

AGENDA
IRVINE RANCH WATER DISTRICT
SUPPLY RELIABILITY PROGRAMS COMMITTEE
THURSDAY, OCTOBER 17, 2024

This meeting will be held in-person at the District’s headquarters located at 15600 Sand Canyon Avenue, Irvine, California. The meeting will be held on the second floor in the Committee room, please check in with the receptionist for access. The meeting will also be broadcasted via Webex for those wanting to observe the meeting virtually.

To observe this meeting virtually, please join online using the link and information below:

Via Web: <https://irwd.webex.com/irwd/j.php?MTID=m4fd1880315c0b5f8b2e94d9c93122f9d>
Meeting Number (Access Code): 2489 978 3480
Meeting Password: M3RacpmX3b3

As courtesy to the other participants, please mute your device when you are not speaking.

PLEASE NOTE: Participants joining the meeting will be placed into the Webex lobby when (if) the Committee enters Closed Session. Participants who remain in the “lobby” will automatically be returned to the open session of the Committee once the closed session has concluded. Participants who join the meeting while the Committee is in closed session will receive a notice that the meeting has been locked. They will be able to join the meeting once the Closed Session has concluded.

CALL TO ORDER 1:30 p.m.

ATTENDANCE Committee Chair: Doug Reinhart _____
 Committee Member: Peer Swan _____

<u>ALSO PRESENT</u>	Paul Cook	_____	Paul Weghorst	_____
	Neveen Adly	_____	Fiona Sanchez	_____
	Natalie Palacio	_____	Robert Huang	_____
	Marina Lindsay	_____	_____	_____
	_____	_____	_____	_____
	_____	_____	_____	_____

PUBLIC COMMENT NOTICE

If you wish to address the Committee on any item, please submit a request to speak via the “chat” feature available when joining the meeting virtually. Remarks are limited to three minutes per speaker on each subject. Public comments are limited to three minutes per speaker on each subject. You may also submit a public comment in advance of the meeting by emailing comments@irwd.com before 8:00 a.m. on October 17, 2024.

COMMUNICATIONS

1. Notes: Weghorst
2. Public Comments
3. Determine the need to discuss and/or take action on item(s) introduced that came to the attention of the District subsequent to the agenda being posted.
4. Determine which items may be approved without discussion.

INFORMATION

5. WATER BANKING PROJECT FACILITIES, CAPACITIES, OPERATIONS AND PROGRAMS – PALACIO / SANCHEZ / WEGHORST

Recommendation: Receive and file.

ACTION


6. AMENDMENT NO. 2 TO THE SHORT-TERM WATER EXCHANGE PROGRAM WITH CENTRAL COAST WATER AUTHORITY – SANCHEZ / WEGHORST

Recommendation: That the Board authorize the General Manager to execute an Amendment No. 2 to the 2019 Short-Term Water Exchange program with Central Coast Water Authority based on the draft terms presented at the meeting, subject to substantive changes approved by the Supply Reliability Programs Committee and special legal counsel.

OTHER BUSINESS

7. Receive Oral Updates from District’s liaison to Dudley Ridge Water District and provide information on relevant activities.
8. Directors’ Comments
9. Adjourn

 Availability of agenda materials: Agenda exhibits and other writings that are disclosable public records distributed to all or a majority of the members of the above-named Committee in connection with a matter subject to discussion or consideration at an open meeting of the Committee are available for public inspection in the District’s office, 15600 Sand Canyon Avenue, Irvine, California (“District Office”). If such writings are distributed to members of the Committee less than 72 hours prior to the meeting, they will be available from the District Secretary of the District Office at the same time as they are distributed to Committee Members, except that if such writings are distributed one hour prior to, or during, the meeting, they will be available electronically via the Webex meeting noted. Upon request, the District will provide for written agenda materials in appropriate alternative formats, and reasonable disability-related modification or accommodation to enable individuals with disabilities to participate in and provide comments at public meetings. Please submit a request, including your name, phone number and/or email address, and a description of the modification, accommodation, or alternative format requested at least two days before the meeting. Requests should be emailed to comments@irwd.com. Requests made by mail must be received at least two days before the meeting. Requests will be granted whenever possible and resolved in favor of accessibility.

October 17, 2024
Prepared by: N. Palacio
Submitted by: F. Sanchez / P. Weghorst
Approved by: Paul A. Cook 

SUPPLY RELIABILITY PROGRAMS COMMITTEE

WATER BANKING PROJECT FACILITIES, CAPACITIES, OPERATIONS, AND PROGRAMS

SUMMARY:

Staff has prepared information related to IRWD’s water banking facilities, capacities, operations, and exchange programs. The information is regularly updated to reflect changes in the status of IRWD’s projects, programs, and operations. At the Committee meeting, staff will review this information as well as provide an overview of IRWD’s forecasted monthly recharge operations for 2024, and how a recent State and Federal decision to curtail “Fall X2” water releases through the Sacramento-San Joaquin River Delta (“Delta”) might affect operations in 2025. Staff will also provide an update on the status of the Kern Fan Groundwater Storage Project (Kern Fan Project) and related discussions with the Kern County Water Agency (KCWA).

BACKGROUND:

Staff has prepared reference materials in tabular, map, and schematic formats to describe IRWD’s water banking facilities, capacities, operations, storage, and exchange programs. These reference materials are updated regularly to reflect changes in the status of the projects, programs, and operations. The following is an overview of the reference materials as well as forecasted recharge operations for calendar year 2024 at the IRWD Water Bank, a State and Federal decision to curtail Fall X2 releases through the Delta, and an update on the Kern Fan Project.

Capacity and Operations Tables:

A table presenting storage, recharge, and recovery capacities of existing and planned IRWD water banking projects, including capacities available to IRWD in the Kern Water Bank, is provided as Exhibit “A”. Exhibits “B” and “C” provide an update on water banking recovery and recharge operations as well as the balance of the water stored in the Kern Water Bank. Exhibit “B” provides before-loss estimates of water recharged and in storage at the water banking projects. Exhibit “C” shows after-loss estimates of water recharged and in storage at the projects. There were no changes to Exhibits “B” and “C” this month.

Summary of Programs:

A table summarizing IRWD’s water purchase and exchange programs is presented as Exhibit “D”. This table lists each water purchase and exchange program IRWD has entered into and presents information related to the type of exchange, year executed, agreement type, and water type. IRWD and partner shares are listed, and the table shows the accumulated total amount of water secured by each program. The balances listed for IRWD and its partners show the amount of water remaining in storage with IRWD’s balances specifying whether the water is

stored in Metropolitan Water District's system, Kern County, or owed to IRWD by Dudley Ridge. The table also provides details related to the exportability of IRWD's supplies. There were no changes to Exhibit "D" this month.

Exhibit "E" graphically depicts how storage of State Water Project (SWP) and non-SWP water has changed annually in the Strand and Stockdale Integrated Banking Projects. Exhibit "E" also depicts the balance of water owed to IRWD by Dudley Ridge (shown as credits). The table provided as Exhibit "F" shows how capacities in the water banking projects have been dedicated to IRWD's existing and proposed exchange programs.

Project Maps:

To support the tables and figures provided as Exhibits "A", "B", "C", "D", "E", and "F", staff has prepared maps depicting project wells, pipelines, recharge basins, and Cross Valley Canal turnout locations, along with the most current recharge rates. These maps are provided as Exhibits "G", "H", and "I", respectively. Exhibit "I" includes the most recent recharge rates at the IRWD Water Bank. The facilities shown on the maps are associated with the Strand Ranch, Stockdale West, Stockdale East, and Drought Relief Projects.

Program Agreement Diagrams:

Schematic diagrams have been prepared that depict IRWD water banking and exchange programs with Rosedale-Rio Bravo Water Storage District, Buena Vista Water Storage District, Dudley Ridge, Metropolitan, and AVEK. A new exhibit was added as Exhibit "Q" for the long-term exchange program with Santa Clara Valley Water District (Valley Water) that is currently being implemented. These diagrams are provided as Exhibits "J", "K", "L", "M", "N", "O", "P", and "Q" as described in the List of Exhibits.

Cost of Water Table:

A table presenting a summary of the costs of water from each of IRWD's unbalanced exchange partnerships through the year 2021 is provided as Exhibit "R". The table lists each of IRWD's unbalanced exchange partnerships and presents information related to the period over which water was acquired, water type, IRWD's share of water, and various cost components as well as the total cost of water delivered to IRWD's service area. Cost components include fixed and variable operating costs, estimated future IRWD recovery costs, the 2024 Metropolitan Full Service Untreated Tier-1 Rate, and a capital cost of water. The variable costs include an administrative fee issued by the Kern County Water Agency for staff time related to processing Transaction Request Forms. The costs of water are presented on a dollar per acre-foot basis. Exhibit "R" will be updated to reflect 2022 and 2023 operations once all invoices have been received from Rosedale.

IRWD's Coordinated Agreement with Metropolitan:

An overview of IRWD's Coordinated Operating, Water Storage, Exchange, and Delivery Agreement with Metropolitan and Municipal Water District of Orange County (Coordinated

Agreement) is provided as Exhibit “S”. The benefits to IRWD are foundational to the success of IRWD’s water banking project and programs.

Forecasted 2024 Water Recharge Activities:

Projected deliveries to IRWD’s Water Bank in 2024 are depicted in Exhibit “T”. Staff will update the forecasted delivery amounts shown in Exhibit “T” as more information becomes available. Anticipated water bank deliveries in 2024 are as follows:

- *Homer Capacity Exchange Program:* In 2023, IRWD recharged 1,854 acre feet (AF) of water into storage at the IRWD Water Bank using Homer’s Cross Valley Canal capacity. Consistent with the terms of the Pilot Capacity Exchange Program, Homer can use recharge capacity at the IRWD Water Bank to recharge an equal amount of its supplies in 2024. Staff has worked with Homer in submitting a Transaction Request Form to KCWA for the delivery of the 1,854 AF of water to the IRWD Water Bank. These deliveries are included in Exhibit “T” for Homer in 2024.
- *Valley Water Unbalanced Exchange Program:* Valley Water expects to have at least 5,000 AF of SWP Table A Water available for delivery to the IRWD Water Bank in 2024. The letter agreement between IRWD and Valley Water has been fully executed and Metropolitan has consented to the exchange. DWR is working with Metropolitan and Valley Water to finalize the necessary DWR agreements to deliver water to the IRWD Water Bank before the end of the year.
- *IRWD’s SWP Table A Allocation:* The 2024 SWP Table A allocation is 40%. IRWD will take delivery of its 700 AF of Table A water from Dudley Ridge into the Strand Ranch.
- *Metropolitan Deliveries:* In 2021 and 2022, Metropolitan took direct delivery of IRWD’s Dudley Ridge SWP Table A water. Metropolitan has notified staff that they would like to return 157 AF of water to IRWD this year. Metropolitan will deliver 50% of the water to IRWD’s Water Bank and the remaining 50% of water to Dudley Ridge for use on the Jackson Ranch.

Water Supply Conditions and Fall X2:

At the meeting, staff will update the Committee on water supply conditions in California and how a recent State and Federal decision to curtail “Fall X2” water releases through the Sacramento-San Joaquin River Delta (“Delta”) might affect recharge operations at IRWD’s Water Bank in 2025. Staff’s presentation is provided as Exhibit “U”.

Kern Fan Groundwater Storage Project:

Moving forward with the development of the water conveyance facilities for the Kern Fan Project is dependent upon KCWA supporting the construction of a new turnout from the California Aqueduct. Rosedale has been in discussions with KCWA regarding the benefits of KCWA’s participation in the project to alleviate capacity constraints in the Cross Valley Canal. Concurrently, staff has been working with Rosedale to identify opportunities to connect the Kern Fan Project conveyance facilities to IRWD’s and Rosedale’s existing recharge facilities. These

connections would allow the use of the existing recharge facilities during Article 21 periods when Cross Valley Canal capacity is unavailable. Making these connections could significantly reduce the cost of the project. At the meeting staff will present an update on these efforts.

FISCAL IMPACTS:

None.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

RECOMMENDATION:

Receive and file.

LIST OF EXHIBITS:

- Exhibit “A” – Recharge, Storage and Recovery Capacities of Current and Anticipated Water Banking Projects
- Exhibit “B” – Water Banking Storage, Recharge, and Recovery Operations before Losses
- Exhibit “C” – Water Banking Storage, Recharge, and Recovery Operations after Losses
- Exhibit “D” – Status of IRWD Purchase and Exchange Programs
- Exhibit “E” – Historic Water Storage in Strand and Stockdale Projects
- Exhibit “F” – Dedicated Capacities of Current Water Banking Projects
- Exhibit “G” – Map of Water Banking Project Wells and Pipelines
- Exhibit “H” – Map of Water Banking Recharge Basins and Turnout Facilities
- Exhibit “I” – Map of Water Banking Recharge Rates
- Exhibit “J” – Diagram of IRWD-Rosedale Water Banking and Exchange Program Agreements
- Exhibit “K” – Diagram of Long-term Water Exchange Program with Buena Vista Water Storage District and Diagram of One-year Program to Augment Recharge Using Stockdale West Recharge Facilities with Buena Vista Water Storage District
- Exhibit “L” – Diagram of Unbalanced Exchange Program Diagram with Dudley Ridge
- Exhibit “M” – Diagram of Coordinated Operating, Water Storage, Exchange, and Delivery Agreement with Metropolitan
- Exhibit “N” – Diagram of Template Wheeling Agreement with Metropolitan
- Exhibit “O” – Diagram of Dudley Ridge One-for-One Exchange
- Exhibit “P” – Diagram of Long-term Water Exchange Program with Antelope Valley-East Kern
- Exhibit “Q” – Diagram of Long-term Water Exchange Program with Valley Water
- Exhibit “R” – Cost of Water Tables
- Exhibit “S” – Summary of IRWD’s Coordinated Operating, Water Storage, Exchange and Delivery Agreement with Metropolitan and MWDOC (updated 8 Feb 2024)
- Exhibit “T” – Actual and Forecasted 2024 Recharge Operations
- Exhibit “U” – Presentation on Water Supply Conditions and Fall X2 Requirements

Exhibit "A"

TABLE 1
Current and Anticipated Water Banking Projects
Recharge, Storage and Recovery Capacities
 October 17, 2024

WATER BANKING PROJECT	OWNERSHIP AND WELL INFO		ALLOCATED CAPACITY (AF)					1 ST PRIORITY RECOVERY CONDITIONS (CFS)		2 ND PRIORITY RECOVERY CONDITIONS (CFS)	
	IRWD OWNED	WELLS EXISTING	TOTAL STORAGE CAPACITY	ANNUAL RECHARGE 1 ST PRIORITY	ANNUAL RECHARGE 2 ND PRIORITY	ANNUAL RECOVERY 1 ST PRIORITY	ANNUAL RECOVERY 2 ND PRIORITY	RECOVERY CAPACITY AS PLANNED ¹	RECOVERY CAPACITY (Average Daily Production 1/1/2021 - 7/31/2022)	RECOVERY CAPACITY AS PLANNED	RECOVERY CAPACITY CURRENT CONDITIONS
Strand Ranch	Yes	7	50,000	17,500	-	17,500	-	40.0	20.5	-	-
Stockdale West	Yes	3	26,000	27,100	-	11,250	-	15.0	11.6	-	-
Stockdale East	No	2	-	-	19,000	-	7,500	-	-	10.0	9.0
IRWD Acquired Storage Account ²	No	-	50,000	-	-	-	-	-	-	-	-
Drought Relief Project Wells ²	No	3	-	-	-	-	-	15.0	16.5	-	-
Kern Water Bank Storage Account ⁴	No	-	9,495	3,200	-	1,520	<5,000	-	-	-	-
TOTALS		15	135,495	47,800	19,000	30,270	12,500	70.0	48.6	10.0	9.0
Partner Capacities ³			38,000	22,300	9,500	10,850	0	35.5	25.0	-	-
IRWD Capacities (does not include Kern Water Bank capacities)			88,000	22,300	9,500	17,900	7,500	34.5	25.0	-	-
IRWD's recovery <i>during</i> 6 month partner recovery period (AF)								12,420	9,000	-	-
IRWD's recovery <i>after</i> 6 month partner recovery period (AF)								5,480	6,733	-	-
TOTALS (AF)								17,900	15,733	-	-
Number of months needed to recover IRWD's total AF after partners' recovery (Assumes IRWD has use of total recovery capacity after partners' recovery)								8.6	10.2	-	-
Strand Ranch monthly recharge amount assuming 0.3 ft/day average recharge rate (AF)										4,518	
Stockdale West monthly recharge amount assuming 0.3 ft/day average recharge rate (AF)										2,331	

¹Based on designed Strand recovery capacity assuming 370' bgs. Assumes 5 cfs for each of the Stockdale West and Drought Relief wells in order to meet IRWD's Water Banking, Transfers, and Wheeling policy position. Assumes partners' water is recovered over 6 months.

²IRWD has use of Acquired Storage and Drought Relief Project wells until January 12, 2039, unless the term of the agreement is extended.

³One half of storage capacity at Stockdale West and Strand Ranch will be allocated for partners.

⁴Kern Water Bank capacities based on 6.58% of Dudley Ridge Water District's 9.62% share of the Kern Water Bank. Annual recharge amount is based on an average of recharge rates for high and low groundwater level conditions. 5,000 AF of recovery capacity may be available for second priority use.

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Exhibit "B"

TABLE 2
IRWD's Water Banking Storage, Recharge and Recovery Operations - BEFORE LOSSES
 October 17, 2024

TRANSACTIONS	WATER BANKING ENTITY							TOTAL BY WATER TYPE AND STORAGE LOCATION
	IRWD		BUENA VISTA (BVWSD)	CENTRAL COAST (CCWA)	ANTELOPE VALLEY-EAST KERN (AVEK)	SILVERTIP	DUDLEY RIDGE WATER DISTRICT (DRWD) ³	
	SWP ¹	NON-SWP ²	NON-SWP	SWP	SWP	SWP	SWP	
BEGINNING WATER IN STORAGE 2023 (AF)								
Total Kern Water Bank ⁴	-	3,751	-	-	-	-	-	3,751
Total MWD System	12,033	-	-	-	-	-	43	12,076
Total Kern County	1,383	9,641	225	-	-	-	-	11,249
Total DRWD 1-for-1 Long Term Exchange Credit ⁵	16,500	-	-	-	-	-	-	16,500
TOTAL STORED WATER (1/1/2023)	29,916	13,392	225	-	-	-	43	43,576
(RECOVERY) AND RECHARGE IN 2023 (AF)								
KWB Recovery for use on Jackson Ranch ⁶	-	(232)	-	-	-	-	-	(232)
KWB Deliveries ⁷	-	803	-	-	-	-	-	803
2023 SWP Allocation (100%)	873	-	-	-	-	-	872	1,745
2020 Reserve Water	13	-	-	-	-	-	-	13
BV Long Term Program Kern River Water	-	8,713	8,713	-	-	-	-	17,426
BV 2023 Recharge Kern River Water	-	2,244	2,243	-	-	-	-	4,487
CCWA 2023 Short Term Exchange	225	-	-	225	-	-	-	450
AVEK Long Term Exchange Est.	3,537	-	-	-	3,536	-	-	7,073
DRWD 1-for-1 Long Term Exchange (Recharge) Est.	8,975	-	-	-	-	-	-	8,975
TOTAL 2023 TRANSACTIONS⁸	13,623	11,528	10,956	225	3,536	-	872	40,740
Total Kern Water Bank ⁴	-	4,322	-	-	-	-	-	4,322
Total MWD System	12,033	-	-	-	-	-	43	12,076
Total Kern County	15,006	20,598	11,181	225	3,536	-	872	51,418
Total DRWD 1-for-1 Long Term Exchange Credit ⁵	7,525	-	-	-	-	-	-	7,525
TOTAL STORED WATER (1/1/2024)	34,564	24,920	11,181	225	-	-	915	71,805
(RECOVERY) AND RECHARGE IN 2024 (AF)								
KWB Recovery for use on Jackson Ranch ⁶ Est.	-	-	-	-	-	-	-	-
2024 SWP Allocation (30%)	-	-	-	-	-	-	-	-
BV Long Term Program Kern River Water Est.	-	-	-	-	-	-	-	-
AVEK Long Term Exchange Est.	-	-	-	-	-	-	-	-
Silver Tip 2023 Short Term Exchange	-	-	-	-	-	-	-	-
DRWD 1-for-1 Long Term Exchange (Recharge) Est.	2,200	-	-	-	-	-	-	2,200
TOTAL ESTIMATED 2024 TRANSACTIONS⁸	2,200	-	-	-	-	-	-	2,200
ESTIMATED WATER IN STORAGE 2024 (AF)								
Total Kern Water Bank ⁴	-	4,322	-	-	-	-	-	4,322
Total MWD System	12,033	-	-	-	-	-	43	12,076
Total Kern County	17,206	20,598	11,181	225	3,536	-	872	53,618
Total DRWD 1-for-1 Long Term Exchange Credit ⁵	5,325	-	-	-	-	-	-	5,325
TOTAL ESTIMATED STORED WATER TO DATE	34,564	24,920	11,181	225	3,536	-	915	75,341

NOTES: MWD = Metropolitan Water District of Southern California.

¹ IRWD's SWP includes 295 AF from CVWD that stays in Kern County.

² IRWD's Non-SWP total includes 2,403 AF, net of losses, of Kern County Water Agency Article 21 Water.

³ DRWD water supply will be returned by MWD or IRWD's Strand Ranch to IRWD's Jackson Ranch. MWD took delivery of IRWD's 2022 SWP allocation in June 2022.

⁴ IRWD's KWB Account balance includes SWP, Friant and Kern River water. The KWB account balance is included in the Non-SWP column because it is not exportable to IRWD's service area.

⁵ Per the DRWD Long-Term 1-for-1 Exchange Program, Non-SWP water delivered to DRWD landowners will be returned to IRWD as SWP water at a later date. To account for the SWP water that will be returned at a later date, the amount of water owed will be shown as a credit. Total assumes all water is returned to IRWD Water Bank which adds in a 10% loss factor.

⁶ Water recovered from IRWD's Kern Water Bank account for use on Jackson Ranch.

⁷ A portion of IRWD's 2023 SWP deliveries from DRWD include 803 AF of Article 21 water, which was delivered to the Kern Water Bank.

⁸ Total banking losses for 2023 deliveries to the IRWD bank are estimated to be 3,506 AF. Total banking losses for 2024 deliveries to the IRWD Water Bank are estimated to be 314 AF.

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Exhibit "C"

TABLE 3
IRWD's Water Banking Storage, Recharge and Recovery Operations - AFTER LOSSES
 October 17, 2024

TRANSACTIONS	WATER BANKING ENTITY							TOTAL BY WATER TYPE AND STORAGE LOCATION
	IRWD		BUENA VISTA (BVWSD)	CENTRAL COAST (CCWA)	ANTELOPE VALLEY-EAST KERN (AVEK)	SILVERTIP	DUDLEY RIDGE WATER DISTRICT (DRWD) ³	
	SWP ¹	NON-SWP ²	NON-SWP	SWP	SWP	SWP	SWP	
BEGINNING WATER IN STORAGE 2023 (AF)								
Total Kern Water Bank ⁴	-	3,751	-	-	-	-	-	3,751
Total MWD System	12,033	-	-	-	-	-	43	12,076
Total Kern County	344	5,705	225	-	-	-	-	6,274
Total DRWD 1-for-1 Long Term Exchange Credit ⁵	15,000	-	-	-	-	-	-	15,000
TOTAL STORED WATER (1/1/2023)	27,377	9,456	225	-	-	-	43	37,101
(RECOVERY) AND RECHARGE IN 2023 (AF)								
KWB Recovery for use on Jackson Ranch ⁶	-	(232)	-	-	-	-	-	(232)
KWB Deliveries ⁷	-	723	-	-	-	-	-	723
2023 SWP Allocation (100%)	748	-	-	-	-	-	748	1,496
2020 Reserve Water	12	-	-	-	-	-	-	12
BV Long Term Program Kern River Water	-	7,470	7,863	-	-	-	-	15,333
BV 2023 Recharge Kern River Water	-	1,923	2,025	-	-	-	-	3,948
CCWA 2023 Short Term Exchange	193	-	-	193	-	-	-	386
AVEK Long Term Exchange	3,032	-	-	-	3,032	-	-	6,064
DRWD 1-for-1 Long Term Exchange (Recharge)	7,694	-	-	-	-	-	-	7,694
TOTAL 2023 TRANSACTIONS	11,679	9,884	9,888	193	3,032	-	748	35,424
Total Kern Water Bank	-	4,242	-	-	-	-	-	4,242
Total MWD System	12,033	-	-	-	-	-	43	12,076
Total Kern County	12,023	15,098	10,113	193	3,032	-	748	41,207
Total DRWD 1-for-1 Long Term Exchange Credit	7,306	-	-	-	-	-	-	7,306
TOTAL STORED WATER (1/1/2024)	31,362	19,340	10,113	193	3,032	-	791	64,831
(RECOVERY) AND RECHARGE IN 2024 (AF)								
KWB Recovery for use on Jackson Ranch ⁶ Est.	-	-	-	-	-	-	-	-
2024 SWP Allocation (40%)	-	-	-	-	-	-	-	-
BV Long Term Program Kern River Water Est.	-	-	-	-	-	-	-	-
AVEK Long Term Exchange Est.	-	-	-	-	-	-	-	-
Silver Tip 2023 Short Term Exchange	-	-	-	-	-	-	-	-
DRWD 1-for-1 Long Term Exchange (Recharge) Est.	1,886	-	-	-	-	-	-	1,886
TOTAL ESTIMATED 2024 TRANSACTIONS	1,886	-	-	-	-	-	-	1,886
ESTIMATED WATER IN STORAGE 2024 (AF)								
Total Kern Water Bank	-	4,242	-	-	-	-	-	4,242
Total MWD System	12,033	-	-	-	-	-	43	12,076
Total Kern County	13,909	15,098	10,113	193	3,032	-	748	43,093
Total DRWD 1-for-1 Long Term Exchange Credit	5,420	-	-	-	-	-	-	5,420
TOTAL ESTIMATED STORED WATER TO DATE	31,362	19,340	10,113	193	3,032	-	791	64,831

NOTES: Water in storage has been adjusted to account for losses. IRWD's water stored in Kern County is adjusted 15% for losses (5% for out of county loss, 6% surface loss, and 4% reserve loss); Water stored for BVWSD in Kern County is adjusted 10% (6% for surface loss and 4% for reserve loss); no losses for water directly delivered to MWD system.

MWD = Metropolitan Water District of Southern California.

¹ IRWD's SWP includes 251 AF from CVWD that stays in Kern County.

² IRWD's Non-SWP total includes 2,403 AF of Kern County Water Agency Article 21 Water.

³ DRWD water will be returned by MWD or IRWD's Strand Ranch to IRWD's Jackson Ranch. MWD took delivery of IRWD's 2022 SWP allocation in June 2022. MWD will not take delivery of IRWD's 2023 SWP Allocation.

⁴ IRWD's KWB Account balance includes SWP, Friant and Kern River water. The KWB account balance is included in the Non-SWP column because it is not exportable to IRWD's service area. The 2022 beginning KWB balance was revised by DRWD based on KCWA 2021 end of year balances.

⁵ Per the DRWD Long-Term 1-for-1 Exchange Program, Non-SWP water delivered to DRWD landowners will be returned to IRWD as SWP water at a later date. To account for the SWP water that will be returned at a later date, the amount of water owed will be shown as a credit. Total assumes all water is returned to IRWD Water Bank which adds in a 10% loss factor. Final amounts may be subject to additional CVC losses.

⁶ Water recovered from IRWD's Kern Water Bank account for use on Jackson Ranch.

⁷ A portion of IRWD's 2023 SWP Deliveries from DRWD include 723 AF of Article 21, after losses, which was delivered to the Kern Water Bank.

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Exhibit "D"

TABLE 4
Status of IRWD Purchase and Exchange Programs (AFTER LOSSES)
 October 17, 2024

PARTNER	EXCHANGE RATIO	YEAR EXECUTED	AGREEMENT TYPE	WATER TYPE	PARTNER WATER		IRWD WATER									SELLABLE (Y/N)
					PARTNER SHARE (AF)	PARTNER BALANCE (AF)	IRWD SHARE (AF)	IRWD BALANCE			EXPORTABILITY					
								IN MWD SYSTEM (AF)	STORED IN KERN (AF)		OWED BY DUDLEY RIDGE WD	TOTAL (AF)	EXPORTABLE TO IRWD (AF)	NON-EXPORTABLE (AF)	FOR USE ON JACKSON RANCH (DRWD)	
							Strand and Stockdale	Kern Fan (W.Enos)								
Semitropic Water Storage District	NA	2008	Purchase	SWP Article 21	NA	NA	2,842		2,403			2,403		2,403		Yes
Carpinteria Valley Water District	2-for-1	2008	Short-Term	SWP Table A	277		250		250			250		250		Yes
Buena Vista Water Storage District ¹	2-for-1	2010	Pilot	Kern River	4,108		3,903									Yes
	2-for-1	2011	Long-Term	Kern River	29,336	8,088	27,869		10,772			10,772		10,772		
Antelope Valley East Kern Water Agency	2-for-1	2011	Pilot	SWP Table A	2,229		2,337	2,337				2,337	2,337			No
Carpinteria Valley Water District	2-for-1	2011	Pilot	SWP Table A	624		655	655				655	655			No
Dudley Ridge Water District (SWPAO #13012)	2-for-1	2013	SWPAO	SWP Table A	1,876		1,876	1,876				1,876	1,876			Yes
				SWP Article 21	1,553		1,554	1,554				1,554	1,554			Yes
Metropolitan Water District ²	1-for-1	2014	Short-Term	SWP Table A	NA	NA	4,000	4,000				4,000	4,000			No
Dudley Ridge Water District (SWPAO #17030)	2-for-1	2018	SWPAO	SWP Table A	1,802	791	1,885	1,055	829			1,885	1,885		791	Yes
Central Coast Water Authority (SWPAO #17001)	2-for-1	2017	Short-Term	SWP Table A	258		258	258				258	258			No
Dudley Ridge Water District ³ (SWPAO #19001)	1-for-1	2017	Long-Term	SWP Table A	NA	NA	9,580		9,580			9,580	15,000			No
				Credit	NA	NA	5,420				5,420	5,420				No
Central Coast Water Authority (SWPAO #19031)	2-for-1	2019	Short-Term	SWP Table A	298		323	298	25			323	323			No
Buena Vista Water Storage District ¹	2-for-1	2023	Short-Term	Kern River	2,025	2,025	1,923		1,183	741		1,923		1,923		Yes
Central Coast Water Authority (SWPAO #23012)	2-for-1	2023	Short-Term	SWP Table A	193	193	193			193		193	193			No
Antelope Valley East Kern Water Agency	2-for-1	2018	Long-Term	SWP Table A	3,032	3,032	3,032		2,461	571		3,032	3,032			No
Total:					47,610	14,128	67,899	12,033	27,503	1,504	5,420	46,460	31,112	15,348	791	NA

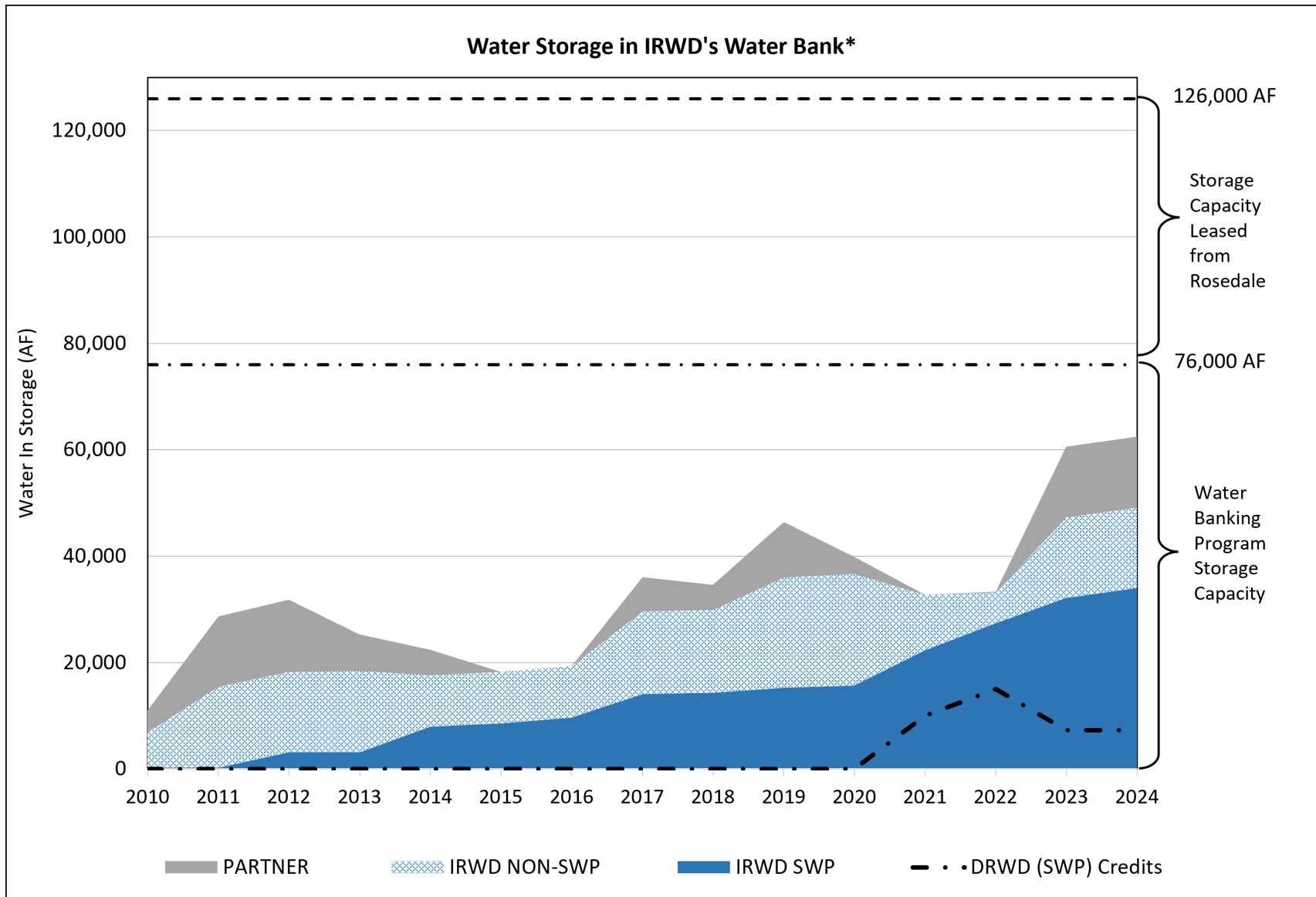
¹ Water acquired through BVWSD will be exportable after it is exchanged for SWP Table A through 1-for-1 exchange with Dudley Ridge Water District.

² Source of water was Buena Vista Water Storage District Kern River high flow water.

³ To account for the SWP water that will be returned to IRWD, the amount of water owed is shown as a credit. The total net of losses is 15,000 AF.

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Exhibit "E"



*After losses

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Exhibit "F"

TABLE 5

IRWD Dedicated Water Banking Capacities for Existing and Proposed Exchange Programs

October 17, 2024

STORAGE CAPACITY

Program	Dedicated Storage Capacity Strand Ranch (AF)	Dedicated Storage Capacity Stockdale West (AF)	Dedicated Storage Capacity Leased Storage Account (AF)	Kern Water Bank Storage Capacity (AF)
Total Capacity	50,000	26,000	50,000	9,495
BVWSD	40,000	-	-	-
IRWD/DRWD	10,000	6,000	-	-
AVEK	-	20,000	-	-
Valley Water	-	-	20,000	-
<i>Proposed Programs:</i>				
Homer LLC	-	-	8,000	-
Total Dedicated	50,000	26,000	28,000	-
Total Remaining	-	-	22,000	9,495

FIRST-PRIORITY RECHARGE CAPACITY

Program	Dedicated Recharge Capacity Strand Ranch (AF)	Dedicated Recharge Capacity Stockdale West (AF)	Dedicated Recharge Capacity Leased Storage Account (AF)	Kern Water Bank Recharge Capacity (AF)
Total Capacity	17,500	27,100	-	3,200
BVWSD	17,500	-	-	-
IRWD/DRWD	-	7,100	-	-
AVEK	-	20,000	-	-
Total Dedicated	17,500	27,100	-	-
Total Remaining	-	-	-	3,200

FIRST-PRIORITY RECOVERY CAPACITY

Program Partner	Dedicated Recovery Capacity Strand Ranch (AF)	Dedicated Recovery Capacity Stockdale West (AF)	Dedicated Recovery Capacity Leased Storage Account (AF)	Kern Water Bank Recovery Capacity (AF)
Total Capacity	17,500	11,250	-	1,520
BVWSD	6,667	-	-	-
DRWD	-	-	-	-
AVEK	-	3,333	-	-
IRWD	10,833	7,917	-	1,520
Total Dedicated	17,500	11,250	-	1,520
Total Remaining	-	-	-	-

TABLE 6
Second-Priority Recharge and Recovery Capacity Available after Annual Scheduling of Dedicated First-
Priority Recharge and Recovery Allocated to Existing Programs

October 17, 2024

SECOND-PRIORITY RECHARGE CAPACITY

Program	Dedicated Recharge Capacity Strand Ranch and Stockdale West (AF)	Minimum Program Share for Second-Priority ¹	Available Minimum Recharge Capacity if not used by Existing Programs (AF)	Total Program Recharge Capacity (AF)
Total Capacity	44,600		44,600	
First Priority Programs	44,600		-	44,600
Valley Water	-	40%	17,840	20,000
<i>Proposed Programs:</i>				
Homer LLC	-	16%	7,136	8,000
Total Dedicated	44,600	56%	24,976	
Total Remaining	-		19,624	

SECOND-PRIORITY RECOVERY CAPACITY

Program Partner	Dedicated Recovery Capacity Strand Ranch and Stockdale West (AF)	Minimum Program Share for Second Priority ¹	Minimum Available Recovery Capacity if not used by Existing Programs (AF)	Total Program Recovery Capacity (AF)
Total Capacity	28,750		28,750	
First Priority Programs	28,750		-	2,750
Valley Water	-	40%	3,333	3,333
<i>Proposed Programs:</i>				
Homer LLC	-	16%	1,333	1,333
Total Dedicated	28,750	56%	4,666	
Total Remaining	-		24,084	

¹ Second-priority recharge and recovery capacity allocated to programs on a pro-rata share based on share of leased storage capacity.

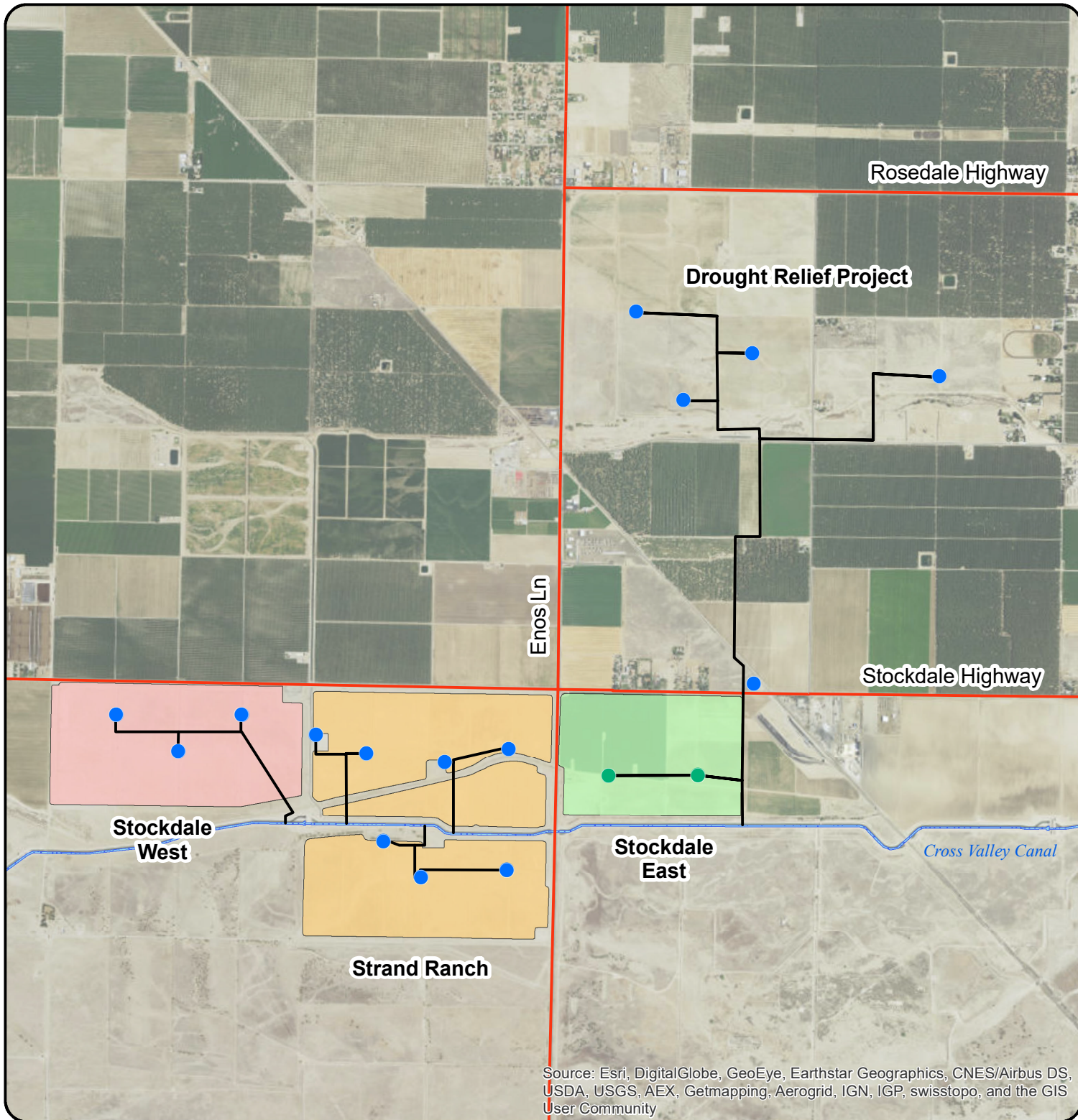
For example:

Valley Water Share: 20,000 AF of 50,000 AF leased storage (40%)

Homer LLC Share: 8,000 AF of 50,000 AF leased storage (16%)



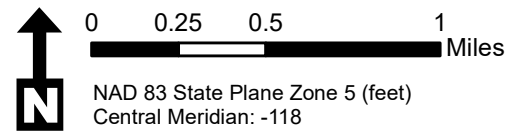
Location Map: IRWD Water Banking Projects Wells and Turnin Pipelines



MAP FEATURES

- Extraction Well
- Extraction Well
- Well Discharge Pipelines
- Stockdale East
- Stockdale West
- Strand Ranch

This figure shows the location of IRWD's water banking project sites and extraction wells.

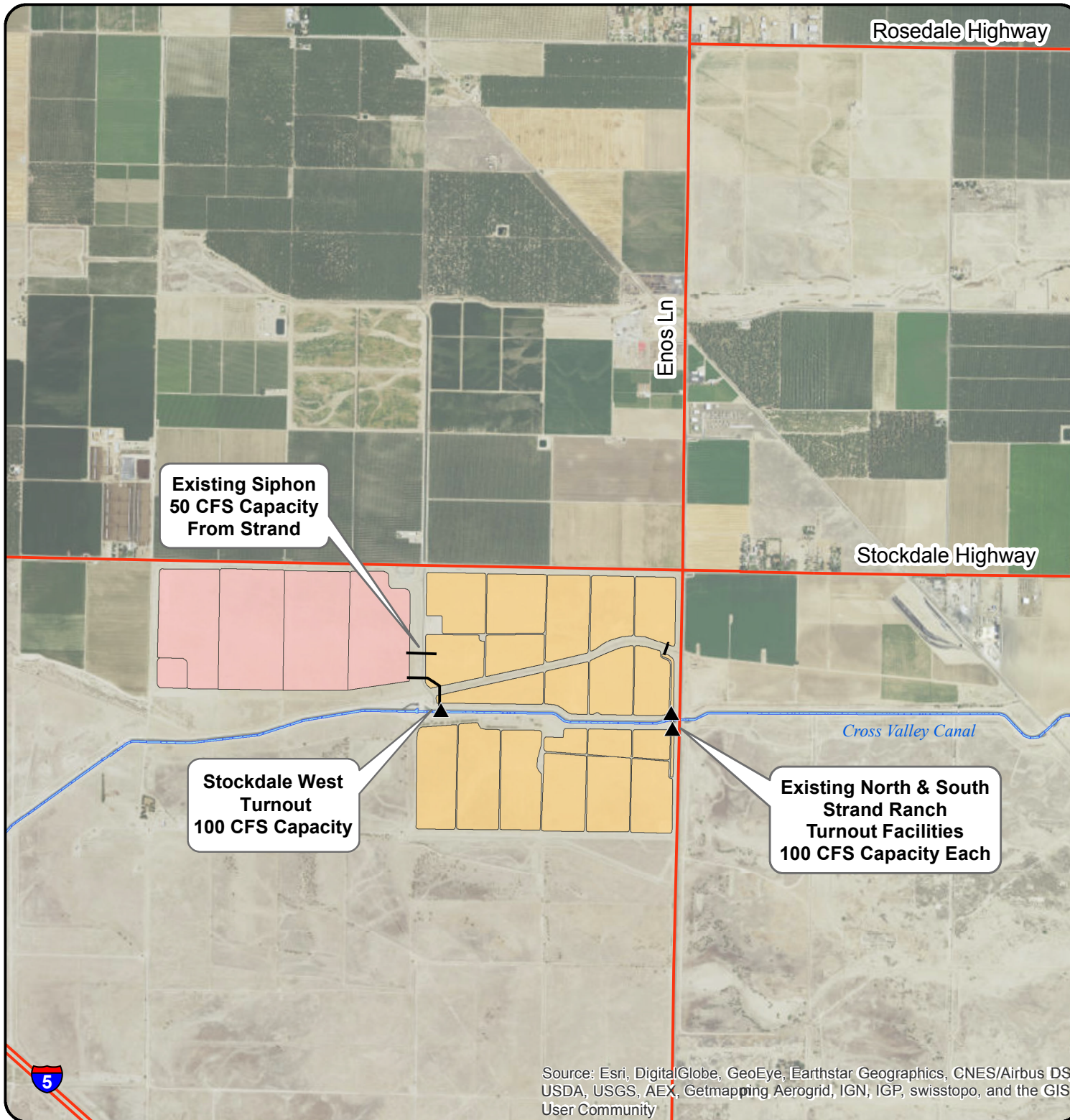


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Location Map: IRWD Water Banking Projects Recharge Basins & Turnout Facilities



**Existing Siphon
50 CFS Capacity
From Strand**

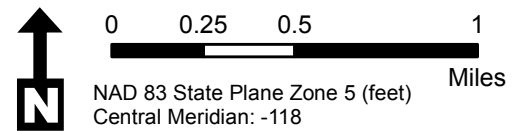
**Stockdale West
Turnout
100 CFS Capacity**

**Existing North & South
Strand Ranch
Turnout Facilities
100 CFS Capacity Each**

MAP FEATURES

- ▲ Turnouts
- Stockdale West
- Strand Ranch

This figure shows the location of recharge basins, pipelines and turnout facilities.

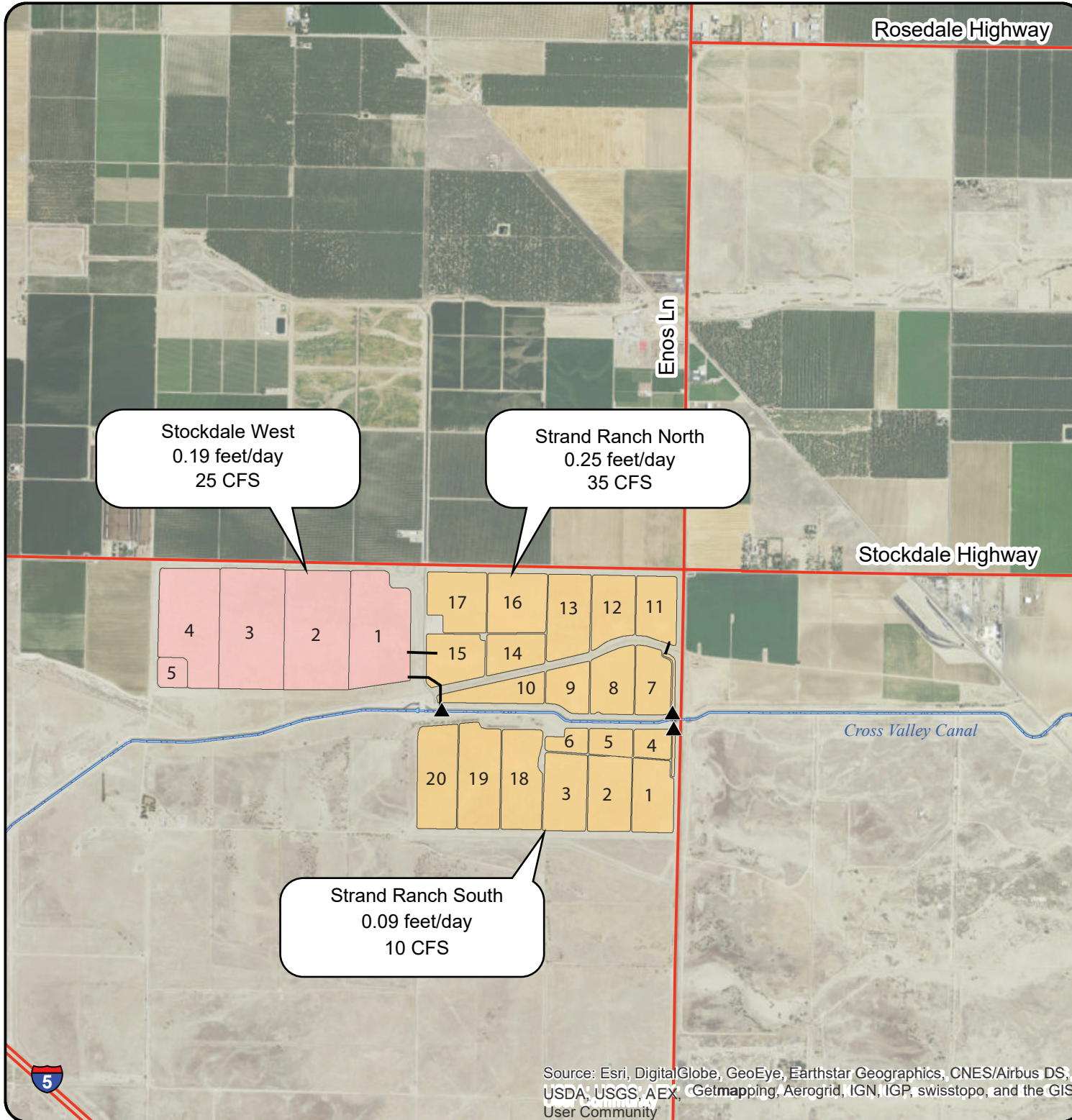


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping AeroGrid, IGN, IGP, swisstopo, and the GIS User Community

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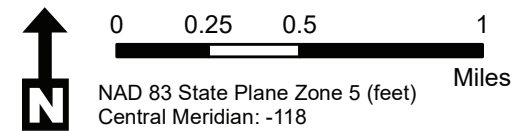
Location Map: IRWD Water Banking Projects Recharge Rates



MAP FEATURES

- ▲ Turnouts
- Stockdale West
- Strand Ranch

This figure shows the location of recharge basins and their associated recharge rates as of January 4, 2024



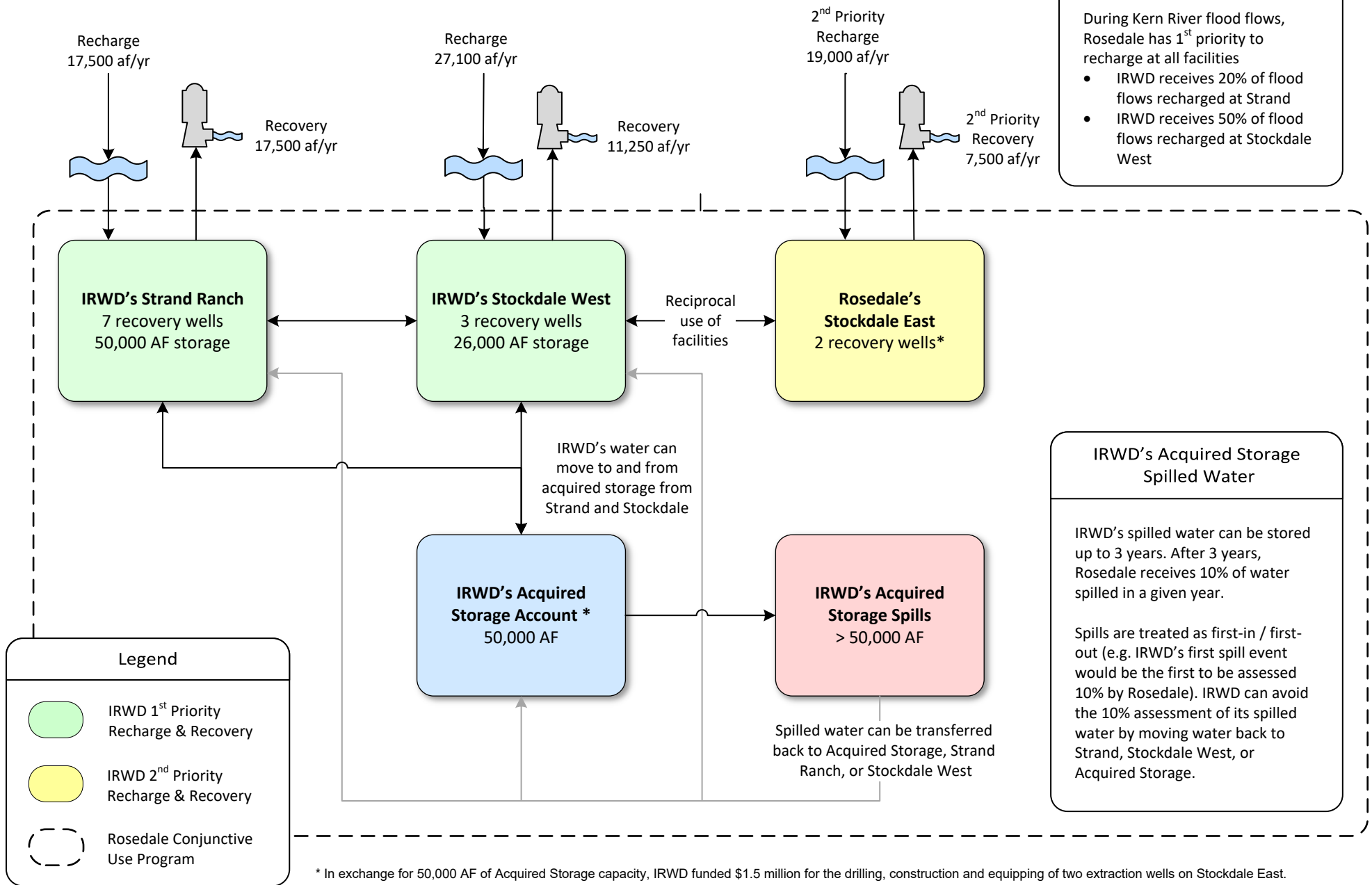
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Exhibit "J"

IRWD-Rosedale Water Banking and Exchange Program Agreements

Effective 1/12/2009 through 1/12/2039 (Strand Ranch)

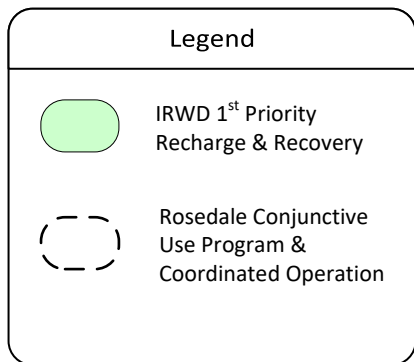
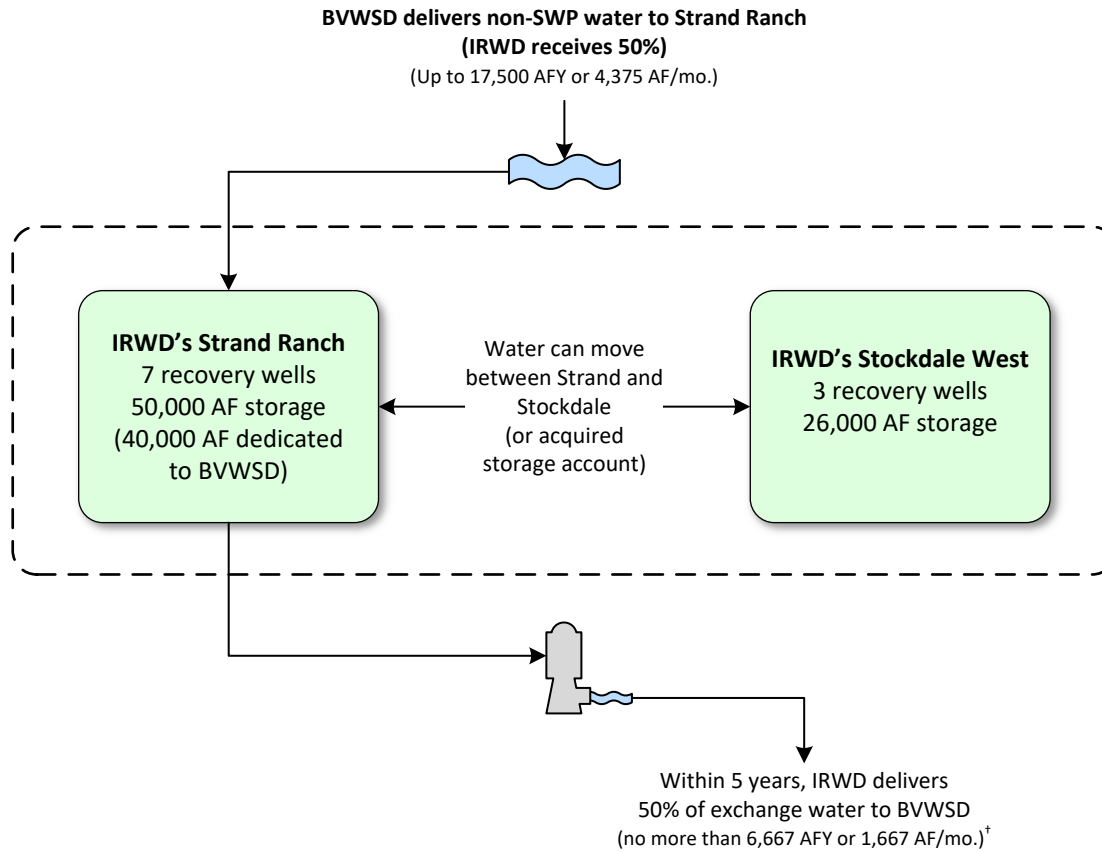
2/4/2016 through 1/12/2039 (Stockdale West)



* In exchange for 50,000 AF of Acquired Storage capacity, IRWD funded \$1.5 million for the drilling, construction and equipping of two extraction wells on Stockdale East.

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Buena Vista Water Storage District Long Term Water Exchange Program
 Effective 1/1/2011 through 1/12/2039

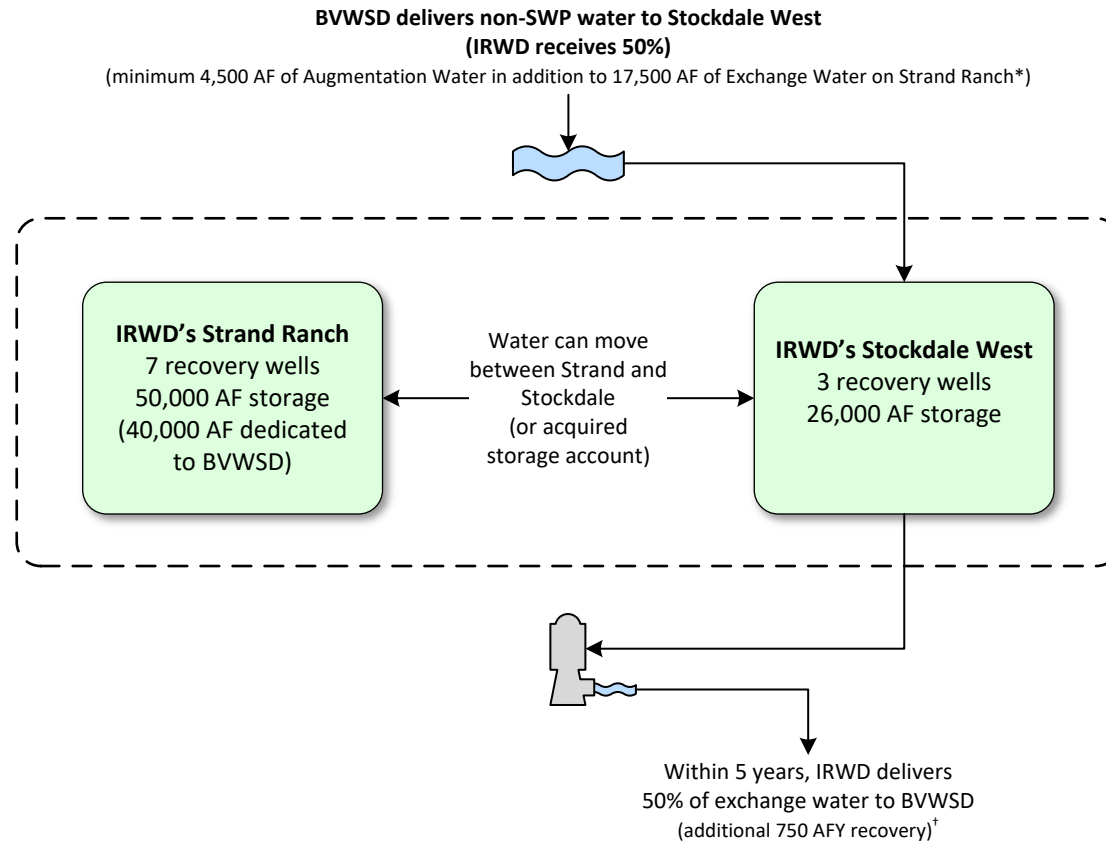




†IRWD shall remit one-half of the exchanged supply less one-half of reasonable losses back to BV no later than December 31st of the 4th year following the associated recharge event. IRWD pays for recovery of water returned to BV. Water to be remitted back to BV may remain in storage at Strand Ranch beyond the 4th year, in exchange for a greater percent being transferred to IRWD as compensation per the table shown to the right:

Year Following Recharge Event	Percent Transferred to IRWD	Percent Returned to BV During or Before Indicated Year
1	50%	50%
2	50%	50%
3	50%	50%
4	50%	50%
5	60%	40%
6	70%	30%
7	80%	20%
8	90%	10%
9	100%	0%

Buena Vista Water Storage District One-Year Program to Augment Recharge Using Stockdale West Recharge Facilities

Effective 6/28/2023 through 12/31/2023



Legend	
	IRWD 1 st Priority Recharge & Recovery
	Rosedale Conjunctive Use Program & Coordinated Operation

* IRWD agrees to pay BV \$25 per AF for IRWD's share of the Augmentation Water and Exchange Water

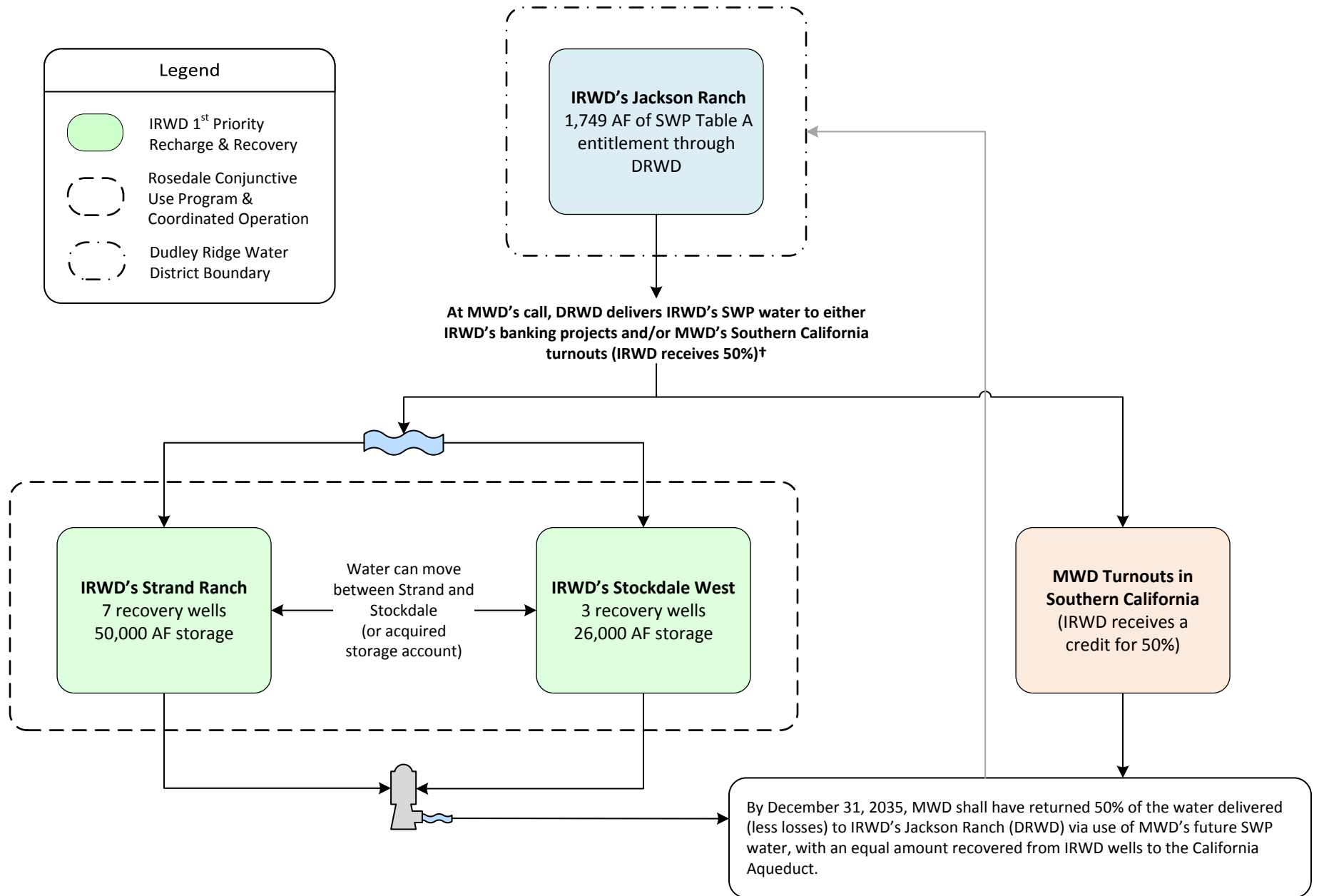
† IRWD shall remit one-half of the exchanged supply less one-half of reasonable losses back to BV no later than December 31st of the 4th year following the associated recharge event. BV pays for recovery of its share of Augmentation Water. Water to be remitted back to BV may remain in storage at Strand Ranch beyond the 4th year, in exchange for a greater percent being transferred to IRWD as compensation per the table shown to the right:

Year Following Recharge Event	Percent Transferred to IRWD	Percent Returned to BV During or Before Indicated Year
1	50%	50%
2	50%	50%
3	50%	50%
4	50%	50%
5	60%	40%
6	70%	30%
7	80%	20%
8	90%	10%
9	100%	0%

Exhibit "L"

Dudley Ridge Water District (DRWD) Unbalanced Exchange Program

Up to 12,240 AF delivered from 6/7/2018 through 12/31/2027



†Consistent with IRWD-MWD coordinated operating agreement.

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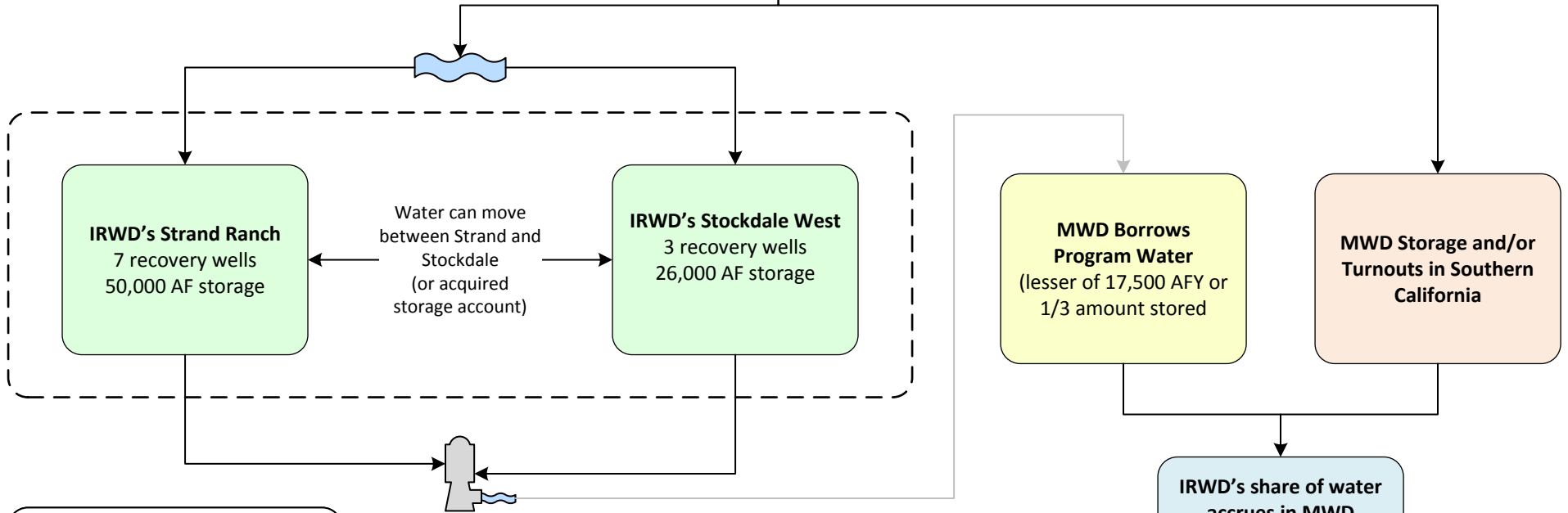
Exhibit "M"

Coordinated Operating, Water Storage, Exchange and Delivery Agreement Between MWD, MWDOC and IRWD
Effective 5/1/2011 through 11/4/2035

With MWD's consent, IRWD secures SWP water (Program Water) through exchanges with IRWD Banking Partners for use as extraordinary supply under MWD Water Supply Allocation Plan

MWD has three options for the use and storage of Program Water:

- Storage of water in IRWD's Integrated Banking Project
- Delivery to Southern California for immediate use and/or storage in MWD system
- Borrow a portion of Program water, with accrual in MWD Delivery Account



Legend

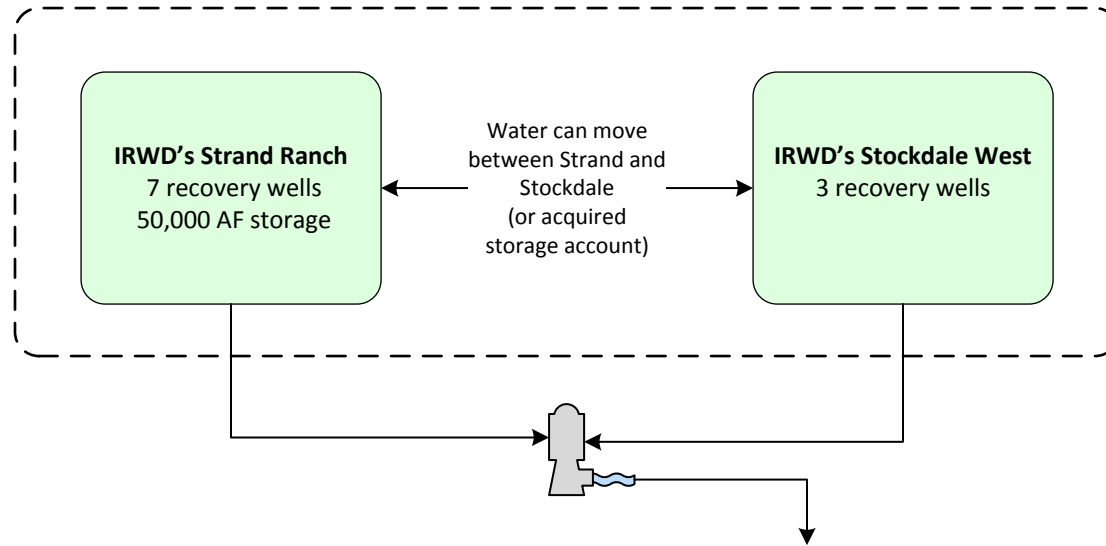
- IRWD 1st Integrated Banking Project
- Rosedale Conjunctive Use Program & Coordinated Operation

- Under an MWD Allocation, when IRWD calls for water, IRWD must first recover Program Water from the Integrated Banking Project before receiving water from the MWD Delivery Account.
- MWDOC shall pass through extraordinary supply credits for IRWD's benefit.
- † IRWD's banking partner share of Program Water to be returned by MWD.



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Exhibit "N"

Agreement for Conveyance of Water Between MWD, MWDOC, and IRWD (Wheeling Agreement)
Template for future agreements



IRWD recovers its share of non-SWP water from its Integrated Banking Projects for use as extraordinary supply under a declared MWD Water Supply Allocation. MWD will coordinate the conveyance and delivery of recovered water to be used within IRWD's Service Area. Delivery can also occur through an operational exchange.*

Legend	
	IRWD 1 st Priority Recharge & Recovery
	Rosedale Conjunctive Use Program & Coordinated Operation

*The recovered water must be used within IRWD's service area. IRWD to pay MWD wheeling charges, including system access rate, water stewardship rate, and treatment surcharge (if applicable), for each acre foot of recovered water wheeled by MWD. IRWD will pay the actual costs of power incurred by MWD to convey recovered water in the California Aqueduct to IRWD delivery points.

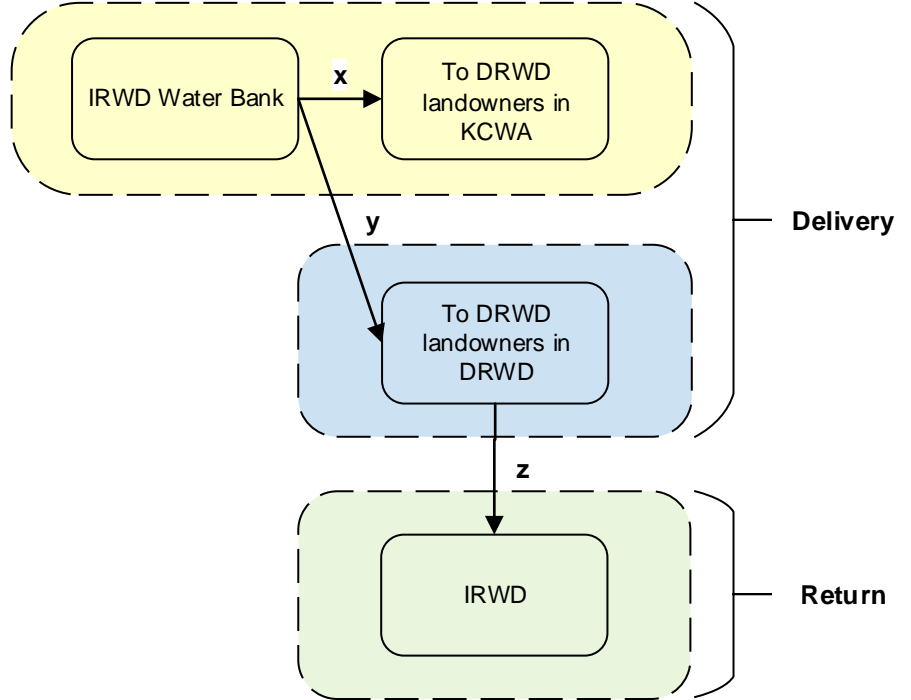
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Dudley Ridge Water District Long Term 1-for-1 Water Exchange Program
 Effective 5/31/2017 through 11/4/2035

Scenario A
 (Per Sections 2, 3, 4.1.1, and 4.1.3)

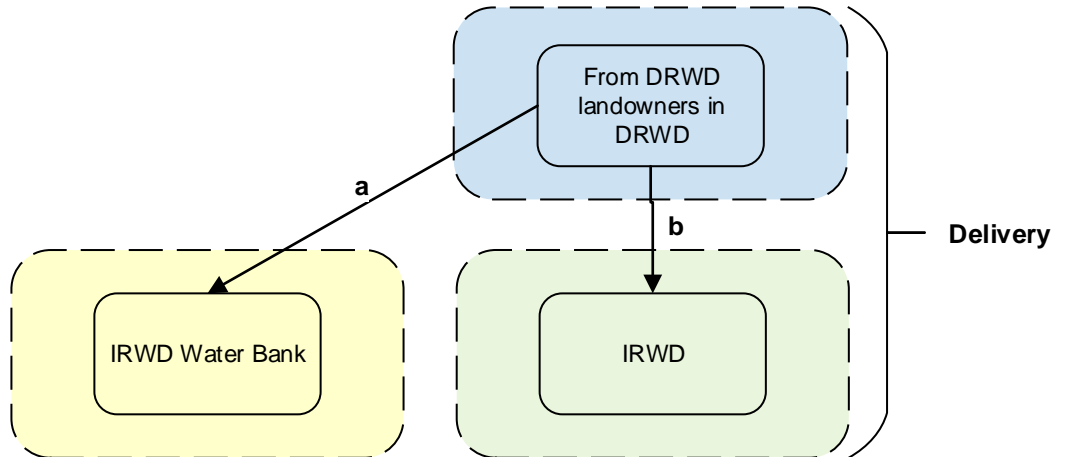
x= Non-Project Water required to stay in Kern County
 y= Non-Project Water allowed to leave Kern County
 z= DRWD Table A Water equal to x+y less applicable losses, if any

Per Section 4.1.3, z can be delivered to IRWD via in-ground transfer to IRWD, SWP delivery to IRWD banking facilities, or SWP delivery to MWDSC



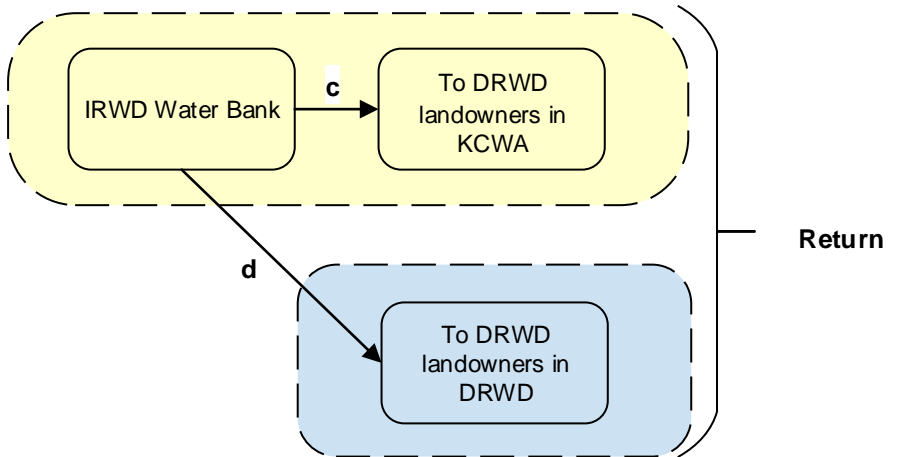
Scenario B
 (Per Sections 2, 3, and 4.1.2)

$a + b = c + d$
 (less applicable losses, if any)



Legend

- KCWA Service Area
- DRWD Service Area
- IRWD Service Area

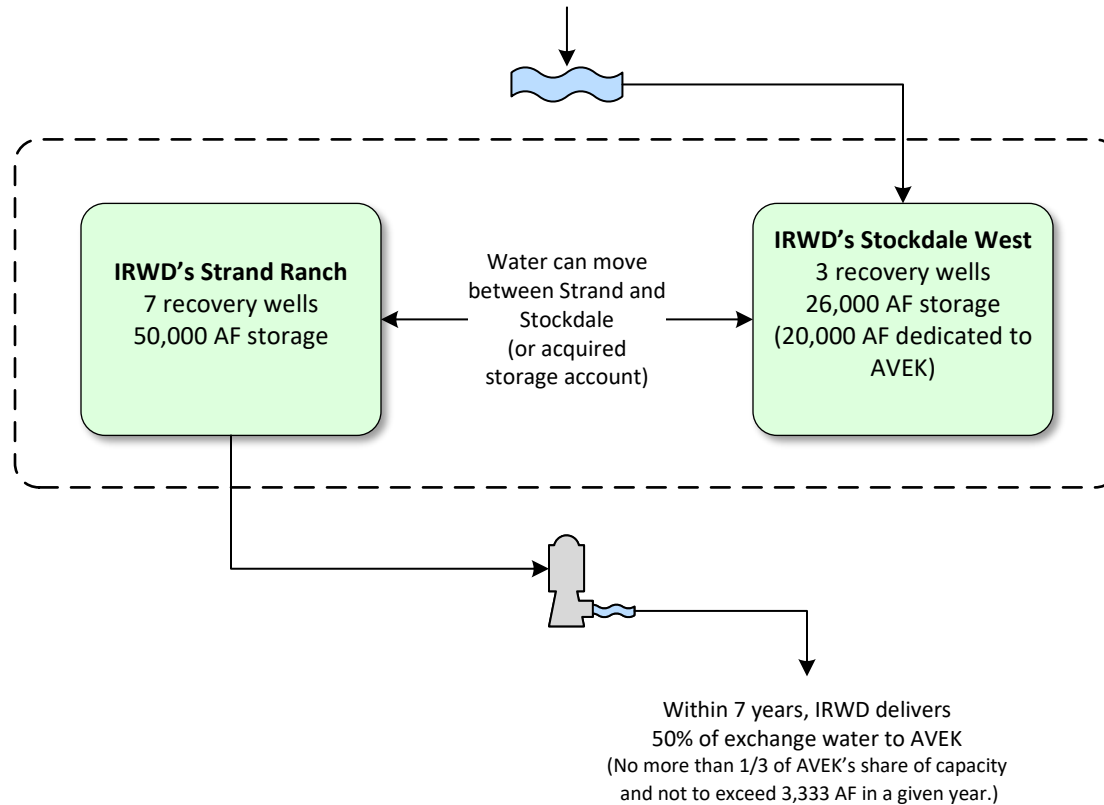




†The cost of water exchanged between IRWD and DRWD will be equalized

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Exhibit "P"
Antelope Valley-East Kern Water Agency (AVEK) Long Term Water Exchange Program
 Effective 12/21/2018 through 12/31/2035

AVEK delivers SWP water to IRWD Water Bank
(IRWD receives 50%)
 (Up to 20,000 AFY or 2,200 AF/mo.)*

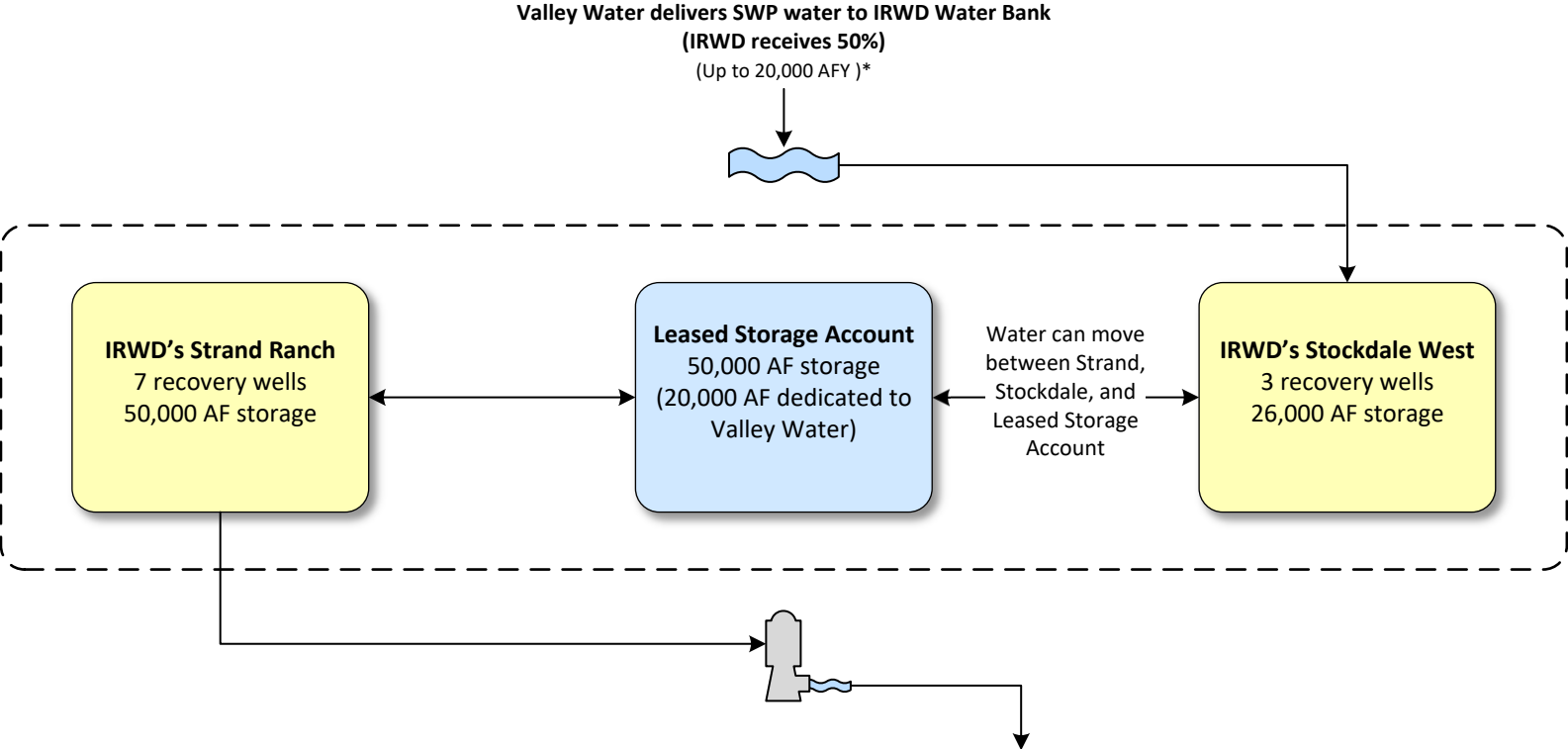


Legend	
	IRWD 1 st Priority Recharge & Recovery
	Rosedale Conjunctive Use Program & Coordinated Operation

*Up to 20,000 AF per year of AVEK Exchange Water may be delivered to IRWD for recharge using recharge facilities at the Strand Ranch and Stockdale West for storage in the Stockdale West Bank. IRWD shall remit one-half of stored supplies less one half of losses back to AVEK no later than December 31st of the 7th year, following the associated recharge event.

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Exhibit "Q"
Santa Clara Valley Water District (Valley Water) Long Term Water Exchange Program
 Effective 9/4/2024 through 12/31/2035



Legend	
	IRWD 2nd Priority Recharge & Recovery
	IRWD Leased Storage Account
	Rosedale Conjunctive Use Program & Coordinated Operation

*Up to 20,000 AF per year of Valley Water Exchange Water may be delivered to IRWD for recharge using recharge facilities at the Strand Ranch and Stockdale West for storage in IRWD's Leased Storage Account. IRWD shall remit one-half of stored supplies less one half of losses back to Valley Water no later than December 31st of the 7th year, following the associated recharge event.

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Exhibit "R"

TABLE 7
IRWD Water Banking Program Costs of Water Summary
 October 17, 2024

Program Partner	Time Period	Water Type	IRWD Amount (AF)	Variable costs ² (\$/AF) (A)	Fixed Cost Component ³ (\$/AF) (B)	Fixed & Variable (\$/AF) (C)	Capital Component ⁴ (\$/AF) (D)	Cost of Water (\$/AF) (E)	Estimated Recovery of Water ⁵ (\$/AF) (F)	2024 MWD Tier 1 Untreated Rate + SAC Surcharge ⁶ (\$/AF) (G)	Cost of Water in IRWD Service Area (\$/AF) (H)
Buena Vista	2010-2015	Kern River	12,832	\$ 75.98	\$ 48.36	\$124.34	\$ 190.00	\$ 314.34	\$ 120.00	\$ 903.99	\$ 1,338.33
Buena Vista ¹	2017-2021	Kern River	11,256	\$ 159.16	\$ 48.36	\$207.52	\$ 190.00	\$ 397.52	\$ 120.00	\$ 903.99	\$ 1,421.51
AVEK	2012-2014	SWP Table A	2,229	\$ 11.70	\$ 48.36	\$ 60.06	\$ 190.00	\$ 250.06	\$ 120.00	\$ 903.99	\$ 1,274.05
AVEK ⁷	2012-2014	SWP Table A	108	\$ 11.70	\$ 48.36	\$ 60.06	\$ 190.00	\$ 250.06	\$ -	\$ 903.99	\$ 1,154.05
Carpinteria	2010-2015	SWP Table A	874	\$ 27.04	\$ 48.36	\$ 75.40	\$ 190.00	\$ 265.40	\$ 120.00	\$ 903.99	\$ 1,289.39
Carpinteria ⁷	2010-2015	SWP Table A	31	\$ 27.04	\$ 48.36	\$ 75.40	\$ 190.00	\$ 265.40	\$ -	\$ 903.99	\$ 1,169.39
Central Coast ⁷	2017-2021	SWP Table A	556	\$ 30.34	\$ 48.36	\$ 78.70	\$ 190.00	\$ 268.70	\$ -	\$ 903.99	\$ 1,172.69
DRWD ⁷	2014-2021	SWP Table A /Article 21	4,452	\$ 362.67	\$ 48.36	\$411.03	\$ 190.00	\$ 601.03	\$ -	\$ 903.99	\$ 1,505.02
Total			32,338								

¹ Water purchased in 2019 includes commodity charge of \$110/AF

² Variable Costs shown above are based on actual costs. The different components and average costs included in the variable cost are as follows: recharge variable operating costs (\$5.00/AF), Rosedale administration fees (\$3.00/AF), CVC pumping (\$9.00/AF), operating and stand-by fees (\$3.50/AF), and KCWA fees (\$5.00/AF) plus \$3,000 per transaction request. IRWD pays Buena Vista recovery costs. (Net of partner payments to IRWD for their share of water)

³ Fixed costs include IRWD share of fixed operating costs (\$25.00/AF), annual property taxes (\$88,000), PG&E standby costs (up to \$5,000/year), GSP fees (\$8,450/year) and CVC expansion costs (\$28,000/year)

⁴ Capital component does not include land costs, grants received, and revenue from DRWD water sold in 2021. Add \$60/AF to include these costs.

⁵ Increased PG&E costs for recovering water.

⁶ Assumes IRWD would take delivery as extraordinary supply through Irvine Lake to the Baker Water Treatment Plant. The SAC surcharge rate as of 6/30/2023 was \$0.99 per AF.

⁷ No recovery costs for DRWD water delivered in 2014-2016 and water recovered in 2022 as part of MWD borrowing.

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Exhibit "S"

Summary of IRWD's Coordinated Operating, Water Storage, Exchange and Delivery Agreement with Metropolitan Water District and Municipal Water District of Orange County (MWDOC) (February 8, 2024)

Agreement approved (unanimously) by the IRWD Board on November 22, 2010;
Agreement Term: April 21, 2011 to November 4, 2035

Summary of Benefits to IRWD:

1. IRWD benefits from all State Water Project (SWP) water IRWD secures; Metropolitan's borrowing of this water is temporary.
2. On behalf of IRWD, Metropolitan uses its SWP exchange and conveyance capacities to move IRWD's water for banking.
3. IRWD can "store" water in Metropolitan's system as a credit, freeing up space in IRWD's Water Bank with the water stored closer to the IRWD service area.
4. IRWD does not incur conveyance or evaporation losses on its water that is conveyed in Metropolitan's system and stored in Metropolitan's reservoirs.
5. IRWD avoids groundwater recovery (pumping) costs when Metropolitan issues a credit for IRWD's SWP supplies in Southern California (currently \$122/AF¹).
6. IRWD pays Metropolitan's melded system power rate – currently \$182/AF, not DWR's current power costs of \$330/AF² (\$148/AF savings).
7. Deliveries are on-demand to IRWD at its service connections in Orange County, which are not subject to lower priorities for wheeling.
8. Metropolitan pays all SWP costs, including variable OMP&R supply costs, associated with SWP water secured by IRWD³.
9. IRWD pays Metropolitan's Full-Service Tier-1 Untreated Rate, which is currently \$903/AF, for deliveries at its service connections allowing IRWD to avoid higher Metropolitan wheeling charges.
10. IRWD only pays once for supply at the current Tier-1 Supply Rate of \$332/AF.
11. Deliveries to IRWD's service area qualify as Extraordinary Supply during a Water Supply Allocation, allowing IRWD to avoid Metropolitan's Allocation Surcharge of between \$1,480/AF and \$2,960/AF.
12. IRWD increases local water supply reliability for its ratepayers.

¹ Estimated from IRWD's current groundwater pumping costs and Water Bank related operations costs. Metropolitan has the option to extinguish credits by returning water to the IRWD Water Bank. In recent borrowing letter agreement, Metropolitan agreed to waive its ability to return borrowed water to the Water Bank.

² Melded system and actual power costs were taken from Metropolitan's Fiscal Years 2022-23 and 2023-24 Biennial Budget Report and 2022 Cost of Service Study.

³ Does not include fixed costs paid by IRWD's unbalanced exchange partners. In 2014 and 2017, Metropolitan's SWP costs were \$1,097/AF and \$359/AF, respectively.

Summary of Benefits to MWD:

1. Metropolitan maintains control of all SWP supplies entering its service area as required by its SWP Contract with California Department of Water Resources (DWR).
2. Metropolitan's investments in the SWP are protected by not causing a reduction in revenue received by Metropolitan for payment of SWP fixed charge obligations.
3. Metropolitan can temporarily borrow SWP water secured by IRWD.
4. Metropolitan is assured that IRWD is not competing for water supplies.
5. Increased regional water supply reliability.

Exhibit "T"

IRWD 2024 Recharge Operations- BEFORE LOSSES

October 17, 2024

Actual and Forecasted Amounts:

Month	IRWD Table A (AF)	DRWD 1:1 (AF)	MWD ¹ (AF)	Buena Vista (AF)	AVEK (AF)	Homer (AF)	Valley Water (AF)	Total (AF)	Status	Expected Recharge ² (AF)	Expected Recharge Rate (CFS)
January	-	2,200	-	-	-	-	-	2,200	prelim	2,200	80
February	-	-	-	-	-	-	-	-	prelim	-	70
March	-	-	-	-	-	-	-	-	prelim	-	60
April	-	-	-	-	-	-	-	-	prelim	-	60
May	-	-	-	-	-	-	-	-	prelim	-	60
June	-	-	-	-	-	-	-	-	prelim	-	60
July	-	-	-	-	-	-	-	-	prelim	-	60
August	-	-	-	-	-	-	-	-	prelim	-	60
September	-	-	-	-	-	-	-	-	prelim	-	60
October	-	-	-	-	-	-	-	-	prelim	-	60
								2,200		2,200	
November	700	-	79	-	-	1,854	500	3,133		4,760	80
December	-	-	-	-	-	-	4,500	4,500		4,919	80
	700	2,200	79	-	-	1,854	5,000	9,833		11,879	
Recharge goal:	700	7,525	79	-	-	1,854	20,000	30,158			

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WATER SUPPLY CONDITIONS AND FALL X2 REQUIREMENTS

SUPPLY RELIABILITY PROGRAMS
COMMITTEE MEETING

OCTOBER 17, 2024

1

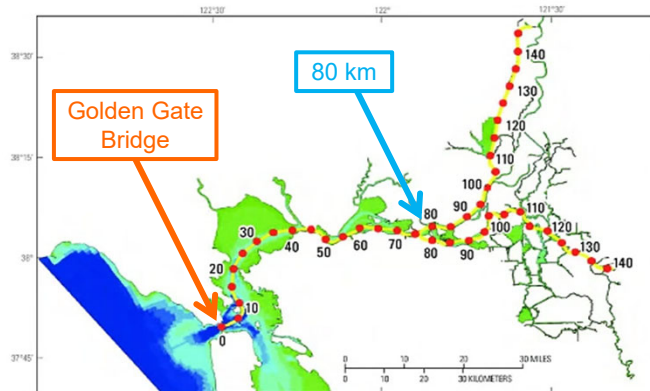
OVERVIEW

- Background on Delta Flow Requirements “Fall X2”
 - Definition
 - Regulations and Requirements
 - Recent Modeling Updates
 - 2024 Changes
- Fall X2 Impacts on Delta Pumping
- San Luis Reservoir Update

FALL X2: DEFINITION

- The location in kilometers from the Golden Gate Bridge where average daily salinity is 2 parts per thousand (ppt) at 1 meter from the bottom of the waterbody
- Historically, low salinity was associated with high productivity and abundance of native fish species

Map of Delta and San Francisco Estuary with kilometer ticks illustrating distance from the Golden Gate Bridge



FALL X2: REGULATION AND REQUIREMENTS

- U.S. Fish and Wildlife Service Biological Opinion and California Department of Fish and Wildlife's Incidental Take Permit
 - Establishes September and October X2 actions to maintain low salinity habitat at or less than 80 km from the Golden Gate Bridge
 - Following wet and above normal water years
 - Incidental Take Permit (2020-2030), includes the Summer-Fall Habitat Action and an additional 100,000 AF of release water to supplement Delta outflow from June-October
- State Water Board's Water Right Decision 1641 (D-1641)
 - Implements the Bay-Delta Plan and its salinity objectives
 - DWR and USBR operate the State Water Project and Central Valley Project consistent with D-1641

FALL X2: RECENT MODELING UPDATES

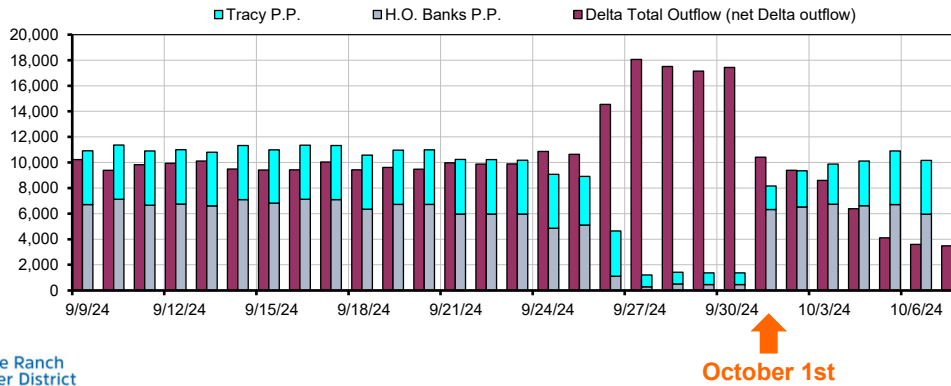
- U.S Fish and Wildlife Service modeling indicates that October implementation of Fall X2 is not a critical driver of Delta smelt survival
- Two appeals in 2024 based on changes in scientific evidence regarding Fall X2 and Delta smelt survival:
 - Letter from the State Water Project contractors to DWR and Bureau of Reclamation requested a written justification for the scientific basis for Fall X2 action
 - Letter from water policy coalition to Governor Newsom and Secretary of Interior Haaland requested that Fall X2 action be suspended for 2024
- Suspending Fall X2 in October 2024 allows scientists to test hypotheses regarding the Fall X2 action

FALL X2: 2024 CHANGES

- Fall X2 action was suspended on October 1, 2024
 - Removal of Fall X2 requirements allows for 100,000 to 400,000 AF of water to be moved down to San Luis Reservoir over the next few months
- A new biological opinion is expected in 2024/2025 that may include additional considerations to suspend Fall X2 in the future, pending new scientific evidence
- Pumping is expected to increase over the next month as the Fall X2 requirements are transitioned

DELTA PUMPING: AFTER X2 SUSPENSION

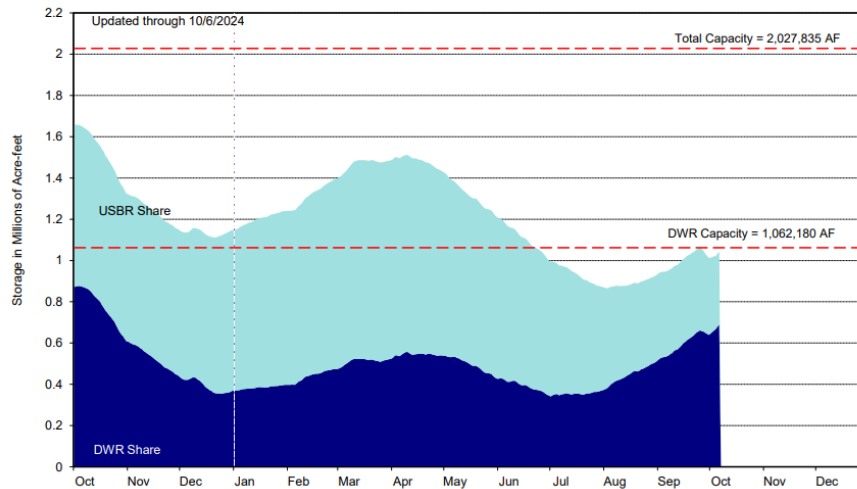
Location	Mean Daily Pumping (cfs)	7-Day Average (cfs)
Banks Pumping Plant (SWP)	6,322	6,311
Delta Total Outflow	10,419	6,565




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SAN LUIS RESERVOIR – STORAGE AND SHARED CAPACITY

San Luis Reservoir Storage
Combination Water/Calendar Year



9

October 17, 2024
Prepared by: F. Sanchez
Submitted by: F. Sanchez / P. Weghorst
Approved by: Paul A. Cook 

SUPPLY RELIABILITY PROGRAMS COMMITTEE

AMENDMENT NO. 2 TO THE SHORT-TERM WATER EXCHANGE PROGRAM WITH CENTRAL COAST WATER AUTHORITY

SUMMARY:

Since 2008, IRWD has implemented five unbalanced exchange programs with Carpinteria Valley Water District (CVWD) through the Central Coast Water Authority (CCWA). Staff has received a request to implement another short-term program with CVWD. To accommodate this request, staff recommends that the Board authorize the General Manager to execute Amendment No. 2 to the 2019 Short-Term Exchange Program with CCWA, subject to substantive changes approved by the Supply Reliability Programs Committee and legal counsel.

BACKGROUND:

In 2008, 2011, 2017, and 2019, the Board approved agreements for short-term unbalanced exchanges of State Water Project (SWP) Table A water with CVWD, which is a member agency of CCWA. In 2023, the Board approved a short-term unbalanced exchange of SWP Article 56 water (carryover water) with CVWD through CCWA. Metropolitan Water District of Southern California (MWD) consented to these programs consistent with the Coordinated Operating, Water Storage, Exchange and Delivery Agreement between IRWD, MWD and Municipal Water District of Orange County.

Subsequent to receiving MWD's consent, the California Department of Water Resources (DWR) prepared formal Exchange and Point of Delivery Agreements that facilitated the unbalanced exchanges of SWP water at IRWD's Water Bank. These DWR agreements were subsequently executed by the Santa Barbara County Flood Control and Conservation District on behalf of CCWA, MWD, Kern County Water Agency, and DWR. The exchanges of water associated with the programs were completed and deemed to be successful by all the parties to the DWR agreements.

Request for 2024 Exchange:

In anticipation of possible spills from San Luis Reservoir in 2024, staff received a request from CCWA to facilitate an amendment to the 2019 Short-term Water Exchange Program agreement. The proposed amended terms, which are provided as Exhibit "A", would extend the term of the agreement to allow CCWA to deliver SWP water for recharge at the IRWD Water Bank on a 2-for-1 basis by the end of 2025. IRWD would return one-half of the water, less a proportional share of losses to CCWA, by the end of the sixth year after execution of the amendment. The amendment would modify the delivery amount from 5,000 acre-feet (AF) to 2,000 AF based on historical deliveries to the IRWD Water Bank by CCWA. It would also modify CCWA's access to first priority use of the IRWD Water Bank facilities to second priority use. Second priority

use would be based on the allocation of storage, recharge and recovery shown in Attachment 1 to the draft terms provided as “Exhibit A”.

In order to expedite the implementation of the program before the end of 2024, staff recommends that the Board authorize the General Manager to execute Amendment No. 2 to the 2019 Short-Term Exchange Program based on the draft terms presented, subject to substantive changes approved by the Supply Reliability Programs Committee and special legal counsel.

FISCAL IMPACTS:

None.

ENVIRONMENTAL COMPLIANCE:

Final Environmental Impact Reports for the Strand Ranch and Stockdale Integrated Banking Project were prepared, certified, and approved in compliance with the California Environmental Quality Act (CEQA) of 1970 as amended, codified at California Public Resources Code Sections 21000 et. seq., and the State CEQA Guidelines in the Code of Regulations, Title 14, Division 6, Chapter 3. Rosedale, as lead agency, filed Notices of Determination for both the Strand Ranch and Stockdale Integrated Banking Projects with the County of Kern. IRWD, as a responsible agency, filed Notices of Determination with the County of Orange and with the County of Kern.

RECOMMENDATION:

That the Board authorize the General Manager to execute an Amendment No. 2 to the 2019 Short-Term Water Exchange program with Central Coast Water Authority based on the draft terms presented at the meeting, subject to substantive changes approved by the Supply Reliability Programs Committee and special legal counsel.

LIST OF EXHIBITS:

Exhibit “A” – Draft Terms for Amendment No. 2 to the 2019 Short-Term Water Exchange Program with Central Coast Water Authority

Exhibit "A"

DRAFT Terms for a Amendment No. 2 to 2019 Short-Term Exchange Program
Between Irvine Ranch Water District and Central Coast Water Authority
October 17, 2024

Parties	The Irvine Ranch Water District (IRWD) and Central Coast Water Authority (CCWA)
State Contractors	<p>Santa Barbara County Flood Control and Water Conservation District (Santa Barbara) has a long-term water supply contract with the Department of Water Resources (DWR) that permits Santa Barbara to receive water supply, storage and conveyance services from the State Water Project (SWP). CCWA is a joint powers agency, members of which are individual water purveyors located in the County of Santa Barbara. In 1991, Santa Barbara and CCWA entered into a Transfer of Financial Responsibility Agreement, which, among other things, obligates CCWA to pay for all Water Supply Contract related costs.</p> <p>Metropolitan Water District of Southern California (Metropolitan) has a long-term water supply contract with the DWR. IRWD receives SWP supplies from Municipal Water District of Orange County, a member unit of Metropolitan.</p> <p><u>Kern County Water Agency (KCWA) also has a long-term Water Supply Contract with DWR. Consent from KCWA is required to deliver CCWA’s water into storage in Kern County.</u></p> <p><u>IRWD and CCWA would cooperate with DWR, KCWA, and Metropolitan in preparing all necessary agreements to facilitate the Exchange Program. IRWD and KCWA shall each be responsible for their own costs associated with coordination.</u></p>
Description	<p>IRWD and CCWA would implement a Short Term Exchange Program (Exchange Program) that would allow CCWA to schedule unused SWP water to Metropolitan on IRWD's behalf on a 2-for-1 exchange ratio basis. As part of the exchange, the water may be temporarily managed in IRWD's Strand and Stockdale Integrated Banking Projects (IRWD Water Bank). The Exchange Program would manage unused SWP supplies for CCWA and would provide increased water supply for both CCWA and Metropolitan including IRWD as a sub-agency of Metropolitan.</p> <p><u>All Recharge and recovery facilities at both the Strand Ranch and Stockdale Integrated Banking Projects and any facilities operated in conjunction with the IRWD Water Bank could be used to deliver water into and out of storage at the IRWD Water Bank.</u></p>
Term	<p>Six years from the effective date of the Exchange Program Agreement Amendment No. 2. Delivery of the water into storage would be accomplished prior to the end of calendar year 20192025. Upon mutual agreement the term may be extended as described under Return Water below.</p>
IRWD’s Water Bank	<p>The IRWD Water Bank, located in Kern County, is owned by IRWD and operated by Rosedale-Rio Bravo Water Storage District (Rosedale). IRWD holds first priority rights to the use of the recharge and recovery</p>

	<p>facilities except for when the Kern River Watermaster offers water to all takers willing to sign a notice/order or the Kern River Watermaster offers Kern River water to the California Aqueduct/Kern River Intertie. Under such conditions, Rosedale has first priority right to the use of the recharge facilities.</p> <p><u>Attachment 1 hereto specifies storage and second-priority recharge and recovery capacity available after annual scheduling of dedicated first-priority recharge and recovery allocated to IRWD and existing programs. CCWA shall have a pro rata share of such second-priority capacity based on its proportion of the total second-priority capacity allocated through fully executed agreements with IRWD. IRWD annually may reallocate any unused second-priority capacity not scheduled for use by such approved programs.</u></p>
Quantity	<p>Up to 5,000 <u>2,000</u> acre-feet (AF) of CCWA 's SWP water supplies may be delivered to Metropolitan at the IRWD Water Bank for storage in 2019 <u>2025</u>. One-half of the water delivered into storage would be available to Metropolitan and IRWD at the time the water has been recharged at the IRWD Water Bank.</p>
Exchange Water	<p>CCWA expects to supply <u>up to</u> the specified Quantity of its SWP water supplies to the IRWD Water Bank by the end of 2019 <u>2025</u> (Exchange Water). The Parties would cooperate in scheduling the Exchange Water deliveries with deliveries associated with other IRWD exchange programs. The recharge of Exchange Water would be subject to available recharge capacity, as well as provisions of IRWD's Coordinated Operating, Water Storage, Exchange and Delivery Agreement with Metropolitan and the Municipal Water District of Orange County (Coordinated Agreement).</p>
Return Water	<p>Water shall be returned, when requested by CCWA by the end of the sixth calendar year after the delivery of Exchange Water. Returns from the IRWD Water Bank would be at an annual rate of no more than one-third of the amount delivered into storage allocated to CCWA, after losses and not to exceed 825 <u>667</u> AF per year. <u>The return of CCWA's share of the water would be subject to scheduling, actual well pumping rates, and would occur after the recovery needs of IRWD and its other exchange partners are met in accordance with Attachment 1 are met in accordance with Attachment 1.</u> IRWD may allow CCWA to recover more water in a year, should IRWD determine that the use of additional recovery capacity by CCWA would not infringe on IRWD's ability to recover water for itself and/or IRWD's other partners.</p> <p>The Return Water delivered to CCWA shall be from Metropolitan's future approved SWP Table A water or by recovery and exchange of water from the IRWD Water Bank with subsequent delivery through the Cross Valley Canal (CVC) to the California Aqueduct.</p> <p>IRWD shall use its first priority recovery well capacity in the IRWD Water Bank to recover Return Water for CCWA after meeting IRWD's own water supply needs. Upon mutual agreement, the Term of this</p>

	Exchange Program may be extended for an additional 5 years and as approved by the DWR.
Quality	The quality of Exchange Water and Return Water will be limited as follows: If and to the extent that either party delivers water to and into the California Aqueduct, the quality of water shall meet the water quality standards established by DWR for pump-in to the California Aqueduct.
Delivery Points	CCWA will deliver Exchange Water to the IRWD point of delivery (IRWD POD) which will be the Strand Ranch and/or Stockdale West Turnouts on the CVC, other Rosedale diversion locations as specified by Rosedale, or as directed by Metropolitan. IRWD will use IRWD Water Bank wells to extract Return Water for delivery to the pump-in location at Reach 12E of the California Aqueduct. CCWA shall coordinate with DWR for delivery of Return Water to the CCWA point of delivery (CCWA POD) which will be Check 28 of the California Aqueduct or to another delivery point as determined by CCWA.
Losses	Water banking losses shall be shared equally between IRWD and CVWD <u>CCWA</u> (estimated to be between 11 and 15%). CCWA CVWD and IRWD each may incur additional conveyance losses of 1% to 2% in the CVC for conveyance of each agency's share of the water, as measured and assessed by Kern County Water Agency.
Recharge Costs	IRWD shall pay all costs assessed to IRWD by Rosedale for recharging water at the IRWD Water Bank. CCWA would reimburse IRWD for 50 percent of these costs paid by IRWD upon delivery of Return Water to CCWA. Costs are assessed by Rosedale consistent with that certain Water Banking and Exchange Program Agreement between Rosedale and IRWD dated January 13, 2009. These estimated costs may include Rosedale's administrative charge of about <u>\$34</u> per acre-foot (AF), <u>third party wheeling</u> charges assessed by the KCWA of \$5 per AF (a minimum of \$7,500), CVC Standby, applicable CVC pumping and O&M costs of about <u>\$1215</u> per AF, and applicable fixed and variable O&M water bank costs of about \$3 per AF. <u>CCWA would also be responsible for paying one-half of the KCWA transaction request fee, estimated at \$3,000.</u>
Recovery Costs	IRWD and CCWA would each be responsible for actual costs of recovery for each agency's respective share of the water either through well pumping or by exchange as assessed by Rosedale, Recovery costs associated with extraction are estimated at \$79 per AF and are comprised of average groundwater pumping costs of \$68 per AF, Rosedale's administrative charge of about <u>\$34</u> per AF, CVC Standby, O&M, and applicable CVC pumping costs of about \$4 per AF, and applicable fixed and variable O&M water bank costs of about \$4 per AF. CCWA would reimburse IRWD for its share of these costs upon delivery of Return Water to CCWA. <u>CCWA would also be responsible for paying a KCWA transaction request fee, estimated at \$3,000, associated with delivery of its Return Water.</u>

	<p>IRWD and CCWA would each share any costs assessed by Rosedale under its Long Term Operations Plan for implementing provisions of the MOUs to prevent impacts from operations. It is expected that banking projects, such as the IRWD Water Bank, will be required to contribute \$2.00 per AF for recovered water to a fund, which may be used to meet mitigation obligations.</p>
<p>SWP Variable OMP & R Costs</p>	<p>Metropolitan will pay the DWR Variable Operation, Maintenance, Power, and Replacement (OMP&R) charges estimated at \$30 per AF associated with the delivery of the Exchange Water from the Delta to IRWD POD consistent with the Coordinated Agreement.</p> <p>For delivery of Return Water to CCWA POD, CCWA will pay the DWR Variable OMP&R charges from the Delta to CCWA's turnout at Check 28 of the California Aqueduct.</p>
<p>Agency Coordination</p>	<p>IRWD and CCWA would cooperate with DWR, KCWA and Metropolitan in preparing all necessary agreements to facilitate the Exchange Program. IRWD and CCWA shall each be responsible for their own costs associated with such coordination.</p>
<p>Environmental Compliance</p>	<p>Both parties shall comply with California Environmental Quality Act (CEQA) and cooperate with one another with respect to CEQA compliance that may be required by the DWR for the proposed Exchange Program. IRWD has already conducted environmental review under CEQA for the Strand and Stockdale Integrated Banking Projects that takes into consideration the delivery, storage and recovery of SWP water. Rosedale certified and IRWD and approved the CEQA documents for the Strand and Stockdale Integrated Banking Projects. IRWD and CVWD <u>CCWA</u> will share equally any additional costs associated with environmental review or permitting deemed necessary for delivering CVWD <u>CCWA</u> water into storage (however, none are expected). Both IRWD and CVWD <u>CCWA</u> shall each be responsible for any other environmental review or permitting necessary to implement the Exchange Program within their own respective service areas.</p>
<p>Water Rights</p>	<p>It is expressly agreed by IRWD and CVWD <u>CCWA</u> that any existing or future delivery of Exchange Water to the IRWD Water Bank by CVWD <u>CCWA</u> will not result in or be considered a sale or transfer of CVWD <u>CCWA's</u> contractual rights to SWP Table A water.</p>
<p>General Expenses</p>	<p>Each Party would be responsible for its own fees and expenses arising out of the negotiation and execution of the Exchange Program Agreement, obtaining necessary approvals and the like.</p>

Irvine Ranch Water District Allocated Capacities for Existing and Proposed Banking Programs

STORAGE CAPACITY

Program Partner	Dedicated Storage Capacity Strand Ranch (AF)	Dedicated Storage Capacity Stockdale West (AF)	Dedicated Storage Capacity Leased Storage Account (AF)	Minimum Proposed Program Storage Share % ¹
Existing Programs				
Buena Vista Water Storage Dist	40,000	-	-	
Dudley Ridge Water District	10,000	-	-	
Antelope Valley-East Kern	-	20,000	-	
Santa Clara Valley Water District	-	-	20,000	40%
Proposed Programs				
Central Coast Water Authority	-	-	2,000	4%
Homer LLC	-	-	8,000	16%
Total Dedicated	50,000	20,000	30,000	

¹ Minimum Proposed Program Storage Share % is based on 50,000 AF of IRWD leased capacity.

RECHARGE CAPACITY

Program Partner	Dedicated Recharge Capacity Strand Ranch (AF/year)	Dedicated Recharge Capacity Stockdale West (AF/year)	Available Minimum Recharge Capacity if not used by Existing Programs (AF/year) ²	Total Program Recharge Capacity (AF/year)
Existing Programs				
Buena Vista Water Storage Dist	17,500	-	-	17,500
Dudley Ridge Water District	-	-	-	-
Antelope Valley-East Kern	-	20,000	-	20,000
IRWD/DRWD	-	7,100	-	-
Santa Clara Valley Water District	-	-	17,840	20,000
Proposed Programs				
Central Coast Water Authority	-	-	1,784	2,000
Homer LLC	-	-	7,136	8,000
Total Dedicated	17,500	27,100	26,760	

² Minimum Recharge calculation based on percentage minimum storage

RECOVERY CAPACITY

Program Partner	Dedicated Recovery Capacity Strand Ranch (AF/year)	Dedicated Recovery Capacity Stockdale West (AF/year)	Minimum Available Recovery Capacity if not used by Existing Programs (AF/year) ³	Total Program Recovery Capacity (AF/year)
Existing Programs				
Buena Vista Water Storage Dist	6,667	-	-	6,667
Dudley Ridge Water District	-	-	-	-
Antelope Valley-East Kern	-	3,333	-	3,333
IRWD	10,833	7,917	-	18,750
Santa Clara Valley Water District	-	-	3,333	3,333
Proposed Programs				
Central Coast Water Authority	-	-	667	667
Homer LLC	-	-	1,333	1,333
Total Dedicated	17,500	11,250	5,333	

³ Minimum annual recovery calculation is based on one-third of program partners' share of maximum storage

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