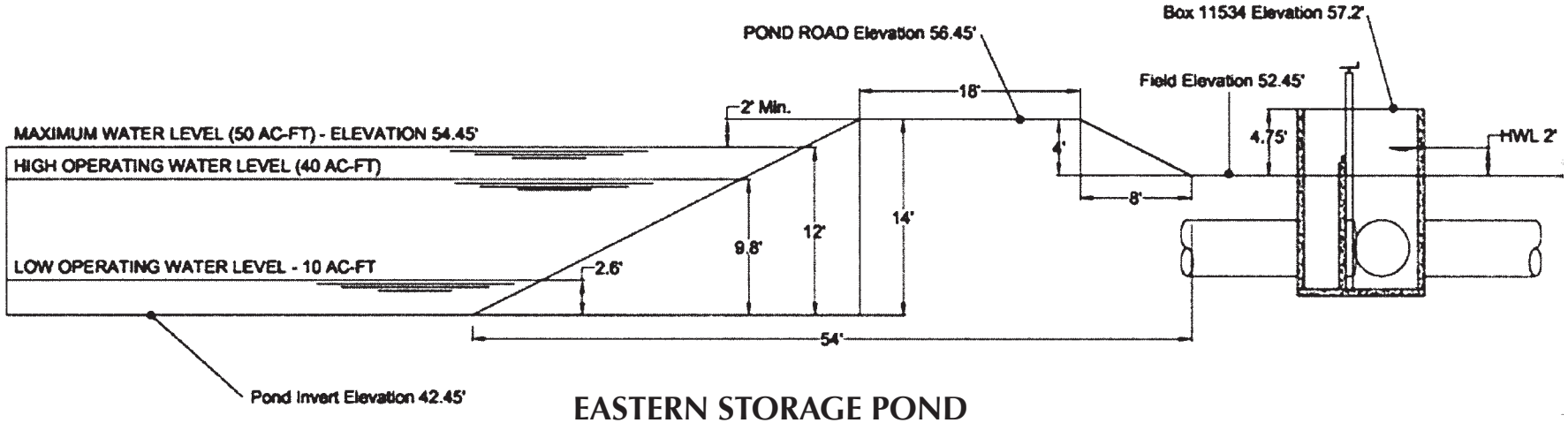
Source: STANTEC CONSULTING, INC.

INSITE ENVIRONMENTAL,

Figure 2-1
PROPOSED PROJECT



WESTERN STORAGE POND



EASTERN STORAGE POND

NORTH

SOURCE: STANTEC

INSITE ENVIRONMENTAL, INC.

Figure 2 - 2
STORAGE BASIN ELEVATIONS

Section 3 Affected Environment & Environmental Consequences

The proposed project is located in San Joaquin County within the San Joaquin Valley. The County is bounded by the Sierra Nevada Mountains to the east and the Pacific Coastal Range to the west. The project region is characterized by flat valley lowland agriculture, with a climate that is cool and moist in the winter and hot and dry in the summer.

SSJID was formed in 1909 to provide a reliable and economical source of irrigation water for the agricultural areas surrounding the cities of Escalon, Ripon, and Manteca in southern San Joaquin County. SSJID water supplies are derived from existing diversion and storage rights on the Stanislaus River, which forms a portion of the southern boundary of the County. Division 9, located west of the city of Ripon, is an agricultural area, composed primarily of almond orchards and row crops. Some residences and farm buildings are scattered throughout Division 9.

3.1 Surface Water Resources

3.1.1 Affected Environment

There are no natural surface water resources within the project site. The Stanislaus River is located along a portion of the southern boundary of San Joaquin County. The Stanislaus River is one of the largest tributaries of the San Joaquin River. The river is 65 miles long and is extensively dammed and diverted. The Stanislaus eventually meets the San Joaquin River downstream of the project area; the San Joaquin River flows into the Sacramento-San Joaquin River Delta. In the Ripon vicinity, the Stanislaus River is located within a well-developed riparian corridor most of which is publicly owned. At its closest, the river is less than one-quarter mile east of the project site, but it is separated from the proposed project facilities by an existing levee system. The Stanislaus River is an important water resource for SSJID.

Project area drainage is generally toward the south and west. Currently, drainage from irrigation and storm water within Division 9 is either left to percolate into the soil or collected in existing SSJID laterals and discharged, under permit, into the Stanislaus River. SSJID also releases small amounts of spill water into the Stanislaus River as a result of the existing gravity system design.

3.1.2 Environmental Consequences

No Action

Under the No Action Alternative, no changes would occur to the existing operations or water supply for Division 9. The No Action Alternative is not likely to result in any appreciable change in SSJID's water management operations or cause any measurable

effects in the near future. However, this alternative would reduce the flexibility Division 9 landowners and SSJID would have in managing water resources, particularly in dry years, as the existing flood irrigation system would continue to place substantial demands on the water supply and the use of alternate systems would be discouraged.

Proposed Action
The Proposed Action would involve no potential for direct adverse effects on surface waters. All elements of the proposed project would be located in upland areas where no surface waters are present.

The Proposed Action would increase the efficiency of the existing irrigation system, specifically reducing existing irrigation water and tailwater discharges to the Stanislaus River. The proposed western storage basin would be used to collect these waters, which currently either percolate into the soil or are discharged into the Stanislaus River. From the western storage basin, these waters would be redistributed back into the pressurized system and used for irrigation.

The project would not result in any adverse change in stormwater runoff, as it would not add impervious surfaces. Proposed pipeline alignments would be returned to their existing condition following completion of the project. Proposed storage basins would capture precipitation within the basin, reducing whatever existing runoff may be generated from these undeveloped sites.

The principal control on construction storm water quality in the project area is the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP), which is required by the State of California for any construction project exceeding one acre in size. The SWPPP identifies potential construction pollution sources, identifies needed construction Best Management Practices (BMPs), and specifies maintenance and monitoring activities needed to prevent exceedance of applicable water quality standards. BMPs include provisions for erosion control including limitations on disturbance and requirements for temporary soil stabilization through the use of mulch, seeding, soil stabilizers, and fiber rolls and blankets. They may also include filtration devices, silt fences, straw bale barriers and sediment traps or basins. The submittal of an SWPPP, which includes an Erosion Control Plan, is required as mitigation for the IS/MND. Implementation of this mitigation would avoid or minimize any project construction impacts on surface water quality.

3.1.3 Environmental Commitments

The SSJID shall implement the following commitments, as set forth in the IS/MND:

- The contractor shall prepare and implement a SWPPP for the project and prepare a Notice of Intent (NOI) with the California Regional Water Quality Control Board prior to commencement of construction activity. The SWPPP shall be available on the construction site at all times.

- Project plans shall incorporate an Erosion Control Plan consistent with all applicable provisions of the SWPPP.

3.2 Groundwater Resources

3.2.1 Affected Environment

Groundwater resources beneath the project area are part of the Central Valley aquifer, which consists of unconsolidated sediments derived from the Coast Ranges and the Sierra Nevada Mountains. Although SSJID supplies most irrigation water in the project area, this aquifer provides water to agricultural uses and communities elsewhere in the Central Valley. Groundwater levels in the project vicinity are approximately 20 feet below the surface (Environmental Science Associates, 2009).

3.2.2 Environmental Consequences

No Action

Under the No Action Alternative, no changes would occur to the operations or water supply for the SSJID. As a result, there would be no effect on groundwater resources in the area in the near future. However, there could be an increased demand on groundwater resources should more Division 9 landowners decide to install sprinkler or drip systems. To ensure proper pressure for such systems, farmers may drill more individual wells, thereby placing greater demands on local groundwater resources.

Proposed Action

The Proposed Action would involve no direct adverse effect on the groundwater system. Groundwater levels are well below the maximum depth of pipeline excavation, and the project would involve a probable reduction in existing groundwater withdrawals.

The Proposed Action is expected to involve a reduction in existing groundwater withdrawals for agricultural lands served by the project. Currently within Division 9, agricultural lands are irrigated primarily by the SSJID gravity system. Owners needing higher quality water under pressure rely on water from the groundwater system. The Proposed Action would provide all Division 9 lands access to pressurized irrigation waters from the SSJID's existing surface water sources at a much lower unit cost than is currently available. This is expected to result in less usage of individual groundwater wells in the area. There would be some groundwater withdrawal by the proposed wells at the two basins. However, this withdrawal would occur only during years when SSJID has inadequate surface water to supply its users. The groundwater withdrawal by the basin wells would be more than balanced by the reductions in groundwater use by properties connecting to the proposed project, resulting in a net overall reduction of groundwater withdrawal within Division 9.

3.3 Biological Resources

3.3.1 Affected Environment

The majority of the proposed pipeline alignment would be placed within existing SSJID easements, which are located along existing public roads and agricultural access roads. Almond orchards, which are the primary agricultural use adjacent to the proposed pipeline alignments, provide foraging and nesting habitat for common bird species. Although extensively disturbed, adjacent row croplands may also support dispersed use by wildlife, including sensitive species such as Swainson's hawk and burrowing owl.

The eastern storage basin would be located in active almond orchards. The western storage basin would be located in row crops. As with the pipeline alignment, these lands and surrounding agricultural uses may provide foraging and nesting habitat for common bird species, and row croplands may also support dispersed use by Swainson's hawk and burrowing owl.

Based on a search of the California Natural Diversity Data Base (CNDDB) for a 120 square mile area surrounding the project, Moore Biological prepared a listing of special-status species that have the potential to occur on the project site together with their listing status and their likelihood of occurrence. Table 3-1 presents the listing, with information current as of June 8, 2009.

Table 3-1 - Sensitive Plant and Wildlife Species Documented or Potentially Occurring in the Project Vicinity

Common Name	Scientific Name	Status	Likelihood of Occurrence
PLANTS			
Delta button celery	*Eryngium racemosum*	SE, 1B	Extremely low
Lesser saltscale	*Atriplex minuscule*	1B	Extremely low
WILDLIFE			
Birds			
Swainson's hawk	*Buteo swainsoni*	ST	Moderate
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FC, SE	Extremely low
Tricolored blackbird	*Agelaius tricolor*	SC	Very low
Burrowing owl	*Athene cunicularia*	SC	Very low
Mammals			
Riparian (San Joaquin Valley) woodrat	*Neatoma ruscipes riparia*	FE, SC	Extremely low
Riparaian brush rabbit	*Sylvilagus bachmani riparius*	FE	Extremely low
Amphibians			
California tiger salamander	*Ambystoma califonriense*	FT, SC	Extremely low

Table 3-1 - Sensitive Plant and Wildlife Species Documented or Potentially Occurring in the Project Vicinity

Common Name	Scientific Name	Status	Likelihood of Occurrence
Fish			
Hardhead	*Mylopharodon conocephalus*	SC	None
Invertebrates			
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT	None
Conservancy fairy shrimp	*Branchinecta conservation*	FE	None
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FT	Low

Notes:
FE - Federal endangered; FT – Federal threatened; FC – Federal candidate for listing
SE – California endangered; ST – California threatened; SC – California Species of Special Concern
1B – Plants rare, threatened or endangered in California or elsewhere, per the California Native Plant Society.
Source: Moore Biological Consultants, 2009.

The 2009 CNDDB search was supplemented by a 2011 review of the U.S. Fish and Wildlife Service species lists for San Joaquin and Stanislaus Counties. Many of the species listed in Table 3-1 are also on the Service species lists. A review of the Service species lists revealed several plant and wildlife species that were not listed in Table 3-1. The species are listed below, along with their potential for occurrence in the project area.

Species (scientific name)	Potential for Occurrence in Project Area
Longhorn fairy shrimp (*Branchinecta longiantenna*)	None – no vernal pool or seasonal wetland habitat in area
Vernal pool tadpole shrimp (*Lepidurus packardi*)	None – no vernal pool or seasonal wetland habitat in area
Green sturgeon (*Acipenser medirostris*)	None – no suitable aquatic habitat on project site
Delta smelt (*Hypomesus transpacificus)*	None – no suitable aquatic habitat on project site
Central Valley steelhead (*Oncorhynchus mykiss*)	None – no suitable aquatic habitat on project site
Winter-run Chinook salmon (*Oncorhynchus tshawytscha*)	None – no suitable aquatic habitat on project site
California red-legged frog (*Rana draytonii*)	None – species does not occur on floor of Central Valley
Alameda whipsnake (*Masticophis lateralis euryxanthus*)	None – no suitable habitat and project site is outside known range of species
Giant garter snake (*Thamnophis gigas*)	None – no suitable aquatic habitat on project site
San Joaquin kit fox (*Vulpes macrotis mutica)*	None – site is outside the known range of species
Large-flowered fiddleneck (*Amsinckia grandiflora*)	None – species does not occur on floor of Central Valley
Hartweg's golden sunburst (*Pseudobahia bahiifolia*)	None – no suitable habitat on project site
Succulent owl's-clover (*Castilleja campestris ssp. succulenta*)	None – no vernal pool or seasonal wetland habitat in area

Species (scientific name)	Potential for Occurrence in Project Area
Hoover's spurge (*Chamaesyce hooveri*)	None – no vernal pool or seasonal wetland habitat in area
Colusa grass (*Neostapfia colusana*)	None – no vernal pool or seasonal wetland habitat in area
Hairy Orcutt grass (*Orcuttia pilosa*)	None – no vernal pool or seasonal wetland habitat in area

Of the species listed in Table 3-1, only three – Swainson's hawk, burrowing owl, and valley elderberry longhorn beetle – have the potential to occur on the project site.

Swainson's hawk - The CNDDB contains several records of nesting Swainson's hawk in the greater project vicinity; the nearest occurrence of nesting Swainson's hawks in the CNDDB is the Stanislaus River and a nest tree along Manteca Road, approximately 0.25 miles west of the proposed western storage basin. There is suitable foraging habitat in the agricultural lands that adjoin the western storage basin and occur elsewhere in the project area site, and there are suitable nest trees along the proposed pipeline alignments that may be used during some years by nesting Swainson's hawk. The Migratory Bird Treaty Act and Fish and Game Code of California protect Swainson's hawks year-round, as well as their nests during the nesting season (March 1 through September 15). No Swainson's hawks were noted during a field survey by Moore Biological Consultants for the project's IS/MND.

Burrowing owl - The CNDDB reports occurrences of this species in the Ripon and Manteca U.S. Geological Survey (USGS) topographic map quadrangles. No burrowing owls or burrows with evidence of burrowing owl occupancy were observed along the pipeline alignment or the storage basin lands during the Moore Biological Consultants field survey in 2009. There is open grassland and cropland adjacent to some of the alignment and storage basin lands that could be used by foraging burrowing owls. Only a few ground squirrel burrows were observed in the northeast portion of the project area. However, this species will colonize areas when suitable habitat becomes available. No burrowing owls were noted during a field survey by Moore Biological Consultants for the project's IS/MND.

Valley elderberry longhorn beetle - The host plant for the beetle is the blue elderberry shrub. The project alignment was surveyed for elderberry shrubs by Moore Biological Consultants in 2009. One group of blue elderberry shrubs was found during the survey north of Melton Road. These shrubs range in size from 15 to 20 feet tall and are growing along the fence of the associated residence, on the west side of the farm access road. No signs of valley elderberry longhorn beetle were found in these shrubs. No other blue elderberry shrubs were observed within 100 feet of the proposed pipeline alignments or of storage basin sites. The nearest documented occurrence of the beetle is along the Stanislaus River, approximately one mile south of the project area.

The proposed pipeline alignments and storage basins sites and vicinity were surveyed for the presence of Waters of the U.S. and wetlands that are potentially subject to U.S. Army Corps of Engineers (Corps) jurisdiction under Section 404 of the Clean Water Act. One small ditch that runs north-south and parallels the proposed pipeline alignment immediately north of Melton Road is incised three to four feet below the adjacent fields, and contained a small amount of standing water during the Moore Biological Consultants field survey in 2009. The potential jurisdictional limits of this ditch are defined by the ordinary high water mark. The drainage canal is mapped as a "blue-line" drainage on the USGS topographic map, which is connected to a network of other blue-line drainages tributary to the Stanislaus River. The Stanislaus River, south of the project area, is a jurisdictional Water of the U.S.; however, this waterway is outside the project's potential area of effect.

3.3.2 Environmental Consequences

No Action

Under the No Action Alternative, plant and wildlife species present within the project area would not be impacted, as well as their habitats. Existing blue elderberry shrubs would not be disturbed. Potential Waters of the U.S. would not be affected.

Proposed Action

The proposed pipeline alignments are located within existing access roads and disturbed areas that do not involve any substantial special-status species habitat values. Adjacent lands provide dispersed foraging habitat for special-status species, suitable nesting trees for Swainson's hawk, potential nesting sites for burrowing owls, and an area of potential habitat for the valley elderberry longhorn beetle. Development of the proposed pipeline alignment, including tree trimming, may involve large machinery operations in close proximity to Swainson's hawk and burrowing owl nests. Vibration and noise from machinery, and general construction activity in the vicinity of bird nests, can result in significant disruption of breeding-related behaviors such as mating, abandonment or neglect of fledglings.

The IS/MND required the project to implement several mitigation measures to minimize or avoid potential impacts on Swainson's hawk and burrowing owl. These measures include conducting pre-construction surveys for hawk nests and occupied owl burrows, and implementation of recommendations by the biologist conducting the survey if active nests or burrows are found. In addition, if active nests of any bird species are found in trees identified for trimming or removal, such actions would be delayed until the young have fledged.

Alternatively, in place of the above mitigation measures, the SSJID may choose to participate in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). The SJMSCP is a voluntary comprehensive program for assessing and mitigating the biological impacts of land development and related activities. It was adopted in 2000 by San Joaquin County and its incorporated cities, with contributions and concurrence by the Service, among other agencies. Participation in the

SJMSCP would involve the payment of fees that would be used to acquire habitat for species covered by the plan, and the implementation of Incidental Take Minimization Measures to reduce impacts on affected species. The species subject to potential construction impacts of the Proposed Action are covered by the SJMSCP. The IS/MND for the project determined that participation in the SJMSCP would reduce any potential biological impacts of the project to a less than significant level.

The proposed storage basins are located on active orchard and row croplands. Development of these sites would not result in direct effects on existing special status species. The western storage basin would replace row crop land, which provides potential burrowing owl nesting and Swainson's hawk foraging habitat. The eastern storage basin site may also provide limited suitable nesting for these species. The Moore Biological Consultants study indicates that the minor reduction in the available potential foraging habitat for Swainson's hawk or burrowing owl associated with the development of the storage basins is considered less than significant, when viewed with respect to the available potential foraging habitat for these species in the greater project vicinity. For purposes of this EA, no impacts would occur to Swainson's hawk or burrowing owl.

Construction of the proposed pipeline segment north of Melton Road would occur in the vicinity of a group of blue elderberry shrubs, which is considered potential habitat for the valley elderberry longhorn beetle. Service guidelines direct that, if possible, elderberry shrubs should be avoided by a ground disturbance setback of at least twenty feet from the drip line of each shrub. The guidelines further direct that buffer areas between 20 and 100 feet from the drip lines of the shrubs that are subject to temporary ground disturbance should be restored or re-vegetated. The Moore Biological Consultants study indicates that the shrubs, surrounded by farmland and not in a riparian setting, are less likely to support the beetle. In any event, the proposed pipeline would be located on the opposite side of the existing SSJID gravity line, resulting in the required minimum 20-foot setback. Disturbed land would be returned to pre-construction conditions. An existing fence would separate the proposed construction area from the elderberry shrubs, preventing inadvertent damage during construction. As a result, the proposed project would not affect the valley elderberry longhorn beetle.

One potential wetland or Water of the U.S. was identified adjacent to a portion of the proposed pipeline alignment north of the western storage basin. This potential Water is a drainage canal that has been incised and contains small amounts of standing water. The proposed alignment would be located on uplands adjacent to the subject drainage, and would have a minimum setback of 10 feet from the ditch (Persak, pers. comm.). Since the drainage canal would be avoided, the project would not be subject to the Section 404 permitting process. Due to the potential for inadvertent construction impacts, however, the project IS/MND required as mitigation the fencing of the drainage ditch with highly visible fencing material during the construction period, in order to prevent construction encroachment into this waterway. Implementation of this measure was determined to result in no impact to this potential Water of the U.S.

3.3.3 Environmental Commitments

The SSJID shall implement the following commitments, as set forth in the IS/MND:

- The drainage located north of Melton Road and parallel to the proposed pipeline alignment shall be fenced with a highly visible fencing material during the construction period in order to prevent encroachment into the waterway.

- SSJID shall obtain coverage of the project by the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP), including the payment of any required fee and the implementation of any required Incidental Take Minimization Measures (ITMMs). ITMMs specified by the San Joaquin Council of Governments shall be observed by the SSJID contractors.

- If SSJID does not obtain coverage of the project by the SJMSCP, then SSJID shall retain a qualified biologist to conduct pre-construction surveys for nesting Swainson's hawks along the proposed pipeline alignments if construction occurs between March 1 and September 15. The survey should include all large trees visible from the alignment. If active nests are found, the qualified biologist should determine the need (if any) for temporal restrictions on construction.

- If SSJID does not obtain coverage of the project by the SJMSCP, then SSJID shall retain a qualified biologist to conduct pre-construction surveys for burrowing owl along the alignment if construction commences between February 1 and August 31. The survey should include the ruderal areas along the pipeline alignments, and all areas of open grassland visible from the alignment. If occupied burrows are found, the qualified biologist should determine the need (if any) for temporal restrictions on construction.

- In the event any trees need to be removed or trimmed to facilitiate the project, they should be felled or trimmed outside of the general bird nesting season (February 1 through August 31) or SSJID shall have a nesting bird survey conducted immediately prior to tree trimming or removal. If active nests are found, tree felling or trimming should be delayed until the young have fledged.

- SSJID shall observe the Service's Conservation Guidelines for the Valley Elderberry Longhorn Beetle. (9 July 1999) These guidelines direct that, if possible, elderberry shrubs should be avoided by a ground disturbance set back of at least twenty feet from the drip line of each shrub. The guidelines further direct that buffer areas between 20 and 100 feet from the driplines of the shrubs that are subject to temporary ground disturbance should be restored or re-vegetated. Although elderberry shrubs are located along the proposed pipeline alignment and are outside the 20 foot buffer zone, SSJID has committed to implementing these measures.

3.4 Cultural Resources

Cultural resources is a term used to describe both 'archaeological sites' depicting evidence of past human use of the landscape, and the 'built environment' which is represented in structures such as dams, roadways, and buildings. The National Historic Preservation Act (NHPA) of 1966, as amended, is the primary Federal legislation that outlines the Federal Government's responsibility to cultural resources. Section 106 of the NHPA requires the Federal Government to take into consideration the effects of an undertaking on cultural resources included in, or eligible for inclusion in, the National Register of Historic Places (NRHP). Those resources that are included in, or eligible for inclusion in, the NRHP are referred to as historic properties.

The Section 106 process is outlined in the Federal regulations at 36 CFR Part 800. These regulations describe the process that the Federal agency (Reclamation) takes to identify cultural resources and the level of effect that the proposed undertaking will have on historic properties. In summary, Reclamation 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, Reclamation must identify the area of potential effects (APE), determine if historic properties are present within that APE, determine the effect that the undertaking will have on historic properties, and consult with the State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Officer where applicable, to seek concurrence on Reclamation's findings. In addition, Reclamation is required through the Section 106 process to consult with Indian tribes concerning the identification of sites of religious or cultural significance, and to consult with individuals or groups who are entitled to be consulting parties or have requested to be consulting parties.

Efforts to identify historic properties and other cultural resources in the project area were undertaken by Genesis Society, a private cultural resources consulting firm. These efforts included a records search at the Central California Information Center at California State University Stanislaus, correspondence with the Native American Heritage Commission (NAHC), and a pedestrian survey of the entire APE. Reclamation initiated Section 106 consultation with Indian tribes pursuant to 36 CFR Part 800. A cultural resources inventory report, which details the results of the records search, NAHC correspondence, and pedestrian survey, and which also reviews the potential for buried prehistoric archaeological deposits in the project area, was prepared by Genesis Society.

3.4.1 Affected Environment

The proposed project is located in the San Joaquin Valley, which has a long and complex cultural history dating back more than 11,000 years. At the time of European-American entry in the region, the project area, in the northern San Joaquin Valley, was occupied by people known ethnographically as the Northern Valley Yokuts. Little is known of the Northern Valley Yokuts, due to their rapid demise resulting from disease, missionization, and the impact of the California gold rush. However, it is assumed that their political, economic, and social organization was similar to that of other Yokuts groups occupying more southern portions of the San Joaquin Valley. Specifically, the Yokuts, who were

loosely organized as self-governing local groups or tribelets, were hunter-gatherers for whom the biological family formed the basic domestic and economic unit.

Exploration and settlement of California's Central Valley by non-indigenous groups began in earnest during the early 1800s, and by the late 1830s and early 1840s several small permanent European-American settlements had been established there. The gold rush, railroad expansion, and the development of farms and ranches led to additional growth in the northern San Joaquin Valley throughout the 19th and early 20th centuries. Farming and ranching continue to be critical components of the local economy in the project area.

No prehistoric, ethnographic, or historic-era cultural resources were identified in the project APE as a result of Genesis Society's records search, NAHC correspondence, and survey efforts, and no information about properties of religious or cultural significance has been provided to Reclamation by Indian tribes. Additionally, there is little likelihood that buried prehistoric archaeological deposits will be encountered in the APE during project implementation, due to the types of landforms present as well as the degree of previous subsurface ground disturbance from earlier pipeline construction in the project area.

3.4.2 Environmental Consequences

No Action

Under the No Action Alternative, no impacts would occur to known cultural resources, or to any currently unknown cultural resources, that may occur in the project area.

Proposed Action

As there are no known cultural resources in the project APE, the Proposed Action would result in no historic properties affected pursuant to 36 CFR Part 800.4(d)(1). No cultural resources would be impacted as a result of the Proposed Action.

3.5 Air Quality

3.5.1 Affected Environment

The proposed project site is located in southern San Joaquin County, which is located within the San Joaquin Valley Air Basin (SJVAB). The San Joaquin Valley Air Pollution Control District (SJVAPCD) has jurisdiction over most air quality matters in the SJVAB. The SJVAB and the jurisdiction of the SJVAPCD is comprised of San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings and Tulare Counties, and the valley portion of Kern County. The SJVAPCD is tasked with implementing programs and regulations required by the Federal and California Clean Air Acts.

The prevailing winds in the project area are from the north/northwest towards the south/southeast. Summers are hot and dry, and winters are cool with frequent periods of fog. Average daily temperatures range from 45.3 degrees F in January to 94.6 degrees F in July. Maximum temperatures of 90 degrees F or greater occur about 81 days per year.

Temperatures of 32 degrees F or below occur about 22 days per year. Nearly 90% of the annual precipitation falls in the six months between November and April. The vertical mixing of air pollutants in the SJVAB is limited by the presence of persistent temperature inversions. High concentrations of primary pollutants, which are those emitted directly into the atmosphere, may be found during ground-level inversions in the winter months. Severe air stagnation also occurs during elevated inversions, which contribute to the occurrence of high levels of ozone during the summer months.

Pursuant to the Federal Clean Air Act, the U.S. Environmental Protection Agency (EPA) has established ambient air quality standards for six criteria air pollutants: ozone, particulate matter, carbon monoxide, nitrogen dioxide, sulfur dioxide and lead. The primary ambient air quality standards are established to protect the health of even the most sensitive individuals in our communities. The secondary standards set limits to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

Based on the primary ambient air quality standards, the SJVAB is designated a nonattainment area for the 8-hour Federal standard for ozone, which is formed in the presence of sunlight from emissions of nitrogen oxides and reactive organic gases. Under the Federal standards, the basin is designated an "extreme" nonattainment area for ozone – the poorest nonattainment status. The basin is also designated a nonattainment area for Federal standards for particulate matter less than 2.5 micrometers in diameter (PM2.5). The SJVAB is either designated an attainment area or is unclassified for all other criteria air pollutants.

3.5.2 Environmental Consequences

No Action

Under the No Action Alternative, no construction-related impacts on air quality would occur. The existing gravity system would continue to be used in the Proposed Action area. However, to achieve the necessary pressure required for the effectual use of sprinkler or drip irrigation systems, landowners may use diesel-powered pumps attached to their individual wells. The pumps would generate emissions of diesel particulate matter, which would contribute to the existing nonattainment status for PM2.5, as well as contribute emissions considered to be toxic by the State of California.

Proposed Action

Operation of the proposed project would not involve any substantial air emissions. The proposed irrigation system would be supplied by gravity flow through the existing SSJID irrigation system and water would be held in passive storage. Pumping operations would be electrically powered and served from the existing electrical distribution system in the project area. These operations would involve no local air emissions; electrical consumption would contribute to air emissions associated with power generation by the electrical purveyor. Operation of the proposed project is expected to result in a substantial reduction of existing diesel exhaust emissions associated with the operation of individual pumping equipment and associated electrical generators. The increased use of electricity

required by project pumps would generate new non-local emissions, but substantially fewer emissions per unit of power than diesel pumps that are individually operated.

The IS/MND states that the proposed project would involve construction activity that would generate fugitive dust emissions. Grading, excavation and travel on unpaved surfaces can generate substantial amounts of dust, and can lead to elevated concentrations of particulate matter for nearby sensitive receptors, mainly residences. In addition, project construction activity would involve emissions of ozone precursors, carbon monoxide and particulate matter from the operation of construction equipment. Emissions of ozone precursors and carbon monoxide were determined to be less than significant, based on significance criteria established by the SJVAPCD that were derived from California ambient air quality standards, which are at least as stringent, and generally more stringent, than Federal ambient air quality standards. The IS/MND determined that particulate matter emissions from construction activities would be reduced to a less-than-significant level by implementing various dust control measures. These measures include applying water or soil stabilizers to all disturbed land areas, limiting traffic speeds in the construction area, stabilizing and covering all materials being transported off-site, and removing the carryout and trackout of soil materials on at least a daily basis. For purposes of this EA, there would be no impact to air quality with the implementation of the proposed mitigation measures.

3.5.3 Environmental Commitments

The SSJID shall implement the following commitments, as set forth in the IS/MND:

- The contractor shall comply with all applicable requirement of SJVAPCD Regulation VIII, including compliance with the following measures:

    a) Visible dust emissions (VDE) from construction, demolition, excavation or other earthmoving activities related to the project shall be limited to 20% opacity or less, as defined in SJVAPCD Rule 8011, Appendix A. The dust control measures specified in measures b) through h) shall be applied as required to maintain the VDE standard.

    b) Pre-water all land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activity sites and phase earthmoving.

    c) Apply water or chemical/organic stabilizers or suppressants, or vegetative ground cover, to all disturbed areas, including unpaved roads.

    d) Restrict vehicular access to the disturbance area during periods of inactivity.

    e) Apply water or chemical/organic stabilizers or suppressants, construct wind barriers, and/or cover exposed potentially dust-generating materials.

f) When materials are transported off-site, stabilize and cover all materials to be transported and maintain six inches of freeboard space from the top of the container.

g) Remove carryout and trackout of soil materials on a daily basis unless it extends more than 50 feet from site; carryout and trackout extending more than 50 feet from the site shall be removed immediately. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the VDE. Use of blower devices is expressly forbidden.

h) Traffic speeds on unpaved roads shall be limited to 15 mph.

3.6 Noise

3.6.1 Affected Environment

The project area noise environment can be characterized as relatively quiet. There are no major noise sources located in the project vicinity, such as freeways, major manufacturing facilities, airports or railroads. Noise sources in the project vicinity are primarily agricultural activities. Agricultural use of the area generates noise intermittently during the use of heavy equipment for field preparation, planting and harvesting. Periodic weed and pest control activity involve additional equipment use and/or aerial overflights. The larger County roads in the area, such as Manteca Road and West Ripon Road, involve relatively low traffic levels that do not contribute substantially to noise levels in the vicinity of proposed improvements. Existing minor County roads in the immediate project vicinity accommodate very low numbers of daily vehicle trips and are not a substantial source of noise even in the immediate vicinity of these roads.

3.6.2 Environmental Consequences

No Action

Under the No Action Alternative, no noise impacts would occur, either from project construction or project operations. Existing noise levels would not increase, either temporarily or on a permanent basis.

Proposed Action

According to the project IS/MND, operation of the proposed pipeline network would not generate any noise, as the pipelines would be underground. The proposed storage basins would require operation of the gravity and pressure system pump stations, and groundwater well pumps occasionally. The eastern storage basin would accommodate the low-head gravity pumps and pressurized pumps. The gravity system pumps would consist of three 8,000-gpm pumps, and the pressure system would consist of a bank of six short-coupled turbine pumps. The western storage basin would accommodate three pumps for the pressure system. One groundwater well pump would be located at each storage basin. All proposed pumps would be electrically operated and enclosed in cement structures, and the nearest sensitive receptor is a minimum of 300 feet and 600 feet from the eastern

and western storage basins, respectively. There would be no impacts to noise as a result of the proposed action.

Project construction would involve locally significant short-term noise during the construction of the project. Construction of pipelines and basins would generate maximum noise levels ranging from 85 to 90 dB at a reference distance of 50 feet. Noise would also be generated by construction truck traffic on project area roadways, including trucks transporting materials and equipment to and from the construction sites.

Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours. The duration of construction noise would extend over a period of several weeks for proposed storage basins. The construction process for proposed pipelines would also extend over a period of several weeks or months, but the noise impact, which would be localized to the immediate area of construction activity, would be limited to a few days at any given point. Pipeline construction is expected to occur at a rate of 500 to 1,000 feet per construction day; as a result, noise impact at a given noise-sensitive location would be limited to a few days at most. Storage basin construction would involve a more extended construction period. However, the home nearest the eastern storage basin is at least 300 feet away, and the western storage basin is farther away from the nearest residence. The IS/MND does require a mitigation measure limiting the operational hours of noise-generating equipment near residences to 7:00 a.m. to 10:00 p.m. Monday through Friday, and to 7:00 a.m. to 6:00 p.m. on Saturday and Sunday. Implementation of this mitigation would ensure that there are no construction noise impacts from the proposed project.

3.6.3 Environmental Commitments

The SSJID shall implement the following commitments as set forth in the IS/MND:

- Noise impacts from project construction shall be minimized by restricting hours of operation of noise-generating equipment in the vicinity of residences to 7:00 AM to 10:00 PM Monday through Friday, and to 7:00 AM to 6:00 PM on Saturday and Sunday.

3.7 Hazardous Materials

3.7.1 Affected Environment

Hazard concerns associated with the project are primarily related to potential construction contact with areas of environmental contamination. Proposed improvements would be located in agricultural areas, which may have been used for storage, dispensing and/or application of fuel, fertilizers and pesticides and may include past spill areas. An Environmental Data Resources, Inc. report that reviewed regulatory agency lists of environmental contamination sites was prepared for the project site as part of the IS/MND. The report indicated approximately 58 sites listed in the regulatory agency databases searched are within one-half mile of the project area, of which 14 were located

on, or in close proximity to, the project's potential area of effect. The majority of these listed sites consist of properly operating underground or aboveground storage tanks.

Only three of the identified sites in the Environmental Data Resources report could involve potential environmental contamination concerns, according to the project IS/MND. The three sites of concern are:

1) De Jong Trucking facility located at 24975 S. Austin Road. De Jong Trucking is reported as a small quantity generator, meaning that more than 100 and less than 1,000 kilograms of hazardous waste is generated during a calendar month. This listed site is currently operating under applicable waste discharge requirements and has had no reported violations.

2) An active agricultural facility located at 8350 E. Brady Road. The active agricultural facility treats and/or disposes of the wastes associated with confined and concentrated animal feedings, holdings and processing. This listed site is currently operating under applicable waste discharge requirements and has had no reported violations.

3) An abandoned clandestine drug lab waste that may be present at the Mohler Road and Moncure Roads intersection. Communication with the San Joaquin County Environmental Health Department, the San Joaquin County Sheriff's Department, the California Metropolitan Narcotics Task Force, and the local and Federal Drug Enforcement Agency did not reveal any record of the abandoned drug waste site. A local Drug Enforcement Agency criminal investigation officer reviewed files from the past 25 years, and indicated that any abandoned wastes in the project area would appear on their databases. None were reported.

3.7.2 Environmental Consequences

No Action

Under the No Action Alternative, no areas where hazardous materials may exist would be disturbed. No hazardous materials would be introduced to the project area.

Proposed Action

Project operations would not require the use of hazardous materials. The primary concerns of the Proposed Action related to hazardous materials are the use of such materials during project construction, and potential worker exposure to existing contamination.

Project construction would involve the temporary use of hazardous materials, with the potential for new hazardous material spills. While primary construction materials would include relatively inert materials, construction and maintenance vehicles would transport and use fuels and other motor vehicle fluids in ordinary quantities. Other substances used in the construction process would be stored in approved containers and used in relatively small quantities, and would be used in accordance with the manufacturer's recommendations and/or applicable regulations. The IS/MND requires the contractor to

prepare and implement a hazardous materials spill plan, which shall identify the level of worker training and supplies of spill containment and cleanup materials needed to respond to potential hazardous materials spills that could occur in conjunction with the project. Implementation of this measure would reduce potential hazardous material impacts related to project construction.

The proposed project would involve excavation of pipeline trenches and the storage basins within agricultural lands. Agricultural lands in the project area may have been used for storage, dispensing and/or application of fuel, fertilizers and pesticides, and may include past spill areas. Planned excavation would also occur in the vicinity of reported abandoned drug lab waste. The IS/MND did not reveal any evidence of existing contamination from past land uses. Nonetheless, excavation in agricultural lands could involve potential for exposure of construction workers to existing contamination and the potential for release of contaminants to the environment. Although project construction is anticipated to proceed quickly and construction worker exposure times would be low, there remains a risk of exposure for construction workers or environmental release. In addition, undiscovered environmental contamination may also occur outside the boundaries of "environmental condition" sites of record, as a result of lack of discovery of contaminant migration in the soil, groundwater system or other pipelines and subterranean features.

The IS/MND requires as mitigation that construction shall be halted if evidence of unusual odors or soil discoloration is noted during construction activities. The contractor shall contact a qualified environmental professional to evaluate the situation and take or dictate action as required by applicable regulations. Implementation of this measure would reduce potential hazardous material exposure impacts.

3.7.3 Environmental Commitments

The SSJID shall implement the following commitments, as set forth in the IS/MND:

- If evidence of unusual odors or soil discoloration is noted during construction, construction shall be halted. The SSJID contractor shall contact a qualified environmental professional to evaluate the situation and take or dictate action as required by applicable regulations.

- The contractor shall prepare and implement a hazardous material spill plan for the project. The spill plan shall identify the level of worker training and supplies of spill containment and cleanup materials needed to respond to potential hazardous materials spills that could occur in conjunction with the project.

- Project construction will be coordinated with the emergency response agency with responsibility for the area if construction will require partial public street closure.

3.8 Land Use and Farmland

3.8.1 Affected Environment

The proposed project is located in an agricultural area that is composed mostly of active mature almond orchards, and associated rural residential parcels. Row croplands also exist in the area. The project area, including proposed pipeline alignments and storage basins, are in active agricultural use and are mapped as approximately 50% "Farmland of Statewide Importance," and 50% "Prime Farmland," by the California Department of Conservation's San Joaquin County Important Farmland Map (2004).

Approximately 50-60% of the lands in Division 9 are under a Williamson Act contract. The Williamson Act is California legislation that encourages farmland preservation by providing owners of farmland with a lower property tax assessment on their properties, in exchange for agreeing to a contract that keeps the land in agricultural use for 10 years. Contracts can be renewed. The proposed pipeline alignments cross several agricultural parcels under contract. Neither of the proposed storage basins would be located on lands under Williamson Act contract.

Division 9 is presently served by the existing SSJID flood irrigation system. Existing SSJID gravity pipelines are located throughout the project area and would be paralleled by the proposed pressure pipelines. The flood irrigation system is operated manually by opening and closing valves that release irrigation water to the adjoining field. Some owners within Division 9 have installed auxiliary pumps and filtration systems to obtain higher quality water at pressure in order to irrigate nearby fields with sprinkler or drip systems.

3.8.2 Environmental Consequences

No Action

Under the No Action Alternative, no agricultural lands would be disturbed, including those under current Williamson Act contract. No existing agricultural lands would be taken out of production.

Proposed Action

Construction of most of the proposed 12.6-mile pipeline alignment would occur along existing SSJID easements and farm access roads. This would have no effect on adjoining agricultural operations or require any encroachment on adjoining lands. Two segments of the proposed pipeline, approximately 3,000 linear feet, would require acquisition of new easements. Construction of these segments would involve no impact on agricultural resources, as these pipelines would be located in already existing farm access roads.

The proposed storage basins would require the conversion of existing active, agricultural land to agricultural irrigation utility use. The proposed irrigation utility use would remain agricultural in character and would improve irrigation service for the approximately 3,800 acres of agricultural land located in Division 9. The project would expand options for irrigation methods, and would also reduce demands for irrigation water, making

conserved water available for other agricultural use. This would be considered a beneficial consequence of the Proposed Action.

The proposed project would involve no other short-term potential impacts to agricultural land. Lands adjacent to the project components may be subject to minor disturbance during construction; however, all disturbed areas would be restored to their existing condition.

Although the proposed backbone pipeline alignment would pass through several properties under Williamson Act contracts, the project would not involve a conflict with the terms of these contracts. Irrigation systems are integral to agricultural use. The San Joaquin County Development Title (Title 9, Section 1810.3) indicates that utility services are permitted uses in Williamson Act lands.

3.9 Transportation

3.9.1 Affected Environment

The proposed project area is located in an agricultural area of southern San Joaquin County. Principal surface transportation routes in the area include West Ripon Road, Manteca Road and Austin Road, all County-maintained roads. These roads accommodate less than 2,500 vehicle trips per day. Other roads in the proposed project area that parallel or would be crossed by the proposed pipelines are lightly used and support less than 400 vehicle trips per day. Trips associated with roads in the proposed project area are generated from agricultural land uses and the limited number of residences.

3.9.2 Environmental Consequences

No Action

Under the No Action Alternative, no transportation routes would be affected. Since no construction activities would occur, there would be no crossings of any roadways and existing roadways would not be disturbed.

Proposed Action

Under the Proposed Action, project construction could involve potential short-term effects on traffic and circulation where the project parallels roads and where pipelines would cross these roads. The proposed pipeline alignments would be located adjacent to existing paved sections of public roadways and would require 15 crossings of these roadways. Construction at the crossings can be expected to require temporary closure of one lane, requiring traffic control. In addition, construction would involve temporary interruption of access to individual agricultural and residential properties along portions of the proposed pipeline alignments. The storage basins would be located away from public roadways and would not obstruct or otherwise physically affect these roadways; therefore, basin construction would not have any adverse traffic effects.

The IS/MND requires as mitigation the preparation of a Traffic Control Plan to address the potential conflicts associated with project construction. In addition, construction contractors would be required to notify residents 48 hours in advance of any driveway closure, and driveway access would be restored at the end of each workday. Due to the anticipated pace of pipeline construction, access interruptions would be of short duration. Once project construction is completed, there would be no interruptions of traffic, nor would there be any increase in traffic generated by the project, other than occasional visits by maintenance vehicles.

3.9.3 Environmental Commitments

The SSJID shall implement the following commitment, as set forth in the IS/MND:

- The contractor shall develop a Traffic Control Plan that address the potential traffic conflicts associated with the project, including traffic control requirements, resident notification, access restoration, and the availability of parking facilities. Preparation and implementation of the Traffic Control Plan shall be coordinated with the San Joaquin County Public Works Department.

3.10 Indian Trust Assets

3.10.1 Affected Environment

Indian Trust Assets (ITAs) are legal interests in property or rights held in trust by the United States for Indian Tribes or individuals. Trust status originates from rights imparted by treaties, statutes, or executive orders. These rights are reserved for, or granted to, tribes. A defining characteristic of an ITA is that such assets cannot be sold, leased, or otherwise alienated without Federal approval. Indian reservations, rancherias, and allotments are common ITAs. Allotments can occur both within and outside of reservation boundaries and are parcels of land where title is held in trust for specific individuals. Additionally, ITAs include the right to access certain traditional use areas and perform certain traditional activities. It is Reclamation policy to protect ITAs from adverse impacts resulting from Reclamation's programs and activities whenever possible.

There are no Indian reservations, rancherias or allotments in the project area. As part of the cultural resources survey described in Section 3.4 of this document, an effort was made to identify any sites of Native American cultural significance. No sacred lands listings or information were identified as a result of this effort.

3.10.2 Environmental Consequences

No Action

The No Action Alternative would have no effect on ITAs.

Proposed Action

The proposed action does not have a potential to affect ITAs. The nearest ITA is Chicken Ranch Rancheria, approximately 40 miles northeast of the project location.

3.11 Environmental Justice

3.11.1 Affected Environment

Executive Order 12898 requires each Federal agency to achieve environmental justice as part of its mission, by identifying and addressing disproportionately high adverse human health or environmental effects, including social and economic effects, of its programs and activities on minority populations and low-income populations of the United States.

3.11.2 Environmental Consequences

No Action

The No Action Alternative would have no effect on low-income or minority individuals within the project area.

Proposed Action

No significant changes in agricultural communities or practices would result from the Proposed Action, other than potential changes to individual irrigation systems. These changes are not likely to affect agricultural employment, which employs a higher proportion of low-income and minority workers than are employed in the general workforce. In fact, the use of more sprinkler or drip irrigation system may ensure the continued viability of agriculture in the area, which would sustain agricultural employment. Accordingly, the Proposed Action would not have any significant or disproportionately negative impact on low-income or minority individuals within the project area.

3.12 Global Climate Change

3.12.1 Affected Environment

Climate change is a shift in the "average weather" that a given region experiences. Global climate change means changes in the climate of the Earth as a whole. There is general consensus in the scientific community that global climate change is now occurring, and that the cause of this change is mainly human activities that generate emissions of greenhouse gases (GHGs). GHGs are gases that trap heat in the earth's atmosphere, including carbon dioxide, methane, nitrous oxide and other less-abundant gases. Increased GHG levels in the atmosphere have been linked to an increase in the average global temperature that has been observed. The increased GHG concentrations primarily have resulted from increased combustion of fossil fuels. Other sources of GHG emissions include decomposition of organic matter, industrial and agricultural activities, and deforestation (IPCC, 2004).

Concerns related to global climate change include the direct consequences of an altered, warmer climate, but also include indirect effects. The State of California's Climate Action Team, in its 2010 Biennial Report, discussed the latest research on the potential impacts of climate change on California's environment. These potential impacts include (Climate Action Team, 2010):

- With some variation, the general trend would be for less precipitation throughout California to the end of the 21st century. Higher temperatures would increase evaporative water loss, and thus produce overall drier conditions.

- The snowpack in the Sierra Nevada, a major source of California's water, would melt earlier. The snowpack would produce less overall runoff, and there would be an increasing trend in floods during the winter months.

- Sea levels would rise, subjecting many coastal areas to inundation, as well as areas near bodies of water affected by tides.

- Some crops (e.g., cherries, cotton, maize, wheat, sunflower) would experience a significant decrease in yields. Other crops (e.g., almonds, tomatoes, rice, alfalfa) would experience no change in yields or even an increase.

- The number and intensity of wildfires is expected to increase, thereby increasing risk to lives and property and contributing to decreased air quality.

- Timber production is expected to decline on a statewide basis, but may increase in some locations and for some tree species.

- While water deliveries to urban users would generally be maintained, water for agricultural uses and environmental flows may be reduced. Reservoir carryover storage (the amount of water in reservoirs at the end of the dry season) would decline. In response, groundwater pumping in the Sacramento Valley would increase.

- Increases in mean temperature and increased frequency, length and intensity of heat waves would occur, which would negatively affect public health.

- Increases in temperature, combined with the uneven distribution of new residential development across California, will generate increased electricity demand for cooling, particularly in the Central Valley. However, hydroelectric power generation is expected to decline due to changes in hydrology.

- Air pollution in coming decades is expected to worsen, with an increased potential for high ozone and high particulate matter days. This would also adversely affect public health.

Some of the impacts described above would affect the project. The project area is located in the Central Valley, which is expected to experience an increase in extreme heat days. Most of the project area's water supply ultimately comes from the Sierra Nevada snowpack, so reductions in snowpack content would adversely affect the surface and groundwater supplies. The project area is located in an agricultural region, so climate

change impacts could adversely affect agricultural productivity, which in turn would affect the local economy.

To date, the Federal government has not adopted any comprehensive national strategy for reducing GHG emissions, although it has adopted some actions related to emission reduction, such as higher fuel economy standards for automobiles. The State of California has addressed climate change on its own initiative. In 2008, California adopted the Climate Change Scoping Plan, with the purpose of reducing GHG emission levels to year 1990 levels by 2020. The Scoping Plan proposes a regional emissions cap-and-trade system and complementary measures such as expansion of energy efficiency programs, increase in the use of renewable energy sources, creation of certain fees to price use of public goods and incentivize GHG emission reduction, and reduction of emissions from State and local government operations. California has adopted other GHG reduction regulations, such as the Low Carbon Fuel Standard, motor vehicle GHG emission standards, and regional planning that integrates land uses with transportation systems.

3.12.2 Environmental Consequences

No Action

The No Action Alternative would have limited effect on climate change. Landowners who choose to install sprinkler or drip systems in the future may resort to the use of individual wells with diesel-powered pumps to deliver the requisite pressure. Diesel-powered pumps would emit GHGs. The amount of GHG emissions cannot be determined, as the number of diesel-powered pumps and the amount of time they are used are unknown. In addition, under California's Low Carbon Fuel Standard, diesel fuel used in the future may emit fewer GHGs than current diesel fuels.

Since the project would not be constructed under this alternative, the project area would not be affected by the potential consequences of climate change, such as reduced water supply.

Proposed Action

The Proposed Action would generate GHG emissions from construction activities, mainly through the combustion of fuels by construction equipment and vehicles. These emissions would be temporary, and would cease once construction work is completed. In addition, California's Low Carbon Fuel Standard would lead to the use of fuels that would generate fewer GHG emissions when combusted than would current fuels.

Operation of the proposed irrigation system would involve ongoing electricity use to operate the pumps. The electrical use would generate secondary emissions of GHGs from power plants supplying the electricity.

However, the proposed project would provide long-term beneficial impacts to global climate change through potential reductions in existing GHG emissions associated with agricultural use in Division 9. Currently, many individual property owners within Division 9 utilize diesel-operated pumps to access groundwater and to provide pressure to support filtration, sprinkler or drip irrigation systems. The proposed action would enable

these farmers to forego use of existing diesel-operated equipment and to obtain pressurized, clean water from the proposed system. By eliminating existing fuel consumption, GHG emissions associated with existing irrigation operations would be reduced. In addition, in April 2011, California enacted legislation requiring all electricity retailers in the state to adopt goals of 20% of retail sales from renewable energy (e.g., solar, wind, biomass) by the end of 2013, 25% by the end of 2016, and 33% by the end of 2020. With implementation of this legislation, future electricity use by the project would be generated by fewer sources that emit GHGs, thereby reducing the Proposed Action's indirect GHG emissions.

Some of these GHG savings described above would be realized from the efficiency of centralizing pressurization and filtration equipment, eliminating the need for on-demand pumping. Other savings would be realized by using available SSJID surface water supplies, thereby eliminating the need to lift groundwater to the surface before it is pressurized.

In summary, project construction and operations are not expected to generate a significant amount of GHGs, and therefore would not have a significant impact on global climate change.

Section 4 Cumulative Impacts

According to the CEQ regulations for implementing the procedural provisions of NEPA, a cumulative impact is defined as *the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions*. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

The Proposed Action consists of the construction and operation of a pressurized irrigation water system serving lands within SSJID Division 9. The proposed water system would consist of a network of pressure pipeline and two water storage basins, each of which would be individually equipped with a pump station and groundwater well. The project IS/MND evaluated the potential cumulative impacts associated with the Proposed Action and concluded that the Proposed Action would involve no significant new long-term environmental considerations or potential cumulative impacts. The Proposed Action would involve upgrading the existing agricultural irrigation system serving SSJID Division 9 lands. There are no other known foreseeable development projects located in the vicinity of the proposed project. Project operations would not contribute to any long-term effects on issues such as air quality and noise. As discussed in Section 3.10, the project would involve a less than considerable contribution to cumulative global climate change effects.

The Proposed Action would not result in cumulative impacts to any of those resources described within this EA.

Section 5 Consultation and Coordination

This EA has been prepared in accordance with the requirements of NEPA. Reclamation is also complying with other applicable laws including the Migratory Bird Treaty Act, Clean Water Act of 1977, Clean Air Act of 1970, Endangered Species Act, Fish and Wildlife Coordination Act, National Historic Preservation Act of 1966, Executive Order 11988-Floodplain Management, Executive Order 11990-Protection of Wetlands, Executive Order 12898-Environmental Justice, and the Council of Environmental Quality Memorandum-Analysis of Prime or Unique Farmlands.

Section 6 List of Preparers and Reviewers

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