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.

The United States Department of the Interior, Bureau of Reclamation (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.

Transfers are allowed under California State law and under Federal law. Water users have been encouraged to seek alternative sources of water through willing buyer/willing seller agreements. The purpose of this Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS), which was previously circulated and has now been revised with new information and analysis presented herein, is to address the effects of transfers between listed buyers and sellers (i.e., the Proposed Action/Proposed Project referred to as Proposed Action in this document) that will streamline the environmental review process and make transfers more implementable relative to National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) requirements, especially when hydrologic conditions and available pumping capacity are unknown until right before the transfer season.

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 only be used to help meet existing demands and would not serve any new demands in the buyers' service areas. The proposed water transfers would not directly or indirectly affect growth beyond what is already planned.

Reclamation and the San Luis & Delta-Mendota Water Authority (SLDMWA) previously completed a joint EIS/EIR for the Proposed Action pursuant to NEPA and CEQA for water transfers through 2024. The Draft Long-Term Water Transfers EIS/EIR (2014 Draft EIS/EIR) was completed in 2014 and a Final Long-Term Water Transfers EIS/EIR (2015 Final EIS/EIR) was completed in 2015. The 2015 Final EIS/EIR was challenged in United States District Court for the Eastern District of California in the case *AquAlliance, et al., v. U.S. Bureau of Reclamation, et al.* On July 5, 2018, the District Court entered judgment, vacating SLDMWA's decisions to approve the Final Long-Term Water Transfers EIS/EIR and approve the Proposed Action, vacating the 2015 Final EIS/EIR, and vacating the U.S. Fish and Wildlife Service's

biological opinion. As a result, Reclamation and SLDMWA are hereby revising the Long-Term Water Transfers EIS/EIR to address the specific issues identified in the ruling. The Long-Term Water Transfers EIS/EIR, as revised with the additional information and analysis presented in this Long-Term Water Transfers Revised Draft EIR/Supplemental Draft EIS (RDEIR/SDEIS), evaluates water transfers conducted by CVP contractors located south of the Delta or in the San Francisco Bay Area. The water 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.

Reclamation serves as the Lead Agency under NEPA and SLDMWA is the Lead Agency under CEQA for this RDEIR/SDEIS. 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.

The RDEIR/SDEIS 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 the Department of Water Resources (DWR), which necessitates compliance with NEPA and CEQA. Other transfers not included in this RDEIR/SDEIS could occur during the same time period, subject to their own environmental review (as necessary). Non-CVP transfers are analyzed in combination with the Action Alternatives in the cumulative analysis.

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 Action. 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 approve and facilitate voluntary transfers of water from willing CVP and non-CVP sellers upstream of the Delta to CVP 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 impacts resulting from shortages of water supplies.

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 in water supplies 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.

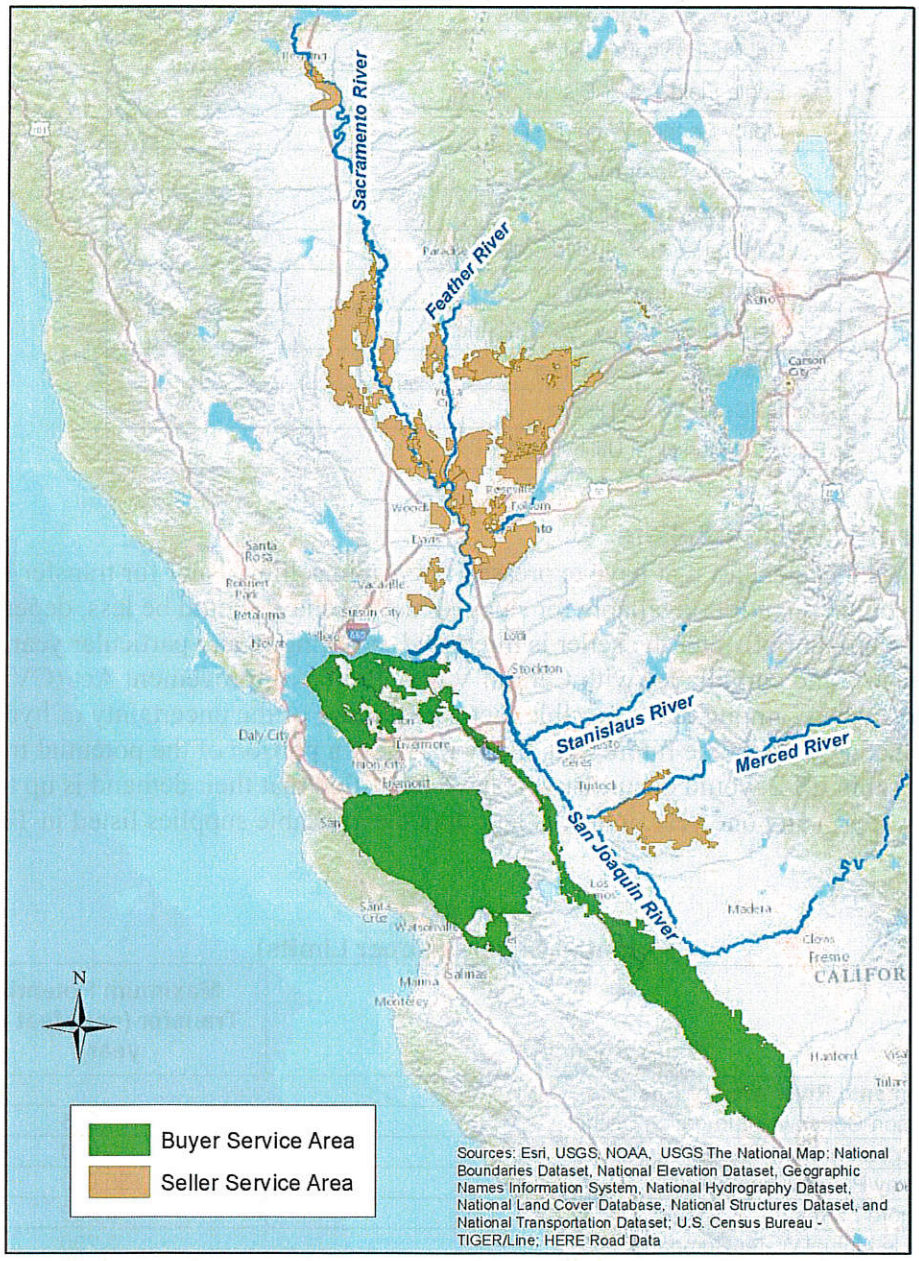

Figure ES-1.
Potential sellers would transfer water to buyers in the Central Valley or Bay Area

ES.2.1 Potential Buyers

A number of CVP contractors have identified interest in purchasing transfer water to reduce potential water shortages and have requested to be included in this RDEIR/SDEIS; 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.2.2 Potential Willing Sellers

Table ES-2 lists the agencies that have expressed interest in selling water for transfer 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. Buyers have identified that their demand is up to 250,000 acre-feet of water in any one year, which is less than the available supplies listed in Table ES-2.

Table ES-2.
Potential Sellers (Upper Limits)

Water Agency	Maximum Potential Transfer (acre-feet per year)[1]
Sacramento River Area of Analysis	
Anderson-Cottonwood Irrigation District	5,225
Burroughs Farms	2,000
Conaway Preservation Group	35,000
Cranmore Farms	8,000
Eastside Mutual Water Company	2,230
Glenn-Colusa Irrigation District	91,000
Giusti Farms	1,000
Henle Family Limited Partnership	700

Water Agency	Maximum Potential Transfer (acre-feet per year)[1]
Lewis Ranch	2,310
Natomas Central Mutual Water Company	30,000
Pelger Mutual Water Company	3,750
Pleasant Grove-Verona Mutual Water Company	18,000
Princeton-Codora-Glenn Irrigation District	13,200
Provident Irrigation District	19,800
Reclamation District 108	55,000
Reclamation District 1004	27,175
River Garden Farms	16,000
Sutter Mutual Water Company	36,000
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
Nevada Irrigation District	15,000
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 2060	6,000
Reclamation District 2068	7,500
Pope Ranch	2,800
Yolo Ranch	8,000

Note:
[1] The total transfers would be limited to be less than 250,000 acre-feet in any one year, based on the buyers' demands for transfers. The transfers in Table 2-2 add to more than this amount, but the buyers would not purchase transfers from all of these parties for the full amount.

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 RDEIR/SDEIS, the Lead Agencies followed a structured, documented process to identify and screen alternatives for inclusion in the EIS/EIR. Appendix A from the 2014 Draft EIS/EIR describes this process and the alternatives considered in more detail.

The process led to the development of the following measures that were carried forward from the scoping and screening process for alternative formulation:

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

These measures were combined into three Action Alternatives that were selected to move forward for analysis in the 2014 Draft EIS/EIR and this RDEIR/SDEIS (in addition to the No Action/No Project Alternative).

ES.4 Water Transfer Methods

A water transfer moves a volume of 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, as discussed in Appendix B of this RDEIR/SDEIS. Transfers involving water diverted through the Delta are governed by existing water rights, applicable Delta pumping limitations, reservoir storage capacity and regulatory requirements. All transfer must be consistent with the guidance provided in the most recent version of the DRAFT Technical Information for Preparing Water Transfer Proposals (Reclamation and DWR 2015). The biological opinions (BOs) on the Coordinated Operations of the CVP and SWP (United States Fish and Wildlife Service [USFWS] 2008; National Oceanic and Atmospheric Administration Fisheries Service [NOAA Fisheries] 2009) analyze water deliveries through the Delta including deliveries through water transfers. Through Delta water transfers from July to September are up to 600,000 acre-feet 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 acre-feet. The transfers included in Alternative 2 would be up to 250,000 acre-feet per year, so they would be less than that which was included in the BOs. The transfer volumes analyzed in the BO are inclusive of the volumes discussed in this document. 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 to the transfer window is made in a particular water year based on concurrence from USFWS and NOAA Fisheries.

This RDEIR/SDEIS analyzes transfers of water to CVP contractors. These transfers could be conveyed through the Delta using either CVP or SWP facilities, depending on availability. CVP

sellers could transfer either Base Supply[1] or Project Water[2], or both, under their CVP contracts. 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[3] contract, which is subject to NEPA compliance. This document also 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).

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 municipal and industrial users. Groundwater substitution would 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 they would have been without the water transfer. To refill the reservoir, a seller must capture some flow that would have otherwise 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. Additionally, refill cannot occur at times when the water would have been used to meet downstream flow or water quality standards.

ES.4.3 Cropland Idling

Cropland idling makes water available for transfer that would have been used for agricultural production. Water would be made available on the same pattern throughout the growing season

[1] Article 1(b) of the Sacramento River Settlement Contract defines Base Supply as the quantity of Surface Water established in Articles 3 and 5 which may be diverted by the Contractor from its Source of Supply each month during the period April through October of each Year without payment to the United States for such quantities diverted.

[2] Article 1(n) of the Sacramento River Settlement Contract defines Project water as all Surface Water diverted or scheduled to be diverted each month during the period April through October of each Year by the Contractor from its Source of Supply which is in excess of the Base Supply.

[3] The Warren Act of February 21, 1911 authorized the United States to execute contracts for the conveyance and storage of non-project water in Federal facilities when excess capacity exists.

as it would have otherwise 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 in the accepted ETAW values between the two crops would be the amount of water that can be transferred.

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. 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 Proposed Action and Alternatives

The following sections describe the Action Alternatives under evaluation in this RDEIR/SDEIS. Transfers of water would only occur when the Delta is in a balanced condition (when releases from upstream reservoirs plus unregulated flow approximately equals the water supply needed to meet Sacramento Valley in-basin uses plus exports).

ES.5.1 Alternative 1: No Action/No Project Alternative

Under the No Action/No Project Alternative, CVP-related water transfers through the Delta would not occur during the period 2019-2024. However, other transfers that do not involve CVP water or facilities could occur under the No Action/No Project Alternative. Additionally, transfers of CVP water within basins could continue and would still require Reclamation's approval. Some CVP entities may decide that they are interested in selling water to buyers in export areas under the No Action/No Project Alternative; however, they would need to complete individual environmental compliance for each transfer to allow Reclamation to complete the evaluation of the transfer for approval.

Under the No Action/No Project Alternative, some agricultural and urban water users may face potential shortages in the absence of water transfers. These potential shortages will likely be met by increasing groundwater pumping, idling cropland, reducing landscape irrigation, land retirement, or rationing water.

ES.5.2 Alternative 2: Full Range of Transfers (Proposed Action)

Alternative 2 would include making water available for transfer through all four methods: groundwater substitution, cropland idling/shifting, stored reservoir release, and conservation. Table ES-2 shows the potential sellers under Alternative 2. Buyers would be the same as those shown in Table ES-1, and transfers from Browns Valley Irrigation District (ID) would not be included in the Proposed Project for CEQA. The upper limit for transfers in any one year would be 250,000 acre-feet and up to 60,693 acres of cropland could be idled.

ES.5.3 Alternative 3: No Cropland Modifications

Alternative 3 would include making water available for transfer through groundwater substitution, stored reservoir release, and conservation actions. It would not include any cropland idling or crop shifting actions as methods of making water available for transfer. The sellers in Table ES-2 that would make water available for transfer through groundwater substitution, stored reservoir release, and conservation actions are included as part of Alternative 3. Buyers would be the same as those shown in Table ES-1, and transfers from Browns Valley ID would not be included in the Proposed Project for CEQA. The upper limit for water made available for transfer in any one year would be 250,000 acre-feet.

ES.5.4 Alternative 4: No Groundwater Substitution

Alternative 4 would include making water available for transfer through cropland idling, crop shifting, stored reservoir release, and conservation actions. It would not include any transfers of water made available through groundwater substitution actions. The sellers in Table ES-2 that would make water available for transfer through cropland idling, crop shifting, stored reservoir release, and conservation actions are included as part of Alternative 4. Buyers would be the same as those shown in Table ES-1, and transfers from Browns Valley ID would not be included in the Proposed Project for CEQA. The upper limit for water made available for transfer in any one year would be 250,000 acre-feet and up to 60,693 acres of cropland could be idled.

ES.6 Environmental Consequences/Environmental Impacts

A summary of the environmental impacts identified for the action alternative (including beneficial effects pursuant to NEPA) is presented in Appendix C, Impacts Summary of the RDEIR/SDEIS. The No Action/No Project Alternative considers the potential for changed conditions during the 2019-2024 period when transfers could occur. The potential for changed conditions for this period was found to be insubstantial and the analysis did not identify changes from existing conditions. Alternative 1 is therefore not included in the tables.

ES.7 Impact Summary

This section summarizes key impacts for the Action Alternatives in this RDEIR/SDEIS.

ES.7.1 Alternative 2: Full Range of Transfers (Proposed Action)

Impacts associated with water transfers are related to the method of making water available for transfer or conveyance of transferred water from seller to buyer. Stored reservoir release and water conservation are structured such that they have minor effects associated with making water available. The discussions below focus on cropland idling, groundwater substitution, and water conveyance, which is related to all methods of making water available for transfer.

Cropland Idling/Crop Shifting

Transfers of water made available from cropland idling actions would require idling fields that were previously farmed; and transfers of water made available from crop shifting actions would require shifting from a higher water-use crop to a lower water-use crop. Cropland idling could include a variety of crops but idling in upland areas would be within the historic range of

variation and would have less than significant effects on natural communities and special-status species.

Idling of seasonally flooded agricultural fields (primarily rice) could affect species that rely on flooded crops or related infrastructure (such as delivery and drainage ditches). Idling seasonally flooded agricultural fields could cause habitat fragmentation, inhibit normal wildlife migration and dispersal of individuals, and potentially dissociate habitats for roosting from those for foraging. These impacts would be detrimental to individual fitness and be potentially significant effects to wildlife. For species that migrate into the area seasonally (mainly birds), effects would be minor because the fields would already be idled when they arrive, and they would select suitable habitat in other locations. For year-round residents (i.e., pond turtle, giant garter snake) the potential impacts would be greater (see Section 3.8.2.4.1 of the RDEIR/SDEIS). These effects are mitigated through measures discussed in Section 3.8.4 of the RDEIR/SDEIS, that maintain water in ditches which support these species and avoid priority habitat areas.

Cropland idling could affect land categorized as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland under the Farmland Mapping and Monitoring Program (FMMP), but this effect would be mitigated by avoiding idling that would result in changes to FMMP land use classifications. Cropland idling could also reduce farm income, which would affect farm employment and farm-related businesses.

Groundwater Substitution

Transfers of water made available from groundwater substitution pumping actions would involve growers using groundwater instead of surface water supplies; and would result in a reduction in stored groundwater. The storage would be filled over time from surface water, which would reduce flow in streams. In major water bodies, the CVP and SWP would release more water from storage to maintain flows as needed, which could affect their operations. This effect would be mitigated by applying a streamflow depletion factor to transfers to account for the groundwater/surface water interactions.

Depleting water in small streams could affect natural communities or special-status species in some waterways, including Cache Creek and Stony Creek (see Section 3.8.2.4.1 of the RDEIR/SDEIS for detailed discussion of impacts River and Creeks in the Seller Service Area). These impacts would be reduced by monitoring groundwater near those areas to avoid changing groundwater levels that could affect stream flows or riparian vegetation.

Water made available for transfer from groundwater substitution pumping actions would reduce groundwater levels near the participating wells, which could affect surrounding third parties or potentially cause subsidence. These effects would be reduced through monitoring and mitigation plans. If groundwater levels fall below local Basin Management Objectives or historic low groundwater levels, transfer pumping would stop until groundwater levels recover. This requirement would avoid potential groundwater pumping related-land subsidence, which could occur when groundwater levels fall below historic low levels. The mitigation plan discussed in Section 3.3.4 of the RDEIR/SDEIS, includes measures to account for potential impacts to third parties (such as increased pumping costs at nearby wells or the requirements to deepen a pump).

Groundwater wells in the Sacramento Valley have multiple sources of power, including electric, diesel, and natural gas engines. Increased pumping, particularly with older diesel engines, could increase emissions of criteria pollutants. These emissions would exceed criteria within the Feather River Air Quality Management District area, and the emissions would need to be reduced by either pumping more of the transferred water with electric engines or transferring less water.

Water Conveyance

Conveying water for made available for transfer would increase flows in the river upstream from the Delta during the transfer period (July through September). Water made available for transfer would also increase Delta inflows and Delta exports. After water made available for transfer has been conveyed, water flows in rivers and the Delta could decrease as the groundwater aquifer (for transfers based on groundwater substitution actions) and surface storage (for transfers based on stored reservoir release) are refilled. Surface storage could only be refilled during wetter periods when it would not otherwise affect downstream users or the ability to meet water quality or flow standards. Groundwater storage could refill at any time, but when the Delta is in balance (Delta inflows are equal to Sacramento Valley in-basin needs, Delta outflows, and Delta exports), the CVP and SWP would maintain flows as required under the operational plans. During wetter conditions, when the Delta is in excess conditions, Delta inflows and outflows may decrease because of storage refills. However, these changes would be insubstantial and take place only during wetter conditions, at times when the changes would not affect resources in the rivers or the Delta (see Section 3.7.6.1 of the RDEIR/SDEIS for detailed discussion of impacts on Delta resources).

ES.7.2 Alternative 3: No Cropland Modifications

Alternative 3 includes making water available for transfer through groundwater substitution, stored reservoir release, and water conservation actions. The effects of Alternative 3 are described in the Alternative 2 summary of impacts associated with making water available for transfer through groundwater substitution actions and associated water conveyance.

ES.7.3 Alternative 4: No Groundwater Substitution

Alternative 4 includes making water available for transfer through cropland idling, crop shifting, stored reservoir release, and water conservation actions. The effects of Alternative 4 are described in the Alternative 2 summary of impacts associated with making water available for transfer through cropland idling/crop shifting actions and associated water conveyance.

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