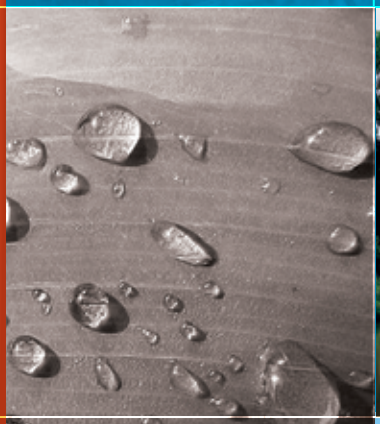
Long-Term Water Transfers Environmental Impact Statement/ Environmental Impact Report

Public Draft



U.S. Department of the Interior
Bureau of Reclamation
Mid-Pacific Region
Sacramento, California

San Luis & Delta-Mendota
Water Authority

September 2014

Long-Term Water Transfers

Environmental Impact Statement/Environmental Impact Report

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Prepared by

United States Department of the Interior
Bureau of Reclamation
Mid-Pacific Region

San Luis & Delta-Mendota Water Authority

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Los Banos, California

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Long-Term Water Transfers
Draft Environmental Impact Statement/Environmental Impact Report

Lead Agencies: U.S. Department of the Interior, through the Bureau of Reclamation (Reclamation) and the San Luis & Delta-Mendota Water Authority (SLDMWA)

State Clearinghouse # 2011011010

ABSTRACT

This Long-Term Water Transfers Environmental Impact Statement/Environmental Impact Report (EIS/EIR) evaluates the potential impacts of alternatives to help address Central Valley Project (CVP) water supply shortages. SLDWMA Participating Members and other CVP water contractors in the San Francisco Bay Area experience severe reductions in CVP water supplies during dry hydrologic years. A number of entities upstream from the Sacramento-San Joaquin Delta have expressed interest in transferring water to reduce the effects of CVP shortages to these agencies. The alternatives evaluated in this EIS/EIR include transfers of CVP and non CVP water or transfers from north of the Delta to CVP contractors south of the Delta that require the use of CVP and SWP facilities. Water would be made available for transfer through groundwater substitution, cropland idling, crop shifting, reservoir release, and conservation. This EIS/EIR evaluates potential impacts of water transfers over a 10-year period, 2015 through 2024.

This EIS/EIR has been prepared according to requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). Direct, indirect, and cumulative impacts resulting from the project alternatives on the physical, natural, and socioeconomic environment of the region are addressed.

Comments on this document must be submitted by December 1, 2014. Reclamation and SLDMWA will consider comments on the Draft EIS/EIR received during the 60-day review period.

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Executive Summary

Hydrologic conditions, climatic variability, consumptive use within the watershed, and regulatory requirements for operation of water projects commonly affect water supply availability in California. This variability strains water supplies, making advance planning for water shortages necessary and routine. In the past decades, water entities have been implementing water transfers to supplement available water supplies to serve existing demands, and such transfers have become a common tool in water resource planning.

The United States Department of the Interior, Bureau of Reclamation manages the Central Valley Project (CVP), which includes storage in reservoirs (such as Shasta, Folsom, and Trinity reservoirs) and diversion pumps in the Sacramento-San Joaquin Delta (Delta) to deliver water to users in the San Joaquin Valley and San Francisco Bay Area. When these users experience water shortages, they may look to water transfers to help reduce potential impacts of those shortages.

A water transfer involves an agreement between a willing seller and a willing buyer, and available infrastructure capacity to convey water between the two parties. To make water available for transfer, the willing seller must take an action to reduce the consumptive use of water (such as idle cropland or pump groundwater in lieu of using surface water) or release additional water from reservoir storage. This water would be conveyed to the buyers' service area for beneficial use. Water transfers would be used only to help meet existing demands and would not serve any new demands in the buyers' service areas. Pumping capacity at the Delta pumps is generally only available in dry or critically dry years.

Reclamation and the San Luis & Delta-Mendota Water Authority (SLDMWA) are completing a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) pursuant to the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) for water transfers from 2015 through 2024. Reclamation is serving as the Lead Agency under NEPA and SLDMWA is the Lead Agency under CEQA. Reclamation would facilitate transfers proposed by buyers and sellers. The SLDMWA, consisting of federal and exchange water service contractors in western San Joaquin Valley, San Benito, and Santa Clara counties, helps negotiate transfers in years when the member agencies could experience shortages.

This EIS/EIR evaluates water transfers that would be purchased by CVP contractors in areas south of the Delta or in the San Francisco Bay Area. The transfers would be conveyed through the Delta using CVP or State Water

Project (SWP) pumps, or facilities owned by other agencies in the San Francisco Bay Area.

This EIS/EIR addresses water transfers to CVP contractors from CVP and non-CVP sources of supply that must be conveyed through the Delta using both CVP, SWP, and local facilities. These transfers require approval from Reclamation and/or the Department of Water Resources (DWR), which necessitates compliance with NEPA and CEQA. Other transfers not included in this EIS/EIR could occur during the same time period, but they would receive separate environmental compliance from the implementing agencies (as necessary).

ES.1 Purpose and Need/Project Objectives

The purpose and need statement (under NEPA) and project objectives (under CEQA) describe the underlying need for and purpose of a proposed project. The purpose and need statement and objectives are a critical part of the environmental review process because they are used to identify the range of reasonable alternatives and focus the scope of analysis.

ES.1.1 Purpose and Need

The purpose of the Proposed Action is to facilitate and approve voluntary water transfers from willing sellers upstream of the Delta to water users south of the Delta and in the San Francisco Bay Area. Water users have the need for immediately implementable and flexible supplemental water supplies to alleviate shortages.

ES.1.2 Project Objectives

SLDMWA has developed the following objectives for long-term water transfers through 2024:

- 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.

ES.2 Study Area

The Study Area for potential transfers encompasses the potential buyers and sellers that could participate, which are shown in Figure ES-1.

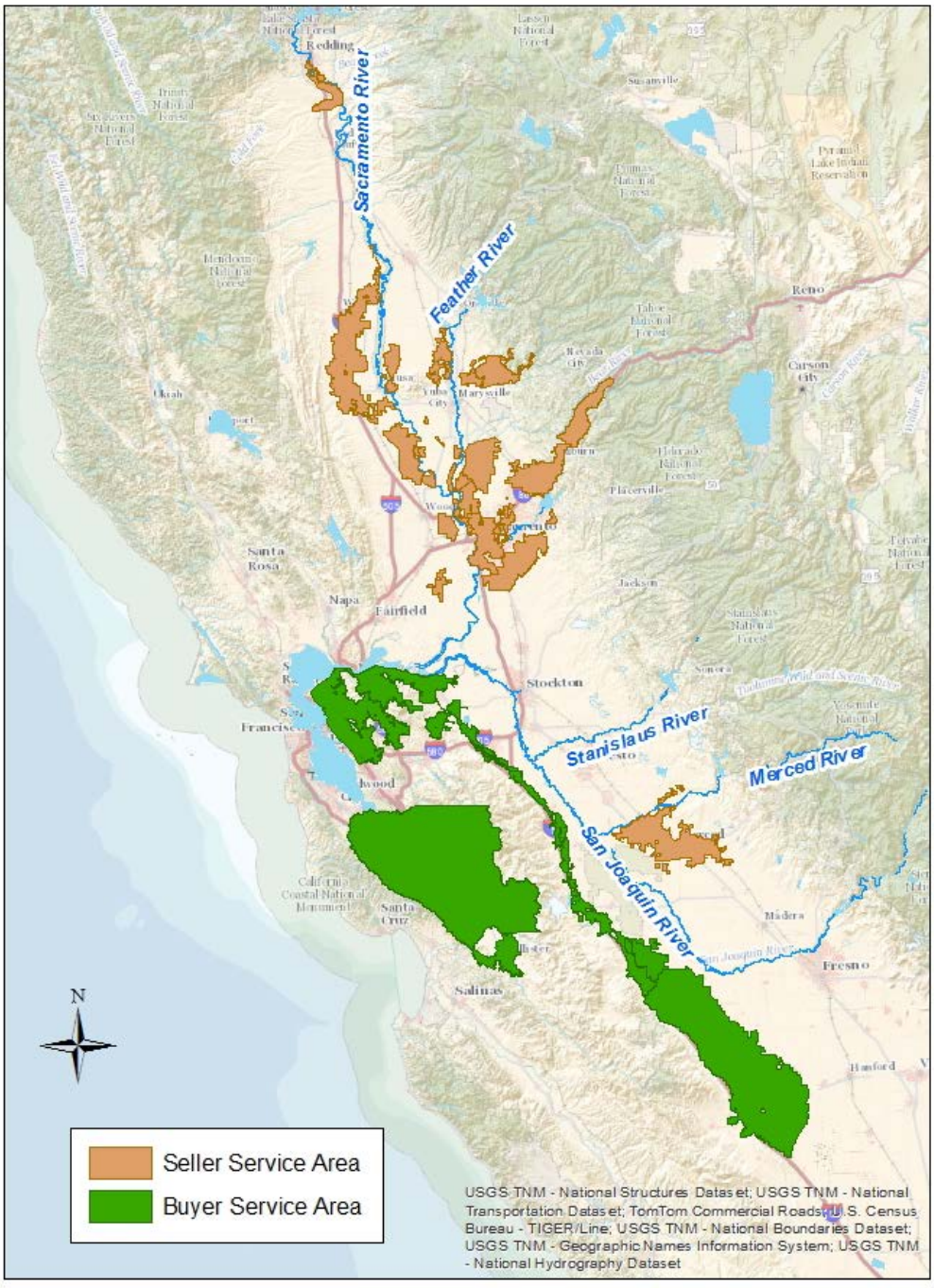

Figure ES-1. Potential sellers would transfer water to buyers in the Central Valley or Bay Area

ES.2.1 Water Agencies Requesting Transfers

Several CVP contractors have identified interest in purchasing transfer water to reduce potential water shortages and have requested to be included in the EIS/EIR; these agencies are shown in Table ES-1.

Table ES-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
Contra Costa Water District
East Bay Municipal Utility District

ES.2.1.1 SLDMWA

SLDMWA consists of 29 member agencies representing water service contractors and San Joaquin River Exchange Contractors, but not all SLDMWA member agencies are participating in the proposed activities that are the subject of this EIS/EIR. Reclamation has an operations and maintenance agreement with SLDMWA to operate and maintain the physical works and appurtenances associated with the Jones Pumping Plant, the Delta-Mendota Canal, the O'Neill Pump/Generating Plant, the San Luis Drain, and associated works. One function SLDMWA serves is to help negotiate water transfers with and on behalf of its member agencies when CVP allocations have been reduced and there is a need for supplemental water.

The SLDMWA service area consists primarily of agricultural lands on the west side of the San Joaquin Valley. Agricultural water use occurs on approximately 850,000 irrigated acres. Water for habitat management occurs on approximately 120,000 acres of refuge lands, which receive approximately 250,000 to 300,000 acre-feet (AF) of water per year. Relative to agricultural uses, there is limited municipal and industrial (M&I) water use in the San Joaquin Valley area. The majority of the M&I use in the SLDMWA service area occurs in the San Felipe Division, primarily the Santa Clara Valley Water District (WD).

South-of-Delta agricultural service contractors, many of which are members of the SLDMWA, experience severe cutbacks in CVP allocations in most years. In 2009, deliveries were cut back to ten percent of CVP contract amounts for agricultural water service contracts. In 2014, agricultural service contracts received a zero percent allocation. Note that the Exchange Contractors are not included in these allocations. SLDMWA member agencies use water transfers as a method to supplement water supplies in years when CVP allocations are reduced.

ES.2.1.2 Contra Costa WD

The Contra Costa WD was formed in 1936 to purchase and distribute CVP water for irrigation and industrial uses. Today, the Contra Costa WD encompasses more than 214 square miles, serves a population of approximately 500,000 people in Central and East Contra Costa County, and is Reclamation's largest urban CVP contractor in terms of contract amount.

Contra Costa WD is almost entirely dependent on CVP diversions from the Delta for its water supply. The 48-mile Contra Costa Canal conveys water throughout the service area. Contra Costa WD's long-term CVP contract with Reclamation was renewed in May 2005 and has a term of 40 years. The contract with Reclamation provides for a maximum delivery of 195,000 AF per year from the CVP for M&I purposes, but Contra Costa WD has historically received well below this contract amount. Contra Costa WD also has limited water supply from groundwater, recycled water, and some long-term water purchase agreements.

ES.2.1.3 East Bay Municipal Utility District (MUD)

East Bay MUD was created in 1923 to provide water service to the east San Francisco Bay Area. Today, East Bay MUD provides water and wastewater services to approximately 1.3 million people over a 332 square mile area in Alameda and parts of Contra Costa counties.

Ninety percent of East Bay MUD's water supply comes from the Mokelumne River watershed in the Sierra Nevada. East Bay MUD has a CVP contract with Reclamation to divert water from the Sacramento River for M&I purposes. East Bay MUD's long-term CVP contract with Reclamation was renewed in April 2006 and has a term of 40 years. The contract provides up to 133,000 AF in a single dry year, not to exceed a total of 165,000 AF in three consecutive dry years. CVP water is available to East Bay MUD only in dry years when certain storage conditions within the East Bay MUD system are met (East Bay MUD 2011). As a result East Bay MUD does not forecast frequent use of CVP water.

ES.2.2 Potential Willing Sellers

Table ES-2 lists the agencies that have expressed interest in being a seller in the Long-Term Water Transfers EIS/EIR and the potential maximum quantities available for sale. Actual purchases could be less, depending on hydrology, the amount of water the seller is interested in selling in any particular year, the

interest of buyers, 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 potential transfers identified in Table ES-2 would occur.

Table ES-2. Potential Sellers (Upper Limits)

Water Agency	Maximum Potential Transfer
Sacramento River Area of Analysis	
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
American River Area of Analysis	
City of Sacramento	5,000
Placer County Water Agency	47,000
Sacramento County Water Agency	15,000
Sacramento Suburban Water District	30,000
Yuba River Area of Analysis	
Browns Valley Irrigation District	8,100
Cordua Irrigation District	12,000
Feather River Area of Analysis	
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
Merced River Area of Analysis	
Merced Irrigation District	30,000
Delta Region Area of Analysis	
Reclamation District 2068	7,500
Pope Ranch	2,800
Total	*511,094*

ES.3 Development and Screening of Preliminary Alternatives

NEPA and CEQA require an EIS and EIR, respectively, to identify a reasonable range of alternatives and provide guidance on the identification and screening of such alternatives. Both NEPA and CEQA include provisions that alternatives reasonably meet the purpose and need/project objectives, and be potentially feasible. For this EIS/EIR, the Lead Agencies followed a structured, documented process to identify and screen alternatives for inclusion in the EIS/EIR. Figure ES-2 illustrates the process that the Lead Agencies conducted to identify and screen alternatives.

Figure ES-2. Alternatives Development and Screening Process

ES.3.1 Public Scoping and Screening Criteria Results

During public scoping, the public provided input regarding potential alternatives to the Proposed Action. The Lead Agencies reviewed the purpose and need/project objectives statement, public scoping comments, and previous studies in their initial effort to develop conceptual alternatives. This process identified an initial list of measures described in more detail in Appendix A, Alternatives Development Report. The initial list included more than 27 measures. The Lead Agencies then developed and applied a set of screening considerations to determine which measures should move forward for further analysis and be considered as project alternatives.

The Lead Agencies determined that they would screen the alternatives based on their ability to meet key elements of the purpose and need/basic project objectives:

- Immediate: the term proposed for this EIS/EIR is 2015 through 2024. This period is relatively short, and measures need to be able to provide some measurable benefit within this time period.

- Flexible: project participants need water in some years, but not in others. They need measures that have the flexibility to be used only when needed.

- Provide Water: project participants need measures that have the capability of providing additional water to regions that are experiencing shortages.

Measures had to satisfy these key elements in order to move forward to the alternatives formulation phase. Appendix A includes a detailed discussion of the screening process and results.

ES.3.2 Selected Alternatives

The measures that moved forward for more detailed analysis in this EIS/EIR are those that best meet the NEPA purpose and need and CEQA objectives, minimize negative effects, are potentially feasible, and represent a range of reasonable alternatives. Some alternatives do not fully meet the purpose and need/project objectives, but they have potential to minimize some types of environmental effects or help provide a reasonable range of alternatives for consideration by decision-makers.

Measures that were carried forward from scoping and the screening process for alternatives formulation include:

- Agricultural Conservation (Seller Service Area)
- Cropland Idling Transfers - rice, field crops, grains
- Cropland Idling Transfers - alfalfa
- Groundwater Substitution
- Crop Shifting
- Reservoir Release

The measures 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 ES-3 presents the alternatives carried forward for analysis in the EIS/EIR. Analysis of these alternatives will provide the information needed to make a decision, and potentially to mix and match elements of the alternatives, if needed, to create an alternative that would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any significant environmental effects.

Table ES-3. Alternatives Selected for Analysis in the EIS/EIR

Alternative Number	Alternative Name	Description
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 water shortages and could increase groundwater pumping, idle cropland, or retire land to address those shortages.
Alternative 2	Full Range of Transfers (Proposed Action)	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: • Agricultural conservation (Seller Service Area) • Groundwater substitution • Reservoir release
Alternative 4	No Groundwater Substitution	The No Groundwater Substitution Alternative includes the following measures: • Agricultural conservation (Seller Service Area) • Cropland idling transfers– rice, field crops, grains, alfalfa • Crop shifting • Reservoir release

ES.4 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. Water transfers must be consistent with State and Federal law. Transfers involving water diverted through the Delta are governed by existing water rights, applicable Delta pumping limitations, reservoir storage capacity and regulatory requirements.

The biological opinions on the Coordinated Operations of the CVP and SWP (U.S. Fish and Wildlife Service [USFWS] 2008; National Oceanic and Atmospheric Administration Fisheries Service [NOAA Fisheries] 2009) analyze transfers through the Delta from July to September (commonly referred to as the "transfer window") that are up to 600,000 AF in dry and critically dry years. For all other year types, the maximum transfer amount is up to 360,000 AF. Through Delta transfers would be limited to the period when USFWS and NOAA Fisheries find transfers to be acceptable, typically July through September, unless a change is made in a particular water year based on concurrence from USFWS and NOAA Fisheries.

This EIS/EIR analyzes transfers to CVP contractors. These transfers 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 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 rather than transfers that involve the State Water Resources Control Board (SWRCB). 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 Project 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.

ES.4.1 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.

ES.4.2 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, these reservoirs are drawn down to levels lower than without the water transfer. To refill the reservoir, a seller must capture some flow that would otherwise have gone downstream. Sellers must refill the storage at a time when downstream users would not have otherwise captured the water, either in downstream

reservoirs or at the CVP and SWP (collectively "the Projects") or non-Project pumps in the Delta. 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.

ES.4.3 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.

ES.4.4 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.

ES.4.5 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.

ES.5 Environmental Consequences/Environmental Impacts

A summary of the environmental impacts identified for the action alternative (including beneficial effects pursuant to NEPA) is presented in Tables ES-4 and ES-5. The No Action/No Project Alternative considers the potential for changed conditions during the 2015-2024 period when transfers could occur, but because this period is relatively short, the analysis did not identify changes from existing conditions. Alternative 1 is therefore not included in the tables.

The purpose of Table ES-4 is to consolidate and disclose the significance determinations made pursuant to CEQA made throughout the EIS/EIR. The impacts listed in Table ES-4 are NEPA impacts as well as CEQA impacts, but they are judged for significance only under CEQA. Pursuant to NEPA, significance is used to determine whether an EIS or some other level of documentation is required, and once the decision to prepare an EIS is made, the magnitude of the impact is evaluated and no further judgment of significance is required. Table ES-5 summarizes impacts for resources that were analyzed only under NEPA and do not include findings of significance.

Table ES-4. Potential Impacts Summary

Potential Impact	Alternative	Significance to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
3.1 Water Supply				
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.	2, 3	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	2, 3, 4	LTS	None	LTS
Transfers would increase water supplies in the Buyers Service Area	2, 3, 4	B	None	B
3.2 Water Quality				
Cropland idling transfers could result in increased deposition of sediment on water bodies.	2, 4	LTS	None	LTS
Cropland idling/shifting transfers could change the water quality constituents associated with leaching and runoff.	2, 4	LTS	None	LTS
Cropland idling/shifting transfers could change the quantity of organic carbon in waterways.	2, 4	LTS	None	LTS
Groundwater substitution transfers could introduce contaminants that could enter surface waters from irrigation return flows.	2, 3	LTS	None	LTS
Water transfers could change reservoir storage in CVP and SWP reservoirs and could result in water quality impacts.	2, 3, 4	LTS	None	LTS
Water transfers could change reservoir storage non-Project reservoirs participating in reservoir release transfers, which could result in water quality impacts.	2, 3, 4	LTS	None	LTS

Potential Impact	Alternative	Significance to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
Water transfers could change river flow rates in the Seller Service Area and could affect water quality.	2, 3, 4	LTS	None	LTS
Water transfers could change Delta outflows and could result in water quality impacts.	2, 3, 4	LTS	None	LTS
Water transfers could change Delta salinity and could result in water quality impacts.	2, 3, 4	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.	2, 3, 4	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.	2, 3, 4	LTS	None	LTS
Water transfers could change reservoir storage in San Luis Reservoir and could result in water quality impacts.	2, 3, 4	LTS	None	LTS
3.3 Groundwater Resources				
Groundwater substitution transfers could cause a reduction in groundwater levels in the Seller Service Area.	2, 3	S	GW-1: Mitigation and Monitoring Plans	LTS
Groundwater substitution transfers could cause subsidence in the Seller Service Area.	2, 3	S	GW-1: Mitigation and Monitoring Plans	LTS
Groundwater substitution transfers could cause changes to groundwater quality in the Seller Service Area.	2, 3	LTS	None	LTS
Cropland idling transfers could cause reduction in groundwater levels in the Seller Service Area due to decreased applied water recharge.	2, 4	LTS	None	LTS

Potential Impact	Alternative	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.	2, 3, 4	B	None	B
3.4 Geology and Soils				
Cropland idling transfers in the Seller Service Area that temporarily convert cropland to bare fields could increase soil erosion.	2, 4	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.	2, 4	LTS	None	LTS
Use of transfer water on agricultural fields in the Buyer Service Area could increase soil erosion.	2, 3, 4	LTS	None	LTS
Use of transfer water on agricultural fields in the Buyer Service Area could increase soil movement.	2, 3, 4	LTS	None	LTS
3.5 Air Quality				
Increased groundwater pumping for groundwater substitution transfers would increase emissions of air pollutants in the Sellers Service Area.	2, 3	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.	2, 4	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.	2, 4	B	None	B

Potential Impact	Alternative	Significance to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
Use of water from transfers on agricultural fields in the Buyer Service Area could reduce windblown dust.	2, 3, 4	B	None	B
Water transfers via groundwater substitution and cropland idling could exceed the general conformity de minimis thresholds.	2, 3, 4	LTS	None	LTS
3.6 Climate Change				
Increased groundwater pumping for groundwater substitution transfers could increase emissions of greenhouse gases.	2, 3	LTS	None	LTS
Water transfers via cropland idling could reduce vehicle exhaust emissions from reduced operations in the study area	2, 4	LTS	None	LTS
Changes to the environment from climate change could affect the Proposed Action	2, 3, 4	LTS	None	LTS
Use of water from transfers on agricultural fields in the Buyer Service Area could affect emissions	2, 3, 4	LTS	None	LTS
3.7 Aquatic Resources				
Transfer actions could affect reservoir storage and reservoir surface area in reservoirs supporting fisheries resources	2, 3, 4	LTS	None	LTS
Transfer actions could decrease flows of rivers and creeks supporting fisheries resources in the Sacramento and San Joaquin river watersheds	2, 3, 4	LTS	None	LTS
Transfer actions could alter hydrologic conditions in the Delta, altering associated habitat availability and suitability	2, 3, 4	LTS	None	LTS
3.8 Terrestrial Resources				
Groundwater substitution could reduce groundwater levels supporting natural communities	2, 3	LTS	None	LTS

Potential Impact	Alternative	Significance to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
Groundwater substitution could reduce stream flows supporting natural communities in small streams	2, 3	S	GW-1	LTS
Cropland Idling/Shifting could alter habitat availability and suitability	2, 4	LTS	None	LTS
Transfer actions could impact reservoir storage and reservoir surface area and alter habitat availability and suitability associated with those reservoirs	2, 3, 4	LTS	None	LTS
Transfer actions could alter flows in large rivers, altering habitat availability and suitability associated with these rivers	2, 3, 4	LTS	None	LTS
Transfer actions could alter hydrologic conditions in the Delta, altering associated habitat availability and suitability	2, 3, 4	LTS	None	LTS
Transfer actions could impact special-status species in the area of analysis through modification of suitable lacustrine, wetland, riverine, and upland habitat	2, 3, 4	LTS	None	LTS
Transfer actions could impact San Luis Reservoir storage and surface area.	2, 3, 4	LTS	None	LTS
Cropland idling/shifting under could alter the amount of suitable habitat for natural communities and special-status wildlife species associated with seasonally flooded agriculture and associated irrigation waterways	2, 4	LTS	None	LTS
Transfer actions could alter planting patterns and urban water use	2, 3, 4	LTS	None	LTS

Potential Impact	Alternative	Significance to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
3.9 Agricultural Land Use				
Cropland idling water transfers could permanently or substantially decrease the amount of lands categorized as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland under the FMMP.	2	LTS	None	LTS
	4	S	Mitigation Measure LU-1: Avoiding changes in FMMP land use classifications	LTS
Cropland idling water transfers could convert agricultural lands under the Williamson Act and other land resource programs to an incompatible use.	2, 4	LTS	None	LTS
Cropland idling water transfers could conflict with local land use policies.	2, 4	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.	2, 3, 4	B	B	B
3.13 Cultural Resources				
Transfers that draw down reservoir surface elevations beyond historically low levels could result in a potentially significant effect on cultural resources.	2, 3, 4	LTS	None	LTS
Stored reservoir release transfers that draw down reservoir surface elevations at local reservoirs beyond historically low levels could affect cultural resources.	2, 3, 4	LTS	None	LTS
3.14 Visual Resources				
Water transfers could degrade the existing landscape character or scenic attractiveness of Class A and B visual resources at CVP and SWP reservoirs	2, 3, 4	LTS	None	LTS

Potential Impact	Alternative	Significance to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
Water transfers could degrade the existing landscape character or scenic quality of Class A and B visual resources along surface water bodies	2, 3, 4	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	2, 3, 4	LTS	None	LTS
Cropland idling transfers could substantially degrade the existing landscape character and scenic attractiveness of Class A and B visual resources	2, 4	LTS	None	LTS
Water transfers could substantially degrade the existing landscape character and quality in the Buyer's Service Area	2, 3, 4	LTS	None	LTS
3.15 Recreation				
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.	2, 3, 4	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.	2, 3, 4	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.	2, 3, 4	LTS	None	LTS
Changes in average flow into the Delta from the San Joaquin River from water transfers could affect river-based recreation.	2, 3, 4	NI	None	NI

Potential Impact	Alternative	Significance to CEQA	Proposed Mitigation	Significance After Mitigation Pursuant to CEQA
Changes in surface water elevation at San Luis Reservoir as a result of water transfers could affect reservoir-based recreation	2, 3, 4	NI	None	NI
3.16 Power				
Acquisition of water via groundwater substitution or crop idling may cause changes in power generation from CVP and SWP reservoirs	2, 3, 4	LTS	None	LTS
Acquisition of water via stored reservoir water may cause changes in power generation from the facilities that sell water	2, 3, 4	LTS	None	LTS
3.17 Flood Control				
Water transfers would change storage levels in CVP and SWP reservoirs, potentially affecting flood control	2, 3, 4	LTS	None	LTS
Water transfers could decrease storage levels in non-Project reservoirs and potentially affecting flood control	2, 3, 4	B	None	B
Water transfers could change river flows, potentially affecting flood capacity or levee stability	2, 3, 4	LTS	None	LTS
Water transfers would change storage at San Luis Reservoir, potentially affecting flood control	2, 3, 4	LTS	None	LTS

Key:
B = beneficial
LTS = less than significant
NI = no impact
None = no feasible mitigation identified and/or required
S = significant

Table ES-5. Impacts for NEPA-Only Resources

Potential Impact	Alternative	Impact
3.10 Regional Economics		
Seller Service Area		
Revenues from cropland idling water transfers could increase incomes for farmers or landowners selling water.	2, 4	Beneficial
Cropland idling transfers in Glenn, Colusa, and Yolo counties could reduce employment, labor income, and economic output for businesses and households linked to agricultural activities.	2, 4	Employment: -362 Labor Income: -$15.11 Million Output: -$45.46 Million
Cropland idling transfers in Sutter and Butte counties could reduce economic output, value added, and employment for businesses and households linked to agricultural activities.	2, 4	Employment: -118 Labor Income: -$4.16 Million Output: -$13.84 Million
Cropland idling transfers in Solano County could reduce economic output, labor income, and employment for businesses and households linked to agricultural activities.	2, 4	Employment: -19 Labor Income: -$0.84 Million Output: -$2.01 Million
Cropland idling transfers could have adverse local economic effects.	2, 4	Adverse
Water transfers from idling alfalfa could increase costs for dairy and other livestock feed.	2, 4	Adverse, but minimal
Cropland idling transfers could decrease net revenues to tenant farmers whose landowners choose to participate in transfers.	2, 4	Adverse
Crop shifting transfers could change economic output, value added, and employment for businesses and households linked to agricultural activities.	2, 4	Adverse, but minimal
Crop shifting transfers could change economic output, value added, and employment for businesses and households linked to agricultural activities.	2, 4	Adverse, but minimal
Economic effects associated with cropland idling could conflict with economic policies and objectives set forth in local plans.	2, 4	Adverse
Economic effects associated with cropland idling could conflict with economic policies and objectives set forth in local plans.	2, 4	Adverse
Reductions in local sales associated with cropland idling transfer effects could reduce tax revenues and increase costs to county governments.	2, 4	Adverse, but minimal
Groundwater substitution transfers could increase groundwater pumping costs for water users in areas where groundwater levels decline as a result of the transfer.	2, 3	Adverse
Revenues from groundwater substitution water transfers could increase incomes for farmers or landowners selling water.	2, 3	Beneficial
Groundwater substitution water transfers could increase management costs for local water districts.	2, 3	Adverse
Revenues received from stored reservoir and conservation transfers could increase operating incomes for sellers.	2, 3, 4	Beneficial, but minimal

Potential Impact	Alternative	Impact
Buyer Service Area		
Water transfers would provide water for agricultural uses that could support revenues, economic output, and employment.	2, 3, 4	Beneficial
Water transfers would provide water for M&I uses that could support revenues, economic output, and employment.	2, 3, 4	Beneficial
3.11 Environmental Justice		
Cropland idling transfers could adversely and disproportionately affect minority and low-income farm workers in the Seller Service Area.	2, 4	No disproportionately high or adverse effect
Crop shifting transfers could adversely and disproportionately affect minority and low-income farm workers in the Seller Service Area.	2, 3	No disproportionately high or adverse effect
Use of cropland modification transfers could adversely and disproportionately affect minority and low-income farm workers in the Buyer Service Area.	2, 3, 4	Beneficial
3.12 Indian Tribal Assets		
Groundwater substitution transfers could adversely affect ITAs by decreasing groundwater levels, which would potentially interfere with the exercise of a federally-reserved water right use, occupancy, and or character	2, 3	No effect
Groundwater substitution transfers could adversely affect ITAs by reducing the health of tribal members by decreasing water supplies	2, 3	No effect
Groundwater substitution transfers could affect ITAs by affecting fish and wildlife where there is a federally-reserved hunting, gathering, or fishing right.	2, 3	No effect
Groundwater substitution transfers could adversely affect ITAs by causing changes in stream flow temperatures or stream depletion, which would potentially interfere with the exercise of a federally-reserved Indian right	2, 3	No effect
Use of groundwater substitution transfers could affect reservations or Rancherias in the Buyer Service Area to reduce CVP shortages.	2, 3, 4	Beneficial

ES.6 References

East Bay MUD. 2011. Urban Water Management Plan 2010. June 2011. Accessed: March 20, 2012. Available at: http://www.ebmud.com/sites/default/files/pdfs/UWMP-2010-2011-07-21-web-small.pdf

NOAA Fisheries Service. 2009. Biological Opinion on the Long-Term Central Valley Project and State Water Project Operations Criteria and Plan. National Marine Fisheries Service, Southwest Region, Long Beach, CA. June 4, 2009. 844 pp.

USFWS. 2008. Biological Opinion on the Coordinated Operations of the Central Valley Project (CVP) and State Water Project (SWP). Final. December 15, 2008.

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