

# Report to the Board of Directors of Butte Water District

**SUBJECT: Addendum to the Long-Term Water Transfers Environmental Impact Statement/Environmental Impact Report (EIS/EIR) (State Clearinghouse # 2011011010)**

## Recommendations

It is recommended that the Board of Directors:

1. Adopt the Staff Report;
2. Acknowledge that:
  - a. The Long-Term Water Transfers EIR, including the Draft and Final EIRs, along with the Addendum completed by the District, have been completed in compliance with California Environmental Quality Act (CEQA);
  - b. The Board of Directors reviewed and considered the information contained in the Long-Term Water Transfers EIR and Addendum prior to approving transfers;
  - c. The Long-Term Water Transfers EIR and Addendum reflect the independent judgement and analysis of the district;
3. Adopt the Long-Term Water Transfers Mitigation, Monitoring, and Reporting Program (MMRP);
4. Further adopt the Long-Term Water Transfers CEQA Findings;
5. Approve the water transfers.

## Discussion

### ***Background***

In 2015, the San Luis & Delta-Mendota Water Authority (SLDMWA) and Bureau of Reclamation (Reclamation) completed a joint EIS/EIR on long-term water transfers in compliance with CEQA and CEQA Guidelines (California Code of Regulations, Section 15000 et seq., as amended) and National Environmental Policy Act (NEPA) requirements (the Long-Term Water Transfers EIS/EIR). The Long-Term Water Transfers EIS/EIR evaluated the potential direct, indirect, and cumulative environmental impacts of transferring water from willing sellers in the Sacramento and San Joaquin valleys to the SLDMWA, Contra Costa Water District (WD), or East Bay Municipal Utility

District (MUD) buying agencies. Cordua Irrigation District (ID) and Butte WD are listed as potential sellers in the Long-Term Water Transfers EIS/EIR, and would function as Responsible Agencies under CEQA related to water transfers from their districts. After completion and certification by the lead agencies of the Long-Term Water Transfers EIS/EIR, Cordua ID and Butte WD identified that they may want to consider water transfers during the ten year period described in the document (2015-2024) to other buyers that were not included in the EIS/EIR, including State Water Project (SWP) contractors in the Central Valley or southern California. Cordua ID and Butte WD have prepared an Addendum describing this change.

There is a current lawsuit challenging the Long-Term Water Transfers EIS/EIR pending in federal district court; however, pursuant to the provisions of CEQA for this type situation, a final EIR shall be conclusively presumed to comply with CEQA for purposes of use by Responsible Agencies unless the EIR is finally adjudged in a legal proceeding not to comply with the requirements of CEQA, or a subsequent EIR is made necessary by Section 15162 of these Guidelines. Neither of those conditions apply here and Butte WD and Cordua ID can utilize the Long-Term Water Transfers EIS/EIR, with the Addendum described below, for decision-making purposes. (Cal. Pub. Res. Code § 21167.3; State CEQA Guidelines § 15233.)

### ***Proposed Project***

A water transfer temporarily moves water from a willing seller to a willing buyer or buyers. To make water available, the seller must take an action to reduce consumptive use or use water in storage. The EIS/EIR analyzed water made available through four mechanisms: groundwater substitution, cropland idling/crop shifting, stored reservoir release, and conservation (see Section 2.3.2.1 of the Long-Term Water Transfers EIS/EIR). Cordua ID and Butte WD could transfer water using two methods:

- Groundwater substitution: groundwater substitution transfers occur when sellers choose to pump groundwater in lieu of diverting a portion of surface water supplies, thereby making the surface water available for transfer.
- Cropland idling/crop shifting: cropland idling makes water available for transfer that would have been used for agricultural production. For crop shifting transfers, water is made available when farmers shift from growing a higher water use crop to a lower water use crop.

The Long-Term Water Transfers EIS/EIR analyzed transfers from Cordua ID of up to 12,000 acre-feet of transfer water through groundwater substitution, and Butte WD of up to 5,500 acre-feet of transfer water through groundwater substitution and 11,500 acre-feet of transfer water through cropland idling/crop shifting. The refinements to the Proposed Project considered in the Addendum do not include any changes to the way that water is made available for transfer,

including the up to transfer quantity, transfer mechanisms, timing of transfer availability, or how the transfer is moved through the river systems and the Delta. The refinements only involve adding potential buyers for Cordua ID and Butte WD.

In addition to the buyers identified in the Long-Term Water Transfers EIS/EIR, Cordua ID and Butte WD would like to consider temporarily transferring water to SWP contractors in the Central Valley or southern California. These SWP contractors were not included as potential buyers in the Long-Term Water Transfers EIS/EIR. Potential SWP buyers include:

- San Joaquin Valley
  - County of Kings
  - Dudley Ridge WD
  - Empire West Side ID
  - Kern County Water Agency
  - Oak Flat WD
  - Tulare Lake Basin Water Storage District
- Southern California
  - Antelope Valley-East Kern Water Agency
  - Castaic Lake Water Agency
  - Coachella Valley WD
  - Crestline-Lake Arrowhead Water Agency
  - Desert Water Agency
  - Littlerock Creek ID
  - Metropolitan Water District of Southern California
  - Mojave Water Agency
  - Palmdale WD
  - San Bernardino Valley Municipal WD
  - San Gabriel Valley Municipal WD
  - San Geronio Pass Water Agency
  - Ventura County Watershed Protection District

***Environmental Review of the Project***

Most of the potential environmental impacts assessed in the Long-Term Water Transfers EIS/EIR were related to actions taken to make water available for transfer (such as idling croplands or pumping groundwater in lieu of surface water deliveries) or moving the water from the seller downstream and through the Delta. Adding potential buyers for Cordua ID and Butte WD does not change the analysis of these impacts. The potential impacts and benefits associated with the refinements to the Proposed Project in the Addendum are focused on adding new buyers to the Buyer Service Area.

Based on substantial evidence provided in the Addendum to the Long-Term Water Transfers EIR, the proposed addition of buyers of Long-Term Water Transfers is adequately addressed by the Long-Term Water Transfers EIS/EIR, and none of the conditions warranting preparation of a supplemental or

subsequent EIR, as set forth in CEQA Section 21166 and State CEQA Guidelines Section 15162 exist. Pursuant to Section 15164 of the State CEQA Guidelines, preparation of an Addendum to the Long-Term Water Transfers EIS/EIR is appropriate to meet CEQA review requirements for the minor modification to the project.

## **Attachments**

1. Addendum to Long-Term Water Transfers EIS/EIR
2. Long-Term Water Transfers MMRP
3. SLDMWA Long-Term Water Transfers CEQA Findings

# Addendum to Long-Term Water Transfers EIS/EIR

## 1 Introduction

This is an Addendum to the Long-Term Water Transfers EIS/EIR (Bureau of Reclamation and San Luis & Delta-Mendota Water Authority 2015).

### 1.1 Background

The California Environmental Quality Act [(CEQA); codified as Public Resources Code, Section 21000 et seq.]) requires public agencies to analyze and consider the environmental consequences of their decisions to approve development projects over which they exercise discretion. CEQA achieves this objective by requiring agencies to prepare Environmental Impact Reports (EIRs) for projects with the potential to cause significant impacts on the physical environment. EIRs are public documents that assess environmental effects related to the planning, construction, and operation of a project, and indicate ways to reduce or avoid possible environmental damage. An EIR also discloses growth-inducing impacts, effects found not to be significant, significant cumulative impacts, and significant impacts that cannot be avoided, if any. The purpose of an EIR is to inform. EIRs are not policy documents that recommend project approval or denial.

In 2015, the San Luis & Delta-Mendota Water Authority (SLDMWA) and Bureau of Reclamation (Reclamation) completed a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) (State Clearinghouse # 2011011010) on long-term water transfers in compliance with CEQA and CEQA Guidelines (California Code of Regulations, Section 15000 et seq., as amended) and National Environmental Policy Act (NEPA) requirements. The Long-Term Water Transfers EIS/EIR evaluated the potential direct, indirect, and cumulative environmental impacts of transferring water from willing sellers in the Sacramento and San Joaquin valleys to the SLDMWA, Contra Costa Water District (WD), or East Bay Municipal Utility District (MUD). Cordua Irrigation District (ID) and Butte WD are listed as potential sellers in this EIS/EIR, and would function as Responsible Agencies under CEQA related to water transfers from their districts. After completion of the Long-Term Water Transfers EIS/EIR, Cordua ID and Butte WD identified that they may want to consider water transfers to other buyers that were not included in the EIS/EIR,

including State Water Project (SWP) contractors in the Central Valley or southern California.

## 1.2 CEQA Requirements

Section 21166 of CEQA (the statute) sets forth the requirements for how a lead agency is to consider changes to a proposed project or the availability of new information that occurs after an EIR for the project has been completed, and Section 15162 of the State CEQA Guidelines reiterates those requirements, along with additional guidance. Section 21166 of CEQA states:

*When an environmental impact report has been prepared for a project pursuant to this division, no subsequent or supplemental environmental impact report shall be required by the lead agency or by any responsible agency, unless one or more of the following events occurs:*

- (a) Substantial changes are proposed in the project which will require major revisions of the environmental impact report.*
- (b) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions in environmental impact report.*
- (c) New information, which was not known and could not have been known at the time the environmental impact report was certified as complete, becomes available.*

Section 15162 of the State CEQA Guidelines indicates that:

- (a) When an EIR has been certified or a negative declaration adopted for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:*
  - (1) Substantial changes are proposed in the project which will require major revisions of the previous EIR ... due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;*
  - (2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR ... due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or*
  - (3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete ... shows any of the following:*

*(A) The project will have one or more significant effects not discussed in the previous EIR;*

*(B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;*

*(C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or*

*(D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.*

Section 15164 of the State CEQA Guidelines states that an Addendum to an EIR should be prepared “if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred.” The decision-making body will consider the Addendum in concert with the Final EIR prior to making a decision on the Project.

## **2 Project Background and Project Description**

The Long-Term Water Transfers EIS/EIR was certified and adopted by the SLDWMA in April 2015. Chapter 2 of the Long-Term Water Transfers EIS/EIR included a description of the alternatives. The Proposed Project included transfers from 28 sellers on the Sacramento, American, Yuba, Feather, and Merced river systems or in the Delta (see Section 2.3.2.2 of the Long-Term Water Transfers EIS/EIR). The water would be transferred to East Bay MUD (through its Freeport Diversion Facility on the Sacramento River), Contra Costa WD (through its Delta diversion facilities), or SLDWMA (through the CVP or SWP Delta diversion facilities) (see Section 1.2.2 of the Long-Term Water Transfers EIS/EIR). Cordua ID and Butte WD were both included as potential sellers. There is a current lawsuit challenging the Long-Term Water Transfers EIS/EIR pending in federal district court; however, responsible agencies such as Butte WD and Cordua ID must assume that the document fully meets the requirements of CEQA and is permitted to approve or disapprove the project. (Cal. Pub. Res. Code § 21167.3; State CEQA Guidelines § 15233.)

### **2.1 Potential Water Transfer Methods**

A water transfer temporarily moves water from a willing seller to a willing buyer. To make water available, the seller must take an action to reduce consumptive use or use water in storage. The EIS/EIR analyzed water made

available through four mechanisms: groundwater substitution, cropland idling/crop shifting, stored reservoir release, and conservation (see Section 2.3.2.1 of the Long-Term Water Transfers EIS/EIR). Cordua ID and Butte WD could transfer water using two methods:

- Groundwater substitution: groundwater substitution transfers occur when sellers choose to pump groundwater in lieu of diverting surface water supplies, thereby making the surface water available for transfer.
- Cropland idling/crop shifting: cropland idling makes water available for transfer that would have been used for agricultural production. For crop shifting transfers, water is made available when farmers shift from growing a higher water use crop to a lower water use crop.

The EIS/EIR analyzed transfers from Cordua ID of up to 12,000 acre-feet of transfer water through groundwater substitution, and Butte WD of up to 5,500 acre-feet of transfer water through groundwater substitution and 11,500 acre-feet of transfer water through cropland idling/crop shifting. The refinements to the Proposed Project considered in this Addendum do not include any changes to the way that water is made available for transfer, including the transfer quantity, transfer mechanisms, timing of transfer availability, or how the transfer is moved through the river systems and the Delta. The refinements only involve adding potential buyers for Cordua ID and Butte WD, as further described in Section 3 below.

## 2.2 Water Transfer Buyers

The Long-Term Water Transfers EIS/EIR analyzes transfers to ten participating members of the SLDWMA, Contra Costa WD, and East Bay MUD. Cordua ID and Butte WD would like to also consider temporarily transferring water to SWP contractors in the Central Valley or southern California. These SWP contractors were not included as potential buyers in the Long-Term Water Transfers EIS/EIR. Figure 1 shows Cordua ID, Butte WD, and the potential SWP contractors that could buy the transfer water. Potential SWP buyers include:

- San Joaquin Valley
  - County of Kings
  - Dudley Ridge WD
  - Empire West Side ID
  - Kern County Water Agency
  - Oak Flat WD
  - Tulare Lake Basin Water Storage District
- Southern California
  - Antelope Valley-East Kern Water Agency
  - Castaic Lake Water Agency
  - Coachella Valley WD



- Crestline-Lake Arrowhead Water Agency
- Desert Water Agency
- Littlerock Creek ID
- Metropolitan Water District of Southern California
- Mojave Water Agency
- Palmdale WD
- San Bernardino Valley Municipal WD
- San Gabriel Valley Municipal WD
- San Geronio Pass Water Agency
- Ventura County Watershed Protection District

These SWP contractors have not committed to buying transfer water, and each agency (or all agencies) may not be interested in participating in transfers. This list includes all SWP contractors in the San Joaquin Valley and southern California in case they determine they may be interested in participating.

These buyers receive SWP water supplies that are diverted from the Delta at the SWP's Harvey O. Banks Pumping Plant (Banks Pumping Plant). Water transfers would also be moved through the Delta using the Banks Pumping Plant into the California Aqueduct. This delivery mechanism is analyzed in the Long-Term Water Transfers EIS/EIR because water transfers to SLDMWA could be delivered through CVP or SWP facilities in the Delta.

After diversion from the Delta, the transfer water would move through the California Aqueduct and potentially be stored in San Luis Reservoir, as described in the Long-Term Water Transfer EIS/EIR. South of San Luis Reservoir, however, the transfer water would follow a different path for delivery to SWP contractors. Transfers to San Joaquin Valley contractors would travel through the San Luis Canal to their respective diversion points. For southern California users, the water would pass through the San Luis Canal to a series of pumping plants to move water south in the valley and over the Tehachapi Mountains (Buena Vista Pumping Plant, Teerink Pumping Plant, Chrisman Pumping Plant, and Edmonston Pumping Plant). Depending on the delivery location in southern California, the water may be pumped through additional pumping plants or temporarily stored in local storage facilities before delivery.

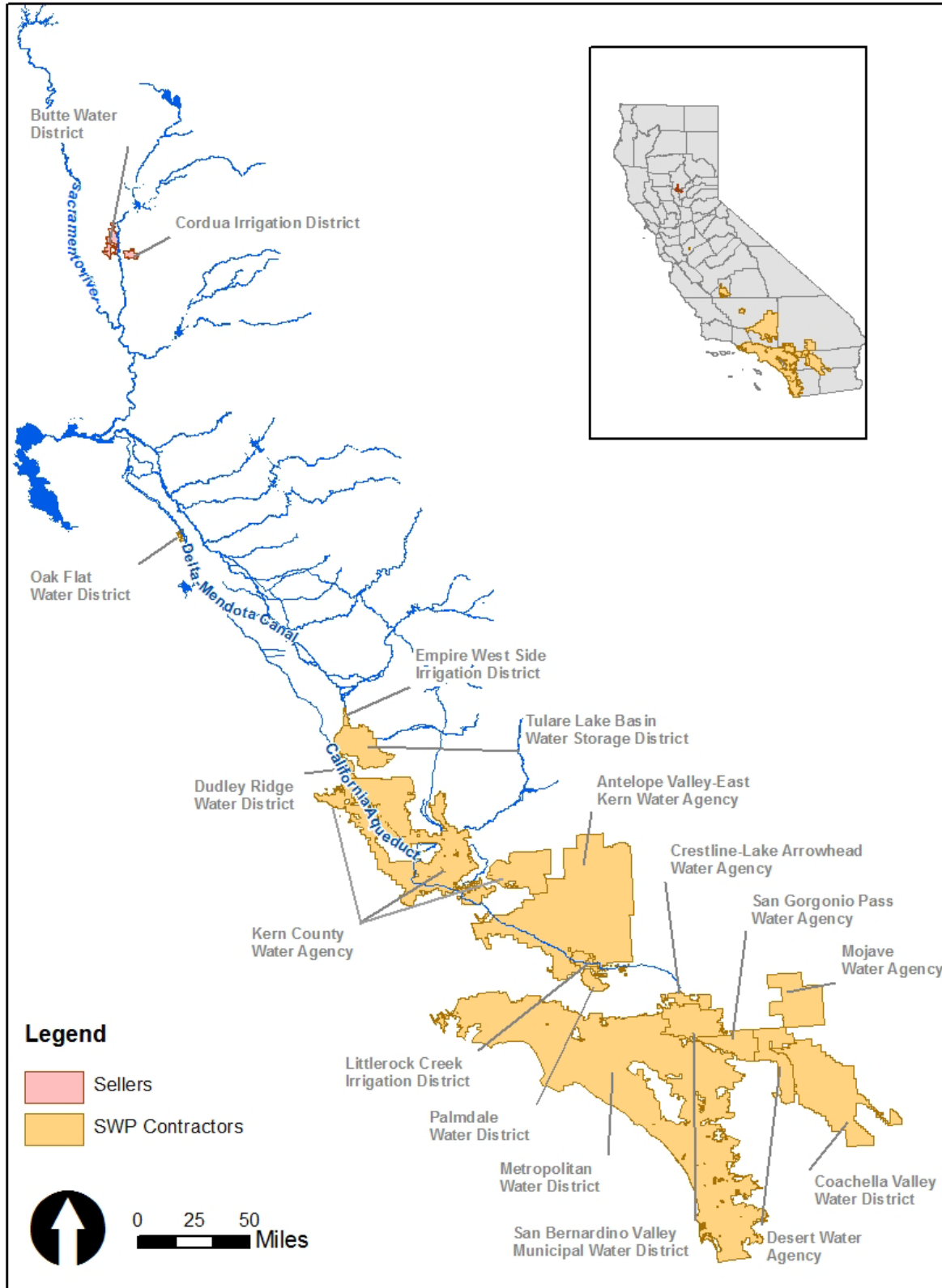


Figure 1. Potential Water Transfer Buyers and Sellers

## 3 Environmental Review of the Project

Most of the potential environmental impacts assessed in the Long-Term Water Transfers EIS/EIR were related to actions taken to make water available for transfer (such as idling croplands or pumping groundwater in lieu of surface water deliveries) or moving the water from the seller downstream and through the Delta. Adding potential buyers for Cordua ID and Butte WD does not change the analysis of these impacts. The potential impacts and benefits associated with the refinements to the Proposed Project are focused on adding new buyers to the Buyer Service Area.

The Long-Term Water Transfers EIS/EIR analyzed the impacts from transferring the maximum amount of water that was available from willing sellers and could be moved through the Delta. This amount may be more than the buyers' demands and in many cases more than the applicable sellers wish to make available, but the maximum transfer amount was analyzed to be conservative. Adding new buyers would not increase the total amount of water that could be transferred compared to what was analyzed in the EIS/EIR. Additional buyers would only have the potential to affect some environmental resources, and these resources are described below in more detail.

### 3.1 Water Supply

#### 3.1.1 Existing Environmental Setting

Section 3.1.1 of the Long-Term Water Transfers EIS/EIR provides a summary of the environmental setting for water supplies in the area of analysis at the time EIR/EIS was prepared. The setting includes a description of the water supply source for each of the sellers and buyers. Since certification of the EIS/EIR, the water supply sources (including water rights and/or water contracts) have not changed. This Addendum is adding SWP contractors in the San Joaquin Valley and southern California as potential buyers. Water transfers would be augmenting SWP supplies for these contractors. Five SWP contractors (primarily in the San Joaquin Valley) use SWP supplies for agricultural uses; the remaining contractors use SWP supplies for municipal and industrial uses (California Department of Water Resources (DWR) 2016). Total SWP deliveries have been up to about 4 million acre-feet in wet years (DWR 2016), but deliveries have been constrained because of dry hydrologic conditions in the past several years and limitations on the ability to move water through the Delta as a result of Biological Opinions. SWP allocations were 5 percent in 2014 (DWR 2014) and 20 percent in 2015 (DWR 2015a), which has contributed to a demand for temporary transfer supplies for SWP contractors.

### 3.1.2 Evaluation of Impacts

Section 3.1.2 in the Long-Term Water Transfers EIS/EIR concluded water transfers under the Proposed Project would have a beneficial effect to water users in the Buyer Service Area. The Proposed Project would deliver additional water supply to water users subject to reductions in their water supply due to dry hydrologic conditions. The transfer water would help provide supplemental water to agricultural lands or municipal users that are experiencing substantial shortages. The Long-Term Water Transfers EIS/EIR concluded that water transfers would not have a significant adverse direct, indirect, or cumulative impact on water supply in the Buyer Service Area and no mitigation was necessary.

Subsequent to the certification of the Long-Term Water Transfers Final EIS/EIR, sellers have identified potential new buyers of water transfers that are outside of the defined Buyer Service Area. The additional buyers in the San Joaquin Valley and southern California would also engage in transfers to address water supply shortages associated with dry hydrologic conditions.

The project changes addressed in this Addendum add new entities to the Buyer Service Area (see list in Section 2.2). Water transfers to SWP contractors in the San Joaquin Valley and southern California would have similar effects to water supply as described in Section 3.1.2 of the EIS/EIR.

### 3.1.3 Findings

There are no substantial changes to the circumstances under which the Long-Term Water Transfers would be undertaken, and there is no new information of substantial importance that has become available relative to water supply. No substantial changes in the water supply environment have occurred since certification of the Long-Term Water Transfers Final EIS/EIR.

Based on the above, no new significant water supply impacts or a substantial increase in previously identified water supply impacts would occur as a result of transferring water to SWP contractors in the San Joaquin Valley or southern California. Therefore, impacts to water supply as a result of the proposed new buyers do not meet the standards for subsequent or supplemental EIR pursuant to CEQA Guidelines, Section 15162.

## 3.2 Groundwater Resources

### 3.2.1 Existing Environmental Setting

Section 3.3.1 of the Long-Term Water Transfers Final EIS/EIR provides a summary of the environmental setting for groundwater resources in the area of analysis at the time EIS/EIR was prepared. The setting includes a description, including geology, hydrogeology, and hydrology, of the San Joaquin Valley Groundwater Basin that extends from San Joaquin County into Kern County. The southern portion of the San Joaquin Valley Groundwater Basin extends from the Fresno-Madera County line through Kings and Tulare counties into Kern County. The setting also describes groundwater production, levels, and storage in the San Joaquin Valley Groundwater Basin. Figure 3.3-19 in the Long-Term Water Transfers Final EIS/EIR shows groundwater elevation contours in the basin. As stated in Section 3.3.1.3.3, groundwater storage has been in steady decline in the San Joaquin Valley Groundwater Basin since the 1940s. Since certification of the Long-Term Water Transfers Final EIS/EIR, the environmental setting for groundwater has remained primarily the same for the San Joaquin Valley Groundwater Basin.

### 3.2.2 Evaluation of Impacts

Section 3.3.2 in the Long-Term Water Transfers Final EIS/EIR concluded water transfers under the Proposed Project would have a minor beneficial effect to groundwater levels in the Buyer Service Area. The Proposed Project may result in a reduced use of groundwater resources during periods of shortage by supplementing local water supply with transferred water. This potential decrease in the use of local groundwater resources may result in a slowing of groundwater level decline or potentially cause an increase in groundwater levels. A slowed rate of decline or an increase in groundwater levels would help to slow the rate of subsidence in these areas.

Subsequent to the certification of the Long-Term Water Transfers Final EIS/EIR, sellers have identified potential new buyers of water transfers that are outside of the originally defined Buyer Service Area. The additional buyers in the San Joaquin Valley and southern California also use local groundwater as a water supply and having additional supplemental water, as afforded through the subject refinement to the Proposed Project, would similarly reduce demands on local surface water and groundwater supplies during water shortages.

The project changes addressed in this Addendum add new districts to the Buyer Service Area. Water transfers to SWP contractors in the San Joaquin Valley and southern California would have similar effects to groundwater as described in Section 3.3.2 of the Long-Term Water Transfers Final EIS/EIR. Water transfers

may temporarily reduce groundwater pumping, which would slow groundwater level declines and improve groundwater storage.

### **3.2.3 Findings**

There are no substantial changes to the circumstances under which the Long-Term Water Transfers would be undertaken, and there is no new information of substantial importance that has become available relative to groundwater resources. No substantial changes in the water supply environment have occurred since certification of the Long-Term Water Transfers Final EIS/EIR.

Based on the above, no new significant water supply impacts or a substantial increase in previously identified groundwater impacts would occur as a result of transferring water to SWP contractors in the San Joaquin Valley or southern California. Therefore, impacts to groundwater as a result of the proposed new buyers do not meet the standards for subsequent or supplemental EIR pursuant to CEQA Guidelines, Section 15162.

## **3.3 Air Quality**

### **3.3.1 Existing Environmental Setting**

Section 3.5.1 of the Long-Term Water Transfers EIS/EIR provides a summary of the environmental setting for air quality in the area of analysis at the time EIR/EIS was prepared. The Buyer Service Area includes water districts in the North Central Coast Air Basin, San Francisco Bay Air Basin, and San Joaquin Valley Air Basin. Since certification of the EIS/EIR, the environmental setting for air quality has remained primarily the same in the Buyer Service Area.

### **3.3.2 Evaluation of Impacts**

Section 3.5.2 in the Long-Term Water Transfers EIS/EIR concluded water transfers under the Proposed Project would have a beneficial but minor impact to air quality in the Buyer Service Area. Water transfers for agricultural uses would reduce fugitive dust emissions that occurs from wind blowing over bare fields. The conclusion of the Long-Term Water Transfers Final EIS/EIR is that water transfers would not have a project-specific or cumulative significant impact on air quality in the Buyer Service Area and no mitigation was necessary.

Subsequent to the certification of the Long-Term Water Transfers Final EIS/EIR, sellers have identified potential new buyers of water transfers that are outside of the originally defined Buyer Service Area for air quality. The new buying entities are in the South Central Coast Air Basin, South Coast Air Basin, Mohave Desert Air Basin, Salton Sea Air Basin, and San Diego Air Basin.

There are also additional water districts in the San Joaquin Valley Air Basin, which was included in Section 3.5 of the Long-Term Water Transfers EIS/EIR. Tables 1 and 2 show Federal and State attainment status by county and air basin for water districts added to the Buyer Service Area. Section 3.5 of the Long-Term Water Transfers EIS/EIR includes the regulatory air quality standards that have not changed since certification of the Final EIS/EIR.

**Table 1. Federal Attainment Status**

<b>Air Basin</b>	<b>County</b>	<b>O<sub>3</sub></b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>
San Joaquin Valley	Kern	N (Extreme)	M (Serious)	N (Moderate)
	Tulare	N (Extreme)	M (Serious)	N (Moderate)
South Coast	Los Angeles	N (Extreme)	M (Serious)	N (Moderate)
	Orange	N (Extreme)	M (Serious)	N (Moderate)
	Riverside	N (Extreme)	M (Serious)	N (Moderate)
	San Bernardino	N (Extreme)	M (Serious)	N (Moderate)
South Central	Ventura	N (Serious)	A	A
San Diego	San Diego	N (Marginal)	M	A
Salton Sea	Imperial	N (Marginal)	N (Serious)	N (Moderate)
	Riverside	N (Severe)	N (Serious)	A
Mohave Desert	Los Angeles	N (Severe)	A	A
	San Bernardino	N (Severe)	N (Moderate)	A

Source: U.S. Environmental Protection Agency 2015

Key:

O<sub>3</sub> = ozone; PM<sub>10</sub> = inhalable particulate matter; PM<sub>2.5</sub> = fine particulate matter; N = nonattainment; A = attainment; M = maintenance

**Table 2. State Attainment Status**

Air Basin	County	O <sub>3</sub> <sup>1</sup>	PM <sub>10</sub>	PM <sub>2.5</sub>
San Joaquin Valley	Kern	N	N	N
	Tulare	N	N	N
South Coast	Los Angeles	N	N	N
	Orange	N	N	N
	Riverside	N	N	N
	San Bernardino	N	N	N
South Central	Ventura	N	N	A
San Diego	San Diego	N	N	N
Salton Sea	Imperial	N	N	A <sup>2</sup>
	Riverside	N	N	A
Mohave Desert	Los Angeles	N	N	Unclassified
	San Bernardino	N	N	N

Source: California Air Resources Board 2015

Key:

O<sub>3</sub> = ozone; PM<sub>10</sub> = inhalable particulate matter; PM<sub>2.5</sub> = fine particulate matter; N = nonattainment; A = attainment; M = maintenance

<sup>1</sup> There are two State standards for ozone, a 1-hour average of 0.09 parts per million and an 8-hour average of 0.070 parts per million, both not to be exceeded

<sup>2</sup> For area excluding City of Calexico

The project changes addressed in this Addendum add new entities to the Buyer Service Area. Water transfers to additional entities within the San Joaquin Valley Air Basin would have the same effects to air quality as described in Section 3.5.2 of the Long-Term Water Transfers EIS/EIR. Water transfers for agricultural irrigation would reduce fugitive dust emissions that occurs from wind blowing over bare fields. This would be a minor benefit to air quality in the Kern and Tulare counties in the San Joaquin Air Basin. Water transfers to entities in the South Central Coast Air Basin, South Coast Air Basin, Mohave Desert Air Basin, and Salton Sea Air Basin would primarily be used for urban uses. There would be no changes in operations of the entities receiving transfer water that would increase air pollutant emissions.

### 3.3.3 Findings

There are no substantial changes to the circumstances under with the Long-Term Water Transfers would be undertaken, and there is no new information of substantial importance that has become available relative to air quality. No substantial changes in the air quality affected environment have occurred since certification of the Long-Term Water Transfers Final EIS/EIR.



Based on the above, no new significant air quality impacts or a substantial increase in previously identified air quality impacts would occur as a result of transferring water to new buyers. Therefore, impacts to air quality as a result of the proposed new buyers do not meet the standards for subsequent or supplemental EIR pursuant to CEQA Guidelines, Section 15162.

## **3.4 Climate Change**

### **3.4.1 Existing Environmental Setting**

Section 3.6.1 of the Long-Term Water Transfers EIS/EIR provides a summary of the environmental setting for climate change at the time EIR/EIS was prepared. The discussion in Section 3.6.1 addresses climate change for all of California. Since certification of the EIS/EIR, the environmental setting for climate change has not changed.

### **3.4.2 Evaluation of Impacts**

Section 3.6.2 in the Long-Term Water Transfers EIS/EIR concluded that greenhouse gas (GHG) emissions due to water transfers in the Buyer Service Area would not likely change relative to existing conditions and the impact to climate change would be less than significant. Water transfers to agricultural areas could temporarily reduce the amount of land idled. This would increase use of farm equipment, which would increase vehicle exhaust emissions. Farmers may also pump less groundwater for irrigation, which would reduce emissions from use of diesel pumps.

Subsequent to the certification of the Long-Term Water Transfers Final EIS/EIR, sellers have identified potential new buyers of water made available by transfers that are outside of the originally defined Buyer Service Area for air quality. There are new buying entities for agricultural water uses in the San Joaquin Valley and for urban water uses in southern California.

The project changes addressed in this Addendum add new entities to the Buyer Service Area. Water transfers to additional districts within the San Joaquin Valley Air Basin would have the same effects to climate change as described in Section 3.6.2 of the Long-Term Water Transfers EIS/EIR. Water transfers for agricultural irrigation would increase vehicle exhaust emissions and could decrease emissions from use of diesel pumps. These changes in greenhouse gas emissions would be a minor and less than significant impact to climate change. Water transfers to districts southern California would require additional pumping to deliver water.

Pumping plants require electricity to pump water into the conveyance facilities, and several other facilities require power to deliver water to southern California. No localized air quality impacts from water delivery would occur, but emissions

at the power plants servicing the electric grids could increase as a result of additional pumping of water transfers. Any combustion equipment operating at the power plants must be permitted by the local air districts and emissions would be accounted for in the emissions budgets included in the State Implementation Plan. Effects to climate change as a result of increased pumping are consistent with the conclusions in the Long-Term Water Transfers EIS/EIR and impacts would remain less than significant. There would be no changes in operations of the entities receiving water transfers that would increase GHG emissions.

### **3.4.3 Findings**

There are no substantial changes to the circumstances under which the Long-Term Water Transfers would be undertaken, and there is no new information of substantial importance that has become available relative to climate change. No substantial changes in the climate change affected environment have occurred since certification of the Long-Term Water Transfers Final EIS/EIR.

Based on the above, no new significant climate change impacts or a substantial increase in previously identified climate change impacts would occur as a result of transferring water to new buyers. Therefore, impacts to climate change as a result of the proposed new buyers do not meet the standards for subsequent or supplemental EIR pursuant to CEQA Guidelines, Section 15162.

## **3.5 Agricultural Land Use**

### **3.5.1 Existing Environmental Setting**

Section 3.9.1 of the Long-Term Water Transfers EIS/EIR provides a summary of the environmental setting for agricultural land use in the area of analysis at the time EIR/EIS was prepared. For agricultural land use, the Buyer Service Area included agricultural water districts' service areas in San Joaquin, Stanislaus, Merced, San Benito, Fresno and Kings counties that identified interest in purchasing water from transfers. Since certification of the EIS/EIR, the environmental setting has remained primarily the same in the Buyer Service Area, except that there has been more cropland idling in response to drought induced water shortages in 2015.

### **3.5.2 Evaluation of Impacts**

Section 3.9.2 in the Long-Term Water Transfers EIS/EIR concluded water transfers under the Proposed Project would have a beneficial but minor impact to agricultural land use in the Buyer Service Area. Water transfers would temporarily provide irrigation for crops that may have an insufficient irrigation supply due to water shortages. The conclusion of the Long-Term Water

Transfers EIS/EIR is that water transfers would not have a project-specific or cumulative significant impact on agricultural land use in the Buyer Service Area and no mitigation was necessary.

Subsequent to the certification of the Long-Term Water Transfers Final EIS/EIR, sellers have identified potential new buyers of water transfers that are outside of the originally defined Buyer Service Area for agricultural land use. The new agricultural entities that are potential buyers are in Kern and Tulare counties. Similar to the buyers in existing Buyer Service Area, water transferred to the new agricultural entities would be used for agricultural irrigation.

The project changes addressed in this Addendum add new entities to the Buyer Service Area. Water transfers to Kern and Tulare counties would have similar effects to agricultural land use as described in Section 3.9.2 of the Long-Term Water Transfers EIS/EIR. Water transfers to the new entities would be used for irrigation and would maintain agricultural land uses in the San Joaquin Valley. There would be reduced cropland idling in Kern and Tulare counties with increased irrigation supply from transfers.

### **3.5.3 Findings**

There are no substantial changes to the circumstances under which the Long-Term Water Transfers would be undertaken, and there is no new information of substantial importance that has become available relative to agricultural land use. No substantial changes in the agricultural land use environment have occurred since certification of the Long-Term Water Transfers Final EIS/EIR.

Based on the above, no new significant agricultural land use impacts or a substantial increase in previously identified agricultural land use impacts would occur as a result of transferring water to Kern and Tulare Counties for irrigation purposes. Therefore, impacts to agricultural land use as a result of the proposed new buyers do not meet the standards for subsequent or supplemental EIR pursuant to CEQA Guidelines, Section 15162.

## **3.6 Power**

### **3.6.1 Existing Environmental Setting**

Section 3.16.1 of the Long-Term Water Transfers EIS/EIR provides a summary of the environmental setting for power in the area of analysis at the time EIR/EIS was prepared. Power includes hydroelectric power generation at CVP/SWP facilities and pumping plants to move water to the Buyer Service Area. For power resources, the Buyer Service Area included the CVP's Jones Pumping Plant and the SWP's Banks Pumping Plant to deliver water to SLDMWA member agencies, Freeport Pumping Plant to deliver water to East Bay MUD, and pumps operated by Contra Costa WD in the Delta. The Buyer

Service Area also included the Gianelli and O’Neill pump generation plants that pump water to O’Neill Forebay and San Luis Reservoir and also generate power. Since certification of the EIS/EIR, the environmental setting has remained the same in the Buyer Service Area.

### 3.6.2 Evaluation of Impacts

Section 3.16.2 in the Long-Term Water Transfers EIS/EIR concluded water transfers under the Proposed Project would have a minor effect to power resources. Energy required to pump water made available by transfers would be a small increase relative to existing energy use of the CVP and SWP and would not affect long-term power supplies. The conclusion of the Long-Term Water Transfers EIS/EIR is that water transfers would have a less than significant project-specific or cumulative impact on power resources and no mitigation was necessary.

Subsequent to the certification of the Long-Term Water Transfers Final EIS/EIR, sellers have identified potential new buyers of water transfers that are outside of the originally defined Buyer Service Area for power resources. Similar to the existing Buyer Service Area, water transfers would require use of Jones and/or Banks Pumping Plants and O’Neill and Gianelli pump generation facilities. There would be no changes in energy use at these facilities as a result of the new buying entities. The maximum amount of water transferred and delivered south of the Delta has not changed from what was evaluated under the Proposed Project in the Long-Term Water Transfers EIS/EIR.

The project changes addressed in this Addendum expand the Buyer Service Area to water entities in Kern and Tulare counties and southern California. In addition to the power facilities listed above, transfers to the new buyers would require use of pumping plants to move water south through the California Aqueduct (Buena Vista Pumping Plant, Teerink Pumping Plant, and Chrisman Pumping Plant) and over the Tehachapi Mountains (Edmonston Pumping Plant). The use of these facilities were not assumed in the Long-Term Water Transfers EIS/EIR. Table 3 shows pumping plant characteristics for the facilities needed to deliver water to the new buyers and total energy used at pumping plants in 2012 and 2013.

**Table 3. Pumping Plant Characteristics**

Pumping Plant	Number of Units	Normal Static Head (feet)	Total Flow at Design Head (cfs)	Total Motor Rating (hp)	Total Energy Use in 2012 (MW)	Total Energy Use in 2013 (MW)
Buena Vista	10	205	5,405	144,500	427,278	332,642
Teerink	9	233	5,445	150,000	435,184	343,012
Chrisman	9	518	4,995	330,00	962,985	748,627
Edmonston	14	1926	4,480	1,120,000	3,509,882	2,720,105

Source: DWR 2015b, DWR 2015c

Water transfers to these new entities would require additional power to deliver water to buyers further south in the San Joaquin Valley and to southern California. Up to 29,000 acre-feet could be delivered from Cordua ID and Butte WD to these new buyers over a 3-month transfer period (July through September). Edmonston Pumping Plant conveyed 1,570,507 acre-feet in 2012 and 1,216,034 acre-feet in 2013 to Southern California (DWR 2015b; DWR 2015c). An additional up to 29,000 acre-feet (assuming these southern California entities were the only new buyers) would be about a 2 percent increase over the amount of water pumped in 2013 and the total would be even less for 2012. The SWP contractors are purchasing transfer water because SWP Table A allocations are less than 100 percent. With the proposed water transfer of 29,000 acre-feet, SWP deliveries would continue to be less than 100 percent of Table A allocations. Therefore, the total amount of SWP water supply in 2016 and proposed transfer water pumped at Edmonston Pumping Plant would be less than if the contractors received 100 percent of their Table A allocation. The increase in energy use due delivering water to the new buyers would be comparatively minor and within historic ranges of energy use for these facilities. The impacts to power supply would be less than significant.

### 3.6.3 Findings

There are no substantial changes to the circumstances under which the Long-Term Water Transfers would be undertaken, and there is no new information of substantial importance that has become available relative to power resources. No substantial changes in the power resources affected environment have occurred since certification of the Long-Term Water Transfers Final EIS/EIR.

Based on the above, no new significant power impacts or a substantial increase in previously identified power impacts would occur as a result of transferring water to new buyers. Therefore, impacts to power as a result of the proposed new buyers do not meet the standards for subsequent or supplemental EIR pursuant to CEQA Guidelines, Section 15162.

## 4 Conclusion

Based on substantial evidence provided herein, the proposed addition of buyers of Long-Term Water Transfers is adequately addressed by the Long-Term Water Transfers EIS/EIR, and none of the conditions warranting preparation of a supplemental or subsequent EIR implementation, as set forth in CEQA Section 21166 and State CEQA Guidelines Section 15162 exist. Pursuant to Section 15164 of the State CEQA Guidelines, preparation of an Addendum to the Long-Term Water Transfers EIS/EIR is appropriate to meet CEQA review requirements for the project.

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# Appendix K

## Mitigation Monitoring and Reporting Program

### K.1 Introduction

The proposed Long-Term Water Transfers (Project) would result in the potential for significant environmental impacts associated with water supply, air quality, groundwater resources, and agricultural land use. Mitigation measures have been incorporated into the Project to reduce impacts to less than significant levels. The mitigation measures for the Project must be adopted by Reclamation and the San Luis & Delta-Mendota Water Authority (SLDMWA), in conjunction with adoption of the Environmental Impact Statement/Environmental Impact Report (EIS/EIR).

Section 21081.6 of the Public Resources Code (PRC) and California Environmental Quality Act (CEQA) Guidelines section 15097 require the Lead Agency for each project that is subject to CEQA to monitor performance of the mitigation measures included in any environmental document to ensure that implementation does, in fact, take place. The PRC requires the Lead Agency to adopt a monitoring and reporting program for assessing and ensuring the implementation of required mitigation measures.

In accordance with PRC Section 21081.6, SLDMWA has developed this Mitigation Monitoring and Reporting Program (MMRP) for the Project. The purpose of the MMRP is to ensure activities associated with transferring water comply with all applicable environmental mitigation requirements.

### K.2 Mitigation and Monitoring

Table K-1 lists the mitigation measures identified in the EIS/EIR, responsible parties, the time frame for implementation, and the monitoring parties. A column is provided for the monitoring party to sign-off on the implementation of each mitigation measure.

In addition to the mitigation measures, several environmental commitments would be enacted to reduce potential environmental impacts from water transfers. The environmental commitments are included in this MMRP to verify compliance as transfers move forward. Table K-2 shows these commitments, the responsible parties, time frame for implementation, and the monitoring parties.

**Table K-1. Mitigation Measures**

Measure No.	Mitigation Measure	Responsible Party	Monitoring Party	Method of Verification	Timing of Verification	Verification of Completion	
						Initials	Date
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</p>	Reclamation	Reclamation and DWR	CVP and SWP operations reporting.	Ongoing.		



Measure No.	Mitigation Measure	Responsible Party	Monitoring Party	Method of Verification	Timing of Verification	Verification of Completion	
						Initials	Date
	<p>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 <i>DRAFT Technical Information for Preparing Water Transfer Proposals</i> (Reclamation and DWR 2014) provide guidance for the development of proposals for groundwater substitution water transfers. The technical information informs the development of the monitoring and mitigation program for the range of potential transfer activities evaluated in this EIS/EIR, which will be updated as appropriate based on the most current version of the technical paper each year of the ten-year term of potential activities.</p> <p>The objective of Mitigation Measure GW-1 is to avoid significant adverse environmental effects and ensure prompt corrective action in the event unanticipated effects nevertheless occur. The measure accomplishes this by monitoring groundwater and/or surface water levels during transfers to avoid potential effects. The objectives of this process are to: (1) minimize potential effects to other legal users of water; (2) provide a process for review and response to reported effects to non-transferring parties; (3) assure that a local mitigation strategy is in place prior to the groundwater transfer; and (4) mitigate significant adverse environmental effects that occur. Reclamation will verify that sellers adopt and implement these</p>	Participating Sellers	Reclamation	Seller transfer application package.	Prior to water transfers.		

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Measure No.	Mitigation Measure	Responsible Party	Monitoring Party	Method of Verification	Timing of Verification	Verification of Completion	
						Initials	Date
	mitigation measures to avoid potentially significant adverse effects related to groundwater extraction. In addition, each entity participating in a groundwater substitution transfer 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 is compatible with applicable GSPs.						
GW-1	<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> .	Participating sellers	Reclamation	Seller transfer application package.	Prior to water transfers.		
GW-1	<u>Monitoring Program</u> Potential sellers must complete and implement a monitoring program subject to Reclamation's approval that shall, at a minimum, include the following components:	Participating sellers	Reclamation	Seller transfer application package and monitoring reports.	Prior to, during, and after water transfers.		
GW-1	<u>Monitoring Well Network</u> The monitoring program shall incorporate a sufficient number of monitoring wells, as determined by Reclamation in relation to local conditions, to accurately characterize groundwater levels and 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.	Participating sellers	Reclamation	Seller transfer application package and monitoring data.	Plan submitted prior to water transfers; monitoring information submitted during and after transfer.		

Measure No.	Mitigation Measure	Responsible Party	Monitoring Party	Method of Verification	Timing of Verification	Verification of Completion	
						Initials	Date
GW-1	<p><i>Groundwater Pumping Measurements</i></p> <p>All wells pumping to replace surface water designated 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 pumping and at designated times, but no less than monthly and as close as practical to the last day of the month, throughout the duration of the transfer.</p>	Participating sellers	Reclamation	Seller transfer application package with field spot-checks and monitoring data.	Prior to, during, and after water transfers.		
GW-1	<p><i>Groundwater Levels</i></p> <p>Sellers will collect measurements of groundwater levels in both participating transfer wells and monitoring wells. Groundwater level monitoring will include measurements before, during and after transfer-related 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 monthly from March in the year of the proposed transfer until the start of the transfer (where possible).</li> <li>• Start of transfer: Groundwater levels will be measured on the same day that the transfer begins, prior to the pump being turned on.</li> <li>• During transfer: Groundwater levels will be measured throughout the transfer period at the frequency specified in the most current <i>DRAFT Technical Information for Preparing Water Transfer Proposals</i>.</li> <li>• Post-transfer: Groundwater levels will be measured weekly for one month after the end of transfer pumping, after which groundwater levels will be measured monthly through March of the year following the transfer.</li> </ul> <p>Sellers thus monitor effects to groundwater levels that may result from the proposed transfer and avoid significant impacts. The primary criteria used</p>	Participating sellers	Reclamation	Regular inspection, monitoring data, and report on effects to deep-rooted vegetation, if necessary.	Prior to, during, and after water transfers.		

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						Initials	Date
	<p>to identify significant impacts to groundwater levels are the Basin Management Objectives (BMOs) set by GMPs. In the Sacramento Valley, several counties have established GMPs to provide guidance in managing the resource. The existing GMPs and BMOs are discussed in Section 3.3.1.2, Regulatory Setting.</p> <p>In areas where quantitative BMOs do not exist, Reclamation, SLDMWA, and the potential seller(s) will coordinate closely with potentially impacted third parties to collect and monitor groundwater data. If a third party expects that it may be impacted 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, 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> <p>Additionally, to avoid effects to vegetation, sellers will monitor groundwater depth data to verify that significant adverse effects to deep-rooted vegetation are avoided. If monitoring data indicate that water levels have dropped 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 elevations in the area of transfer have typically varied by more than this amount annually during the proposed transfer period, then the transfer may be allowed to proceed. If there is no deep-rooted vegetation (i.e., oaks that would have tap roots greater than 10 feet deep) within one-half mile of the transfer area or the vegetation is located</p>						

Measure No.	Mitigation Measure	Responsible Party	Monitoring Party	Method of Verification	Timing of Verification	Verification of Completion	
						Initials	Date
	along waterways that will continue to have water during the transfer, the transfer may be allowed to proceed. If significant adverse impacts to deep-rooted vegetation occur as a result of the transfer despite the monitoring efforts and implementation of the mitigation plan, the seller will prepare a report documenting the result of the restoration activity to plant, maintain, and monitor restoration of vegetation for 5 years to replace the losses.						
GW-1	<i>Groundwater Quality</i> 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 period, and at the termination of transfer pumping.	Municipal sellers	Reclamation	Inspections during transfer period and monitoring data.	Prior to, during, and after water transfers.		
GW-1	<i>Land Subsidence</i> Subsidence monitoring will be required if groundwater levels could decline below historic low levels during the proposed water transfer. If the measured groundwater level falls below the historic low level, land surface elevation measurements in strategic locations within and/or near the transfer area will be required. Measurements may include (1) extensometer monitoring, (2) continuous Global Positioning System (GPS) monitoring, or (3) extensive land-elevation benchmark surveys conducted by a licensed surveyor. This data could be collected by the seller or from other sources (such as public extensometer data). Measurements must be completed on a monthly basis during the transfer.  If the land surface elevation survey indicates an	Participating sellers	Reclamation	Regular inspections and monitoring data.	Prior to, during, and after water transfers.		

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						Initials	Date
	<p>elevation decrease between 0.1 foot and 0.2 foot from the initial measurement, the seller could have significant impacts and would need to start the process identified in the Mitigation Plan. The seller will also work with Reclamation to assess the accuracy of the survey measurements based on current limitations of technology, professional engineering/surveying judgment, and any other data available in or near the transferring area.</p> <p>The threshold of 0.1 foot was chosen as this value is typical of the elastic (i.e., recoverable) portion of subsidence; the threshold of 0.2 foot was selected considering limitations of current land survey technology. This threshold is supported by a review of data from the several extensometers within the Sacramento Valley.</p>						
GW-1	<p><i>Coordination Plan</i> 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 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>	Participating sellers	Reclamation	Seller transfer application package with Coordination Plan.	Prior to water transfers.		
GW-1	<p><i>Evaluation and Reporting</i> 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 groundwater pumping. Post-program 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 impacts on groundwater and surface water (both during and after pumping), and the extent and significance, if any, of effects on local groundwater users. It shall include groundwater elevation</p>	Participating sellers	Reclamation	Seller transfer application package and monitoring data and report.	Plan submitted prior to water transfers; monitoring information submitted during and after transfer.		

Measure No.	Mitigation Measure	Responsible Party	Monitoring Party	Method of Verification	Timing of Verification	Verification of Completion	
						Initials	Date
	contour maps for the area in which transfer operations are located, showing pre-transfer groundwater elevations, groundwater elevations at the end of the transfer, and recovered groundwater elevations in March of the year following the transfer. The summary report shall also identify the extent and significance, if any, of transfer-related effects to ecological resources such as fish, wildlife, and vegetation resources.						
GW-1	<p><u>Mitigation Plan</u> Potential sellers must complete and implement a mitigation plan. If the seller's monitoring efforts indicate that the operation of wells for groundwater substitution pumping are causing substantial adverse impacts, the seller will be responsible for mitigating any significant environmental impacts that occur. Mitigation actions must be implemented to reduce impacts to a less than significant level and could include:</p> <ul style="list-style-type: none"> <li>• Curtailment of pumping until natural recharge corrects the issue.</li> <li>• Lowering of pumping bowls in non-transferring wells affected by transfer pumping.</li> <li>• Reimbursement for significant increases in pumping costs due to the additional groundwater pumping to support the transfer.</li> <li>• Curtailment of pumping until water levels raise above historic lows if non-reversible subsidence is detected (based on local data to identify elastic versus inelastic subsidence).</li> <li>• Reimbursement for modifications to infrastructure that may be affected by non-reversible subsidence.</li> <li>• Other appropriate actions as determined by Reclamation.</li> </ul> <p>As summarized above, the purpose of Mitigation Measure GW-1 is to monitor groundwater levels</p>	Participating sellers	Reclamation	Mitigation plan, monitoring data for mitigation activities, and regular inspections of mitigation activities.	Prior to, during, and after water transfers.		

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	<p>during transfers to avoid potentially significant adverse effects. The mitigation plan will describe how to address any significant effects that occur despite the monitoring efforts. The objectives of this process are to: (1) minimize potential effects to other legal users of water; (2) provide a process for review and response to reported effects; and (3) assure that a local mitigation strategy is in place prior to the groundwater transfer. Accordingly, to ensure that mitigation plans will be feasible, effective, and tailored to local conditions, the plan must include the following elements:</p> <ul style="list-style-type: none"> <li>• A procedure for the seller to receive reports of purported environmental effects or effects to non-transferring parties;</li> <li>• A procedure for investigating any reported effect;</li> <li>• Development of mitigation options, in cooperation with the affected parties, for legitimate significant effects; and</li> <li>• Assurances that adequate financial resources are available to cover reasonably anticipated mitigation needs.</li> </ul> <p>Mitigation to avoid potentially significant subsidence impacts and ensure prompt corrective action in the event of unanticipated effects nevertheless occur is described by the following stages.</p> <p><i>Stage 1: Groundwater Levels</i> Irreversible subsidence would not occur if groundwater levels stay above historic low levels for the entire transfer season. As groundwater is pumped from an aquifer, the pore water pressure in the aquifer is reduced. This reduction in pore water pressure increases the effective stress on the structure of the aquifer itself. This increase in effective stress can cause the aquifer structure to deform, or compress, resulting in the subsidence of</p>						



Measure No.	Mitigation Measure	Responsible Party	Monitoring Party	Method of Verification	Timing of Verification	Verification of Completion	
						Initials	Date
	<p>the ground surface elevation. Subsidence can be irreversible if the reduced effective stress is lower than historically low effective stress. Typically this would be the result of groundwater levels reaching levels lower than the historical low level. If groundwater level monitoring indicates that groundwater levels remain above historic low levels, then no additional actions for subsidence monitoring or mitigation are necessary.</p> <p><i>Stage 2: Ground Surface Elevations</i> Stage 2 includes monthly ground surface monitoring during water transfers if they could cause groundwater levels to fall below historic low levels, as described above in the Monitoring Plan. If ground surface elevations decrease between 0.1 and 0.2 foot, the seller will evaluate the accuracy of the information based on the current limitations of technology, professional engineering/surveying judgment, and other local data. If the elevations decline more than 0.2 feet, this change could indicate inelastic subsidence, which would trigger a shift to Stage 3.</p> <p><i>Stage 3: Local Investigation</i> If the threshold of 0.2 foot of ground surface elevation change is exceeded, the seller shall cease groundwater substitution pumping for the transfer until one of the following occurs: (1) groundwater levels recover above historic low groundwater levels; (2) seller completes a more detailed local investigation identifying hydrogeologic conditions that could potentially allow continued transfer from a subset of wells (if the seller can provide evidence that this pumping is not expected to cause additional subsidence); or (3) seller completes an investigation of local infrastructure that could be affected by subsidence (such as water delivery</p>						

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	<p>infrastructure, water supply facilities, flood protection facilities, highways, etc.) indicating the local threshold of subsidence that could be experienced before these facilities would be adversely affected. Any option should also consider the effect of non-transfer pumping that may be causing subsidence.</p> <p><i>Stage 4: Mitigation</i>            If subsidence effects to local infrastructure occur despite monitoring efforts, then the sellers must work with the lead agencies to determine whether the measured subsidence may be caused by water transfers. Any significant adverse subsidence effects caused by transfer activities must be addressed and a contingency plan in the event of a need for further corrective action must be approved by Reclamation before transfers could continue after Stage 3.</p> <p><i>Stage 5: Continued Monitoring</i>            The sellers will continue to monitor for subsidence while groundwater levels remain below historic low levels. If the seller has ceased transfer-related pumping but groundwater levels remain below historic lows, subsidence monitoring will need to continue until the spring following the transfer. The results of subsidence monitoring will be factored into monitoring and mitigation plans for future transfers.</p>						

Measure No.	Mitigation Measure	Responsible Party	Monitoring Party	Method of Verification	Timing of Verification	Verification of Completion	
						Initials	Date
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>	Selling agency	Reclamation	Daily recordkeeping logs specifying the engines operated by each selling agency with potentially significant emissions and calculated criteria pollutant emissions.	Monthly during transfer.		

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Measure No.	Mitigation Measure	Responsible Party	Monitoring Party	Method of Verification	Timing of Verification	Verification of Completion	
						Initials	Date
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.	Selling agency	Reclamation	Daily recordkeeping logs documenting the engines used for groundwater substitution transfers and the fuel type used.	Monthly during transfer.		
LU-1	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.	Selling agency	Reclamation	Maps of fields to be idled with land classification and past cropping patterns for field to be idled.	Prior to water transfer.		

**Table K-2. Environmental Commitments**

Environmental Commitments	Responsible Party	Monitoring Party	Method of Verification	Timing of Verification	Verification of Completion	
					Initials	Date
In groundwater basins where sellers are in the same groundwater subbasin as protected aquatic habitats, such as giant garter snake preserves and conservation banks, groundwater substitution will be allowed as part of the long term water transfers if the seller can demonstrate that any impacts to water resources needed for special-status species protection have been addressed. In these areas, sellers will be required to address these impacts as part of their mitigation plan.	Participating Sellers	Reclamation	Seller transfer application package.	Prior to water transfers.		
Carriage water (a portion of the transfer that is not diverted in the Delta and becomes Delta outflow) will be used to maintain water quality in the Delta. Carriage water calculations will also reflect conveyance losses as the water moves from its source to the Delta export pumps, and is conveyed from the Delta to buyers. Carriage water is represented as a percent of the transfer that does not reach the buyer, and this percent is calculated during the transfer based on real-time monitoring information in the Delta. Typical carriage water amounts range from 20 to 30 percent for transfers from the Sacramento Valley, and about 10 percent for transfers from the San Joaquin Valley.	Reclamation	Reclamation	CVP operations reporting.	During water transfers.		

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Environmental Commitments	Responsible Party	Monitoring Party	Method of Verification	Timing of Verification	Verification of Completion	
					Initials	Date
As part of the approval process for long-term water transfers, Reclamation will have access to the land to verify how the water transfer is being made available and to verify that actions to protect the giant garter snake are being implemented. At the end of each water transfer year, Reclamation will prepare a monitoring report that contains maps of all cropland idling actions that occurred within the range of potential transfer activities analyzed in this EIS/EIR, results of any newly available scientific research and monitoring pertinent to water transfer actions, and a discussion of conservation measure effectiveness. The report will be submitted to United States Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) in February, prior to the next year of potential transfers. Reclamation will coordinate with USFWS and CDFW on the contents and findings of the annual report prior to additional transfers.	Participating Sellers	Reclamation	Seller transfer application package with regular inspections of transfer actions. Reclamation will compile and submit annual report to USFWS and CDFW	Access provided prior to and during water transfers; inspections ongoing; report submitted annually to USFWS and CDFW		
Reclamation will establish annual meetings with the USFWS 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 the next transfer season.	Reclamation	Reclamation	Distribution of monitoring report to USFWS and occurrence of annual meeting.	Meeting occurs prior to the next transfer season.		
Reclamation will provide a map(s) to the USFWS in June of each year showing the parcels of riceland that are proposed for the purpose of transferring water for that year. These maps will be prepared to comport to Reclamation's geographic information system (GIS) standards.	Participating Sellers	Reclamation	Completed mapping package from sellers showing parcels idled. Reclamation will prepare complete package for USFWS.	June of each transfer season.		
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.	Participating Sellers	Reclamation	Seller transfer application package with field spot-checks.	Ongoing during transfer season.		

Environmental Commitments	Responsible Party	Monitoring Party	Method of Verification	Timing of Verification	Verification of Completion	
					Initials	Date
Districts proposing water transfers made available from idled rice fields will ensure that adequate water is available for priority habitat with a high likelihood of giant garter snake occurrence. The determination of priority habitat will be made through coordination with giant garter snake experts, Geographic Information System (GIS) analysis of proximity to historic tule marsh, and GIS analysis of suitable habitat. The priority habitat areas are indicated on the priority habitat maps for participating water agencies and will be maintained by Reclamation. As new information becomes available, these maps will be updated in coordination with USFWS and CDFW. In addition to mapped priority habitat, fields abutting or immediately adjacent to federal wildlife refuges will be considered priority habitat.	Participating Sellers	Reclamation	Seller transfer application package with field spot-checks. Priority habitat maps reviewed and updated as needed prior to each transfer season.	Field spot checks to occur during the transfer season, priority habitat to be reviewed and update prior to the next transfer season.		
Maintaining water in smaller drains and conveyance infrastructure supports key habitat attributes such as emergent vegetation for giant garter snake for escape cover and foraging habitat. If crop idling/shifting occurs in priority habitat areas, Reclamation will work with contractors to document that adequate water remains in drains and canals in those priority areas. Documentation may include flow records, photo documentation, or other means of documentation agreed to by Reclamation and USFWS.	Participating Sellers	Reclamation	Seller transfer application package with field spot-checks.	Ongoing during transfer season.		

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Environmental Commitments	Responsible Party	Monitoring Party	Method of Verification	Timing of Verification	Verification of Completion	
					Initials	Date
<p>Mapped priority habitat known to be occupied by giant garter snake and priority habitats with a high likelihood for giant garter snake occurrence (60 percent or greater probability) will not be permitted to participate in cropland idling/shifting transfers. Water sellers can request a case-by-case evaluation of whether a specific field would be precluded from participating in long-term water transfers. These areas include lands adjacent to naturalized lands and refuges and corridors between these areas, such as:</p> <ul style="list-style-type: none"> <li>• Fields abutting or immediately adjacent to Little Butte Creek between Llano Seco and Upper Butte Basin Wildlife Area, Butte Creek between Upper Butte Basin and Gray Lodge Wildlife areas, Colusa Basin drainage canal between Delevan and Colusa National Wildlife Refuges, Gilsizer Slough, Colusa Drainage Canal, the land side of the Toe Drain along the Sutter Bypass, Willow Slough and Willow Slough Bypass in Yolo County, Hunters and Logan Creeks between Sacramento and Delevan National Wildlife Refuges; and</li> <li>• Lands in the Natomas Basin.</li> </ul>	Participating Sellers	Reclamation	Seller transfer application package, maps of fields to be idled, and field spot-checks of land idled.	Prior to and during water transfers.		
<p>Sellers will perform giant garter snake best management practices, including educating maintenance personnel to recognize and avoid contact with giant garter snake, dredging only one side of a conveyance channel per year, and implementing other measures to enhance habitat for giant garter snake. Implementation of best management practices will be documented by the sellers and verified by Reclamation and will be included in the annual monitoring report.</p>	Participating Sellers	Reclamation	Seller transfer application package with field spot-checks and documented in annual monitoring report.	Ongoing.		
<p>In order to limit reduction in the amount of over-winter forage for migratory birds, including greater sandhill crane, cropland idling transfers will be minimized near known wintering areas that support high concentrations of waterfowl and shorebirds, such as wildlife refuges and established wildlife areas.</p>	Participating Sellers	Reclamation	Seller transfer application package, maps of fields to be idled, and field spot-checks	Prior to and during transfer season.		



### **K.3 List of Acronyms**

AF – Acre-feet

BMOs – Basin Management Objectives

CDFW – California Department of Fish and Game

CEQA – California Environmental Quality Act

CVP – Central Valley Project

DWR – California Department of Water Resources

EIR – Environmental Impact Report

EIS – Environmental Impact Statement

FMMP – Farmland Mapping and Monitoring Program

GIS – Geographic Information System

GMP – Groundwater Management Plan

GSP – Groundwater Sustainability Plan

GPS – Global Positioning System

MMRP – Mitigation and Monitoring Program

PRC – Public Resources Code

Reclamation – Bureau of Reclamation

SLDMWA – San Luis & Delta–Mendota Water Authority

SWP – State Water Project

USFWS – United States Fish and Wildlife Service

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# San Luis & Delta-Mendota Water Authority Long-Term Water Transfers CEQA Findings

## 1.0 Introduction

The Bureau of Reclamation's (Reclamation's) Mid-Pacific Region is responsible for managing the Central Valley Project (CVP), which stores and delivers water to the San Luis & Delta-Mendota Water Authority (SLDMWA) service area, consisting of federal water service, refuge, 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 based on conditions for that year. CVP water allocations for agricultural, refuge, and municipal and industrial (M&I) users vary based on factors such as hydrology, 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 (does not include the exchange contractors) and to 60 percent of Contract Total for M&I water service contracts, and in 2014, agricultural water service contractors received a zero percent allocation and M&I water service contractors received a fifty percent allocation. These water supply shortages lead to severe water constraints 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.

These Findings of Fact are based on information contained in the Environmental Impact Statement/Environmental Impact Report (EIS/EIR) that evaluates potential water transfers originating upstream from the Delta and purchased by SLDMWA on behalf of member agencies. The EIS/EIR addresses the transfer of water to CVP contractors from CVP and non-CVP sources of supply that must be conveyed through the Delta using CVP, SWP, and local facilities. These transfers require approval from Reclamation and/or Department of Water Resources (DWR).

## 1.1 Purpose of Findings

Section 21081 of the California Public Resources Code and Section 15091 of the California Environmental Quality Act (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 and environmental commitments delineated in the MMRP is provided herewith as Attachment A, in support of the project 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.

## 1.2 Project Overview

This section presents the project objectives and describes the Proposed Project.

### 1.2.1 Project Objectives

SLDMWA has developed the following objectives for the Proposed Project:

- Develop supplemental water supply for member agencies during times of CVP shortages to meet existing demands.
- Meet the need of member agencies for a water supply that is immediately implementable and flexible and can respond to changes in hydrologic conditions and CVP allocations.

Because shortages are expected due to hydrologic conditions, climatic variability, and regulatory requirements, transfers are needed to meet water demands.

### 1.2.2 Project Description

The Proposed Project includes a range of potential water transfers from 2015 to 2024. A water transfer temporarily moves water from a willing seller to a willing buyer. To make water available, the seller must take an action to reduce consumptive use or use water in storage. Water transfers must be consistent with State and Federal law. Transfers involving conveyance of water through the Delta are governed by operational limits imposed under federal and state laws.

A specific limitation was imposed through the biological opinions on the Coordinated Operations of the CVP and State Water Project (SWP) (U.S. Fish and Wildlife Service [USFWS] 2008; National Oceanic and Atmospheric Administration Fisheries Service [NOAA Fisheries] 2009). Those biological opinions analyze conveyance of transfer water through the Delta from July to September (commonly referred to as the “transfer window”) that are up to 600,000 AF in critical years and dry years (following dry or critical years). For all other year types, the maximum transfer amount is up to 360,000 AF. Thus, under the biological opinions, through Delta transfers would be limited to the July through September period and for the quantities identified above.

The transfers to SLDMWA member agencies could be conveyed through the Delta using either CVP or SWP facilities, depending on availability. Some transfers may not involve CVP contractors as sellers, but they may use CVP facilities. Any non-CVP water that would use CVP facilities would need a Warren Act contract, which is subject to National Environmental Policy Act (NEPA) compliance. This document analyzes the impacts of conveying or

storing non-CVP water in CVP facilities to address compliance needs for transfers facilitated by execution of a contract pursuant to the Warren Act of February 21, 1911 (36 Stat. 925).

Some transfers may be accomplished through forbearance agreements. Under such agreements, a CVP seller would forbear (i.e., temporarily suspend) the diversion of some of their Base Supply, which in the absence of forbearance, would have been diverted for use on lands within the CVP sellers' service areas. This forbearance would be undertaken in a manner that allows Reclamation to deliver the forborne water supply as CVP water to a purchasing CVP water agency. A forbearance agreement would not change the way that water is made available for transfer, conveyed to buyers, or used by the buyers; therefore, it would not change the environmental effects of the transfer.

### ***Transfer Methods***

Transfer methods evaluated in the EIS/EIR are groundwater substitution, reservoir release, cropland idling, crop shifting, and conservation. As used in these findings, the term "transfer" refers to all mechanisms identified in this section, whether through transfer agreements or forbearance agreements, unless otherwise specified.

#### *Groundwater Substitution*

Groundwater substitution transfers occur when sellers choose to pump groundwater in lieu of diverting surface water supplies, thereby making the surface water available for transfer. Sellers making water available through groundwater substitution actions are agricultural and M&I users. Water could be made available for transfer by the agricultural users during the irrigation season of April through September. If there are issues related to water supply availability or conveyance capacity at the Delta, sellers could shorten the window when transfer water is available by switching between surface water sources and groundwater pumping for irrigation or M&I use.

Groundwater substitution would temporarily decrease levels in groundwater basins near the participating wells. Water produced from wells initially comes from groundwater storage. Groundwater storage would refill (or "recharge") over time, which affects surface water sources. Groundwater pumping captures some groundwater that would otherwise discharge to streams as baseflow and can also induce recharge from streams. Once pumping ceases, this stream depletion continues, replacing the pumped groundwater slowly over time until the depleted storage fully recharges.

#### *Reservoir Release*

Buyers could acquire water by purchasing surface water stored in reservoirs owned by non-Project entities (not part of the CVP or SWP). To ensure that purchasing this water would not affect downstream users, Reclamation would

limit transferred water to what would not have otherwise been released downstream absent the transfer.

When the willing seller releases stored reservoir water for transfer, the reservoir is drawn down to a level lower than without the water transfer. To refill the reservoir, a seller must capture some flow that would otherwise have gone downstream. The seller must refill the storage at a time when downstream users would not have otherwise captured the water. Typically, refill can only occur during Delta excess conditions as defined in the “Agreement Between the United States of America and the State of California for Coordinated Operation of the Central Valley Project and State Water Project” (commonly referred to as the “Coordinated Operations Agreement”, or “COA”), as “periods when it is agreed that releases from upstream reservoirs plus unregulated flow exceed Sacramento Valley in basin uses, plus exports,” or when any downstream reservoirs are in flood control operations. Refill of the storage vacated for a transfer may take more than one season to refill if the above conditions are not met in the wet season following the transfer. Each reservoir release transfer would include a refill agreement between the seller and Reclamation (developed in coordination with DWR) to prevent impacts to downstream users following a transfer.

#### *Cropland Idling*

Cropland idling makes water available for transfer that would have been used for agricultural production. Water would be available on the same pattern throughout the growing season as it would have been consumed had a crop been planted. The irrigation season generally lasts from April or May through September for most crops in the Sacramento Valley.

#### *Crop Shifting*

For crop shifting transfers, water is made available when farmers shift from growing a higher water use crop to a lower water use crop. The difference between the water used by the two crops would be the amount of water that can be transferred. Transfer water generated by crop shifting is difficult to account for. Farmers generally rotate between several crops to maintain soil quality, so water agencies may not know what type of crop would have been planted in a given year absent a transfer. To calculate water available from crop shifting, agencies would estimate what would have happened absent a transfer using an average water use over a consecutive 5-year baseline period. The change in consumptive use between this baseline water use and the lower water use crop determines the amount of water available for transfer.

#### *Conservation*

Conservation transfers must include actions to reduce the diversion of surface water by the transferring entity by reducing irrecoverable water losses. The

amount of reduction in irrecoverable losses determines the amount of transferrable water. Conservation measures may be implemented on the water-district and individual user scale. These measures must reduce the irrecoverable losses at a site without reducing the amount of water that otherwise would have been available for downstream beneficial uses. Irrecoverable losses include water that would not be usable because it currently flows to a salt sink, to an inaccessible or degraded aquifer, or escapes to the atmosphere.

**Buyers and Sellers**

Several SLDMWA member agencies are identified as potential buyers in the EIS/EIR; these agencies are shown in Table 1.

**Table 1. Potential Buyers**

San Luis & Delta-Mendota Water Authority Participating Members
Byron-Bethany Irrigation District
Del Puerto Water District
Eagle Field Water District
Mercy Springs Water District
Pacheco Water District
Panoche Water District
San Benito County Water District
San Luis Water District
Santa Clara Valley Water District
Westlands Water District

Table 2 lists the agencies that are identified as potential sellers in the EIS/EIR. For each potential seller, Table 2 and the EIS/EIR identify the maximum quantities the seller may have available for sale. Actual quantity of water purchased could be less, depending on hydrology, the amount of water the seller is willing to sell in any particular year, the amount of water a buyer or buyers are willing to buy in any particular year, and compliance with Central Valley Project Improvement Act (CVPIA) transfer requirements, among other possible factors. Because of the uncertainty of hydrologic and operating conditions in the future, it is likely that only a portion of the water identified in Table 2 would be available in any particular year for transfer.

Sellers that are not specifically listed in the range of potential transfer activities evaluated in the EIS/EIR may rely on the environmental document in order to sell water to the buyers as long as: the water that is made available occurs in the same watershed or groundwater basin analyzed in the EIS/EIR, the total quantity of water proposed for sale does not exceed the maximums listed for each region or type of transfer in any given transfer year, the impacts of the proposed transfer do not exceed the magnitude of impacts assessed in the



EIS/EIR, and the adopted mitigation measures required can be effectively implemented. On a case-by-case basis, Reclamation would evaluate proposals from sellers not included in the range of potential transfers identified in the EIS/EIR to determine whether or not the impacts have been adequately assessed in the EIS/EIR.

**Table 2. Potential Sellers (Upper Limits)**

<b>Water Agency</b>	<b>Maximum Potential Transfer</b>
<b><i>Sacramento River Area of Analysis</i></b>	
Anderson-Cottonwood Irrigation District	5,225
Conaway Preservation Group	35,000
Cranmore Farms	8,000
Eastside Mutual Water Company	2,230
Glenn-Colusa Irrigation District	91,000
Natomas Central Mutual Water Company	30,000
Pelger Mutual Water Company	3,750
Pleasant Grove-Verona Mutual Water Company	18,000
Reclamation District 108	35,000
Reclamation District 1004	17,175
River Garden Farms	9,000
Sycamore Mutual Water Company	20,000
Te Velde Revocable Family Trust	7,094
<b><i>American River Area of Analysis</i></b>	
City of Sacramento	5,000
Placer County Water Agency	47,000
Sacramento County Water Agency	15,000
Sacramento Suburban Water District	30,000
<b><i>Yuba River Area of Analysis</i></b>	
Browns Valley Irrigation District	8,100
Cordua Irrigation District	12,000
<b><i>Feather River Area of Analysis</i></b>	
Butte Water District	17,000
Garden Highway Mutual Water Company	14,000
Gilsizer Slough Ranch	3,900
Goose Club Farms and Teichert Aggregates	10,000
South Sutter Water District	15,000
Tule Basin Farms	7,320
<b><i>Merced River Area of Analysis</i></b>	
Merced Irrigation District	30,000
<b><i>Delta Region Area of Analysis</i></b>	
Reclamation District 2068	7,500
Pope Ranch	2,800
<b>Total</b>	<b>511,094</b>

## 2.0 Findings of Environmental Effects

This section discusses the impacts and mitigation measures identified for the Proposed Project, and makes findings for all areas of potential impact.

### 2.1 Resource Analysis Overview

This section summarizes the resources considered in the EIS/EIR and the resources with less than significant and potentially significant impacts. Section 2.2 presents finding for resources with potentially significant impacts.

Resource areas that are 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

The reasons why there would be no impacts related to the above resource areas are that: (1) the action alternatives would not require any construction activities, therefore, short- and long-term impacts 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 to hazardous materials and mineral resources would not occur.

The following are resources analyzed in Chapter 3 of the EIS/EIR. The section in Chapter 3 for each resource area is in parenthesis.

- Water Supply (Section 3.1)
- Water Quality (Section 3.2)
- Groundwater Resources (Section 3.3)
- Geology and Soils (Section 3.4)
- 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 Project would have less than significant impacts 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, as described in greater detail within the EIS/EIR section identified above for each topic.

**Table 3. Potential Impacts Summary**

Potential Impact	Significance to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
<b>3.1 Water Supply</b>			
Groundwater substitution transfers could decrease flows in surface water bodies following a transfer while groundwater basins recharge, which could decrease pumping at Jones and Banks Pumping Plants and/or require additional water releases from upstream CVP reservoirs.	S	WS-1: Streamflow Depletion Factor	LTS
Water supplies on the rivers downstream of reservoirs could decrease following stored reservoir water transfers, but would be limited by the refill agreements	LTS	None	LTS
Changes in Delta diversions could affect Delta water levels	LTS	None	LTS
Transfers would increase water supplies in the Buyers Service Area	B	None	B

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Potential Impact	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>3.3 Groundwater Resources</b>			
Groundwater substitution transfers could cause a reduction in groundwater levels in the Seller Service Area.	S	GW-1: Mitigation and Monitoring Plans	LTS
Groundwater substitution transfers could cause subsidence in the Seller Service Area.	S	GW-1: Mitigation and Monitoring Plans	LTS
Groundwater substitution transfers could cause changes to groundwater quality in the Seller Service Area.	LTS	None	LTS
Cropland idling transfers could cause reduction in groundwater levels in the Seller Service Area due to decreased applied water recharge.	LTS	None	LTS
Water transfers via cropland idling could cause groundwater level declines in the Seller Service Area that lead to permanent land subsidence or changes in groundwater quality.	LTS	None	LTS

Potential Impact	Significance to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
Water transfers could reduce groundwater pumping during shortages in the Buyer Service Area, which could increase groundwater levels, decrease subsidence, and improve groundwater quality.	B	None	B
<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>3.5 Air Quality</b>			
Increased groundwater pumping for groundwater substitution transfers would increase emissions of air pollutants in the Sellers Service Area.	S	AQ-1: Reducing pumping to reduce emissions, AQ-2: Operate electric engines	LTS
Water transfers via cropland idling could reduce vehicle exhaust emissions from reduced operations in the Sellers Service Area.	B	None	B
Water transfers via cropland idling would increase fugitive dust emissions from wind erosion of bare fields and decrease fugitive dust emissions associated with land preparation and harvesting in the Sellers Service Area.	B	None	B
Use of water from transfers on agricultural fields in the Buyer Service Area could reduce windblown dust.	B	None	B
Water transfers via groundwater substitution and cropland idling could exceed the general conformity de minimis thresholds.	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
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

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Potential Impact	Significance to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
<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>3.8 Vegetation and Wildlife</b>			
Groundwater substitution could reduce groundwater levels supporting natural communities	LTS	None	LTS
Groundwater substitution could reduce stream flows supporting natural communities in small streams	S	GW-1: Mitigation and Monitoring Plans	LTS
Cropland Idling/Shifting could alter habitat availability and suitability for upland species	LTS	None	LTS
Transfer actions could impact reservoir storage and reservoir surface area and alter habitat availability and suitability associated with those reservoirs	LTS	None	LTS
Transfers could reduce flows in large rivers in the Sacramento and San Joaquin River watersheds, altering habitat availability and suitability associated with these rivers	LTS	None	LTS
Transfer actions could alter hydrologic conditions in the Delta, altering associated habitat availability and suitability	LTS	None	LTS
Transfer actions could impact San Luis Reservoir storage and surface area.	LTS	None	LTS
Cropland idling/shifting under could alter the amount of suitable habitat for natural communities, special-status wildlife species, and migratory birds associated with seasonally flooded agriculture and associated irrigation waterways	LTS	None	LTS
Transfer actions could alter planting patterns and urban water use in the Buyer Service Area	LTS	Non	LTS
Transfers could affect wetlands that provide habitat for special status plant species.	LTS	None	LTS
Transfers could affect giant garter snake and Pacific pond turtle by reducing aquatic habitat.	LTS	None	LTS
Transfers could affect the San Joaquin kit fox by reducing available habitat.	LTS	None	LTS
Transfers could impact special status bird species and migratory birds.	LTS	None	LTS

Potential Impact	Significance to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
<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 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
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

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Potential Impact	Significance to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
<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 Project 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 Project to reduce impacts to less than significant levels. The impacts analysis also determined the Proposed Project would result in potential for significant impacts to vegetation and wildlife. In addition to mitigation measures identified for vegetation and wildlife impacts, environmental commitments were incorporated into the Proposed Project to reduce vegetation and wildlife impacts to less than significant.

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 there would be no significant and unavoidable impacts of the Proposed Project.

## 2.2 Findings

In accordance with Section 21081 of the California Public Resources Code and Section 15091 of the CEQA Guidelines, the following presents the CEQA findings related to significant impacts associated with the Proposed Project. For



each of the resource areas with significant impacts, the following items are presented:

- *Description of Potential Effects* are specific descriptions of the environmental effects identified in the EIR as significant.
- *Mitigation Measures* are the proposed mitigation measures for the impacts identified as significant. In the case of Vegetation and Wildlife impacts, the incorporation of certain environmental commitments into the Proposed Project will, in conjunction with mitigation measures, also help reduce impacts to less than significant.
- *Findings* are the findings made in accordance with Section 21081 of the Public Resources Code. One of three findings is made for each significant or potentially significant impact, in response to Section 15091 of the CEQA Guidelines (See Section 1.1). The significance of the environmental impacts after mitigation is also provided.
- *Rationale* is a summary of the reasons for the findings.
- *References* are notations on the specific section in the EIS/EIR that supports the findings.

### 2.2.1 Water Supply

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

Groundwater substitution transfers would decrease flows in surface water bodies following a transfer while groundwater basins recharge. The change 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 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***

For the above impact to water supply, the following finding is made:

[ 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 Project’s water supply impacts and mitigation measures.

**2.2.2 Groundwater Resources**

***Description of Potential Effects***

Groundwater substitution transfers would cause a reduction in groundwater levels, migration of poor quality groundwater, and subsidence in the seller areas.

***Mitigation Measures***

Mitigation Measure GW-1 (Mitigation and Monitoring Plans) would 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***

For the above impacts to groundwater resources, the following finding is made:

[ 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 includes monitoring groundwater and/or surface water levels during transfers to avoid potential effects and assures that a local mitigation strategy is in place prior to the groundwater transfer. Reclamation will verify that sellers adopt and implement the mitigation measures to avoid potentially significant adverse effects related to groundwater extraction. In addition, each entity participating in a groundwater substitution transfer 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 is compatible with applicable GSPs.

Potential sellers must complete and implement a monitoring program subject to Reclamation's approval that shall, at a minimum, include a monitoring well network, groundwater pumping and groundwater level measurements, groundwater quality monitoring and land subsidence monitoring. The monitoring program also includes a coordination plan, evaluation, and reporting.

GW-1 also requires a mitigation plan that describes how to address any significant effects that occur despite the monitoring efforts. Mitigation actions must be implemented to reduce impacts to a less than significant level and could include:

- Curtailment of pumping until natural recharge corrects the issue.
- Lowering of pumping bowls in non-transferring wells affected by transfer pumping.
- Reimbursement for significant increases in pumping costs due to the additional groundwater pumping to support the transfer.
- Curtailment of pumping until water levels raise above historic lows if non-reversible subsidence is detected (based on local data to identify elastic versus inelastic subsidence).
- Reimbursement for modifications to infrastructure that may be affected by non-reversible subsidence.
- Other appropriate actions as determined by Reclamation.

### **References**

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

## **2.2.3 Air Quality**

### **Description of Potential Effects**

Groundwater substitution transfers would increase emissions of air pollutants from the groundwater well pumps.

### **Mitigation Measures**

Mitigation Measures AQ-1 (Reducing pumping to reduce emissions) and AQ-2 (Operate electric engines) would 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**

For the above impacts to air quality, the following finding is made:

[ 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 seller would reduce pumping at diesel or natural gas wells to reduce emissions to below the thresholds. If a seller 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. Sellers may also decide to replace old diesel or natural gas wells to reduce emission below the thresholds.

Any seller 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 seller.

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 seller 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 Project to less than significant.

**References**

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

**2.2.4 Vegetation and Wildlife**

***Description of Potential Effects***

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

Cropland idling transfers would affect giant garter snake when idling is on rice fields, but these effects are avoided by incorporating environmental commitments.

***Mitigation Measures and Environmental Commitments***

Mitigation Measure GW-1 (Mitigation and Monitoring Plans) would reduce effects from groundwater substitution transfers on natural communities in small streams to less than significant.

Environmental commitments incorporated into the Proposed Project would avoid significant effects of cropland idling transfers on giant garter snake.

Section 2.3.2.4 of the Draft EIS/EIR and Attachment A of the CEQA Findings present the environmental commitments incorporated into the Proposed Project. 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***

For the above impacts to vegetation and wildlife, the following finding is made:

[ 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 Project could be significant because groundwater substitution pumping would cause stream flows in some small creeks to be substantially reduced. The reduction in stream flow would 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. Implementation of Mitigation Measure GW-1 would reduce this effect to less than significant because it requires monitoring of wells and implementing a mitigation plan if the seller's monitoring efforts indicate that the operation of the wells for groundwater substitution pumping are causing substantial adverse impacts. Under GW-1, sellers will monitor groundwater depth data to verify that significant adverse effects to deep-rooted vegetation are avoided. If monitoring data indicate that water levels have dropped 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 elevations in the area of transfer have typically varied by more than this amount annually during the proposed transfer period, then the transfer may be allowed to proceed. If there is no deep-rooted vegetation (i.e., oaks that would have tap roots greater than 10 feet deep) within one-half mile of the transfer area or the vegetation is located along waterways that will continue to have water during the transfer, the transfer may be allowed to proceed. If significant adverse impacts to deep-rooted vegetation occur as a result of the transfer despite the monitoring efforts and implementation of the mitigation plan, the seller will restore the vegetation and prepare a report documenting the result of the restoration activity to plant, maintain, and monitor restoration of vegetation for 5 years to replace the losses. GW-1 will reduce effects of groundwater substitution transfers on natural communities and special status species that occur in wetlands and small waterways to less than significant.

GW-1 and the environmental commitments incorporated into the Proposed Project (e.g., avoiding cropland idling actions in areas that could result in the substantial loss or degradation of habitats supporting priority giant garter snake populations, maintaining water levels in drainage canals to provide adequate movement corridors and foraging opportunities for giant garter snake, and implementing best management practices for canal maintenance activities) would avoid significant effects to giant garter snake associated with cropland idling transfers.

**References**

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

## **3.0 Alternatives Considered**

Three project alternatives and the No Project Alternative were considered during preparation 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 Project), 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.

### **3.1 Alternatives Selected for Analysis in the EIS/EIR**

#### **3.1.1 No Project Alternative**

Under the No Project Alternative, CVP related water transfers through the Delta would not occur during the period 2015-2024. However, other transfers that do not involve CVP water or facilities could occur under the No Project Alternative. Some CVP entities may decide that they are interested in selling water to buyers in SLDMWA under the No Project Alternative; however, they would need to complete individual environmental compliance for each transfer to allow Reclamation to complete the evaluation of the transfers for approval.

Under the No Project Alternative, some agricultural and urban water users would likely face shortages in the absence of water transfers. To the extent transfer water is not available, there would be demand that would be unmet by surface water. Demand may be met by increasing groundwater pumping. Demand may not be satisfied and changes in land and water use might result, including idling cropland, reducing landscape irrigation, land retirement, or rationing water.

### 3.2.1 Action Alternatives

The alternatives that moved forward for more detailed analysis in the EIS/EIR were those with the potential to meet the NEPA purpose and need and CEQA objectives, minimize negative effects, were potentially feasible, and represented a range of reasonable alternatives. The alternatives remaining after the initial screening were combined into three action alternatives that were selected to move forward for analysis in the EIS/EIR (in addition to the No Action/No Project Alternative). Table 4 summarizes the alternatives analyzed in the EIS/EIR.

Alternatives 3 and 4 are similar to the Proposed Project but do not include the entire suite of transfer methods. Alternative 4 would result in an additional potentially significant impact to agricultural land use. Cropland idling transfers under Alternative 4 could decrease the amount of lands characterized as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland under the Farmland Mapping and Monitoring Program (FMMP). Cropland idling would also be included in Proposed Project, but would be less frequent than in Alternative 4 because the Proposed Project has more potential ways to make water available for transfer. The potentially significant impact under Alternative 4 would be reduced through implementation of Mitigation Measure LU-1 (Avoid changes in FMMP land use classifications).

**Table 4. Alternatives Selected for Analysis in the EIS/EIR**

<b>Alternative Number</b>	<b>Alternative Name</b>	<b>Description</b>
Alternative 1	No Action/No Project	The No Action/No Project Alternative represents the state of the environment without the Proposed Action or any of the alternatives. In the No Action/No Project Alternative, the Buyer Service Area would experience shortages and could increase groundwater pumping, idle cropland, or retire land to address those shortages.
Alternative 2	Full Range of Transfers (Proposed Project)	This alternative combines all potential transfer measures that met the purpose and need and were carried forward through the screening process.
Alternative 3	No Cropland Modifications	The No Cropland Modifications Alternative includes the following measures: <ul style="list-style-type: none"> <li>• Agricultural conservation (Seller Service Area)</li> <li>• Groundwater substitution</li> <li>• Reservoir release</li> </ul>
Alternative 4	No Groundwater Substitution	The No Groundwater Substitution Alternative includes the following measures: <ul style="list-style-type: none"> <li>• Agricultural conservation (Seller Service Area)</li> <li>• Cropland idling transfers– rice, field, grains, alfalfa</li> <li>• Crop shifting</li> <li>• Reservoir release</li> </ul>



## 3.2 Impacts of Alternatives

As indicated throughout the EIS/EIR, the Proposed Project 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 Project 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. The difference in impact between the Proposed Project and the alternatives is not substantial under CEQA.

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# Attachment A Mitigation Measures and Environmental Commitments

Table A-1 lists the mitigation measures identified in the EIS/EIR. In addition to the mitigation measures, several environmental commitments are made as part of the Proposed Project to avoid potential environmental impacts from water transfers. Table A-2 lists the environmental commitments. In light of the evidence in the EIS/EIR for the Proposed Project and the administrative record as a whole, SLDMWA finds that the environmental commitments and mitigation measures adopted for the Proposed Project are equally or more effective to avoid or substantially lessen the Proposed Project’s impacts than the mitigation measures set forth in the Programmatic Environmental Impact Report (PEIR) for the Delta Plan prepared by the Delta Stewardship Council (Council).

SLDMWA notes that, following the Council’s certification of the PEIR and adoption of the Delta Plan and implementing regulations, twenty-six petitioners, including SLDMWA and consisting of agencies, organizations, and individuals, filed seven lawsuits against the Council challenging the validity and adequacy of the Delta Plan, the PEIR, and the regulations. It is unknown whether the Council’s PEIR and Delta Plan approvals will be upheld because the cases remain pending in Sacramento County Superior Court. Although the legality of the Council’s actions remains disputed by SLDMWA and others, for purposes of the Proposed Project, the PEIR is presumed valid absent a contrary ruling from the court.

**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</p>

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Measure No.	Mitigation Measure
	<p>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 <i>DRAFT Technical Information for Preparing Water Transfer Proposals</i> (Reclamation and DWR 2014) provide guidance for the development of proposals for groundwater substitution water transfers. The technical information informs the development of the monitoring and mitigation program for the range of potential transfer activities evaluated in this EIS/EIR, which will be updated as appropriate based on the most current version of the technical paper each year of the ten-year term of potential activities.</p> <p>The objective of Mitigation Measure GW-1 is to avoid significant adverse environmental effects and ensure prompt corrective action in the event unanticipated effects nevertheless occur. The measure accomplishes this by monitoring groundwater and/or surface water levels during transfers to avoid potential effects. The objectives of this process are to: (1) minimize potential effects to other legal users of water; (2) provide a process for review and response to reported effects to non-transferring parties; (3) assure that a local mitigation strategy is in place prior to the groundwater transfer; and (4) mitigate significant adverse environmental effects that occur. Reclamation will verify that sellers adopt and implement these mitigation measures to avoid potentially significant adverse effects related to groundwater extraction. In addition, each entity participating in a groundwater substitution transfer 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 is compatible with applicable GSPs.</p>
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>.</p>
GW-1	<p><u>Monitoring Program</u> Potential sellers must complete and implement a monitoring program subject to Reclamation's approval that shall, at a minimum, include 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 in relation to local conditions, to accurately characterize groundwater levels and 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.</p>
GW-1	<p><u>Groundwater Pumping Measurements</u> All wells pumping to replace surface water designated 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 pumping and at designated times, but no less than monthly and as close as practical to the last day of the month, throughout the duration of the transfer.</p>
GW-1	<p><u>Groundwater Levels</u> Sellers will collect measurements of groundwater levels in both participating transfer wells and monitoring wells. Groundwater level monitoring will include measurements before, during and after transfer-related 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 monthly from March in the year of the proposed transfer until the start of the transfer (where possible).</li> <li>• Start of transfer: Groundwater levels will be measured on the same day that the transfer begins, prior to the pump being turned on.</li> </ul>

Measure No.	Mitigation Measure
	<ul style="list-style-type: none"> <li>• During transfer: Groundwater levels will be measured throughout the transfer period at the frequency specified in the most current <i>DRAFT Technical Information for Preparing Water Transfer Proposals</i>.</li> <li>• Post-transfer: Groundwater levels will be measured weekly for one month after the end of transfer pumping, after which groundwater levels will be measured monthly through March of the year following the transfer.</li> </ul> <p>Sellers thus monitor effects to groundwater levels that may result from the proposed transfer and avoid significant impacts. The primary criteria used to identify significant impacts to groundwater levels are the Basin Management Objectives (BMOs) set by GMPs. In the Sacramento Valley, several counties have established GMPs to provide guidance in managing the resource. The existing GMPs and BMOs are discussed in Section 3.3.1.2, Regulatory Setting.</p> <p>In areas where quantitative BMOs do not exist, Reclamation, SLDMWA, and the potential seller(s) will coordinate closely with potentially impacted third parties to collect and monitor groundwater data. If a third party expects that it may be impacted 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, 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> <p>Additionally, to avoid effects to vegetation, sellers will monitor groundwater depth data to verify that significant adverse effects to deep-rooted vegetation are avoided. If monitoring data indicate that water levels have dropped 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 elevations in the area of transfer have typically varied by more than this amount annually during the proposed transfer period, then the transfer may be allowed to proceed. If there is no deep-rooted vegetation (i.e., oaks that would have tap roots greater than 10 feet deep) within one-half mile of the transfer area or the vegetation is located along waterways that will continue to have water during the transfer, the transfer may be allowed to proceed. If significant adverse impacts to deep-rooted vegetation occur as a result of the transfer despite the monitoring efforts and implementation of the mitigation plan, the seller will prepare a report documenting the result of the restoration activity to plant, maintain, and monitor restoration of vegetation for 5 years to replace the losses.</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 period, and at the termination of transfer pumping.</p>
GW-1	<p><i>Land Subsidence</i></p> <p>Subsidence monitoring will be required if groundwater levels could decline below historic low levels during the proposed water transfer. If the measured groundwater level falls below the historic low level, land surface elevation measurements in strategic locations within and/or near the transfer area will be required. Measurements may include (1) extensometer monitoring, (2) continuous Global Positioning System (GPS) monitoring, or (3) extensive land-elevation benchmark surveys conducted by a licensed surveyor. This data could be collected by the seller or from other sources (such as public extensometer data). Measurements must be completed on a monthly basis during the transfer.</p> <p>If the land surface elevation survey indicates an elevation decrease between 0.1 foot and 0.2 foot from the initial measurement, the seller could have significant impacts and would need to start the process identified in the Mitigation Plan. The seller will also work with Reclamation to assess the accuracy of the survey measurements based on current limitations of technology, professional engineering/surveying judgment, and any other data available in or near the transferring area.</p> <p>The threshold of 0.1 foot was chosen as this value is typical of the elastic (i.e., recoverable) portion of subsidence; the threshold of 0.2 foot was selected considering limitations of current land survey technology. This threshold is supported by a review of data from the several extensometers within</p>

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	the Sacramento Valley.
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 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>
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 groundwater pumping. Post-program 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 impacts on groundwater and surface water (both during and after pumping), and the extent and significance, if any, of effects on local groundwater users. It shall include groundwater elevation contour maps for the area in which transfer operations are located, showing pre-transfer groundwater elevations, groundwater elevations at the end of the transfer, and recovered groundwater elevations in March of the year following the transfer. The summary report shall also identify the extent and significance, if any, of transfer-related effects to ecological resources such as fish, wildlife, and vegetation resources.</p>
GW-1	<p><u>Mitigation Plan</u></p> <p>Potential sellers must complete and implement a mitigation plan. If the seller's monitoring efforts indicate that the operation of wells for groundwater substitution pumping are causing substantial adverse impacts, the seller will be responsible for mitigating any significant environmental impacts that occur. Mitigation actions must be implemented to reduce impacts to a less than significant level and could include:</p> <ul style="list-style-type: none"> <li>• Curtailment of pumping until natural recharge corrects the issue.</li> <li>• Lowering of pumping bowls in non-transferring wells affected by transfer pumping.</li> <li>• Reimbursement for significant increases in pumping costs due to the additional groundwater pumping to support the transfer.</li> <li>• Curtailment of pumping until water levels raise above historic lows if non-reversible subsidence is detected (based on local data to identify elastic versus inelastic subsidence).</li> <li>• Reimbursement for modifications to infrastructure that may be affected by non-reversible subsidence.</li> <li>• Other appropriate actions as determined by Reclamation.</li> </ul> <p>As summarized above, the purpose of Mitigation Measure GW-1 is to monitor groundwater levels during transfers to avoid potentially significant adverse effects. The mitigation plan will describe how to address any significant effects that occur despite the monitoring efforts. The objectives of this process are to: (1) minimize potential effects to other legal users of water; (2) provide a process for review and response to reported effects; and (3) assure that a local mitigation strategy is in place prior to the groundwater transfer. Accordingly, to ensure that mitigation plans will be feasible, effective, and tailored to local conditions, the plan must include the following elements:</p> <ul style="list-style-type: none"> <li>• A procedure for the seller to receive reports of purported environmental effects or effects to non-transferring parties;</li> <li>• A procedure for investigating any reported effect;</li> <li>• Development of mitigation options, in cooperation with the affected parties, for legitimate significant effects; and</li> <li>• Assurances that adequate financial resources are available to cover reasonably anticipated mitigation needs.</li> </ul> <p>Mitigation to avoid potentially significant subsidence impacts and ensure prompt corrective action in the event of unanticipated effects nevertheless occur is described by the following stages.</p> <p><i>Stage 1: Groundwater Levels</i></p> <p>Irreversible subsidence would not occur if groundwater levels stay above historic low levels for the entire transfer season. As groundwater is pumped from an aquifer, the pore water pressure in the aquifer is reduced. This reduction in pore water pressure increases the effective stress on the structure of the aquifer itself. This increase in effective stress can cause the aquifer structure to deform, or compress, resulting in the subsidence of the ground surface elevation. Subsidence can</p>

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	<p>be irreversible if the reduced effective stress is lower than historically low effective stress. Typically this would be the result of groundwater levels reaching levels lower than the historical low level. If groundwater level monitoring indicates that groundwater levels remain above historic low levels, then no additional actions for subsidence monitoring or mitigation are necessary.</p> <p><i>Stage 2: Ground Surface Elevations</i> Stage 2 includes monthly ground surface monitoring during water transfers if they could cause groundwater levels to fall below historic low levels, as described above in the Monitoring Plan. If ground surface elevations decrease between 0.1 and 0.2 foot, the seller will evaluate the accuracy of the information based on the current limitations of technology, professional engineering/surveying judgment, and other local data. If the elevations decline more than 0.2 feet, this change could indicate inelastic subsidence, which would trigger a shift to Stage 3.</p> <p><i>Stage 3: Local Investigation</i> If the threshold of 0.2 foot of ground surface elevation change is exceeded, the seller shall cease groundwater substitution pumping for the transfer until one of the following occurs: (1) groundwater levels recover above historic low groundwater levels; (2) seller completes a more detailed local investigation identifying hydrogeologic conditions that could potentially allow continued transfer from a subset of wells (if the seller can provide evidence that this pumping is not expected to cause additional subsidence); or (3) seller completes an investigation of local infrastructure that could be affected by subsidence (such as water delivery infrastructure, water supply facilities, flood protection facilities, highways, etc.) indicating the local threshold of subsidence that could be experienced before these facilities would be adversely affected. Any option should also consider the effect of non-transfer pumping that may be causing subsidence.</p> <p><i>Stage 4: Mitigation</i> If subsidence effects to local infrastructure occur despite monitoring efforts, then the sellers must work with the lead agencies to determine whether the measured subsidence may be caused by water transfers. Any significant adverse subsidence effects caused by transfer activities must be addressed and a contingency plan in the event of a need for further corrective action must be approved by Reclamation before transfers could continue after Stage 3.</p> <p><i>Stage 5: Continued Monitoring</i> The sellers will continue to monitor for subsidence while groundwater levels remain below historic low levels. If the seller has ceased transfer-related pumping but groundwater levels remain below historic lows, subsidence monitoring will need to continue until the spring following the transfer. The results of subsidence monitoring will be factored into monitoring and mitigation plans for future transfers.</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>

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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.

**Table A-2 Environmental Commitments**

Transfer Method	Environmental Commitment
Groundwater Substitution Transfers	In groundwater basins where sellers are in the same groundwater subbasin as protected aquatic habitats, such as giant garter snake preserves and conservation banks, groundwater substitution will be allowed as part of the long term water transfers if the seller can demonstrate that any impacts to water resources needed for special-status species protection have been addressed. In these areas, sellers will be required to address these impacts as part of their mitigation plan.
All Transfers	Carriage water (a portion of the transfer that is not diverted in the Delta and becomes Delta outflow) will be used to maintain water quality in the Delta. Carriage water calculations will also reflect conveyance losses as the water moves from its source to the Delta export pumps, and is conveyed from the Delta to buyers. Carriage water is represented as a percent of the transfer that does not reach the buyer, and this percent is calculated during the transfer based on real-time monitoring information in the Delta. Typical carriage water amounts range from 20 to 30 percent for transfers from the Sacramento Valley, and about 10 percent for transfers from the San Joaquin Valley.
Cropland Idling Transfers	As part of the approval process for long-term water transfers, Reclamation will have access to the land to verify how the water transfer is being made available and to verify that actions to protect the giant garter snake are being implemented. At the end of each water transfer year, Reclamation will prepare a monitoring report that contains maps of all cropland idling actions that occurred within the range of potential transfer activities analyzed in this EIS/EIR, results of any newly available scientific research and monitoring pertinent to water transfer actions, and a discussion of conservation measure effectiveness. The report will be submitted to United States Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) in February, prior to the next year of potential transfers. Reclamation will coordinate with USFWS and CDFW on the contents and findings of the annual report prior to additional transfers.
	Reclamation will establish annual meetings with the USFWS 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 the next transfer season.
	Reclamation will provide a map(s) to the USFWS in June of each year showing the parcels of riceland that are proposed for the purpose of transferring water for that year. These maps will be prepared to comport to Reclamation's geographic information system (GIS) standards.
	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>Districts proposing water transfers made available from idled rice fields will ensure that adequate water is available for priority habitat with a high likelihood of giant garter snake occurrence. The determination of priority habitat will be made through coordination with giant garter snake experts, Geographic Information System (GIS) analysis of proximity to historic tule marsh, and GIS analysis of suitable habitat. The priority habitat areas are indicated on the priority habitat maps for participating water agencies and will be maintained by Reclamation. As new information becomes available, these maps will be updated in coordination with USFWS and CDFW. In addition to mapped priority habitat, fields abutting or immediately adjacent to federal wildlife refuges will be considered priority habitat.</p>
<p>Maintaining water in smaller drains and conveyance infrastructure supports key habitat attributes such as emergent vegetation for giant garter snake for escape cover and foraging habitat. If crop idling/shifting occurs in priority habitat areas, Reclamation will work with contractors to document that adequate water remains in drains and canals in those priority areas. Documentation may include flow records, photo documentation, or other means of documentation agreed to by Reclamation and USFWS.</p>
<p>Mapped priority habitat known to be occupied by giant garter snake and priority habitats with a high likelihood for giant garter snake occurrence (60 percent or greater probability) will not be permitted to participate in cropland idling/shifting transfers. Water sellers can request a case-by-case evaluation of whether a specific field would be precluded from participating in long-term water transfers. These areas include lands adjacent to naturalized lands and refuges and corridors between these areas, such as:</p> <ul style="list-style-type: none"> <li>• Fields abutting or immediately adjacent to Little Butte Creek between Llano Seco and Upper Butte Basin Wildlife Area, Butte Creek between Upper Butte Basin and Gray Lodge Wildlife areas, Colusa Basin drainage canal between Delevan and Colusa National Wildlife Refuges, Gilsizer Slough, Colusa Drainage Canal, the land side of the Toe Drain along the Sutter Bypass, Willow Slough and Willow Slough Bypass in Yolo County, Hunters and Logan Creeks between Sacramento and Delevan National Wildlife Refuges; and</li> <li>• Lands in the Natomas Basin.</li> </ul>
<p>Sellers will perform giant garter snake best management practices, including educating maintenance personnel to recognize and avoid contact with giant garter snake, dredging only one side of a conveyance channel per year, and implementing other measures to enhance habitat for giant garter snake. Implementation of best management practices will be documented by the sellers and verified by Reclamation and will be included in the annual monitoring report.</p>
<p>In order to limit reduction in the amount of over-winter forage for migratory birds, including greater sandhill crane, cropland idling transfers will be minimized near known wintering areas that support high concentrations of waterfowl and shorebirds, such as wildlife refuges and established wildlife areas.</p>

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