

AGENDA  
IRVINE RANCH WATER DISTRICT  
SUPPLY RELIABILITY PROGRAMS COMMITTEE  
THURSDAY, JANUARY 19, 2023

This meeting will be held in-person at the District’s headquarters located at 15600 Sand Canyon Avenue, Irvine, California. 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=m397a915a7aca520db5abe8075272f684>  
Meeting Number (Access Code): 2495 626 6661  
Meeting Password: 7xbRuYYE8j2

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

**PLEASE NOTE:** Participants joining the meeting will be placed into the Webex lobby when 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: Douglas Reinhart     \_\_\_\_\_  
Member: Peer Swan     \_\_\_\_\_

ALSO PRESENT     Paul Cook     \_\_\_\_\_     Paul Weghorst     \_\_\_\_\_  
Rob Jacobson     \_\_\_\_\_     Fiona Sanchez     \_\_\_\_\_  
Kellie Welch     \_\_\_\_\_     Christine Compton     \_\_\_\_\_  
Natalie Palacio     \_\_\_\_\_     Marina Lindsay     \_\_\_\_\_  
Robert Huang     \_\_\_\_\_     \_\_\_\_\_     \_\_\_\_\_  
\_\_\_\_\_     \_\_\_\_\_     \_\_\_\_\_     \_\_\_\_\_

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](mailto:comments@irwd.com) before 9:00 a.m. on Thursday, January 19, 2023.

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**COMMUNICATIONS**

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- 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.

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**INFORMATION**

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

Recommendation: Receive and file.

6. WATER BANKING, TRANSFERS, AND WHEELING POLICY POSITION PAPER – WELCH / SANCHEZ / WEGHORST

Recommendation: Receive and file.

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**OTHER BUSINESS**

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- 7. CLOSED SESSION
  - A. CLOSED SESSION CONFERENCE WITH LEGAL COUNSEL — EXISTING LITIGATION — Pursuant to Government Code Section 54956.9(d)(1): *Rosedale-Rio Bravo Water Storage District and Irvine Ranch Water District v. The Dow Chemical Company, et al.*, Kern County Superior Court Case No. BCV-22-100041.
- 8. Open Session
- 9. Directors’ Comments
- 10. Adjourn

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 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.

January 19, 2023

Prepared by: N. Palacio / K. Welch

Submitted by: F. Sanchez / P. Weghorst

Approved by: Paul A. Cook *P.A.C.*

## 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 and provide an update on efforts to secure additional water for recharge at IRWD's water banking projects.

#### BACKGROUND:

To facilitate discussion with the Committee, staff has prepared reference materials in tabular, map, and schematic formats to describe IRWD's water banking facilities, capacities, operations, storage, and exchange programs. The 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.

#### 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 (KWB). Exhibit "B" provides before-loss estimates of water recharged at the water banking projects, and Exhibit "C" provides after-loss estimates of water recharged at the projects. Changes shown in red on Exhibits "B" and "C" depict an updated beginning balance of 3,848 acre-feet (AF) of water stored in IRWD's KWB account for 2022. The 2022 beginning balance was updated based on revisions from 2021 end of year balances provided by Dudley Ridge Water District (DRWD). Other changes include the final recovery of 84 AF of water in 2022 from IRWD's KWB account for use on the Jackson Ranch by lessee Adee Farms, estimated 2023 recovery from IRWD's KWB account for use by Adee Farms, and the initial 2023 State Water Project (SWP) Table A 5 percent Allocation. It is assumed that Metropolitan will take delivery of IRWD's 2023 SWP Table A water.

#### Summary of Programs:

A table presenting a summary of IRWD's water purchase and exchange programs is presented as Exhibit "D". The table lists each purchase and exchange program that 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 show the total amount of water included in 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's system, Kern County, or owed to IRWD by DRWD. The table also provides details related to the exportability of IRWD's supplies. Changes shown in red on Exhibit "D" correspond with the changes made to Exhibits "B" and "C".

Exhibit "E" graphically depicts how storage of SWP and non-SWP water has changed in the Strand and Stockdale Integrated Banking Projects through time. 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 provided as Exhibits "A", "B", "C", "D", and "F", as well as the figure provided as Exhibit "E", staff has prepared maps that depict project wells and 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. 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, and Metropolitan Water District. These diagrams are provided as Exhibits "J", "K", "L", "M", "N", and "O", 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 is provided as Exhibit "P". 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 2023 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 estimated recovery costs in column "G" were increased from \$100 to \$120 to reflect increased PG&E costs associated with the recovery of water. These changes are shown in red. The costs of water are presented on a dollar per acre-foot basis.

#### IRWD's Coordinated Agreement with Metropolitan:

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

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

Other Program Opportunities:

IRWD has been pursuing additional opportunities to secure water for recharge. At the Committee meeting, staff will provide an update on efforts to perform unbalanced exchanges with Metropolitan Water District, Antelope Valley-East Kern Water Agency, Santa Clarita Valley Water Agency, and Mojave Water Agency.

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 Cross Valley Canal 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” – Cost of Water Table

Supply Reliability Programs Committee: Water Banking Project Facilities, Capacities,  
Operations, and Programs  
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Exhibit “Q” – Summary of IRWD’s Coordinated Operating, Water Storage, Exchange and  
Delivery Agreement with Metropolitan and MWDOC

# Exhibit "A"

**TABLE 1**  
**Current and Anticipated Water Banking Projects**  
**Recharge, Storage and Recovery Capacities**  
 January 19, 2023

WATER BANKING PROJECT	OWNERSHIP AND WELL INFO		ALLOCATED CAPACITY (AF)					1 <sup>ST</sup> PRIORITY RECOVERY CONDITIONS (CFS)		2 <sup>ND</sup> PRIORITY RECOVERY CONDITIONS (CFS)	
	IRWD OWNED	WELLS EXISTING	TOTAL STORAGE CAPACITY	ANNUAL RECHARGE 1 <sup>ST</sup> PRIORITY	ANNUAL RECHARGE 2 <sup>ND</sup> PRIORITY	ANNUAL RECOVERY 1 <sup>ST</sup> PRIORITY	ANNUAL RECOVERY 2 <sup>ND</sup> PRIORITY	RECOVERY CAPACITY AS PLANNED <sup>1</sup>	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 <sup>2</sup>	No	-	50,000	-	-	-	-	-	-	-	-
Drought Relief Project Wells <sup>2</sup>	No	3	-	-	-	-	-	15.0	16.5	-	-
Kern Water Bank Storage Account <sup>4</sup>	No	-	9,495	3,200	-	1,520	<5,000	-	-	-	-
<b>TOTALS</b>		<b>15</b>	<b>135,495</b>	<b>47,800</b>	<b>19,000</b>	<b>30,270</b>	<b>12,500</b>	<b>70.0</b>	<b>48.6</b>	<b>10.0</b>	<b>9.0</b>
Partner Capacities <sup>3</sup>			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	-	-
<b>TOTALS (AF)</b>								<b>17,900</b>	<b>15,733</b>	<b>-</b>	<b>-</b>
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	

<sup>1</sup> Based 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.

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

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

<sup>4</sup> Kern 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.

Note: This page is intentionally left blank.



# Exhibit "B"

TABLE 2

**IRWD's Water Banking Storage, Recharge and Recovery Operations - BEFORE LOSSES**

January 19, 2023

TRANSACTIONS	WATER BANKING ENTITY					TOTAL BY WATER TYPE AND STORAGE LOCATION
	IRWD		BUENA VISTA (BVWSD)	CENTRAL COAST (CCWA)	DUDLEY RIDGE WATER DISTRICT (DRWD) <sup>3</sup>	
	SWP <sup>1</sup>	NON-SWP <sup>2</sup>	NON-SWP	SWP	SWP	
<b>BEGINNING WATER IN STORAGE 2022 (AF)</b>						
Total Kern Water Bank <sup>4</sup>	-	3,848	-	-	-	3,848
Total MWD System	8,062	-	-	-	-	8,062
Total Kern County	5,234	14,416	-	-	-	19,650
Total DRWD 1-for-1 Long Term Exchange Credit <sup>5</sup>	10,000	-	-	-	-	10,000
<b>TOTAL STORED WATER (1/1/2022)</b>	<b>23,296</b>	<b>18,264</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>41,560</b>
<b>(RECOVERY) AND RECHARGE IN 2022 (AF)</b>						
KWB Recovery for use on Jackson Ranch <sup>6</sup>	-	(84)	-	-	-	(84)
2022 SWP Allocation (5%)	44	-	-	-	43	87
2019 Reserve Water	76	225	225	-	-	526
Kern River Water	-	(5,000)	-	-	-	(5,000)
DRWD 1-for-1 Long Term Exchange Credit	5,000	-	-	-	-	5,000
Recovery of Banked SWP Water for MWD	(3,927)	-	-	-	-	(3,927)
MWD Credit for SWP Water	3,927	-	-	-	-	3,927
<b>TOTAL 2022 TRANSACTIONS</b>	<b>5,120</b>	<b>(4,859)</b>	<b>225</b>	<b>-</b>	<b>43</b>	<b>529</b>
Total Kern Water Bank <sup>9</sup>	-	3,764	-	-	-	3,764
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	15,000	-	-	-	-	15,000
<b>TOTAL STORED WATER (1/1/2023)</b>	<b>28,416</b>	<b>13,405</b>	<b>225</b>	<b>-</b>	<b>43</b>	<b>42,089</b>
<b>(RECOVERY) AND RECHARGE IN 2023 (AF)</b>						
KWB Recovery for use on Jackson Ranch <sup>6</sup> (estimated)	-	(235)	-	-	-	(235)
2023 SWP Allocation (5%) <sup>3</sup>	44	-	-	-	43	87
Kern River Water	-	-	-	-	-	-
DRWD 1-for-1 Long Term Exchange Credit	-	-	-	-	-	-
Recovery of Banked SWP Water for MWD	-	-	-	-	-	-
MWD Credit for SWP Water	-	-	-	-	-	-
<b>TOTAL ESTIMATED 2023 TRANSACTIONS</b>	<b>44</b>	<b>(235)</b>	<b>-</b>	<b>-</b>	<b>43</b>	<b>(148)</b>
<b>ESTIMATED WATER IN STORAGE 2023 (AF)</b>						
Total Kern Water Bank <sup>9</sup>	-	3,529	-	-	-	3,529
Total MWD System	12,077	-	-	-	86	12,163
Total Kern County	1,383	9,641	-	-	-	11,024
Total DRWD 1-for-1 Long Term Exchange Credit	15,000	-	-	-	-	15,000
<b>TOTAL ESTIMATED STORED WATER TO DATE</b>	<b>28,460</b>	<b>13,170</b>	<b>-</b>	<b>-</b>	<b>86</b>	<b>41,716</b>

**NOTES:**

-MWD = Metropolitan Water District of Southern California.

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

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

<sup>3</sup> 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. It is assumed that MWD will take delivery of IRWD's 2023 SWP Allocation.

<sup>4</sup> 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.

<sup>5</sup> 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.

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

Note: This page is intentionally left blank.

# Exhibit "C"

TABLE 3

**IRWD's Water Banking Storage, Recharge and Recovery Operations - AFTER LOSSES**

January 19, 2023

TRANSACTIONS	WATER BANKING ENTITY					TOTAL BY WATER TYPE AND STORAGE LOCATION
	IRWD		BUENA VISTA (BVWSD)	CENTRAL COAST (CCWA)	DUDLEY RIDGE WATER DISTRICT (DRWD) <sup>3</sup>	
	SWP <sup>1</sup>	NON-SWP <sup>2</sup>	NON-SWP	SWP	SWP	
<b>BEGINNING WATER IN STORAGE 2022 (AF)</b>						
Total Kern Water Bank <sup>4</sup>	-	3,848	-	-	-	3,848
Total MWD System	8,062	-	-	-	-	8,062
Total Kern County	4,199	10,492	-	-	-	14,691
Total DRWD 1-for-1 Long Term Exchange Credit <sup>5</sup>	10,000	-	-	-	-	-
<b>TOTAL STORED WATER (1/1/2022)</b>	<b>22,261</b>	<b>14,340</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>36,601</b>
<b>(RECOVERY) AND RECHARGE IN 2022 (AF)</b>						
KWB Recovery for use on Jackson Ranch <sup>6</sup>	-	(84)	-	-	-	(84)
2022 SWP Allocation (5%)	44	-	-	-	43	87
2019 Reserve Water	72	213	213	-	-	498
Kern River Water	-	(5,000)	-	-	-	(5,000)
DRWD 1-for-1 Long Term Exchange Credit	5,000	-	-	-	-	5,000
Recovery of Banked SWP Water for MWD	(3,927)	-	-	-	-	(3,927)
MWD Credit for SWP Water	3,927	-	-	-	-	3,927
<b>TOTAL 2022 TRANSACTIONS</b>	<b>5,116</b>	<b>(4,871)</b>	<b>213</b>	<b>-</b>	<b>43</b>	<b>501</b>
Total Kern Water Bank	-	3,764	-	-	-	3,764
Total MWD System	12,033	-	-	-	43	12,076
Total Kern County	344	5,705	213	-	-	6,262
Total DRWD 1-for-1 Long Term Exchange Credit	15,000	-	-	-	-	15,000
<b>TOTAL STORED WATER (1/1/2023)</b>	<b>27,376</b>	<b>9,469</b>	<b>213</b>	<b>-</b>	<b>43</b>	<b>37,101</b>
<b>(RECOVERY) AND RECHARGE IN 2023 (AF)</b>						
KWB Recovery for use on Jackson Ranch <sup>6</sup> (estimated)	-	(235)	-	-	-	(235)
2023 SWP Allocation (5%) <sup>3</sup>	44	-	-	-	43	87
Kern River Water	-	-	-	-	-	-
DRWD 1-for-1 Long Term Exchange Credit	-	-	-	-	-	-
Recovery of Banked SWP Water for MWD	-	-	-	-	-	-
MWD Credit for SWP Water	-	-	-	-	-	-
<b>TOTAL ESTIMATED 2023 TRANSACTIONS</b>	<b>44</b>	<b>(235)</b>	<b>-</b>	<b>-</b>	<b>43</b>	<b>(148)</b>
<b>ESTIMATED WATER IN STORAGE 2023 (AF)</b>						
Total Kern Water Bank	-	3,529	-	-	-	3,529
Total MWD System	12,077	-	-	-	86	12,163
Total Kern County	344	5,705	-	-	-	6,049
Total DRWD 1-for-1 Long Term Exchange Credit	15,000	-	-	-	-	15,000
<b>TOTAL ESTIMATED STORED WATER TO DATE</b>	<b>27,420</b>	<b>9,234</b>	<b>-</b>	<b>-</b>	<b>86</b>	<b>36,740</b>

**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.

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

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

<sup>3</sup> 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. It is assumed that MWD will take delivery of IRWD's 2023 SWP Allocation.

<sup>4</sup> 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.

<sup>5</sup> 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.

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

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# Exhibit "D"

**TABLE 4**  
**Status of IRWD Purchase and Exchange Programs (AFTER LOSSES)**  
 January 19, 2023

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)	
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 <sup>1</sup>	2-for-1	2010	Pilot	Kern River	4,108	-	3,903								Yes
	2-for-1	2011	Long-Term	Kern River	21,461	213	20,399		3,302		3,302		3,302		
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 <sup>2</sup> (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 <sup>3</sup>	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	1,097	86	1,168	1,099	69		1,168	1,168		86	Yes
Central Coast Water Agency	2-for-1	2017	Short-Term	SWP Table A	258	-	258	258			258	258			No
Dudley Ridge Water District <sup>4</sup>	1-for-1	2017	Long-Term	SWP Table A	-	-	15,000			15,000	15,000	15,000			No
Central Coast Water Agency	2-for-1	2019	Short-Term	SWP Table A	298		323	298	25		323	298			No
<b>Total:</b>					<b>33,781</b>	<b>299</b>	<b>54,565</b>	<b>12,077</b>	<b>6,049</b>	<b>15,000</b>	<b>33,126</b>	<b>27,146</b>	<b>5,955</b>	<b>86</b>	

<sup>1</sup> 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.

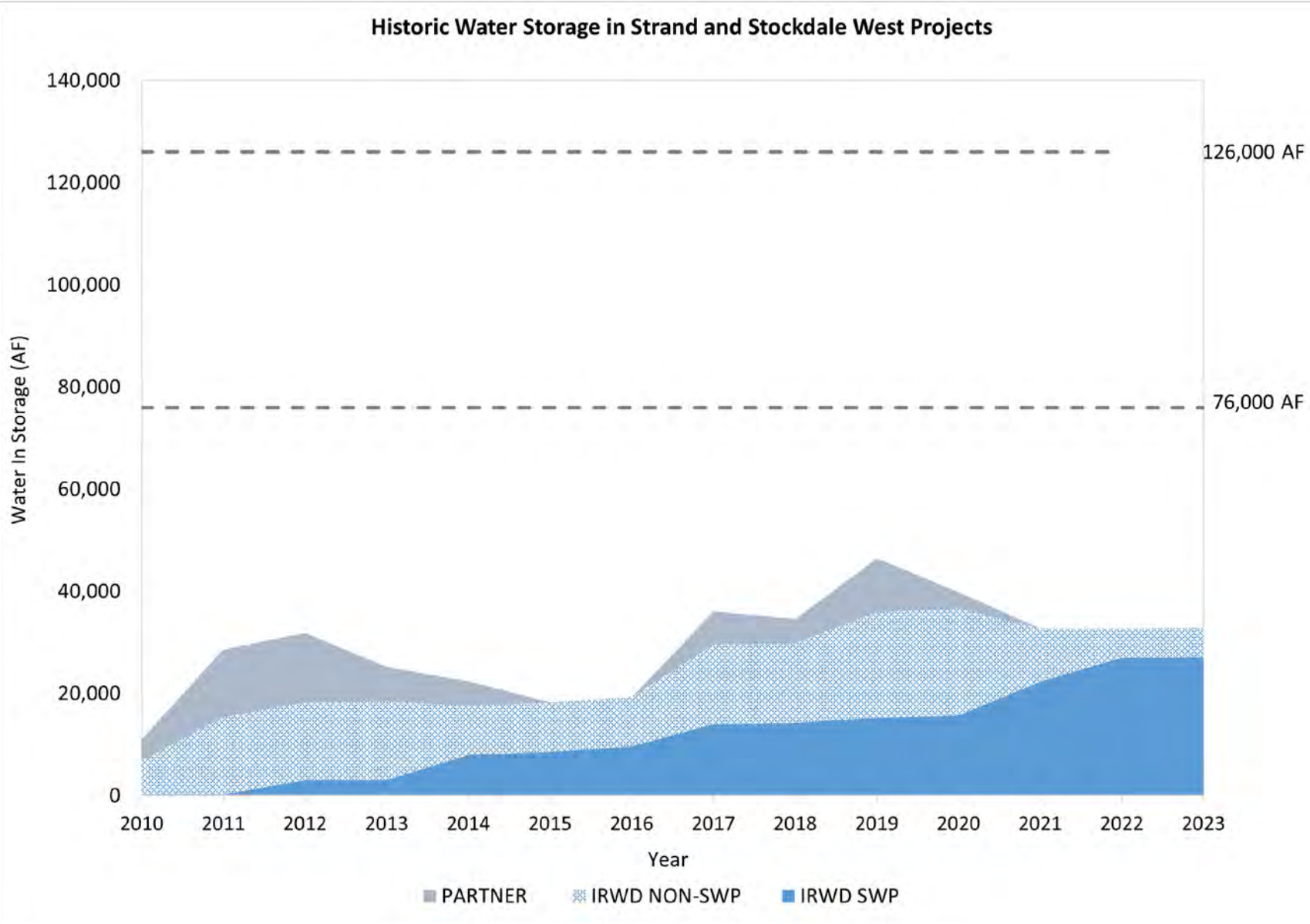
<sup>2</sup> Only the portion of water stored for use on Jackson Ranch in DRWD is sellable.

<sup>3</sup> Source of water was Buena Vista Water Storage District Kern River high flow water.

<sup>4</sup> Estimated amount of Table A to be returned to IRWD from Dudley Ridge Water District under the 1-for-1 exchange program.

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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**

January 19, 2023

**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	-	-	-
DRWD	10,000	-	-	-
AVEK	-	20,000	-	-
Total Dedicated	50,000	20,000	-	-
Total Remaining	-	6,000	50,000	9,495

**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	-	-	-
DRWD	-	-	-	-
AVEK	-	20,000	-	-
Total Dedicated	17,500	20,000	-	-
Total Remaining	-	7,100	-	3,200

**RECOVERY CAPACITY**

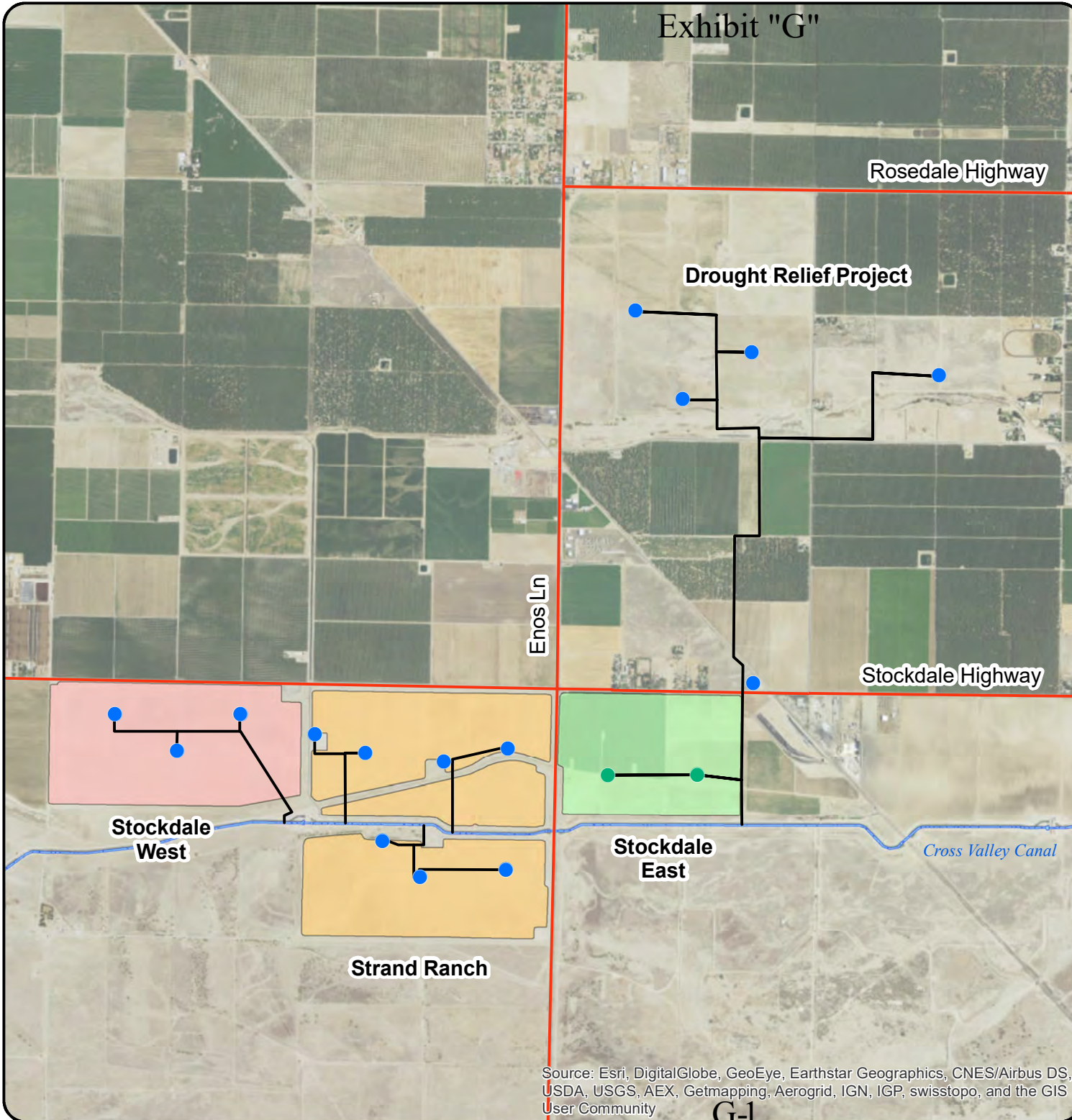
Program Partner	Dedicated Recovery Capacity Strand Ranch (AF)	Dedicated Recovery Capacity Stockdale West (AF)	Dedicated Recovery Capacity Leased Storage Account (AF)	Kern Water Bank Recovery Capacity (AF)
Total Capacity	17,500	11,250	-	1,520
BVWSD	6,667	-	-	-
DRWD	-	-	-	-
AVEK	-	3,333	-	-
IRWD	10,833	7,084	-	1,520
Total Dedicated	17,500	10,417	-	1,520
Total Remaining	-	833	-	-

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# Exhibit "G"



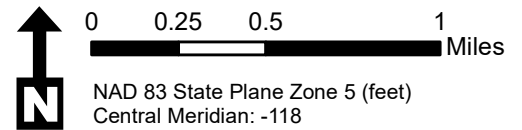
## Location Map: IRWD Water Banking Projects Wells and Turnin Pipelines



**MAP FEATURES**

- Extraction Well (Blue)
- Extraction Well (Green)
- Well Discharge Pipelines
- Stockdale East (Green)
- Stockdale West (Pink)
- Strand Ranch (Orange)

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

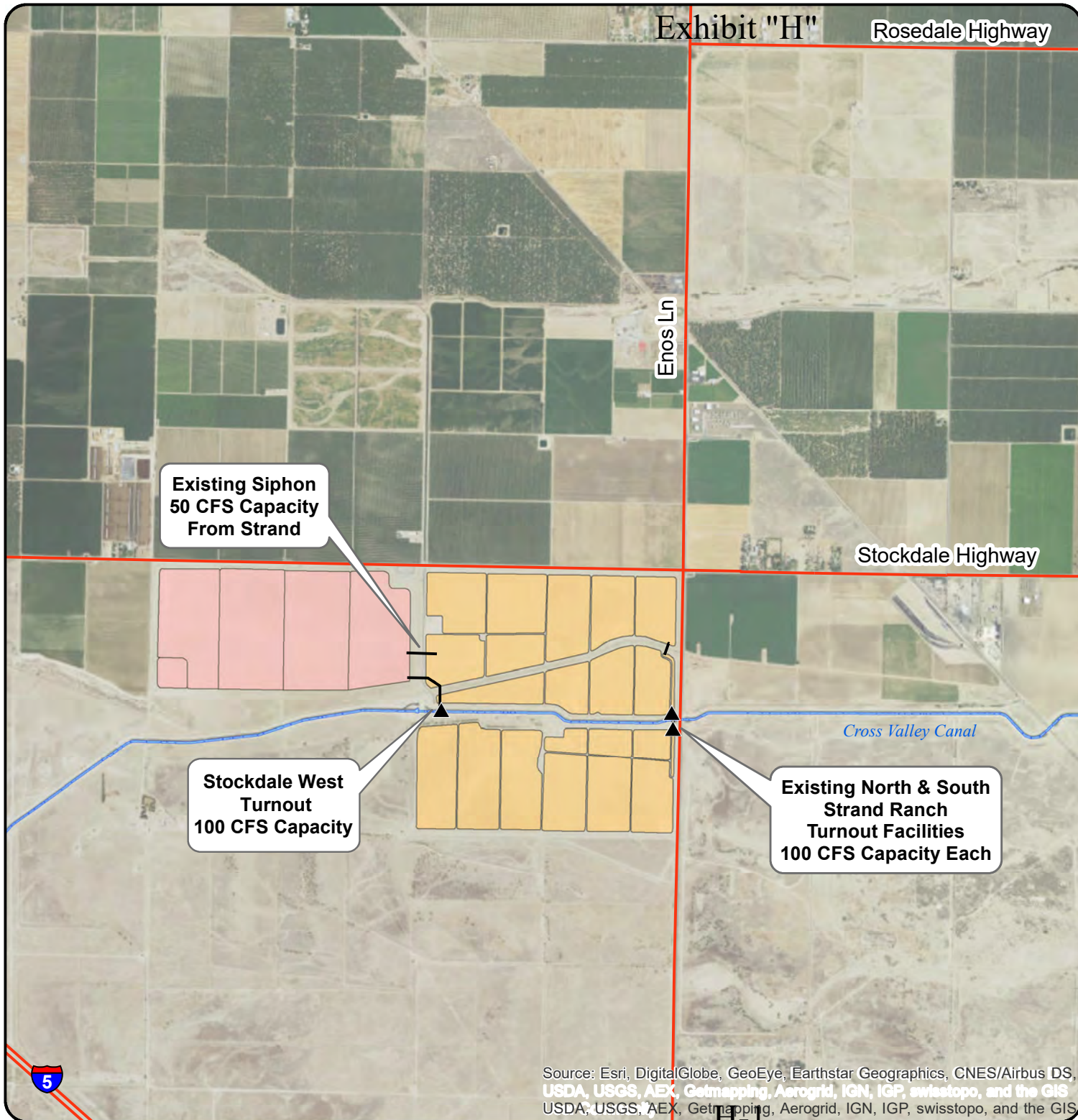


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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



**Existing Siphon  
50 CFS Capacity  
From Strand**

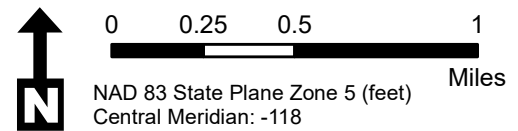
**Stockdale West  
Turnout  
100 CFS Capacity**

**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**

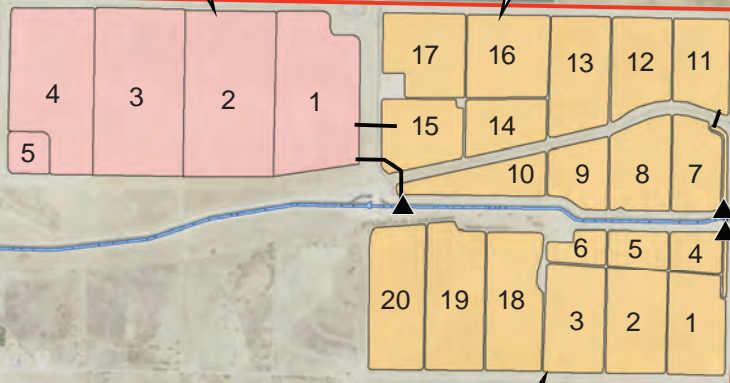
- ▲ Turnouts
- Stockdale West
- Strand Ranch

This figure shows the location of recharge basins and their associated recharge rates as of June 18, 2019.

Stockdale West  
0.11 feet/day  
15 CFS

Strand Ranch North  
0... feet/day  
40 CFS

Strand Ranch South  
0.13 feet/day  
15 CFS

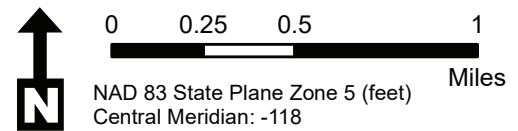


Stockdale Highway

Cross Valley Canal

Enos Ln

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



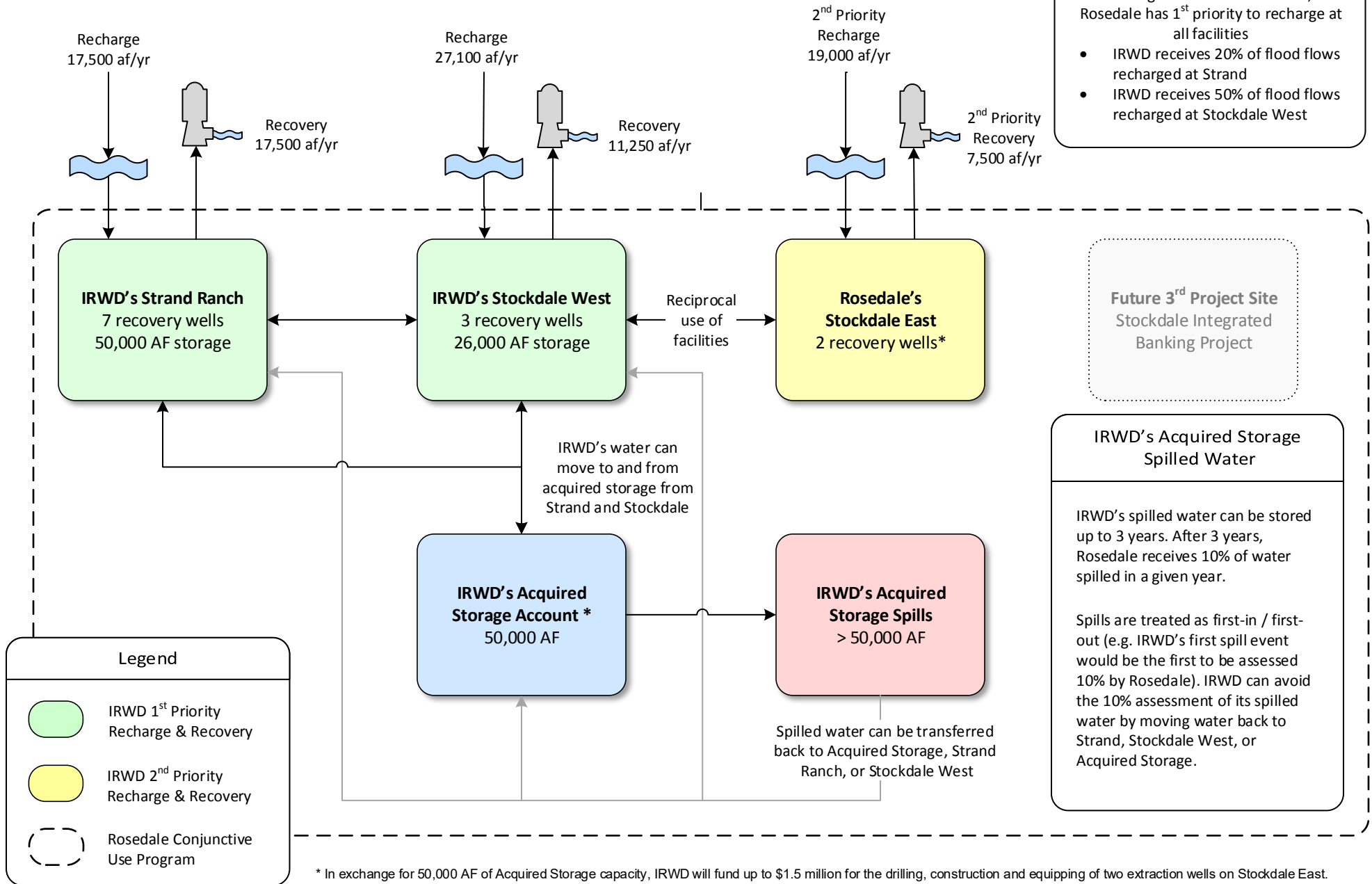
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# Exhibit "J"

## 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)



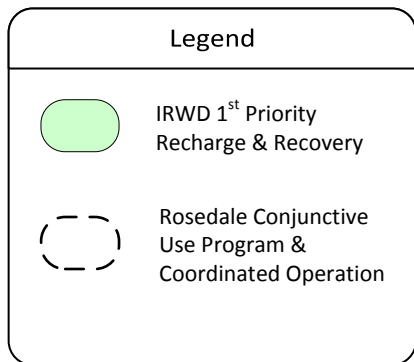
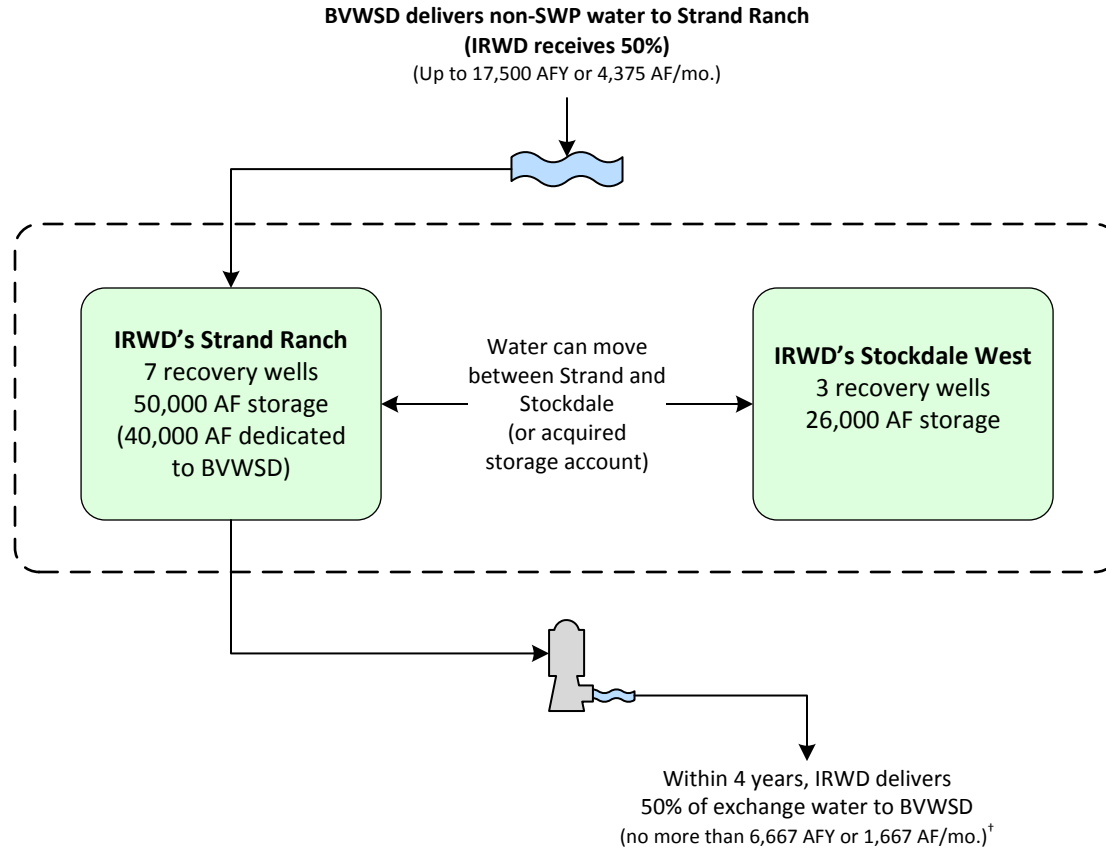
\* In exchange for 50,000 AF of Acquired Storage capacity, IRWD will fund up to \$1.5 million for the drilling, construction and equipping of two extraction wells on Stockdale East.

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# Exhibit "K"

## Buena Vista Water Storage District Long Term Water Exchange Program

Effective 1/1/2011 through 1/12/2039

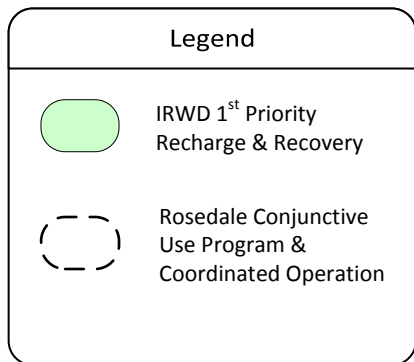
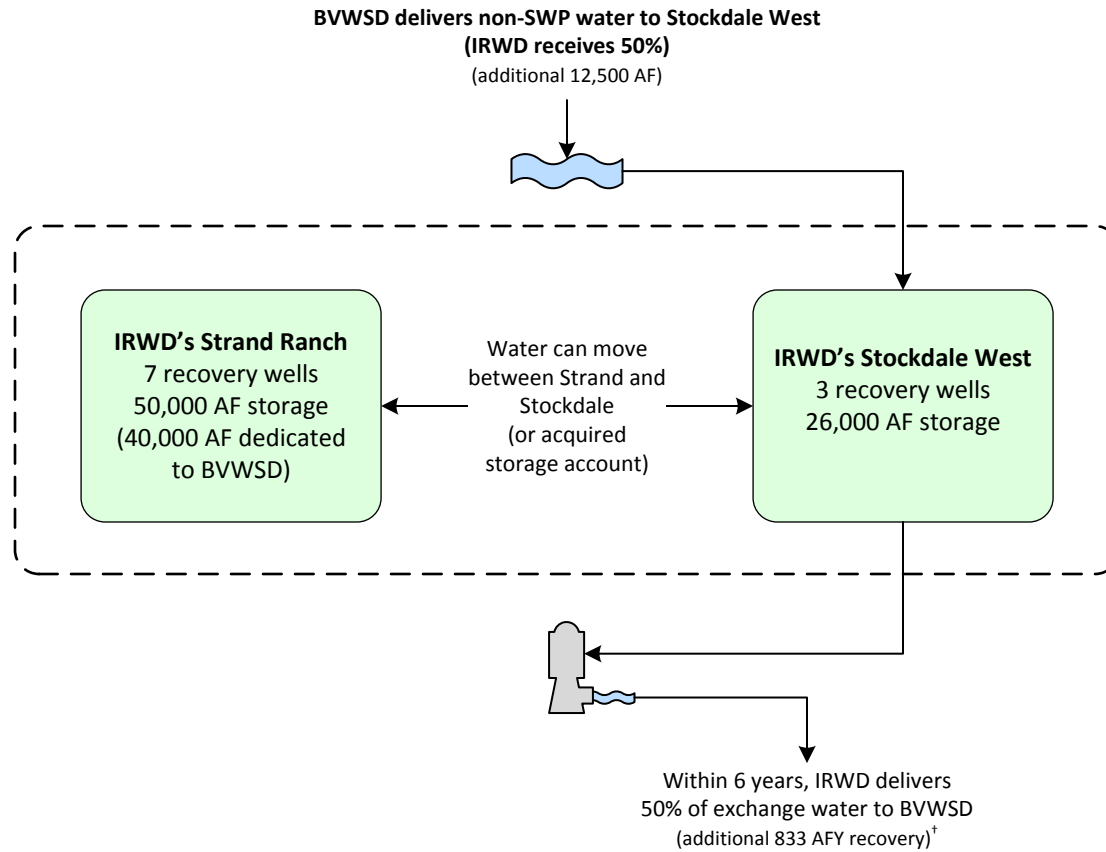


†IRWD shall remit one-half of the exchanged supply less one-half of reasonable losses back to BV no later than December 31<sup>st</sup> of the 4<sup>th</sup> year following the associated recharge event. IRWD pays for recovery of water returned to BV. Water to be remitted back to BV may remain in storage at Strand Ranch beyond the 4<sup>th</sup> 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 4/1/2017 through 3/30/2018



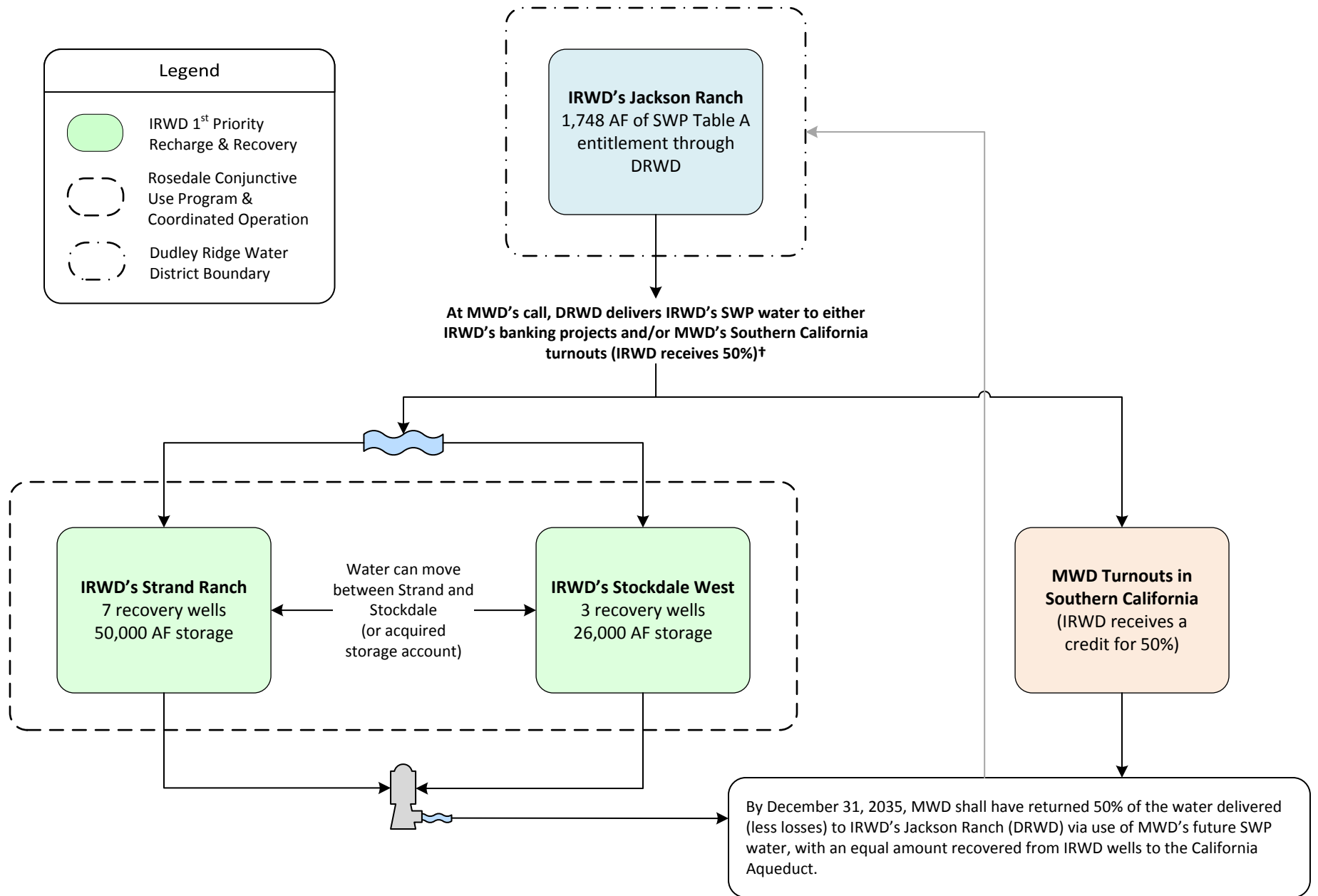
<sup>†</sup>IRWD shall remit one-half of the exchanged supply less one-half of reasonable losses back to BV no later than December 31<sup>st</sup> of the 6<sup>th</sup> year following the associated recharge event. IRWD pays for recovery of water returned to BV. Water to be remitted back to BV may remain in storage at Strand Ranch beyond the 6<sup>th</sup> 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	50%	50%
6	50%	50%
7	75%	25%
8	100%	0%
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



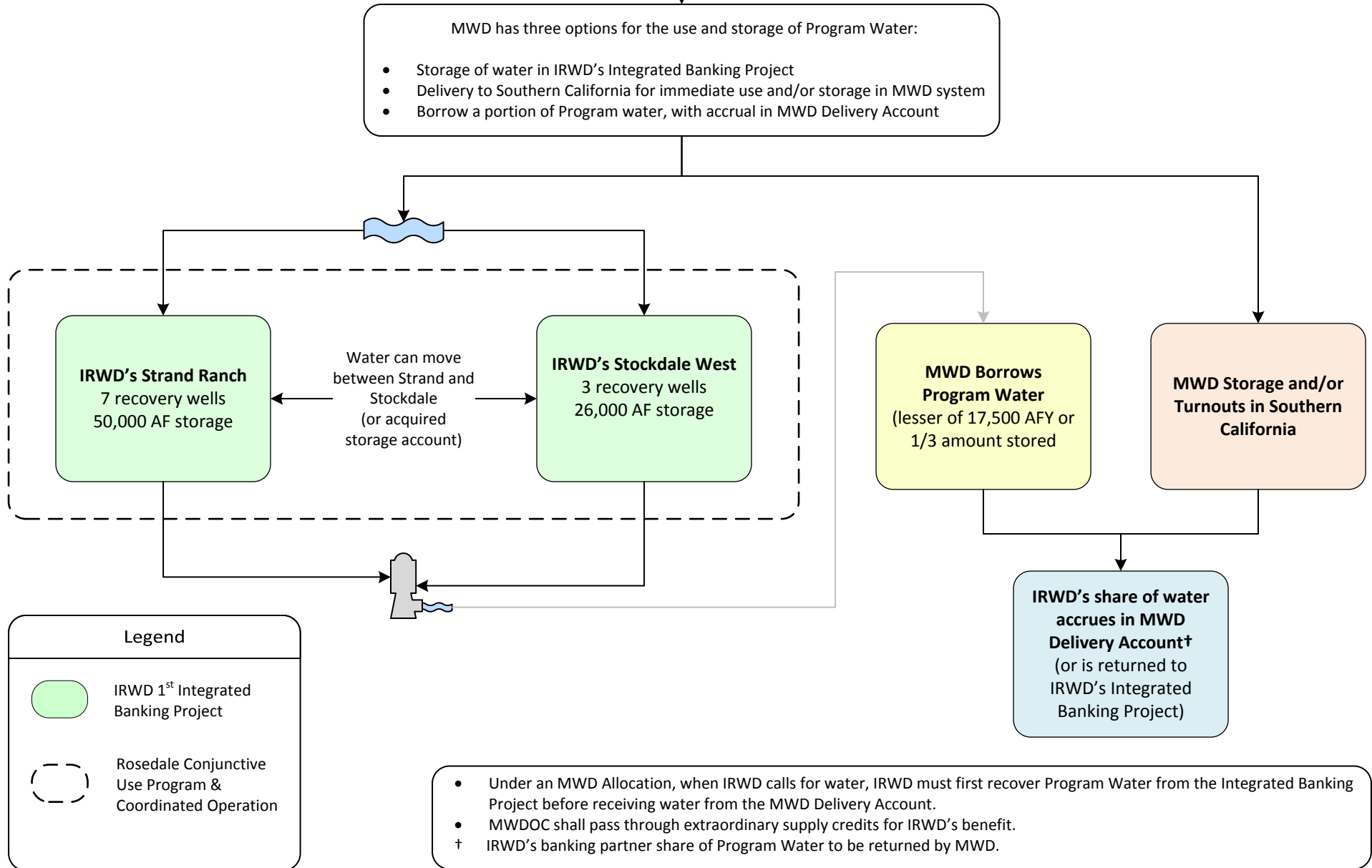
†Consistent with IRWD-MWD coordinated operating agreement.

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# Exhibit "M"

## Coordinated Operating, Water Storage, Exchange and Delivery Agreement Between MWD, MWDOC and IRWD Effective 4/21/2011 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



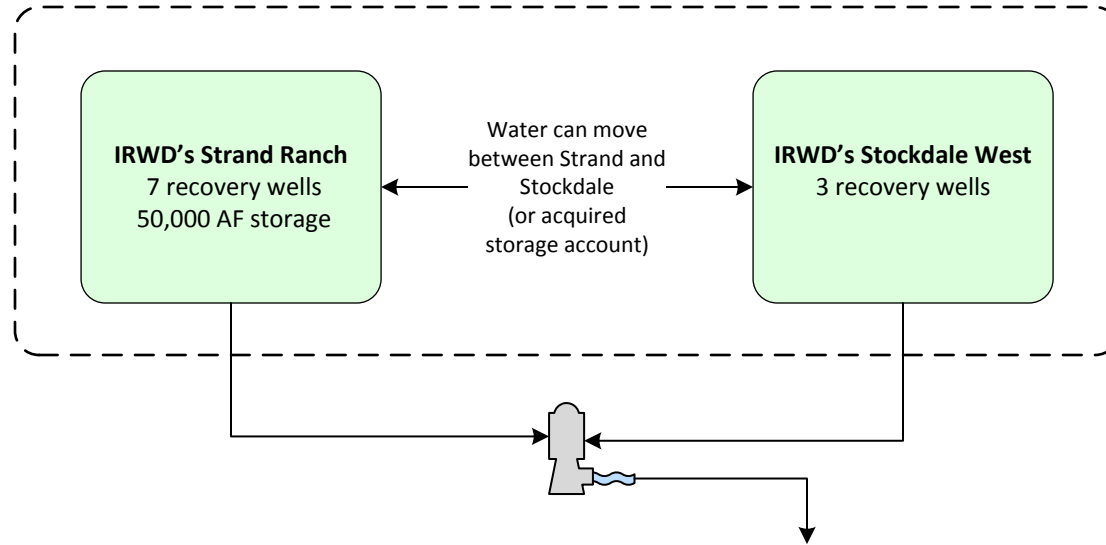
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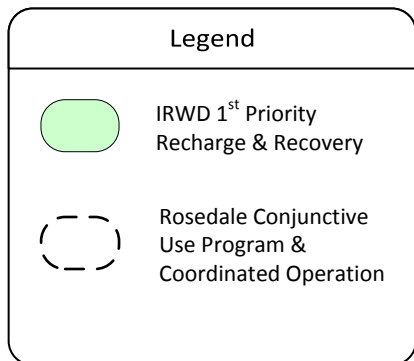
# Exhibit "N"

## 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.\*



\*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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# Exhibit "O"

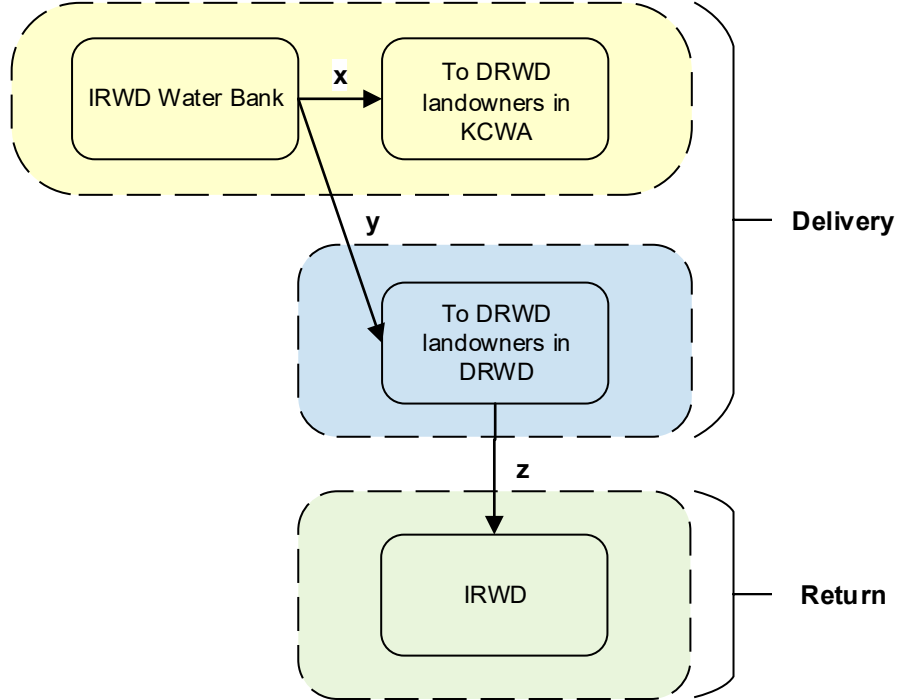
## Dudley Ridge Water District Long Term 1-for-1 Water Exchange Program Effective 5/31/2017 through 11/4/2035

**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

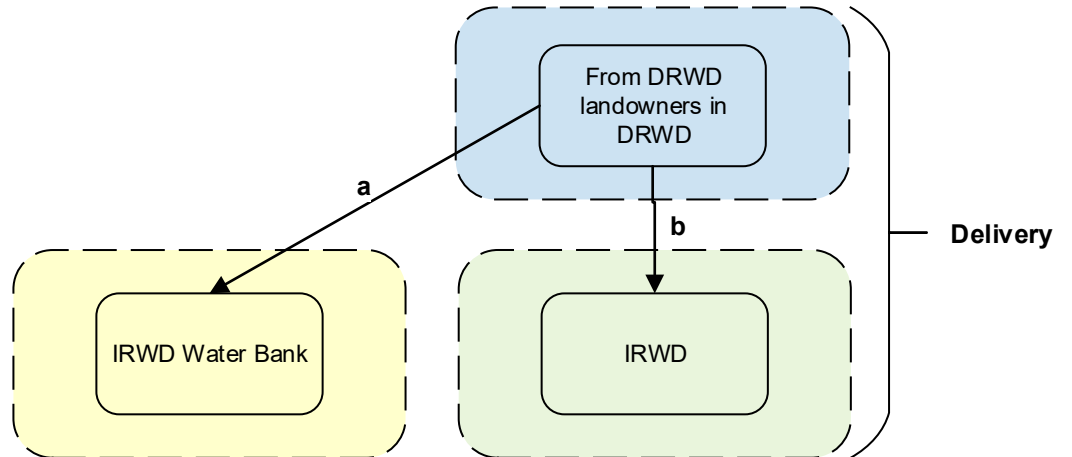
Per Section 4.1.3, z can be delivered to IRWD via in-ground transfer to IRWD, SWP delivery to IRWD banking facilities, or SWP delivery to MWDSC



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

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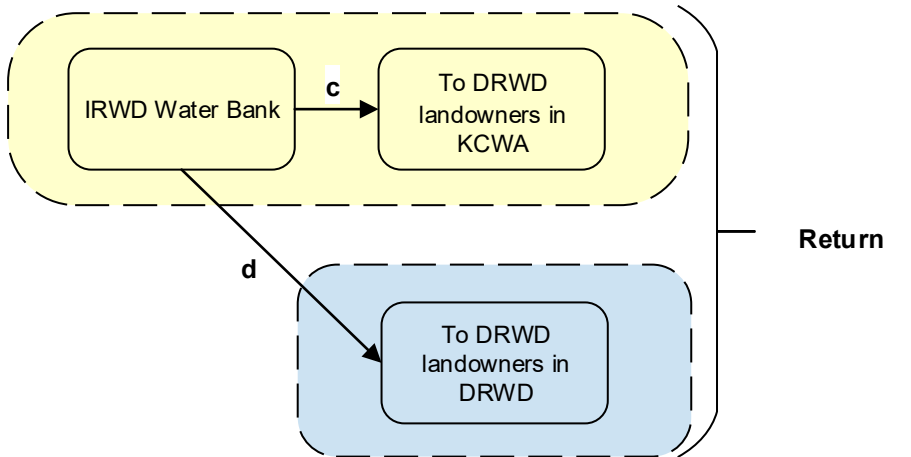
$a + b = c + d$   
(less applicable losses, if any)



**Legend**

---

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



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# Exhibit "P"

## TABLE 6

### IRWD Water Banking Program Costs of Water Summary

January 19, 2023

Program Partner	Time Period	Water Type	IRWD Amount (AF)	Variable costs <sup>2</sup> (\$/AF) (A)	Fixed Cost Component <sup>3</sup> (\$/AF) (B)	Fixed & Variable (\$/AF) (C)	Capital Component <sup>4</sup> (\$/AF) (D)	Cost of Water (\$/AF) (E)	Estimated Recovery of Water <sup>5</sup> (\$/AF) (F)	2023 MWD Tier 1 Untreated Rate + SAC Surcharge <sup>6</sup> (\$/AF) (G)	Cost of Water in IRWD Service Area (\$/AF) (H)
						A+B		C+D			E+F+G
Buena Vista	2010-2015	Kern River	12,832	\$ 75.98	\$ 48.36	\$124.34	\$ 190.00	\$ 314.34	\$ 120.00	\$ 855.00	\$ 1,289.34
Buena Vista <sup>1</sup>	2017-2021	Kern River	11,256	\$ 159.16	\$ 48.36	\$207.52	\$ 190.00	\$ 397.52	\$ 120.00	\$ 855.00	\$ 1,372.52
AVEK	2012-2014	SWP Table A	2,229	\$ 11.70	\$ 48.36	\$ 60.06	\$ 190.00	\$ 250.06	\$ 120.00	\$ 855.00	\$ 1,225.06
AVEK <sup>7</sup>	2012-2014	SWP Table A	108	\$ 11.70	\$ 48.36	\$ 60.06	\$ 190.00	\$ 250.06	\$ -	\$ 855.00	\$ 1,105.06
Carpinteria	2010-2015	SWP Table A	874	\$ 27.04	\$ 48.36	\$ 75.40	\$ 190.00	\$ 265.40	\$ 120.00	\$ 855.00	\$ 1,240.40
Carpinteria <sup>7</sup>	2010-2015	SWP Table A	31	\$ 27.04	\$ 48.36	\$ 75.40	\$ 190.00	\$ 265.40	\$ -	\$ 855.00	\$ 1,120.40
Central Coast <sup>7</sup>	2017-2021	SWP Table A	556	\$ 30.34	\$ 48.36	\$ 78.70	\$ 190.00	\$ 268.70	\$ -	\$ 855.00	\$ 1,123.70
DRWD <sup>7</sup>	2014-2021	SWP Table A /Article 21	4,452	\$ 362.67	\$ 48.36	\$411.03	\$ 190.00	\$ 601.03	\$ -	\$ 855.00	\$ 1,456.03

**32,338**

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

<sup>2</sup> Variable Costs include Rosedale variable operating costs, Rosedale administration fees, CVC pumping, operating and stand-by fees, and KCWA fees. (Net of partner payments to IRWD for their share of water)

<sup>3</sup> Fixed costs include Rosedale fixed operating costs, property taxes, PG&E standby costs, GSP fees, CVC expansion costs and other minor fix costs

<sup>4</sup> Capital component does not include land costs.

<sup>5</sup> Increased PG&E costs for recovering water.

<sup>6</sup> Assumes IRWD would take delivery as extraordinary supply through Irvine Lake to the Baker Water Treatment Plant.

<sup>7</sup> 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 “Q”

### Summary of IRWD’s Coordinated Operating, Water Storage, Exchange and Delivery Agreement with Metropolitan Water District and Municipal Water District of Orange County (MWDOC)

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/AF<sup>1</sup>).
6. IRWD pays Metropolitan’s melded system power rate – currently \$167/AF, not DWR’s current power costs of \$395/AF<sup>2</sup> (\$228/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 IRWD<sup>3</sup>.
9. IRWD pays Metropolitan’s Full-Service Tier-1 Untreated Rate, which is currently \$799/AF, for deliveries at its service connections allowing IRWD to avoid higher Metropolitan wheeling charges currently estimated at \$856/AF<sup>4</sup>.
10. IRWD only pays once for supply at the current Tier-1 Supply Rate of \$243/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.

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<sup>1</sup> 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.

<sup>2</sup> Melded system and actual power costs were taken from Metropolitan’s April 2022 Bi-Annual Budget Report and 2022 Cost of Service Study.

<sup>3</sup> 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.

<sup>4</sup> The Coordinated Agreement requires IRWD to pay Metropolitan its Full-Service Tier 1 Rate for exchange deliveries at IRWD service connections. IRWD is expected to take delivery of such deliveries to the Baker Water Treatment Plant. Metropolitan’s current Tier-1 Untreated Rate = \$799/AF. Current Metropolitan wheeling charges of \$856/AF are estimated using Metropolitan’s current System Access Rate (\$389/AF), estimated demand management charge (\$72/AF), and actual power costs (\$395/AF).

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.



January 19, 2023  
Prepared by: K. Welch / F. Sanchez  
Submitted by: P. Weghorst  
Approved by: Paul A. Cook *PAC*

SUPPLY RELIABILITY PROGRAMS COMMITTEE

WATER BANKING, TRANSFERS AND WHEELING  
POLICY POSITION PAPER

SUMMARY:

IRWD's most recent Water Banking, Transfers and Wheeling Policy Position Paper includes Board-adopted policy principles related to IRWD's water supply reliability needs, sources of water for IRWD's Water Bank, sharing reliability with other agencies, and offsetting capital investments. The Committee requested this item be placed on the agenda for discussion.

BACKGROUND:

The current version of IRWD's Water Banking, Transfers and Wheeling Policy Position Paper, provided as Exhibit "A", was adopted by the Board of Directors in November 2020. The November 2020 policy position paper provides policy principles for the development and implementation of IRWD's water banking projects and programs. It includes principles related to IRWD's water supply reliability needs, sharing water supply reliability benefits, and offsetting IRWD's capital investments through sales of water.

FISCAL IMPACTS:

None.

ENVIRONMENTAL COMPLIANCE:

None.

RECOMMENDATION:

Receive and file.

LIST OF EXHIBITS:

Exhibit "A" – IRWD Policy Position on Water Banking, Transfers and Wheeling – Revised  
November 23, 2020

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## EXHIBIT "A"

### IRVINE RANCH WATER DISTRICT POLICY POSITION WATER BANKING, TRANSFERS AND WHEELING

Revised: November 23, 2020

#### Issue Summary:

The Irvine Ranch Water District is further diversifying its water supply portfolio by developing water banking facilities in the Kern Fan area located in the southern San Joaquin Valley in Kern County. Water supplies continue to be stressed in California due to implementation of the Sustainable Groundwater Management Act (SGMA), increased competition for water supplies, potential shortages from the Colorado River, supply limitations from and environmental constraints in the Sacramento-San Joaquin Delta (Delta), potential climate change and reoccurring droughts. Under such conditions, water banking recharge, storage and recovery programs will continue to provide a cost effective and reliable supplemental source of water that can be relied upon during major droughts and periods of supply interruptions. The development of and participation in water banking programs and other types of emergency supply projects by retail water agencies should be encouraged throughout the State. This policy position paper provides Policy Principles for the implementation of the IRWD water banking program as well as other banking programs in the Metropolitan Water District of Southern California (MWD) service area.

#### IRWD Supply Diversity Requirements:

IRWD's primary mission is to provide a safe and reliable water supply to its customers. IRWD's water supply reliability is directly related to supply diversity. Along with the implementation of numerous water use efficiency programs, IRWD has developed and continues to develop a diverse mix of local and non-local supplies including high quality groundwater, impaired groundwater, and recycled water – all of which reduce IRWD's dependence on imported water.

In March 2020, IRWD completed a Water Supply Reliability Evaluation that affirmed the need for IRWD's water banking programs to meet District demands during future droughts and major supply interruptions. Current demand projections indicate that IRWD has a long-term need to store supplemental water that could be called upon during drought conditions or major supply interruptions. In the event of a major and prolonged supply interruption, such as an earthquake that significantly damages the levees in the Delta, this stored water would be available to fulfill IRWD's estimated needs for imported water over three years. IRWD's water banking programs make IRWD more resilient during major shortages. IRWD's water banking program is a cost effective and environmentally sound method to store and recover supplemental water to meet such long-term supply reliability requirements.

#### Key Elements of IRWD's Water Banking Program:

Since 2005, IRWD has made significant progress in the development of its water banking program and in securing associated supplemental supplies. IRWD has purchased land, constructed facilities, and is now operating the Strand and Stockdale Integrated Banking Projects through a long-term partnership with Rosedale-Rio Bravo Water Storage District. IRWD retains equity ownership of these water banking projects. IRWD has also partnered with Rosedale and

Santa Clarita Valley Water Agency to complete the construction of wells that ensure IRWD's ability to recover water for itself and its partners during peak demand periods.

*Securing Water Supplies:*

So far, IRWD has secured water supplies for its water banking projects through unbalanced exchange partnerships with other agencies. These partnerships allow agencies with surplus water to store water in IRWD's water banking projects in return for transferring 50 percent or more of the water to IRWD. Such exchanges are called unbalanced exchanges because only half or less of the water that is delivered into storage is returned to the originating agency.

*Addressing Increased Competition:*

SGMA was signed into law by Governor Jerry Brown in September 2014 for the purpose of developing and implementing sustainable groundwater management plans throughout California. By January 31, 2022, all high- and medium-priority groundwater basins must have in place a Groundwater Sustainability Plan and all basins in overdraft must achieve groundwater sustainability by year 2042. The implementation of these plans is increasing competition for water supplies and putting upward pressure on the cost of water as agencies work to optimize the use of surface supplies and expand water storage capabilities.

Other factors that will increase cost of water in the Kern Fan area include implementation of amendments to the State Water Project (SWP) Contract allowing compensation for transfers of water and the completion of the Isabella Lake Dam Safety Modification project, both of which will allow water right holders to better manage their supplies with a greater financial return. The use of transfers with associated financial compensation will become more flexible and easier to implement. Unbalanced exchanges will frequently include financial compensation components.

Increased competition for water supplies will require IRWD to adopt strategies to continue securing water for its Water Banking Projects while minimizing its cost of water. Strategies to be adopted by the IRWD Board of Directors could include leveraging IRWD's existing banked supplies to secure greater amounts of water and focusing on increasing the District's reliance on smaller schedulable sources of supply.

*Wheeling and Exchange Agreements:*

In 2011, IRWD, Metropolitan Water District of Southern California (MWD) and Municipal Water District of Orange County (MWDOC) executed a long-term Coordinated Operating, Exchange and Delivery Agreement (Coordinated Agreement) that facilitates the delivery of SWP supplies from IRWD's water banking projects to IRWD's service area. The agreement allows IRWD to secure SWP supplies with the concurrence of MWD, with MWD maintaining control of the introduction of these supplies into its service area. In 2014, IRWD, MWD and MWDOC developed and executed a template Wheeling Agreement that facilitated the delivery of non-SWP water into IRWD's service area. Water delivered to IRWD's service area, through the use of either of these agreements, is considered "Extraordinary Supply" by MWD during water supply allocation periods. It is IRWD's position, that the Coordinated Agreement and the

template Wheeling Agreement will be used by IRWD in the future to facilitate the delivery of water that is recovered from IRWD's water banking projects to IRWD's service area.

Supporting Extraordinary Supply Projects:

Other agencies in southern California are pursuing the development of Extraordinary Supply Projects that will require water purchase, wheeling and exchange capabilities. It is IRWD's position that MWD Member Agencies should support and not impede the ability of agencies to develop and implement agreements for purchasing water, implementing exchanges and wheeling of water associated with Extraordinary Supply Projects. Sponsors of all Extraordinary Supply Projects should work together to avoid impediments being imposed on projects.

Sharing Reliability Benefits:

The acquisition of supplemental supplies for IRWD's water banking projects is likely to require the use of unbalanced exchange concepts whereby IRWD stores water on behalf of another party in return for 50 percent or more of the water being transferred to IRWD. The storage and recovery of water for IRWD's exchange partners will take up capacity in IRWD's water banking projects that might otherwise be available for IRWD's use.

Recently, other agencies have expressed an interest in securing shared reliability from IRWD's water banking programs. It is IRWD's intent, after taking into consideration IRWD's reliability needs as well as hydrologic conditions, regional water supply conditions and storage levels, that IRWD will be able to enter into shared reliability program agreements that will allow other retail water agencies to receive reliability benefits from IRWD's water banking program. In exchange for receiving these benefits, the agencies would reimburse IRWD for its costs along with a proportional share of IRWD's capital investment in its water banking facilities.

*Need for Expansion:*

The implementation of future unbalanced exchanges and sharing of reliability benefits from IRWD's water banking projects will result in the need to expand IRWD's water banking capacities. In addition, potential climate change impacts could further increase the need to expand IRWD's water banking projects. Such expansions will ensure that IRWD can meet its water supply reliability requirements while meeting the requirements of its partners. IRWD and Rosedale are working to expand their respective water banking projects with the development of the Kern Fan Groundwater Storage Project (Kern Fan Project). IRWD and Rosedale will each have equity ownership in half of the project. IRWD and Rosedale have been conditionally approved to receive \$67.5 million in Proposition 1 Water Storage Investment Program funding for the Kern Fan Project. The agencies are currently pursuing up to \$63 million in Water Infrastructure Improvements for the Nation Act funding for the project.

Offsetting Capital Investments:

When IRWD has enough water in storage to meet its Extraordinary Supply Needs as well as the needs of those agencies to which IRWD has committed to shared water supply reliability, then

IRWD could consider selling a portion of its banked supplies in dry years to offset its capital investment in the water banking projects. The use of this strategy would need to take into careful consideration of existing regional storage levels, current water supply conditions, IRWD's demands for imported water and expectations for future water supplies.

Objectives for Acquiring Supplemental Water Supplies:

IRWD's objectives for acquiring both short and long-term supplemental water supplies through water transfers, exchanges and other market transactions, that would be available to IRWD's water banking projects and other water supply reliability programs, excluding supplies needed to fulfill local operations (including irrigation), are as follows:

1. IRWD seeks to acquire low-cost and diverse supplemental sources of water such as high flow Kern River water, State Water Project supplies, water associated with pre-1914 rights, CVP supplies and water from other available sources depending on annual availability and conveyance capacity availability.
2. Generally, IRWD seeks to acquire up to 67% of its supplemental supplies during wet hydrologic periods subject to the conditions established by the water supplier and availability. IRWD does not intend to compete for supplemental supplies during dry years.
3. Over the long term, IRWD plans to acquire up to 33% of its supplemental supplies through smaller sustained, controllable and schedulable supply sources. Such supplies are expected to be acquired through the purchases of farm land that have water supply entitled to it and by securing rights to new water supplies and the ability to convey the water without significant losses. IRWD intends to preserve existing agricultural uses on purchased lands when possible, and will schedule excess water for direct or exchange delivery to its water banking and other water supply reliability programs through rotational fallowing or onsite conservation using methods that are implemented in coordination with the local community with the intent to minimize significant third-party impacts to local economies.

Policy Principles:

Based on the information provided above, the following IRWD policy principles have been developed. These principles provide guidance on issues related to water banking, transfers, exchanges, wheeling of water and Extraordinary Supply projects.

1. The State's water supplies are being impacted by reoccurring droughts, problems in the Delta, a growing population, competition for supplies, increasing costs of water, increasing regulatory pressure, potential climate change impacts, and an imbalance between available water supplies and available storage. As a result, IRWD needs supplemental supplies and storage facilities to bank the supplemental water supplies for use during dry periods.

2. Based on economic and environmental criteria, water banking programs involving storage in groundwater aquifers are preferred, having demonstrated that they are less expensive and preferable to surface storage.
3. A primary mission of IRWD is to provide a highly reliable supply of water. Reliability is enhanced by having multiple redundant sources of supply. To address this need, IRWD will develop diverse supplemental water supply sources and water banking capacities that will be sufficient to meet changes in IRWD's reliability needs in the future.
4. IRWD seeks to secure low-cost and diverse supplemental sources of wet year and smaller schedulable water supplies including high flow Kern River, State Water Project supplies, water with pre-1914 rights, CVP supplies and water from other available sources depending on annual availability and conveyance and/or exchange capacity that will allow IRWD to achieve its water supply reliability goals through the implementation its water banking program.
5. Because of the District's obligation to its customers, long-term equity ownership of water banking capacity as well as lands and projects that have water supplies entitled to them is strongly preferred over contract or lease arrangements. Equity partnerships that provide benefits to both the District and to local entities are preferred.
6. The District's water banking partners will benefit from the sharing of recharge, storage and recovery capacity through unbalanced exchanges and shared reliability benefit programs. In addition, due to potential climate change, the future intervals between wet years could become longer with increases in the rate of runoff. These issues may make it necessary for IRWD in the future to consider increasing recharge, storage and recovery capacities in its water banking program.
7. Expansion of water banking capacities may be considered through equity purchases of capacities available in existing water banking programs or development of partnerships for capacity expansion.
8. IRWD will support wheeling policies and rates adopted by MWD, MWD Member Agencies and other agencies to the extent they reflect cost of service approach. Any wheeling or exchange of water through MWD's conveyance facilities should be consistent with MWD's Administrative Code, must not financially impact MWD or its Member Agencies and should protect MWD's rights including its SWP contract.
9. MWD Member Agencies should support and not impede the ability of agencies to implement Extraordinary Supply projects and to wheel or exchange water through MWD's conveyance facilities.
10. IRWD will work with sponsors of other Extraordinary Supply projects and support exchanges of water that prevent or avoid impediments that threaten the feasibility or increase the costs of the projects.

11. IRWD will put all available supplemental water supplies to beneficial use using methods that are implemented in coordination with the communities that are local to the source waters and where necessary attempt to minimize significant third-party impacts while preserving the agricultural benefits of the contributing lands through temporary fallowing arrangements and / or water conservation efforts.
12. IRWD will seek partnerships that result in mutually beneficial exchange and transfer opportunities including the ability to enhance direct and in-lieu recharge or recovery operations associated with IRWD's water banking program.
13. IRWD will support and actively work with the State and the Federal governments and available legislative processes to streamline procedures for the implementation of short and long-term water transfers and exchanges as well as the formation of local, regional and statewide water marketing systems.
14. IRWD will support the development of water marketing systems in the State of California that are consistent with and do not expand existing lawful authorities, provide local and regional oversight of markets, encourage regional and statewide cooperation, protect existing land, water and capacity rights, attempt to protect communities from unreasonable third party and / or environmental impacts, do not interfere with contract rights and that result in streamlined abilities to effectuate water transfers, exchanges and wheeling of supplies among voluntary market participants.
15. To address increasing competition and costs for water, IRWD will consider leveraging its existing banked supplies to secure greater amounts of water while maximizing the exportability of water. IRWD will also consider increasing the District's reliance on small and schedulable sources of supplies.
16. IRWD will support sharing water supply reliability benefits from its water banking program after considering its own water supply reliability needs as well as hydrologic and regional water supply conditions including storage levels. .
17. When IRWD has enough water in storage to meet its current Extraordinary Supply Needs as well as the needs of the agencies to which IRWD has committed shared water supply reliability, then IRWD will consider selling a portion of its banked supplies in dry years to offset its capital investment in the water banking projects. Such sales would consider existing regional storage levels, current water supply conditions, IRWD's demands for imported water and expectations for future water supplies.