

## **ADDENDUM TO THE FINAL LONG-TERM WATER TRANSFERS EIR FOR EVALUATION OF 2026-2027 NORTH TO SOUTH WATER TRANSFERS**

**LEAD AGENCY:** San Luis & Delta-Mendota Water Authority  
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**AVAILABILITY OF DOCUMENTS:** The Initial Study for this Addendum to the 2019 Final Long-Term Water Transfers (LTWT) Environmental Impact Report (Final EIR) (SCH# 2011011010) is available for review at: <https://sldmwa.org/water-transfers/>.

Questions or comments regarding this Initial Study and Addendum may be addressed to:  
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**Project Description:** The San Luis & Delta-Mendota Water Authority (SLDMWA), its member agencies, Contra Costa Water District, and East Bay Municipal Utilities District (collectively referred to as the Buyers) may experience water shortages in 2026 and 2027 and are soliciting willing Sellers that may transfer surface water to them. The interested Buyers would negotiate with these interested Sellers to identify potential volumes of water that could be made available for transfer and the specifics of each transfer arrangement through single-year agreements for 2026 and 2027. Transfers of water would occur from Sellers primarily upstream of the Sacramento-San Joaquin Delta (Delta) to Buyers that primarily receive water conveyed through the Delta. The Proposed Project includes a range of potential single-year transfers of up to 250,000 acre-feet (AF) per year from Sellers to Buyers, made available from groundwater substitution and reservoir release actions.

**Project Location:** Proposed Project effects would occur within the Buyer Service Area and Seller Service Area and reservoirs used for reservoir release transfers. The transfers could originate from Sellers in Butte, Colusa, El Dorado, Glenn, Merced, Nevada, Placer, Sacramento, San Joaquin, Shasta, Sierra, Stanislaus, Sutter, Tehama, Yolo, and Yuba counties (**Figure 1**). The transfer Buyers could be in Alameda, Contra Costa, Fresno, Kings, Merced, San Benito, Santa Clara, and Stanislaus counties.

**Findings:** An Initial Study was prepared to evaluate whether the changes reflected in the Proposed Project and the circumstances in which it is undertaken result in new significant impacts or substantially more severe effects than have been previously analyzed. (Pub. Resources Code, § 21166; CEQA Guidelines, §§ 15162-15164.). Based on the Initial Study and in light of the entire record, SLDMWA has determined that the Final EIR retains its relevance and the Proposed Project would not have any new or substantially more severe significant direct, indirect, or cumulative impact on the existing environment. This conclusion is supported, without limitation, by the following findings:

- The project would result in beneficial impacts on water supply, geology and soils, air quality, noise, and agricultural land use in the Buyer Service Area.
- The project would result in less than significant impacts on water quality in the Seller Service Area and Buyer Service Area and less than significant impacts on greenhouse gas emissions, noise and vibration, agricultural land use, visual resources, recreation, and energy in the Seller Service Area.

- The project would result in less than significant impacts after mitigation to surface water supply, groundwater resources, air quality, biological resources, and geology and soils.

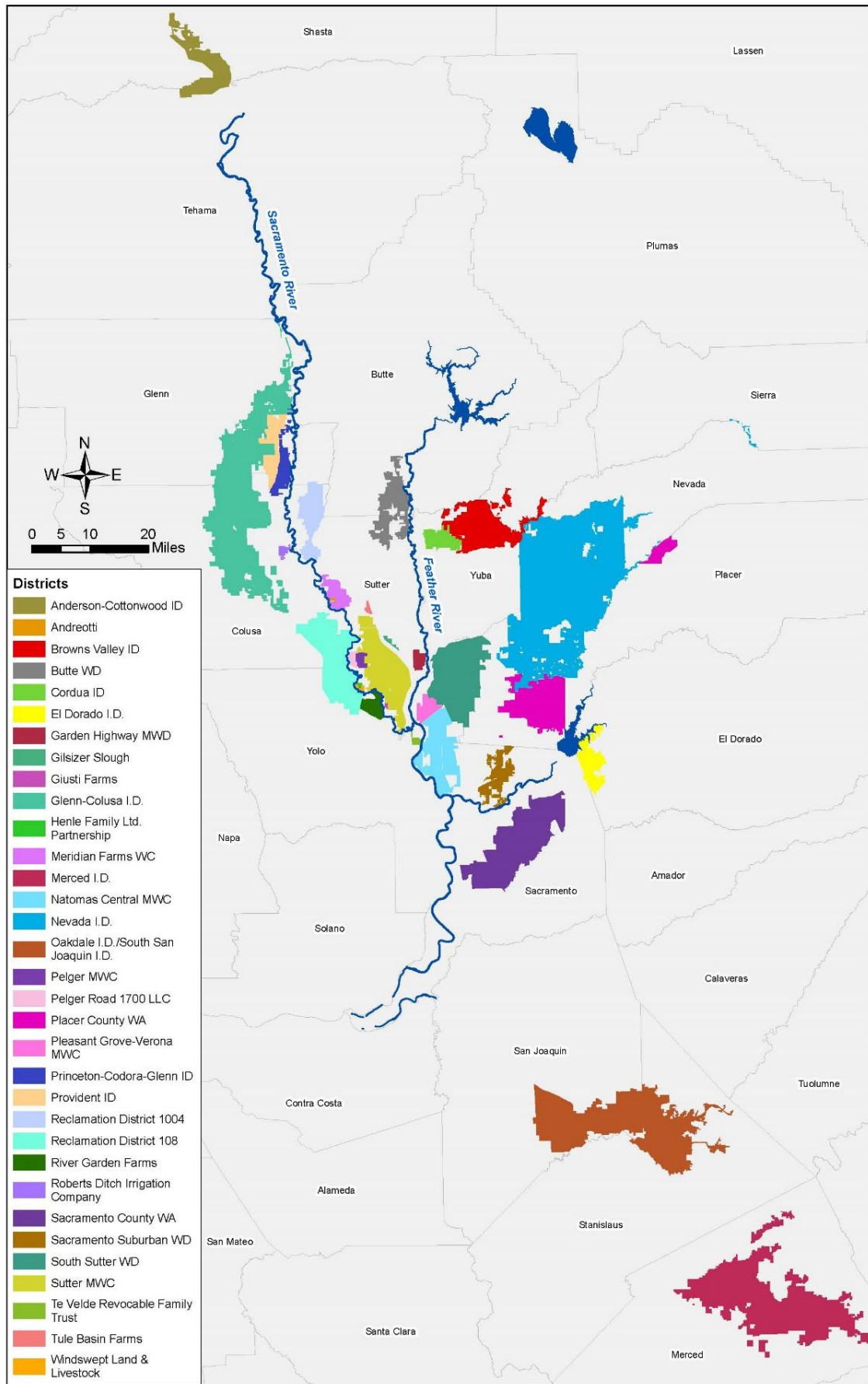
**Mitigation Measures:** The Initial Study identified the following mitigation measures:

**Mitigation Measure WS-1: Streamflow Depletion Factor**

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 physically be available for transfer to the Buyer (transferee) and is intended to offset the streamflow effects of the added groundwater pumping due to transfer.

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. Analysis relied upon for this document was based on regional modeling; and more site-specific data, analysis, and groundwater modeling may result in different, local streamflow depletion factors. The streamflow depletion factor will be not less than 20 percent. However, this factor may be adjusted, either higher or lower, based on additional information on local conditions if new information indicates a substantial difference in local conditions that warrants a change.

Reclamation and DWR require the imposition of a streamflow depletion factor to ensure transfers do not violate the no injury rule (Water Code § 1702, 1706, and 1725), and other applicable laws, regulations and policies. This process to evaluate and determine the streamflow depletion factor will help verify that the factor reduces potential impacts to avoid injury to CVP or SWP water supplies and a substantial impact or injury.



**Figure 1. Potential Selling Entities**

### **Mitigation Measure GW-1: Monitoring Program and Mitigation Plan**

The objective of Mitigation Measure GW-1 is to avoid potentially significant adverse environmental effects from groundwater-level declines such as (1) impacts to other legal users of water; (2) land subsidence; (3) adverse effects to groundwater-dependent vegetation; or (4) migration of reduced quality groundwater. The measure accomplishes this by monitoring groundwater levels in the period during which groundwater is being pumped, in-lieu of diverting surface water, to cease groundwater pumping when the groundwater level reaches the established groundwater trigger. As described in the Mitigation Plan section below, the mitigation measure also requires prompt intervention, including the cessation of groundwater pumping, if groundwater level triggers are reached during transfer-related pumping or if, in the unlikely event, that a potential impact is detected to ensure it will be reduced to less than significant. Additionally, the mitigation measure requires preventative actions if monitoring shows that identified groundwater-level triggers are reached during transfer-related pumping. Potential Sellers are required to prepare a Monitoring Program and Mitigation Plan to address the required elements of the mitigation measure for review and approval by Reclamation prior to initiation of groundwater substitution pumping.

Sellers are required to submit monitoring reports to Reclamation and Reclamation will verify that participating Sellers implement the Monitoring Program and Mitigation Plan to avoid potentially significant adverse effects of transfer-related groundwater extraction. In addition, each entity making surface water available for transfer through groundwater substitution actions must confirm that the proposed groundwater pumping will be compatible with applicable state and local regulations and county groundwater management plans (GMPs), as well as GSPs. Most GSPs in the Seller Service Area have been reviewed and approved by DWR; and all of the GSAs are required to meet the sustainability objectives identified under SGMA, thus providing a regulatory backstop to prevent substantial adverse effects.

### **Well Review Process**

Potential Sellers are required to prepare and submit a water transfer proposal to Reclamation a minimum of one month prior to the initiation of groundwater substitution pumping transfers. Potential Sellers are encouraged to electronically submit their water transfer proposal through DWR's online web application. Reclamation (in coordination with DWR) will review water transfer proposals and those groundwater substitution pumping transfers cannot start prior to Reclamation's approval. Water transfer proposals must include well data collected by potential Sellers consistent with the data requirements identified in the Water Transfers Information Checklist that is included in Reclamation and DWR's *Water Transfer White Paper*<sup>1</sup>.

In the water transfer proposal, potential Sellers must also include subsidence information, which is available from DWR's InSAR data, best available subsidence information from their local DWR-approved GSP(s), or other available data relative to subsidence. Sellers must demonstrate that substantial land subsidence is not occurring within the area of a proposed participating transfer pumping well<sup>2</sup> in accordance with minimum thresholds identified in their local DWR approved GSP(s), subject to Reclamation's verification; and if it is occurring, the participating transfer pumping well would not be allowed to participate in groundwater substitution transfers, ensuring adverse effects of the Proposed Action would not occur in areas vulnerable to land subsidence.

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<sup>1</sup> At the time of development of this EA/IS, the 2019 Water Transfers White Paper (Reclamation and DWR 2019) document governs the water transfers evaluated in this EA/IS. The Water Transfers White Paper is updated by Reclamation and DWR when necessary and the version of that governing document and the Water Transfers Information Checklist it includes shall be used by Sellers to develop their water transfer proposals. See Appendix E3 for the current Water Transfers Information Checklist (Reclamation and DWR 2019).

<sup>2</sup> A transfer pumping well is a production well used to pump groundwater as part of a groundwater substitution transfer under the Proposed Action.

## Monitoring Program

Potential Sellers must complete and implement a monitoring program subject to Reclamation's approval (in coordination with DWR) that shall include, at a minimum, the following components:

### *Monitoring Well Network*

The monitoring program, as determined by Reclamation, shall accurately characterize groundwater levels from the appropriate aquifers and their response in the area before, during, and after transfer-related substitution pumping takes place. Depending on local conditions, additional groundwater-level monitoring may be required near ecological resource areas such as areas with mapped groundwater dependent ecosystems. Sellers must identify, in the transfer proposal, suitable monitoring wells<sup>3</sup> that meet the requirements below for review and approval by Reclamation (in coordination with DWR). If a suitable monitoring well(s) is not identified for a participating transfer pumping well, the well will not be allowed to participate in a water transfer until a suitable monitoring well(s) is identified, ensuring adverse effects of the Proposed Action are not occurring undetected.

The monitoring well network shall include the participating transfer pumping well and a suitable groundwater-level monitoring well(s) in the vicinity of the participating transfer pumping well(s). Suitable monitoring well(s) are required to: (1) be within a radius of between 500 feet and 2 miles from a Seller's groundwater substitution well; (2) be located within the same Bulletin 118<sup>4</sup> subbasin as the groundwater substitution pumping well; and (3) have a screen depth(s) similar to the groundwater substitution pumping well(s). The suitable monitoring well may be established at a different radius if more well-specific data can be presented to Reclamation demonstrating a suitable monitoring well that is outside the radius established above. The request to use a different radius for the suitable monitoring well should be submitted with the water transfer proposal for review and approval by Reclamation (in coordination with DWR). If any SGMA representative monitoring sites (RMSs)<sup>5</sup> meet the suitable monitoring well requirements presented above, then the RMS shall be included as the suitable monitoring well. At least one suitable monitoring well must be paired with a participating transfer pumping well. More than one participating transfer pumping well may be paired with a suitable monitoring well, provided the requirements above are met. Suitable monitoring wells with short historical records could be considered, but short records could limit the transfer because the measured historical low groundwater level (described below) may not reflect persistent drier conditions. In this situation, the lowest groundwater level for the short period of record would likely be higher than the historical low during a prior drought period. A groundwater level trigger (described below) based on the lowest groundwater level for a short period of record would be more restrictive than a trigger based on a historical low because the lowest groundwater level for the short period could be reached more quickly during transfer-related groundwater substitution pumping than the historically low groundwater level.

In addition to monitoring at the participating transfer pumping well and suitable monitoring well(s), Sellers must also identify all RMS wells within the Sellers' Service Area and within a two-mile radius of the service area boundary should be identified in their transfer proposal.

### *Groundwater Level Monitoring*

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<sup>3</sup> A suitable monitoring well is used to monitor effects from groundwater substitution transfer pumping. A suitable monitoring well must meet the three requirements stated in the next paragraph.

<sup>4</sup> Bulletin 118 is the State's official publication on the occurrence and nature of groundwater in California. DWR updated Bulletin 118 in 2020, the next update will be published in 2025.

<sup>5</sup> A SGMA representative monitoring site (RMS) is a well identified in a GSP under SGMA for monitoring the sustainability indicator chronic lowering of groundwater levels. RMS wells include defined quantitative thresholds: minimum threshold and measurable objective.

Sellers will collect measurements of groundwater levels in the participating transfer pumping wells (those wells being used in-lieu of diverting surface water that is being made available for transfer) and the suitable monitoring well(s) in the monitoring network. Groundwater level measurements will be used to avoid both third-party impacts and inelastic (irreversible) subsidence based on the identified groundwater level triggers (described below). Measurements in the participating transfer pumping well(s) will be taken while the well is pumping in order to record the lowest levels reached. Measurements at the suitable monitoring well(s) will be static (non-pumping) groundwater levels. Groundwater-level monitoring will include measurements before, during, and after transfer-related substitution pumping. The Seller will measure groundwater levels as follows:

- Prior to transfer: Groundwater levels will be measured in all wells in the monitoring network, monthly from March in the year of the proposed transfer-related substitution pumping until the start of the transfer pumping. Monitoring will also be conducted on the day that the transfer pumping begins, prior to the pump being turned on.
- During transfer-related substitution pumping: Groundwater levels will be measured in all wells in the monitoring network, weekly throughout the pumping period unless the groundwater level threshold (described in the next subsection) is reached. Measurements will be required once every three days if a groundwater level threshold (described in the next subsection) is reached at the participating pumping well(s) or the suitable monitoring well(s).
- Post-transfer pumping: Groundwater levels will be measured in all wells in the monitoring well network, weekly for one month after the end of transfer-related pumping, after which groundwater levels will be measured monthly through March of the year following the end of the transfer pumping.

### *Groundwater Level Triggers and Thresholds*

The primary criteria used to identify and avoid potentially significant impacts related to groundwater levels are the historical low groundwater levels for the participating transfer pumping wells and the suitable monitoring wells. Other criteria that may be used, if the RMS is selected as a suitable monitoring well and, therefore, the RMS meets the suitable monitoring well criteria presented above, are minimum thresholds for groundwater levels at RMSs set by GSAs and identified in the DWR approved GSPs. Sellers will manage groundwater levels to maintain them above the identified historical low groundwater level (trigger). Sellers will initiate the increased frequency of monitoring (discussed in a later subsection) if groundwater levels reach the threshold and will initiate the mitigation plan (discussed in a later subsection) if groundwater levels reach the trigger. Monitoring and operating to these groundwater level triggers and thresholds are the best available tools to avoid potential impacts to the environment as well as to third parties, and to avoid irreversible subsidence. The potential for irreversible subsidence would only occur when groundwater levels are below historic low levels (U.S. Geological Survey 2018); therefore, this measure would also avoid any potential irreversible (permanent) subsidence.

As part of a Seller's transfer proposal subject to Reclamation's (in coordination with DWR) review and approval, the Seller will need to identify a proposed groundwater level trigger for each pumping well and each suitable monitoring well (established through the historical low groundwater level for that well). The historical low groundwater level at a participating transfer pumping well will likely have occurred when the well was operating (e.g., pumping water level); and similarly, the historical low at a suitable monitoring well will likely have occurred when the associated participating transfer pumping well was operating. However, the identified trigger for a suitable monitoring well cannot be from a measurement made while the suitable monitoring well was operating. Any pumping taking place at the participating transfer pumping well at the time when the historical low groundwater level is identified must represent normal operations and not periods of heavy pumping for well development or testing.

Based on the groundwater level trigger, a groundwater level threshold for each pumping well and each suitable monitoring well is established at ten feet above the trigger. When groundwater monitoring at the frequency identified above (e.g., weekly during transfer pumping) indicates the groundwater level declined to or below the threshold, the frequency of groundwater-level monitoring shall increase to once every three days for that well (participating transfer pumping well or suitable monitoring well). The groundwater level threshold may be established at a different level if a more well specific threshold can be identified based on past groundwater level trends at the participating transfer pumping well or suitable monitoring well. The groundwater level trigger and threshold for each participating transfer pumping well and each suitable monitoring well is required in the water transfer proposal submitted to Reclamation (in coordination with DWR) for review and approval.

Groundwater level declines due to pumping occur initially at the pumping well and then propagate outward from that location. The magnitude of groundwater level decline caused by pumping also decreases with increasing distance from the pumping well. Therefore, groundwater level declines caused by transfer-related substitution pumping would be observed first at the pumping well and subsequently at the suitable monitoring well. The decline would be greatest at the participating transfer pumping well and lower at the suitable monitoring well. Therefore, it is likely that groundwater levels in the participating transfer pumping well would decline to the historical low groundwater level trigger or groundwater level threshold sooner than at the suitable monitoring well(s). The groundwater level measurements at the suitable monitoring well(s) would provide information surrounding the participating transfer pumping well to avoid potential significant or cumulative impacts.

#### *Other Monitoring*

**Groundwater Quality.** For municipal Sellers, the comprehensive water quality testing requirements of CCR Title 22, Chapter 15, Domestic Water Quality and Monitoring Regulations (SWRCB 2024) are considered sufficient for the water transfer monitoring program. Agricultural Sellers shall measure specific conductance in samples from each participating transfer pumping well. Samples shall be collected when the Seller first initiates pumping, monthly during the pumping period, and at the termination of transfer-related pumping. Sellers shall provide details such as sample location(s), sample well depth, sample well construction information, and distance from sample location(s) to the participating transfer pumping well.

**Groundwater Pumping Measurements.** All wells pumping groundwater to replace surface water made available for transfer shall be configured with a permanent instantaneous and totalizing flowmeter capable of accurately measuring well discharge rates and volumes. Flowmeters will be installed and calibrated in accordance with manufacturer's recommendations and the relevant documentation will be submitted by the Seller to Reclamation. Flowmeter readings will be recorded in a similar frequency as groundwater level monitoring, as follows:

- Prior to transfer: Readings will be recorded on the day that the transfer pumping begins, prior to the pump being turned on.
- During transfer-related substitution pumping: Flowmeter readings will be recorded weekly throughout the pumping period. If the measured groundwater levels meet or decline below the groundwater level threshold (described in the subsection above), flowmeter readings shall be recorded every three days.
- Post-transfer pumping: Flowmeter readings will be recorded immediately following cessation of transfer-related pumping.

**Shallow Groundwater Level Monitoring for Groundwater Dependent Ecosystems (GDEs)<sup>6</sup> supporting Shallow-Rooted and Deep-Rooted Vegetation.** To avoid significant effects to GDEs and allow Sellers to modify actions before significant effects occur, Sellers will monitor groundwater level data to verify that significant adverse effects to GDEs with shallow-rooted or deep-rooted vegetation are avoided. This monitoring is only required in areas that have been identified as GDEs in the Nature Conservancy's Natural Communities Commonly Associated with Groundwater Dataset Version 2.0 (NCCAG 2.0) (The Nature Conservancy 2021) data set or by an approved GSP and either (1) contain shallow-rooted (i.e., groundwater dependent vegetation, such as riparian phreatophytes that have roots extending up to 30 feet deep) within a 0.5-mile radius of the participating transfer pumping well and areas where groundwater levels are less than 30 feet below ground surface prior to starting transfer-related pumping; or (2) contain deep-rooted vegetation (i.e., primarily valley oak trees that could have roots up to 80 feet deep) within a 0.5-mile radius of the participating transfer pumping well and areas where groundwater levels are less than 80 feet below ground surface prior to starting transfer-related pumping. This monitoring is not required in areas with no GDEs with shallow-rooted and/or deep-rooted vegetation within 0.5-mile of the participating transfer pumping well(s) or in areas where vegetation is located along waterways or irrigated fields that will continue to have water during the period of transfer.

In their transfer proposal, the Seller would be required to identify if monitoring for shallow-rooted and/or deep-rooted vegetation associated with a GDE is a requirement. Best available information such as the NCAAG 2.0, GDE Pulse 2.3 (<https://gde.codefornature.org/#/home>) or GSA<sup>7</sup> collected data/information could be used to identify GDEs containing shallow and/or deep rooted vegetation near the participating transfer pumping well and to determine the health and maximum rooting depth of dominant vegetation in the GDE. The proposal would require the distance between participating transfer pumping well and the GDE, as well as the dominant vegetation type (e.g., shallow-rooted vegetation such as cottonwood, willows or deep-rooted vegetation such as valley oaks), and photographs from a pre-season vegetation assessment.

If a GDE comprised of shallow-rooted and/or deep-rooted vegetation is identified near the participating transfer pumping well, a groundwater level monitoring well with the following requirements would need to be identified and monitored: (1) monitoring well is within a 0.5-mile radius of the GDE containing shallow-rooted and/or deep-rooted vegetation; and (2) monitoring well would measure shallow groundwater level changes (typically less than 80 feet below ground surface). For each GDE monitoring well, a minimum groundwater threshold would be identified by the Seller using hydrologic data and expert opinion based on the ecological function and value of the GDE, and on the maximum rooting depth of its dominant vegetation type. If monitoring data at the monitoring well indicate that groundwater levels have dropped below the groundwater threshold within the GDE, the Seller must implement actions set forth in the mitigation plan. However, if a qualified plant ecologist/arborist determines that the GDE is in relatively healthy condition, and historical data show that groundwater levels in the area have typically fluctuated by more than this amount annually during the proposed transfer period, then the transfer may be allowed to proceed without any monitoring requirements. Prior to transfer pumping, the Seller must submit to Reclamation historical data showing groundwater fluctuations in the vicinity of the GDE.

If no monitoring wells with the requirements discussed in the previous paragraph exist, monitoring would be based on visual observations by a qualified plant ecologist/certified arborist of the health of these areas of shallow- or deep-rooted vegetation until it is feasible to obtain or

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<sup>6</sup> Groundwater dependent ecosystems (GDEs) are plant communities that solely or partially depend on the availability of groundwater to maintain their structure and function. Evaluation of impacts to GDEs from proposed action are discussed under Section 3.7, Biological Resources.

<sup>7</sup> Groundwater sustainability agencies (GSAs) are local agencies required to form as a requirement of SGMA for high and medium priority basins and implement GSPs to avoid undesirable results and mitigate overdraft within groundwater basins (DWR 2024b).

install shallow groundwater monitoring. Monitoring of these areas would include a pre-pumping vegetation assessment of GDEs within a 0.5-mile radius of the pumping well followed by monthly assessments during transfers and assessment near the end of the pumping season but prior to fall/autumn leaf-drop. The assessment of post-pumping impacts on deep-rooted vegetation will be conducted by a qualified plant ecologist/arborist and will take into account the existing health conditions of the vegetation prior to pumping, species present, size-class of trees, and rainfall data from the previous WYs. Photographs from the assessment must be provided to Reclamation as part of the annual transfers reports. If the qualified plant ecologist/certified arborist determines, based on site-specific circumstances, that groundwater pumping has caused any loss of the shallow-rooted or deep-rooted vegetation the Seller must implement restoration actions set forth in the mitigation plan. Findings from the pre-pumping assessment, during transfers pumping assessment and post-pumping assessment will be reported to Reclamation in monthly transfers reports.

### *Coordination Plan*

The monitoring program will include a plan to coordinate the collection and organization of monitoring data. This plan will describe how input from third party well owners 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.

Additionally, Reclamation and potential Seller(s) will coordinate closely with potentially affected third parties to collect and monitor groundwater data. If a third party expects that it may be affected by a proposed transfer, that party should contact Reclamation and the Seller with its concern. The burden of collecting groundwater data will be the Seller's responsibility with oversight by Reclamation. If warranted, additional groundwater-level monitoring to address the third party's concern may be incorporated into the monitoring and mitigation plans (which may include compensatory mitigation) required by Mitigation Measure GW-1. No significant adverse impacts to third parties are anticipated from implementation of the Proposed Action as mitigated because Mitigation Measure GW-1 is designed to avoid impacts related to groundwater pumping.

### *Evaluation and Reporting*

The monitoring program will describe the method of reporting monitoring data.

- Potential Sellers are encouraged to prepare and submit a water transfers proposal by March 1 of transfers years for Reclamation (in coordination with DWR) review and approval.
- Sellers will provide monthly spreadsheets of data collected (such as groundwater levels at a participating transfer pumping well and suitable monitoring well, flowmeter readings at the participating well, and groundwater quality monitoring data at the participating transfer pumping well) and where applicable, photographs from the shallow-rooted or deep-rooted vegetation assessment, to Reclamation during transfers.
- If the groundwater level threshold is reached at the participating transfer pumping well(s) or suitable monitoring well(s), weekly reporting would be required for the well(s). If the groundwater level threshold is reached, then increased frequency of reporting will be required and summarized in the transfer proposal and subject to Reclamation (in coordination with DWR) review and approval.
- Post-transfer reporting will continue monthly through March of the year following the transfer.

Sellers will provide a final summary report to Reclamation evaluating the effects of the water transfer. The final report will identify transfer-related effects on groundwater and surface water (both during and after pumping), and the extent of effects, if any, on local groundwater users. It shall include hydrographs for each well in the monitoring network, showing pre-transfer

groundwater levels, groundwater levels at the end of the transfer period, and recovered groundwater levels in March of the year following the transfer. The final summary report shall also identify the extent of transfer-related effects, if any, to ecological resources such as fish, wildlife, and vegetation resources. The final summary report will be subject to Reclamation (in coordination with DWR) review and approval and will determine if the Seller (or one or more of the Seller's wells) would be allowed to participate in future transfers. Reclamation will consider the potential for adverse impacts to subsidence, third-party sellers or GDEs from future transfers pumping. Reclamation will coordinate with the Seller in order to obtain, review, and analyze any additional data to assess the removal of a well from a future transfer prior to making such a determination.

### **Mitigation Plan**

Potential Sellers must complete and implement a mitigation plan to avoid groundwater-related adverse impacts and ensure prompt intervention to avoid unanticipated adverse effects. This plan must document the intended actions if the potential arises for unanticipated impacts to groundwater resources or groundwater-dependent vegetation. This plan must be submitted to Reclamation (in coordination with DWR) for review and approval as part of the water transfer proposal, prior to initiating groundwater substitution pumping.

#### *Groundwater Resource Mitigation*

If groundwater level triggers are reached at the participating transfer pumping well(s) or the associated suitable monitoring well (s) (established through the historical low groundwater levels), transfer-related pumping would stop from the participating transfer pumping well for which the trigger was reached. Transfer-related pumping could not continue from this well (in the same year or a future year) until groundwater levels recovered to above the groundwater level trigger. Any volume of water pumped at a participating transfer pumping well while a groundwater level is at or below a trigger, for that participating transfer pumping well or associated suitable monitoring well, would not be credited in the groundwater substitution transfer. If groundwater level thresholds (i.e., ten feet above the groundwater level trigger [identified historical low groundwater level]) are reached or exceeded at the participating transfer pumping well(s) or the associated suitable monitoring well(s), the monitoring frequency would increase in order to evaluate and predict the reduction in groundwater levels, and the transfer-related pumping would stop from the participating transfer pumping when the trigger is reached. Implementation of the mitigation plan thus avoids any potentially significant groundwater impacts. Other interventions that could be used in conjunction with stopping transfer-related pumping and that could assist in avoidance of potentially significant groundwater impacts could include:

- Sellers would be responsible for reimbursement to non-transferring third parties for significant increases in their groundwater pumping costs owing to the groundwater substitution pumping action, as compared with their costs absent the transfer
- Sellers would be responsible for reimbursement to non-transferring third parties for modifications to infrastructure that may be affected
- Other appropriate actions based on local conditions as proposed by the Sellers and subject to review/approval by Reclamation (in coordination with DWR).

#### *GDE Shallow-Rooted and Deep-Rooted Vegetation Mitigation*

If shallow groundwater-level monitoring indicates that groundwater levels at a GDE have dropped below the minimum threshold that was identified taking into account the maximum rooting depth of shallow-rooted or deep-rooted vegetation, the Seller must stop transfer-related pumping at the participating transfer pumping well and cannot resume pumping until groundwater levels have recovered to levels above the root zones. However, if historical data at the location indicate shallow groundwater levels typically declined during the transfer period and remained below the root zone then the transfer may be allowed to proceed.

In areas where visual monitoring is conducted to monitor health of shallow-rooted and deep-rooted vegetation, the Seller must stop transfer-related pumping at the participating transfer pumping well if the qualified plant ecologist/arborist, determines a loss or substantial risk of loss of vegetation.

If a loss of vegetation occurs, the Seller will perform restoration activities by replanting similar vegetation at a 1:1 ratio at the location where loss occurs (for every 1-inch diameter at breast height [dbh] lost, 1-inch dbh will be planted). For example, if 12-inch dbh of oak is lost, then the Seller would have to plant twelve 15-gallon oak saplings at around 1-inch dbh each. Therefore, the Seller would plant more trees than lost. The Seller will plant, irrigate, maintain, and monitor restoration of vegetation for three years to replace the loss(es). All plantings will be fitted with exclusion cages or other suitable protection from herbivores. Plantings will be irrigated for three years or until the survival criterion is met. If 75 percent of the plants survive at the end of the three-year monitoring period, the revegetation will be considered successful. If the survival criterion is not met at the end of the monitoring period, planting and monitoring will be repeated after mortality causes have been identified and corrected. Annual monitoring reports, prepared by a qualified plant ecologist/arborist, will document the status of the plantings and recommendations for remediation as necessary. The monitoring reports will be provided to the Seller and Reclamation by August 31 following each year of monitoring (generally beginning July 1 through June 30 of the following year) to allow time for additional planting activities, if necessary.

Transfer-related pumping could not continue at the subject well while vegetation restoration activities consistent with the requirements above are ongoing (i.e., three years or until the survival criterion is met). Transfer-related pumping at the subject well could not resume after restoration unless the Seller provides evidence that resuming pumping will not affect GDE vegetation (such as data from the installation of a new shallow groundwater-level monitoring well within a 0.5-mile radius of the vegetation that indicates stable shallow groundwater levels at less than the rooting depth of the dominant plant species that comprises the GDE).

#### **Mitigation Measure AQ-1: Reduced Pumping**

Selling agency would reduce pumping at diesel and propane wells to reduce emissions to below the thresholds. Agencies may also decide to replace old diesel wells with cleaner (i.e., higher emission tier) diesel pumps or electric wells to reduce emissions to below the thresholds. Any selling agency with potentially significant emissions, as determined by this EA/IS, will be required to submit information in the water transfer proposal, prior to making water available for transfer through groundwater substitution actions, that documents the wells that would be utilized to support those groundwater substitution actions to stay below the thresholds. The selling agency must also maintain recordkeeping logs that document the specific engine to be used for making water available for transfer through groundwater substitution actions, the power rating (hp), and applicable emission factors. Calculations for daily emissions will be completed for comparison to the significance thresholds determined for each selling agency. In the annual report, the selling agencies will be required to submit documentation specifying that the wells would only be pumped in accordance with the transfer proposals.

#### **REFERENCES**

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