

# San Luis & Delta-Mendota Water Authority 2019 Final Long-Term Water Transfers EIS/EIR CEQA Findings of Fact

## 1.0 Introduction and Description of Proposed Action

The Bureau of Reclamation's (Reclamation's) Mid-Pacific Region is responsible for managing the Central Valley Project (CVP), which stores and delivers irrigation water to the San Luis & Delta-Mendota Water Authority (SLDMWA) service area, consisting of federal water service and exchange contractors in western San Joaquin Valley, San Benito, and Santa Clara counties. Each year Reclamation determines the amount of water that can be delivered to each district and municipality based on conditions for that year. CVP water allocations for agricultural, environmental, municipal and industrial (M&I) users vary based on factors such as hydrology, water rights, reservoir storage, environmental considerations, and operational limitations. Reclamation and SLDMWA recognize that delivery of full contract quantities to all of the districts is not likely to occur in most years. As examples, in 2009, deliveries were cut back to ten percent of Contract Total for agricultural water service contracts and to 60 percent of Contract Total for municipal and industrial water service contracts, and in 2014 and 2015, agricultural water service contractors (does not include the exchange contractors) received a zero percent allocation and municipal and industrial water service contractors received a fifty and twenty-five percent allocation, respectively. These water supply shortages lead to severe water constraints, especially in the SLDMWA service area.

SLDMWA member agencies use water transfers as a method to supplement water supplies to meet existing demands. The SLDMWA helps negotiate transfers for member agencies in years when the member agencies could experience shortages.

The Final Long-Term Water Transfers Environmental Impact Statement/ Environmental Impact Report (2015 Final EIS/EIR) was completed in March 2015. The 2015 Final EIS/EIR was challenged in United States District Court for the Eastern District of California in the case *AquAlliance, et al., v. U.S. Bureau of Reclamation, et al.* On July 5, 2018, the District Court entered judgment, vacating SLDMWA's decisions to approve the Final Long-Term Water Transfers EIS/EIR and approve the Proposed Action, vacating the 2015

Final EIS/EIR, and vacating the U.S. Fish and Wildlife Service’s biological opinion. As a result, Reclamation and SLDMWA released the Long-Term Water Transfers Revised Draft EIR/Supplemental Draft EIS (RDEIR/SDEIS) in February 2019 to address the specific issues identified in the ruling. The RDEIR/SDEIS was released for a 45-day public review and comment period. The 2019 Final Long-Term Water Transfers EIS/EIR presents the entire document including revisions to the 2014 Draft EIS/EIR and the RDEIR/SDEIS in response to the public comments.

These Findings of Fact have been prepared in compliance with the California Environmental Quality Act (CEQA) and are based on information contained in the SLDMWA’s record of these proceedings as a whole, including but not limited to the 2019 Final Long-Term Water Transfers EIS/EIR.

Section 21081 of the California Public Resources Code and Section 15091 of the CEQA Guidelines require a public agency, prior to approving a project, to identify significant impacts of the project and make one or more written findings for each such impact. According to Section 21081, “no public agency shall approve or carry out a project for which an environmental impact report has been certified which identifies one or more significant effects on the environment that would occur if the project is approved or carried out unless both of the following occur:

- (a) The public agency makes one or more of the following findings with respect to each significant effect:
  - 1. Changes or alterations have been required in, or incorporated into, the project which mitigate or avoid the significant effects on the environment.
  - 2. Those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.
  - 3. Specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or alternatives identified in the environmental impact report.
  
- (b) With respect to significant effects which were subject to a finding under paragraph (3) of subdivision (a), the public agency finds that specific overriding economic, legal, social, technological, or other benefits of the project outweigh the significant effects on the environment.”

Section 21081.6 of CEQA also requires public agencies to adopt a monitoring and reporting program for assessing and ensuring the implementation of proposed mitigation measures. The Mitigation Monitoring and Reporting Plan

(MMRP) for the Long-Term Water Transfers, which will be adopted concurrent with the adoption of the CEQA Findings, is provided under separate cover; however, a listing of the mitigation measures delineated in the MMRP is provided herewith as Attachment A, in support of the findings related to (a)1 above.

When making CEQA findings required by Public Resources Code Section 21081(a), a public agency shall specify the location and custodian of the documents or other material, which constitute the record of proceedings upon which its decision is based. These records are in the care of the San Luis & Delta-Mendota Water Authority, 842 6<sup>th</sup> St, Los Banos, CA, 93635.

## **2.0 Findings of Environmental Effects**

### **2.1 Resource Analysis Overview**

Resource areas not analyzed in the EIS/EIR because there would be no impacts include:

- Hazards & Hazardous Materials
- Mineral Resources
- Noise
- Public Services and Utilities
- Transportation/Traffic

No impacts related to the above resource areas would occur because: (1) the action alternatives would not require any construction activities, therefore, short- and long-term impacts related to transportation/traffic, noise, and public services and utilities would not occur; and, (2) the water transfers would not result in the disturbance of land; therefore, impacts related to hazardous materials and mineral resources would not occur.

The following are resources analyzed in Chapter 3 of the EIS/EIR:

- Water Supply (Section 3.1)
- Water Quality (Section 3.2)
- Groundwater Resources (Section 3.3)
- Geology and Soils (Section 3.4)

Long-Term Water Transfers  
CEQA Findings

- Air Quality (Section 3.5)
- Climate Change (Section 3.6)
- Fisheries (Section 3.7)
- Vegetation and Wildlife (Section 3.8)
- Agricultural Land Use (Section 3.9)
- Regional Economics (Section 3.10)
- Environmental Justice (Section 3.11)
- Indian Trust Assets (Section 3.12)
- Cultural Resources (Section 3.13)
- Visual Resources (Section 3.14)
- Recreation (Section 3.15)
- Power (Section 3.16)
- Flood Control (Section 3.17)

The impacts analysis determined that the Proposed Action would have less-than-significant impacts related to water quality, geology and soils, climate change, fisheries, agricultural land use, cultural resources, visual resources, recreation, power, and flood control.

Table 3 summarizes the EIS/EIR analyses that determined potential impacts related to these resource areas would be less-than-significant.

**Table 3. Potential Impacts Summary**

Potential Impact	Proposed Action Significance to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
<b>3.2 Water Quality</b>			
Cropland idling transfers could result in increased deposition of sediment on water bodies.	LTS	None	LTS
Cropland idling/shifting transfers could change the water quality constituents associated with leaching and runoff.	LTS	None	LTS
Cropland idling/shifting transfers could change the quantity of organic carbon in waterways.	LTS	None	LTS
Groundwater substitution transfers could introduce contaminants that could enter surface waters from irrigation return flows.	LTS	None	LTS
Water transfers could change reservoir storage in CVP and SWP reservoirs and could result in water quality impacts.	LTS	None	LTS
Water transfers could change reservoir storage non-Project reservoirs participating in reservoir release transfers, which could result in water quality impacts.	LTS	None	LTS
Water transfers could change river flow rates in the Seller Service Area and could affect water quality.	LTS	None	LTS
Water transfers could change Delta inflows and could result in water quality impacts.	LTS	None	LTS
Water transfers could change Delta outflows and could result in water quality impacts.	LTS	None	LTS
Water transfers could change Delta salinity and could result in water quality impacts.	LTS	None	LTS
Diversion of transfer water at Banta Carbona ID, West Stanislaus ID, and Patterson ID could affect water quality in the Delta-Mendota Canal.	LTS	None	LTS
Use of transfer water in the Buyer Service Area could result in increased irrigation on drainage impaired lands in the Buyer Service Area which could affect water quality.	LTS	None	LTS
Water transfers could change reservoir storage in San Luis Reservoir and could result in water quality impacts.	LTS	None	LTS
<b>3.4 Geology and Soils</b>			
Cropland idling transfers in the Seller Service Area that temporarily convert cropland to bare fields could increase soil erosion.	LTS	None	LTS
Cropland idling water transfers could cause expansive soils in the Seller Service Area to shrink due to the reduction in applied irrigation water.	LTS	None	LTS
Use of transfer water on agricultural fields in the Buyer Service Area could increase soil erosion.	LTS	None	LTS
Use of transfer water on agricultural fields in the Buyer Service Area could increase soil movement.	LTS	None	LTS
Changes in streamflows in the Sacramento and San Joaquin Rivers and their tributaries as a result of water transfers could result in increased soil erosion.	LTS	None	LTS
<b>3.6 Climate Change</b>			
Increased groundwater pumping for groundwater substitution transfers could increase emissions of greenhouse gases.	LTS	None	LTS

Long-Term Water Transfers  
CEQA Findings

Potential Impact	Proposed Action Significance to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
Water transfers via cropland idling could reduce vehicle exhaust emissions from reduced operations in the study area.	LTS	None	LTS
Changes to the environment from climate change could affect the action alternatives.	LTS	None	LTS
Use of water from transfers on agricultural fields in the Buyer Service Area could affect emissions.	LTS	None	LTS
<b>3.7 Fisheries</b>			
Transfer actions could affect reservoir storage and reservoir surface area in reservoirs supporting fisheries resources	LTS	None	LTS
Groundwater substitution could reduce stream flows supporting fisheries resources in small streams	LTS	None	LTS
Transfer actions could alter flows of rivers and creeks supporting fisheries resources in the Sacramento and San Joaquin river watersheds	LTS	None	LTS
Transfer actions could alter hydrologic conditions in the Delta, altering associated habitat availability and suitability	LTS	None	LTS
Transfer actions could affect the habitat of special-status species associated with mainstem rivers, tributaries, and the Delta.	LTS	None	LTS
<b>3.9 Agricultural Land Use</b>			
Cropland idling water transfers could decrease the amount of lands categorized as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland under the Farmland Mapping and Monitoring Program (FMMP).	LTS	None	LTS
Cropland idling water transfers could convert agricultural lands under the Williamson Act and other land resource programs to an incompatible use.	LTS	None	LTS
Cropland idling water transfers could conflict with local land use policies.	NI	None	NI
Water transfers could provide water to irrigators in the Buyer Service Area to irrigate existing crop fields and maintain agricultural land uses.	B	B	B
<b>3.13 Cultural Resources</b>			
Transfers that draw down reservoir surface elevations beyond historically low levels could result in a potentially significant effect on cultural resources.	LTS	None	LTS
Stored reservoir release transfers that draw down reservoir surface elevations at local reservoirs beyond historically low levels could affect cultural resources.	LTS	None	LTS
<b>3.14 Visual Resources</b>			
Water transfers could degrade the existing landscape character or scenic attractiveness of Class A and B visual resources at CVP and SWP reservoirs	LTS	None	LTS
Water transfers could degrade the existing landscape character or scenic quality of Class A and B visual resources along surface water bodies	LTS	None	LTS
Stored reservoir release transfers could substantially degrade the existing landscape character or scenic attractiveness of Class A and B visual resources participating reservoirs	LTS	None	LTS

Potential Impact	Proposed Action Significance to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
Cropland idling transfers could substantially degrade the existing landscape character and scenic attractiveness of Class A and B visual resources	LTS	None	LTS
Water transfers could substantially degrade the existing landscape character and quality in the Buyer's Service Area	LTS	None	LTS
<b>3.15 Recreation</b>			
Changes in surface water elevation at Shasta, Folsom, Merle Collins, Oroville, Camp Far West, and Lake McClure reservoirs as a result of water transfers could affect reservoir-based recreation.	LTS	None	LTS
Changes in surface water elevations at Hell Hole and French Meadows Reservoirs as a result of water transfers could affect reservoir-based recreation.	LTS	None	LTS
Changes in river flows from water transfers could affect river-based recreation on the Sacramento, Yuba, Feather, American, San Joaquin, and Merced rivers.	LTS	None	LTS
Changes in average flow into the Delta from the San Joaquin River from water transfers could affect river-based recreation.	NI	None	NI
Changes in surface water elevation at San Luis Reservoir as a result of water transfers could affect reservoir-based recreation	NI	None	NI
<b>3.16 Power</b>			
Acquisition of water via groundwater substitution or crop idling may cause changes in power generation from CVP and SWP reservoirs	LTS	None	LTS
Acquisition of water via stored reservoir water may cause changes in power generation from the facilities that provide water	LTS	None	LTS
<b>3.17 Flood Control</b>			
Water transfers would change storage levels in CVP and SWP reservoirs, potentially affecting flood control	LTS	None	LTS
Water transfers would change storage levels in non-Project reservoirs and potentially affecting flood control	B	None	B
Water transfers could increase river flows, potentially affecting flood capacity or levee stability	LTS	None	LTS
Water transfers would change storage at San Luis Reservoir, potentially affecting flood control	LTS	None	LTS

Key:

B = beneficial

LTS = less-than-significant

NI = no impact

None = no feasible mitigation identified and/or required

S = significant

The impacts analysis determined that the Proposed Action would result in the potential for significant environmental impacts associated with water supply, groundwater resources, air quality, and vegetation and wildlife. Mitigation measures have been incorporated into the Proposed Action to avoid or substantially reduce impacts to less-than-significant levels.

The EIS/EIR included an analysis of regional economics, Indian Trust Assets, and environmental justice for NEPA purposes; these resources were not the subject of a CEQA analysis.

The EIS/EIR concluded that, with mitigation, there would be no significant and unavoidable impacts resulting from implementation of the Proposed Action.

## 2.2 Findings

### 2.2.1 Water Supply

#### ***Description of Potential Effects***

Groundwater substitution transfers could decrease flows in surface water bodies following a transfer while groundwater basins recharge. Changes in surface water flows could decrease CVP and State Water Project water in upstream storage and Delta diversions, which would affect water supplies.

#### ***Mitigation Measures***

Mitigation Measure WS-1 (Streamflow Depletion Factor) would avoid or substantially reduce this water supply effect to less-than-significant. WS-1 is described in Section 3.1.4.1 of the EIS/EIR and is also presented in Attachment A of the CEQA Findings.

#### ***Findings***

Based on the analysis in the EIS/EIR and the entire record before it, SLDMWA finds, for the above impact to water supply, that:

[ XX ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR.

***Rationale***

Under WS-1, Reclamation will apply a streamflow depletion factor to mitigate potential water supply impacts from the additional groundwater pumping due to groundwater substitution transfers. The streamflow depletion factor equates to a percentage of the total groundwater substitution transfer that will not be credited to the transferor and is intended to offset the streamflow effects of the added groundwater pumping due to transfer. Reclamation and DWR require the imposition of a streamflow depletion factor because they will not move transfer water if doing so will violate the no injury rule. The streamflow depletion factor will reduce this water supply effect to less-than-significant.

***References***

Section 3.1 of the EIR/EIR addresses the Proposed Action’s water supply impacts and mitigation measures.

**2.2.2 Groundwater Resources**

***Description of Potential Effects***

Groundwater substitution transfers have the potentially to cause a reduction in groundwater levels and subsidence in the Seller Service Areas.

Groundwater substitution pumping under the Proposed Action would be limited to short-term withdrawals during the irrigation season and would not result in any significant impacts due to migration of poor quality groundwater.

***Mitigation Measures***

Mitigation Measure GW-1 (Monitoring Program and Mitigation Plan) would avoid and substantially reduce groundwater resources effects to less-than-significant. GW-1 is described in Section 3.3.4.1 of the EIS/EIR and is also presented in Attachment A of the CEQA Findings.

***Findings***

Based on the analysis in the EIS/EIR and the entire record before it, SLDMWA finds, for the above impacts to groundwater resources, that:

[ XX ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers,

make infeasible the mitigation measures or project alternatives identified in the Final EIR.

***Rationale***

Groundwater resources effects would be reduced through implementation of Mitigation Measure GW-1 (Mitigation and Monitoring Plans). GW-1 implements a monitoring program, through a sufficient number of monitoring wells near the production well, required to accurately characterize fluctuations in groundwater levels in the pumping area. Specific groundwater level triggers for each monitoring well will be identified based on local Basin Management Objectives (BMOs), or the historic low groundwater level for that well. In areas where local BMOs are not available, historic low groundwater levels are identified as groundwater level triggers. Most of the quantitative BMOs within the Seller Service Area are tied to historic low groundwater levels. Therefore, the use of historic low groundwater levels in areas without quantitative BMOs is consistent with the approach for areas with quantitative BMOs. These groundwater level triggers are the best available tools to avoid potential impacts to the environment as well as to third parties, and to avoid irreversible subsidence. If these triggers are reached, transfer-related pumping would stop from the well(s) near the monitoring well that reached the trigger. Irreversible subsidence would only occur when groundwater levels are below historic low levels (USGS 2017); therefore, this measure would also avoid any potential irreversible (permanent) subsidence. Stopping transfer-related pumping would stabilize groundwater levels to above historic low levels and avoid any potentially significant effects related to subsidence or third-party impacts caused by transfer-related pumping. Implementation of GW-1 would avoid permanent subsidence and reduce land subsidence impacts to less-than-significant.

Implementation of the mitigation plan thus avoids any potentially significant groundwater impacts. GW-1 also includes other corrective actions in the event unanticipated affects occur. Other corrective actions could include:

- Lowering of pumping bowls in non-transferring wells affected by substitution pumping.
- Reimbursement to non-transferring third parties for significant increases in their groundwater pumping costs due to the groundwater substitution pumping action, as compared with their costs absent the transfer.
- Reimbursement to non-transferring third parties for modifications to infrastructure that may be affected.
- Other appropriate actions based on local conditions.

***References***

Section 3.3 of the EIR/EIR addresses the Proposed Action’s groundwater resources impacts and mitigation measures.

## 2.2.3 Air Quality

### **Description of Potential Effects**

Groundwater substitution transfers could increase emissions of air pollutants from the groundwater well pumps in the Seller Service Area.

### **Mitigation Measures**

Mitigation Measures AQ-1 (Reducing pumping to reduce emissions) and AQ-2 (Operate electric engines) would avoid and substantially reduce air quality effects to less-than-significant. AQ-1 and AQ-2 are described in Section 3.5.4.1 of the EIS/EIR and is also presented in Attachment A of the CEQA Findings.

### **Findings**

Based on the analysis in the EIS/EIR and the entire record before it, SLDMWA finds, for the above impacts to air quality, that:

[ XX ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR.

### **Rationale**

Under AQ-1, the selling agency would reduce pumping at diesel or natural gas wells to reduce emissions to below the thresholds. If an agency is transferring water through cropland idling and groundwater substitution in the same year, the reduction in vehicle emissions can partially offset groundwater substitution pumping at a rate of 4.25 acre-feet (AF) of water produced by idling to one acre-foot of groundwater pumped. Agencies may also decide to replace old diesel or natural gas wells to reduce emission below the thresholds.

Any selling agencies with potentially significant emissions, as determined by this EIS/EIR, will be required to maintain daily recordkeeping logs that document the specific engine to be used for groundwater substitution transfers, the power rating, and applicable emission factors. Emission calculations will be completed daily for comparison to the significance thresholds determined for each selling agency. The recordkeeping logs will be sent to Reclamation monthly for verification that emissions are within the allowable limits.

Under AQ-2, any engines operating in the area of analysis that are capable of operating as either electric or natural gas engines would only operate with electricity during any groundwater transfers. Any selling agencies with these engines will be required to maintain daily recordkeeping logs that document the engines used for groundwater substitution transfers and the type of fuel used. The recordkeeping logs will be sent to Reclamation monthly for verification that the engines are operating in compliance with the mitigation measure.

Mitigation measures AQ-1 and AQ-2 would reduce emissions below the thresholds and reduce air quality impacts of the Proposed Action to less-than-significant.

**References**

Section 3.5 of the EIR/EIR addresses the Proposed Action’s air quality impacts and mitigation measures.

**2.2.4 Vegetation and Wildlife**

**Description of Potential Effects**

Groundwater substitution transfers could reduce stream flows supporting natural communities in small streams.

Cropland idling transfers could alter the amount of suitable habitat related to various biological resources and affect wetlands, giant garter snake, Pacific pond turtles, and special status bird species and migratory birds when idling and transfers occur.

**Mitigation Measures**

Mitigation Measures GW-1 (Monitoring Program and Mitigation Plan) and VEG and WILD-1 (Protect Existing Habitat for Terrestrial Wildlife) would avoid and substantially reduce effects from groundwater substitution and cropland idling transfers to less-than-significant.

VEG and WILD-1 is described in Section 3.8.4 of the EIS/EIR and GW-1 is described in Section 3.3.4.1 of the EIS/EIR. Both mitigation measures are also presented in Attachment A of the CEQA Findings.

**Findings**

Based on the analysis in the EIS/EIR and the entire record before it, SLDMWA finds, for the above impacts to vegetation and wildlife, that:

[ XX ] Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

[ ] Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes

have been adopted by such other agency or can and should be adopted by such other agency.

[ ] Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR.

**Rationale**

The effect of groundwater substitution on natural communities under the Proposed Action could be significant because groundwater substitution pumping would cause stream flows in some small creeks to be substantially reduced. The reduction in stream flow could result in a substantial adverse effect on riparian natural communities because root zones would be dewatered to such an extent to cause die back of riparian tree and shrub foliage, branches or entire plants. With implementation of GW-1, groundwater wells within the seller's service area will be monitored by the seller with the goal of identifying whether groundwater substitution pumping is causing substantial adverse impacts on groundwater levels and associated vegetation that rely on shallow groundwater. If adverse effects on vegetation is recognized during monitoring, actions specified in the mitigation plan will be implemented immediately, which includes curtailment of pumping until natural recharge corrects the environmental impact and natural communities recover from any adverse effects of reduced flows. If actions taken to make water available for transfer result in loss of trees along streams, the seller will plant, maintain, and monitor replacement trees to ensure successful reestablishment of lost trees. Implementation of this measure would reduce significant effects on special-status plants and migratory birds that occupy streamside habitats because riparian vegetation that provides habitat to these species would recover as the result of natural groundwater recharge.

Cropland idling would result in a decrease in planted acreage. Associated with this reduction in planted acreage are the potential loss of water within adjacent agricultural supply and return canals, which could affect habitats associated with these canals, as well as water supply to downstream users, including the wildlife management areas, as well as streams and wetland habitats. These actions could result in a reduction in habitat for special status species such as giant garter snake, and Pacific pond turtle. Additionally, reducing seasonally flooded acreage in the Sacramento Valley could reduce summer forage for greater sandhill crane, long-billed curlew, tricolored blackbird, white-faced ibis, black tern and purple martin, yellow-headed blackbird, and other migratory birds, as well as potential nesting habitat for black terns and other migratory birds.

With implementation of Mitigation Measure VEG and WILD-1, potentially significant impacts to giant garter snake, Pacific pond turtle, and special-status birds from potential reductions in emergent wetland communities and open

water that provide habitat for these species would be avoided or substantially reduced to a less than significant level. VEG and WILD-1 includes measures to maintain water levels in major irrigation canals that support emergent wetland and riparian vegetation, which provides the predominant nesting substrate for migratory birds in agricultural landscapes. Retaining these habitats by continuing to supply water to these canals will prevent substantial loss of vegetation and open water for migratory birds that utilize these areas for nesting and foraging.

For potentially significant impacts to giant garter snake and Pacific pond turtle, Mitigation Measure VEG and WILD-1 will provide protection to these species with regard to cropland idling actions, including provisions for avoiding cropland idling actions in areas that could result in the substantial loss or degradation of habitats supporting important giant garter snake populations, and maintaining water levels in drainage canals to provide adequate habitat for giant garter snake. Maintaining water and suitable vegetation cover in canals and ditches abutting and connecting priority giant garter snake habitats provide opportunities for giant garter snake to relocate to or find additional foraging areas, as a result of reductions in rice cultivation from crop shifting/idling water transfers or due to typical crop rotation schedules. If water resources do become limiting for giant garter snake as a result of cropland shifting/idling, the water in these smaller drains and canals, as well as the required water in major drainage and irrigation canals, would aid movement of individuals to other foraging areas. Because Pacific pond turtles will use canals and ditches for movement corridors and foraging areas as well, this species would also benefit from these measures that aim at maintaining the primarily movement corridors for giant garter snake throughout the Seller's Service Area.

VEG and WILD-1 also includes adaptive management actions that provide for an annual review with USFWS and other agencies to assess the previous years' cropland idling/shifting transfer actions, recent scientific literature and study results, and effectiveness of currently implemented conservation measures. This annual review will incorporate new research related to giant garter snake status with the sellers area and will facilitate timely implementation of adaptive management related to water transfer actions. Mitigation Measure VEG and WILD-1 also includes a requirement to identify whether the project conservation measures are effective in reducing impacts on giant garter snake to a less than significant level. The inclusion of giant garter snake research and monitoring, annual meetings and reports, and adaptive management flexibility will allow Reclamation to identify unexpected effects of the water transfer program and discuss appropriate corrective actions with USFWS and United States Geological Survey (USGS) in a timely manner.

### **References**

Section 3.8 of the EIR/EIR addresses the Proposed Action's vegetation and wildlife impacts and mitigation measures.

## 3.0 Alternatives Considered

Three action alternatives and the No Project Alternative were considered during preparation of the EIS/EIR, as described in Chapter 2 of the EIS/EIR. The range of alternatives is governed by the "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasonable choice. Of these, three alternatives (including the Proposed Action), which meet all of the project objectives, and the No Project Alternative required by CEQA, even though it would not meet the project objectives, were carried forward for detailed analysis in the EIS/EIR. Based on the analysis in the EIS/EIR and the entire record before it, the SLDMWA finds that the EIS/EIR's evaluation and consideration of alternatives retains its relevance.

As indicated throughout Chapter 3 of the EIS/EIR, the Proposed Action would not have any significant, unavoidable adverse impacts. Similarly, none of the alternatives has unavoidable significant impacts, although some of the alternatives could have less of an impact on some resources, as follows:

- Alternative 3, No Cropland Modifications, would reduce the environmental effects associated with cropland idling. Alternative 3 would not have the potential to affect vegetation and wildlife, particularly the giant garter snake, by idling rice fields and reducing habitat. It would also reduce effects to agricultural land use and economic effects to non-transferring parties.
- Alternative 4, No Groundwater Substitution, would reduce the environmental effects associated with groundwater substitution transfers. Alternative 4 would reduce effects to groundwater levels, quality, and land subsidence. It would also reduce effects associated with streamflow depletion, including potential effects to fisheries, vegetation and wildlife, and water supply.

While the alternatives would affect different resources in different ways, none of the alternatives is considered to be the environmentally superior alternative. There are no unavoidable significant impacts associated with the Proposed Action that would otherwise be avoided or substantially reduced by an alternative, and each of the alternatives has its own unique set of environmental impacts which, on balance, would be a "trade-off" of environmental impacts in selecting any one alternative over another, as described in the discussion of each alternative addressed in Chapter 3 of the Final EIS/EIR. The difference in impact between the Proposed Action and the alternatives is not substantial under CEQA.

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# Attachment A Mitigation Measures

Table A-1 lists the mitigation measures identified in the EIS/EIR. In light of the evidence in the EIS/EIR for the Proposed Action and the administrative record as a whole, SLDMWA finds that the mitigation measures adopted for the Proposed Action are equally or more effective to avoid or substantially lessen the Proposed Action’s impacts to a less-than-significant level.

**Table A-1 Mitigation Measures**

Measure No.	Mitigation Measure
WS-1	<p>The purpose of Mitigation Measure WS-1 is to address potential streamflow depletion effects to Central Valley Project (CVP) and State Water Project (SWP) water supply. Reclamation will apply a streamflow depletion factor to mitigate potential water supply impacts from the additional groundwater pumping due to groundwater substitution transfers. The streamflow depletion factor equates to a percentage of the total groundwater substitution transfer that will not be credited to the transferor and is intended to offset the streamflow effects of the added groundwater pumping due to transfer.</p> <p>As described in the impact analysis, the magnitude of the potential water supply impact depends on hydrologic conditions surrounding the transfer period (both before and after). The exact percentage of the streamflow depletion factor will be assessed and determined on a regular basis by Reclamation and California Department of Water Resources (DWR), in consultation with buyers and sellers, based on the best technical information available at that time. The percentage will be determined based on hydrologic conditions, groundwater and surface water modeling, monitoring information, and past transfer data. Application of the streamflow depletion factor will offset potential water supply effects and reduce them to a less-than-significant level. The streamflow depletion factor may not change every year, but will be refined as new information becomes available and may become more site specific as better data and groundwater modeling becomes available. The minimum streamflow depletion factor (based on modeling completed for this EIS/EIR) will be 13 percent, but this factor may be adjusted based on additional information on local conditions.</p> <p>Reclamation and DWR require the imposition of a streamflow depletion factor because they will not move transfer water if doing so will violate the no injury rule. This process to evaluate and determine the streamflow depletion factor will help verify that the factor reduces potential impacts to avoid legal injury to CVP or SWP water supplies and a substantial impact or injury.</p>
GW-1	<p>The objective of Mitigation Measure GW-1 is to avoid potentially significant adverse environmental effects from groundwater level declines such as (1) impacts to other legal users of water; (2) land subsidence; (3) adverse effects to groundwater-dependent vegetation and or (4) migration of reduced quality groundwater. The mitigation measure also requires prompt corrective action so that impacts discussed previously will be reduced to less-than-significant in the event unanticipated effects occur. The measure accomplishes this by monitoring groundwater levels and land subsidence in the period during which groundwater is being pumped in lieu of diverting the surface water. Additionally, the mitigation plan identifies necessary preventative action measures if monitoring shows that identified trigger points are reached during transfer-related pumping</p> <p>Reclamation will verify that sellers implement the monitoring program and mitigation plan to avoid potentially significant adverse effects of transfer-related groundwater extraction. In addition, each entity making surface water available for transfer through groundwater substitution actions must confirm that the proposed groundwater pumping will be compatible with state and local regulations and Groundwater Management Plans (GMPs). As Groundwater Sustainability Plans (GSPs) are developed by Groundwater Sustainability Agencies, potential sellers must confirm that the proposed pumping and the following Monitoring Program and Mitigation Plan verified by Reclamation is compatible with applicable GSPs.</p>

Long-Term Water Transfers  
CEQA Findings

Measure No.	Mitigation Measure
GW-1	<p><u>Well Review Process</u> Potential sellers must submit well data for Reclamation and, where appropriate, DWR review, as part of the transfer approval process. Required information will be detailed in the most current version of the <i>DRAFT Technical Information for Preparing Water Transfer Proposals</i> (Reclamation and DWR 2014).</p>
GW-1	<p><u>Monitoring Program</u> Potential sellers must complete and implement a monitoring program subject to Reclamation’s approval that shall include, at a minimum, the following components:</p>
GW-1	<p><u>Monitoring Well Network</u> The monitoring program shall incorporate a sufficient number of monitoring wells, as determined by Reclamation, to accurately characterize groundwater levels from the appropriate aquifers and their response in the area before, during, and after transfer pumping takes place. Depending on local conditions, additional groundwater level monitoring may be required near ecological resource areas. It should be noted that monitoring well networks have been established for some of the participating pumping wells that have participated in water transfers in previous years. For wells that have not participated in water transfers previously, the sellers would identify suitable monitoring wells as defined below for review and approval by Reclamation prior to transfer. If a suitable monitoring well(s) is not identified for a participating pumping well, the participating pumping well will not be allowed to participate in water transfer until a suitable monitoring well(s) is identified.</p> <p>The monitoring well network would include the participating pumping well and a suitable groundwater level monitoring well(s) in the vicinity of the participating pumping well(s). Suitable monitoring well(s) would: (1) be within a two-mile radius of the seller’s transfer pumping well; (2) be located within the same Bulletin 118 subbasin as the pumping well; and (3) have a screen depth(s) in the same aquifer level (shallow, intermediate, or deep) as the pumping well. Wells with short historic records could be considered, but short records (that do not extend to 2014 or earlier) could limit the transfer because the historic low would not reflect the persistent dry weather from 2011 to 2015. In this situation, the lowest groundwater level for the short period of record would be used, but because the groundwater level would likely be higher than the historic low during the prior drought period, the groundwater level triggers (described below) would be more restrictive (i.e., the lowest recorded groundwater level could be reached more quickly during transfer-related pumping than occurred in the short period of record when groundwater levels were higher.</p> <p>Monitoring requirements at the participating pumping well and suitable monitoring well(s) would detect impacts to third parties and land subsidence. Monitoring and mitigation for impacts to groundwater dependent deep-rooted vegetation and migration of reduced quality groundwater are discussed below under Other Monitoring.</p>
GW-1	<p><u>Groundwater Level Monitoring</u> Sellers will collect measurements of groundwater levels in both the participating wells (those wells being used in lieu of diverting surface water that is being made available for transfer) and monitoring wells. Groundwater level measurements will be used to identify potential concerns for both third party impacts and irreversible subsidence based on the identified trigger points. Groundwater level monitoring will include measurements before, during, and after transfer-related substitution pumping. The seller will measure groundwater levels as follows:</p> <ul style="list-style-type: none"> <li>• Prior to transfer: Groundwater levels will be measured in both the participating pumping well(s) and the monitoring well(s) monthly from March in the year of the proposed transfer-related substitution pumping until the start of the transfer. Monitoring will also be conducted on the day that the transfer-related substitution pumping begins, prior to the pump being turned on.</li> <li>• During transfer-related substitution pumping: Groundwater levels will be measured in both the participating pumping well(s) and the monitoring well(s) weekly throughout the transfer-related substitution pumping period.</li> <li>• Post-transfer pumping: Groundwater levels will be measured in both the participating well(s) and the monitoring well(s) weekly for one month after the end of transfer-related substitution pumping, after which groundwater levels will be measured monthly through March of the year following the transfer.</li> </ul>
GW-1	<p><u>Groundwater Level Triggers</u> The primary criteria used to identify potentially significant impacts to groundwater levels are the BMOs set by GMPs. In the Sacramento Valley, Shasta, Tehama, Glenn, Butte, Colusa, Sutter, Yuba, Nevada, Placer, Sacramento and Yolo counties have established GMPs to provide guidance in managing the resource. In areas where quantitative BMO groundwater level triggers exist, sellers will manage groundwater levels to these triggers and initiate the mitigation plan (discussed below) if groundwater levels reach the trigger. In areas where quantitative BMOs do not exist, sellers will manage groundwater levels to maintain them above the identified historic low groundwater level (trigger) and will initiate the mitigation plan (discussed below) if</p>

Measure No.	Mitigation Measure
	<p>groundwater levels reach the trigger. Most of the quantitative BMOs within the Seller Service Area are tied to historic low groundwater levels. Therefore, the use of historic low groundwater levels in areas without quantitative BMOs is consistent with the approach for areas with quantitative BMOs. As part of a seller's transfer proposal subject to Reclamation's review and approval, the seller will need to identify the monitoring wells and the specific groundwater level trigger for each well (established through the local BMO or the historic low groundwater level for that well).</p> <p>Groundwater level declines due to pumping occur initially at the pumping well and then propagate outward from that location. The magnitude of groundwater level decline caused by pumping also decreases with increasing distance from the pumping well. Therefore, groundwater level declines caused by transfer pumping would be measured first at the pumping well and subsequently at the monitoring well. The decline would be greatest at the pumping well and lower at the monitoring well. Therefore, it is likely that groundwater levels in the pumping well would decline to the historic low level sooner than at the monitoring well(s). The monitoring well(s) would provide information surrounding the well to avoid potential cumulative impacts.</p>
GW-1	<p><i>Groundwater Quality</i></p> <p>For municipal sellers, the comprehensive water quality testing requirements of Title 22 are considered sufficient for the water transfer monitoring program. Agricultural sellers shall measure specific conductance in samples from each participating production well. Samples shall be collected when the seller first initiates pumping, monthly during the transfer pumping period, and at the termination of transfer pumping.</p>
GW-1	<p><i>Groundwater Pumping Measurements</i></p> <p>All wells pumping to replace surface water made available for transfer shall be configured with a permanent instantaneous and totalizing flow meter capable of accurately measuring well discharge rates and volumes. Flow meter readings will be recorded just prior to initiation of transfer related pumping and no less than monthly throughout the duration of the transfer, as close as practical to the last day of the month. Readings will also be recorded just after cessation of transfer-related pumping. Flow meter installation and calibration, in accordance with recommendation by manufacturer, will be submitted by the seller.</p>
GW-1	<p><i>Shallow Groundwater Level Monitoring for Deep Rooted Vegetation</i></p> <p>To avoid significant effects to vegetation and allow sellers to modify actions before significant effects occur, sellers will monitor groundwater level data to verify that significant adverse effects to deep-rooted vegetation are avoided. This monitoring is only required in areas with deep-rooted vegetation (i.e. oak trees and riparian trees that would have tap roots greater than 10 feet deep) within a one-half mile radius of the participating pumping well and areas where groundwater levels are between 10 to 25 feet below ground surface prior to starting the transfer of surface water made available from groundwater substitution actions. This monitoring is not required in areas with no deep-rooted vegetation (i.e., areas without oak trees and riparian trees that would have tap roots greater than 10 feet deep) within one-half mile of the participating wells or in areas where vegetation is located along waterways or irrigated fields that will continue to have water during the period of transfer.</p> <p>The seller would be required to identify if monitoring for deep rooted vegetation is required in their transfer proposal to Reclamation and DWR. Existing resources such as DWR's groundwater dependent ecosystem maps (<a href="https://gis.water.ca.gov/app/NCDatasetViewer/">https://gis.water.ca.gov/app/NCDatasetViewer/</a>) or any existing biological survey data in the area could be used to identify deep rooted vegetation near the participating pumping well.</p> <p>If deep rooted vegetation is identified near the participating pumping well, a groundwater level monitoring well with the following requirements would need to be identified and monitored: (1) monitoring well is within a one-half mile radius of the deep-rooted vegetation; (2) monitoring well would measure shallow groundwater level changes (within the interval between 10 to 25 feet below ground surface). The participating production well can function as the monitoring well if previously mentioned requirements are met. If monitoring data at the well indicate that groundwater levels have dropped below root zones (i.e., more than 10 feet, where groundwater was 10 to 25 feet below ground surface prior to starting the transfer of surface water made available from groundwater substitution actions), the seller must implement actions set forth in the mitigation plan. If historic data show that groundwater levels in the area where actions are being taken to make water available for transfer have typically varied by more than this amount annually during the proposed transfer period, then the transfer may be allowed to proceed. The seller must submit historic data showing groundwater variances to Reclamation prior to transfer pumping.</p> <p>If no monitoring wells with the requirements discussed in the previous paragraph exist, monitoring would be based on visual observations by a qualified plant ecologist/certified arborist of the health of these areas of deep-rooted vegetation until it is feasible to obtain or install shallow groundwater monitoring. Monitoring of these areas would include a pre-pumping vegetation assessment within a half-mile radius of the pumping well followed by an assessment near the end of the pumping season but prior to fall/autumn leaf-drop. The assessment of post-pumping impacts on deep-rooted vegetation will be conducted by a qualified plant</p>

Long-Term Water Transfers  
CEQA Findings

Measure No.	Mitigation Measure
	ecologist/arborist and will take into account the existing health conditions of the vegetation prior to pumping, species present, size-class of trees, and rainfall data from the previous water years. If Reclamation the qualified plant ecologist/certified arborist determines, based on site-specific circumstances in consultation with a plant ecologist/arborist, that groundwater pumping has caused significant adverse impacts to deep-rooted vegetation (that is, any loss of the deep-rooted vegetation), the seller must implement restoration actions set forth in the mitigation plan . Findings from the pre-pumping and post pumping assessment will be reported to Reclamation.
GW-1	<p><i>Coordination Plan</i></p> <p>The monitoring program will include a plan to coordinate the collection and organization of monitoring data. This plan will describe how input from third parties (i.e. groundwater wells not participating in water transfers) will be incorporated into the monitoring program and will include a plan for communication with Reclamation as well as other decision makers and third parties.</p> <p>Additionally, Reclamation, SLDMWA, and potential seller(s) will coordinate closely with potentially affected third parties to collect and monitor groundwater data. If a third party expects that it may be affected by a proposed transfer, that party should contact Reclamation and the seller with its concern. The burden of collecting groundwater data will not be the responsibility of the third party. If warranted, additional groundwater level monitoring to address the third-party's concern may be incorporated in the monitoring and mitigation plans required by Mitigation Measure GW-1.</p>
GW-1	<p><i>Evaluation and Reporting</i></p> <p>The monitoring program will describe the method of reporting monitoring data. At a minimum, sellers will provide data summary tables to Reclamation, both during and after transfer-related substitution pumping. Post-transfer reporting will continue through March of the year following the transfer. Sellers will provide a final summary report to Reclamation evaluating the effects of the water transfer. The final report will identify transfer-related effects on groundwater and surface water (both during and after pumping), and the extent of effects, if any, on local groundwater users. It shall include groundwater level contour maps for the area in which transfer related pumping action is located, showing pre-transfer groundwater levels, groundwater levels at the end of the transfer period, and recovered groundwater levels in March of the year following the transfer. Groundwater level contour maps for different aquifer depths should also be included where data is available. The summary report shall also identify the extent of transfer-related effects, if any, to ecological resources such as fish, wildlife, and vegetation resources.</p>
GW-1	<p><i>Mitigation Plan</i></p> <p>Potential sellers must complete and implement a mitigation plan to avoid potentially significant groundwater impacts and ensure prompt corrective action in the event unanticipated effects occur. This plan must document the planned actions if there are unanticipated impacts to groundwater resources or groundwater-dependent vegetation. This plan must be submitted to Reclamation as part of the transfer approval process.</p>
GW-1	<p><i>Groundwater Resource Mitigation</i></p> <p>If groundwater level triggers are reached at the participating pumping well(s) or the suitable monitoring well (s) (either BMO triggers or historic low groundwater levels), transfer-related pumping would stop from the participating pumping well that reached the trigger. Transfer related pumping would be stopped when the trigger is first reached at either the participating pumping well(s) or the suitable monitoring well(s). Transfer-related pumping could not continue from this well (in the same year or a future year) until groundwater levels recovered to above the groundwater level trigger. Implementation of the mitigation plan thus avoids any potentially significant groundwater impacts.</p> <p>Other corrective actions could include:</p> <ul style="list-style-type: none"> <li>• Lowering of pumping bowls in non-transferring wells affected by substitution pumping.</li> <li>• Reimbursement to non-transferring third parties for significant increases in their groundwater pumping costs due to the groundwater substitution pumping action, as compared with their costs absent the transfer.</li> <li>• Reimbursement to non-transferring third parties for modifications to infrastructure that may be affected.</li> <li>• Other appropriate actions based on local conditions.</li> </ul>
GW-1	<p><i>Groundwater-Dependent Vegetation Mitigation</i></p> <p>If shallow groundwater levels monitoring suggests that groundwater levels have dropped below root zones, the seller must stop transfer-related pumping at the participating pumping well. Transfer-related pumping from the participating pumping well would be stopped until groundwater levels have recovered to levels above the root zones. If historic data at the location indicates shallow groundwater levels typically dropped and remained below the root zones (i.e., more than 10 feet, where groundwater was 10 to 25 feet below ground surface prior</p>

Measure No.	Mitigation Measure
	<p>to starting the transfer of surface water made available from groundwater substitution actions) over the proposed transfer period, then the transfer may be allowed to proceed.</p> <p>In areas where visual monitoring is conducted to monitor health of deep-rooted vegetation, the seller must stop transfer-related pumping at the participating well if the qualified plant ecologist/arborist, determines a loss or substantial risk of loss of vegetation.</p> <p>If adverse impacts to deep-rooted vegetation occur, the seller will perform restoration activities by replanting similar vegetation at a 1:1 ratio (for every 1 inch diameter at breast height (dbh) lost, 1 inch in dbh will be planted. For example if 12-inch dbh of oak is lost then the seller would have to plant 12 gallon oak sapling at around 1-inch dbh. Therefore, the seller would plant more trees than lost.). The seller will plant, irrigate, maintain, and monitor restoration of vegetation for 3 years to replace the losses. All plantings will be fitted with exclusion cages or other suitable protection from herbivores. Plantings will be irrigated for 3 years or until the survival criterion is met. If 75% of the plants survive at the end of the 3-year monitoring period, the revegetation will be considered successful. If the survival criterion is not met at the end of the monitoring period, planting and monitoring will be repeated after mortality causes have been identified and corrected. Annual monitoring reports, prepared by a qualified plant ecologist/arborist, will document the status of the plantings and recommendations for remediation as necessary. The monitoring reports will be provided to the seller and Reclamation by August 31 following each year of monitoring (generally July 1 through June 30) to allow time for additional planting activities, if necessary.</p> <p>Transfer-related pumping could not continue at the subject well while vegetation restoration activities consistent with the requirements above are ongoing (i.e. 3 years or until the survival criterion is met). Transfer-related pumping at the subject well could not resume after restoration unless the seller provides evidence that resuming pumping will not affect deep-rooted vegetation (such as data from the installation of a new shallow groundwater level monitoring well within a one-half mile radius of the deep-rooted vegetation that indicates stable shallow groundwater levels at less than 10 feet).</p>
AQ-1	<p>Selling agency would reduce pumping at diesel or natural gas wells to reduce emissions to below the thresholds. If an agency is transferring water through cropland idling and groundwater substitution in the same year, the reduction in vehicle emissions can partially offset groundwater substitution pumping at a rate of 4.25 acre-feet (AF) of water produced by idling to one acre-foot of groundwater pumped. Agencies may also decide to replace old diesel or natural gas wells to reduce emission below the thresholds.</p> <p>Any selling agencies with potentially significant emissions, as determined by this EIS/EIR, will be required to maintain daily recordkeeping logs that document the specific engine to be used for groundwater substitution transfers, the power rating (hp), and applicable emission factors. Emission calculations will be completed daily for comparison to the significance thresholds determined for each selling agency. The recordkeeping logs will be sent to Reclamation monthly for verification that emissions are within the allowable limits.</p> <p>Reclamation will also work with the water agencies to inform individual growers of incentive funding available through the Natural Resources Conservation Service's Environmental Quality Incentives Program. Funded conservation practices including the replacement of internal combustion engines in irrigation pumps; therefore, the program may be used by growers to further reduce criteria pollutant emissions.</p>
AQ-2	<p>Any engines operating in the area of analysis that are capable of operating as either electric or natural gas engines would only operate with electricity during any groundwater transfers. Any selling agencies with these engines will be required to maintain daily recordkeeping logs that document the engines used for groundwater substitution transfers and the type of fuel used. The recordkeeping logs will be sent to Reclamation monthly for verification that the engines are operating in compliance with the mitigation measure.</p>
LU-1	<p>Water would not be acquired from a particular parcel of land if idling the land would result in a lower classification of Important Farmland as defined under the Farmland Mapping and Monitoring Program (FMMP). The selling agency will provide cropping history of specific parcels to be idled for the transfer to Reclamation to determine if idling will result in a change in classification from Important Farmland.</p>
VEG and WILD-1	<p>Mitigation Measure VEG and WILD-1 includes measures to avoid potentially significant impacts to terrestrial species associated with cropland idling transfers and reduce any potential impacts to less-than-significant: As part of the review and approval process for proposed water transfers, Reclamation will have access to the land to verify how the water for transfer is being made available and to verify that actions to protect the giant garter snake are being implemented.</p>

Long-Term Water Transfers  
CEQA Findings

Measure No.	Mitigation Measure
VEG and WILD-1	<p>Movement corridors for aquatic species (including pond turtle and giant garter snake) include major irrigation and drainage canals. The water seller will keep adequate water in major irrigation and drainage canals. Canal water depths should be similar to years when transfers do not occur or, where information on existing water depths is limited, at least two feet of water will be considered sufficient.</p>
VEG and WILD-1	<p>Maintaining water in smaller drains and conveyance infrastructure supports key habitat attributes such as emergent vegetation for giant garter snake escape cover and foraging habitat. If cropland idling/shifting occurs, Reclamation will work with sellers to document that adequate water remains in drains and canals. Documentation may include flow records, photo documentation, or other means of documentation subject to approval by Reclamation and USFWS.</p>
VEG and WILD-1	<p>Fields abutting or immediately adjacent to areas with known important giant garter snake populations (Appendix N) will not be permitted to participate in cropland idling/shifting transfers. Important giant garter snake populations are defined for purposes of this mitigation measure as populations previously identified by biologists from USFWS, USGS, and possibly contract biologists. These populations of giant garter snakes were identified early on as identified in previous consultations and are in, or connected to, areas that are considered public or protected. Most of these areas have specific management plans for giant garter snakes either for mitigation or as wildlife refuges. One factor influencing the importance of these areas is that they can provide a refuge for snakes independent of rice production. Fields abutting or immediately adjacent to the following areas are considered important giant garter snake populations:</p> <ul style="list-style-type: none"> <li>• Little Butte Creek between Llano Seco and Upper Butte Basin Wildlife Area</li> <li>• Butte Creek between Upper Butte Basin and Gray Lodge Wildlife areas</li> <li>• Colusa Basin drainage canal between Delevan and Colusa National Wildlife Refuges</li> <li>• Gilsizer Slough</li> <li>• Colusa Drainage Canal</li> <li>• Land side of the Toe Drain along the Sutter Bypass</li> <li>• Willow Slough and Willow Slough Bypass in Yolo County</li> <li>• Hunters and Logan Creeks between Sacramento and Delevan National Wildlife Refuges</li> <li>• Lands in the Natomas Basin</li> </ul>
VEG and WILD-1	<p>At the end of the water transfer year, Reclamation will prepare an annual monitoring report that contains the following:</p> <ul style="list-style-type: none"> <li>• Maps of rice production and all cropland idling actions within the seller district that occurred within the range of potential transfer methods analyzed in this EIS/EIR.</li> <li>• Results of current scientific research, summary of monitoring pertinent to water transfer actions, and new giant garter snake detections.</li> <li>• Discussion of conservation measure effectiveness.</li> <li>• Cumulative history of crop idling and crop shifting specifically to make water available for transfers within the sellers area.</li> </ul> <p>The report will be submitted to the USFWS and CDFW no later than January 31, prior to the next year of potential transfers.</p>
VEG and WILD-1	<p>Reclamation will establish annual meetings with the Service to discuss the contents and findings of the annual report. These meetings will be scheduled following the distribution of the monitoring report and prior to February 28.</p>

Long-Term Water Transfers  
CEQA Findings

<b>Measure No.</b>	<b>Mitigation Measure</b>
VEG and WILD-1	If, upon Reclamation's review of monitoring reports or other scientific literature, it appears that the Project is having unanticipated effects on the giant garter snake, Reclamation will contact the Service to discuss the information available and effectiveness of Project conservation measures.
VEG and WILD-1	Reclamation will monitor the effectiveness of the conservation measures by funding giant garter snake distribution and occupancy research. The research, conducted by USGS, includes annual sampling of giant garter snake within the action area and focuses on their distribution and occupancy dynamics. The research is designed to evaluate the effectiveness of the conservation measures to maintain giant garter snake occupancy at sites transferring water via this program.

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