

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. You may also submit a public comment in advance of the meeting by emailing [comments@irwd.com](mailto:comments@irwd.com) before 12:00 p.m. on Tuesday, July 13, 2021.

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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. <u>WATER BANKING PROJECT FACILITIES, CAPACITIES, OPERATIONS AND PROGRAMS – PALACIO / WELCH / SANCHEZ / WEGHORST</u><br><br>Recommendation: Receive and file. |  |
| 6. <u>SITES RESERVOIR PROJECT UPDATE – BENNETT / WELCH / SANCHEZ / WEGHORST</u><br><br>Recommendation: Receive and file.  |  |

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## OTHER BUSINESS

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7. 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](mailto: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.

July 13, 2021

Prepared by: N. Palacio / K. Welch

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. This month a new Exhibit "D" has been added which provides an overview of the status of IRWD's purchase and exchange programs. At the Committee meeting, staff will review this information and provide an update on efforts to secure additional water for recharge and mutually beneficial exchanges 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. 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. Both Exhibits "B" and "C" include a column that provides totals for each water type and storage location.

Changes shown in red on Exhibits "B" and "C" show the estimated recovery (through June 2021) of 5,000 AF of IRWD's non-State Water Project (SWP) water delivered to Wonderful Orchards inside Kern County as part of the Dudley Ridge Water District Long-term 1-for-1 Water Exchange Program. To account for the future return of this water to IRWD, staff has added a new line item to Exhibits "B" and "C" called "DRWD 1-for-1 Long-term Exchange Credit" that will track the SWP water that will be returned to IRWD in the future as part of the exchange.

In Exhibits "B" and "C", staff has also adjusted IRWD's 2021 SWP Allocation to account for IRWD's share of meeting a Dudley Ridge obligation to Pastoria Energy. Pastoria Energy holds a banking agreement that existed at the time IRWD acquired its participation in the Kern Water

Bank. Annually, Pastoria pays the Kern Water Bank an option to purchase water and Dudley Ridge is responsible for 9.62% of the water. Staff also corrected IRWD's beginning balance for SWP water consistent with a minor accounting adjustment made by the Department of Water Resources.

A new table presenting a summary of IRWD's water purchase and exchange programs has been added 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 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.

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. These diagrams are provided as Exhibits "J", "K", "L", "M", "N" and "O", as described in the List of Exhibits.

#### Recharge and Exchange Opportunities:

IRWD has been pursuing additional opportunities to secure water for recharge as well as mutually beneficial exchanges. At the Committee meeting, staff will provide an update on proposed exchanges and programs with Dudley Ridge.

#### 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 and Diagram of One-year Program to Augment Recharge Using Stockdale West Recharge Facilities with Buena Vista
- 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

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# Exhibit "A"

**TABLE 1**  
**Current and Anticipated Water Banking Project**  
**Recharge, Storage and Recovery Capacities**  
**July 13, 2021**

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	WELLS PROPOSED OR UNDER CONST.	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>	ESTIMATED RECOVERY CAPACITY (APR. 2019 CONDITIONS) <sup>2</sup>	RECOVERY CAPACITY AS PLANNED	RECOVERY CAPACITY CURRENT CONDITIONS
Strand Ranch	Yes	7	-	50,000	17,500	-	17,500	-	40.0	40.0	-	-
Stockdale West	Yes	3	-	26,000	27,100	-	11,250	-	15.0	15.0	-	-
Stockdale East	No	-	2	-	-	19,000	-	7,500	-	-	10.0	-
IRWD Acquired Storage Account <sup>3</sup>	No	-	-	50,000	-	-	-	-	-	-	-	-
Drought Relief Project Wells <sup>3</sup>	No	3	-	-	-	-	-	-	15.0	15.0	-	-
Kern Water Bank Storage Account <sup>5</sup>	No	-	-	9,495	3,200	-	6,330	-	-	-	-	-
TOTALS		13	2	126,000	44,600	19,000	28,750	7,500	70.0	70.0	10.0	0.0
Partner Capacities <sup>4</sup>				38,000	22,300	9,500	10,850	0	35.5	25.0	-	-
IRWD 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	

<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>SUP-1, SWEX-2, and SREX-6 are currently down.

<sup>3</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>4</sup>One half of storage capacity at Stockdale West and Strand Ranch will be allocated for partners.

<sup>5</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. Not included in storage capacity, recharge, and recovery totals to match IRWD's Water Banking Policy Position Paper.

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# Exhibit "B"

**TABLE 2**  
**IRWD's Water Banking Storage, Recharge and Recovery Operations - BEFORE LOSSES**  
 July 13, 2021

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	
BEGINNING WATER IN STORAGE 2020 (AF)						
Total Kern Water Bank (estimated)	-	4,683	-	-	-	4,683
Total MWD System <sup>4,8</sup>	8,027	-	-	-	296	8,322
Total Kern County	3,189	24,596	11,177	636	5,230	44,828
TOTAL STORED WATER (1/1/2020)	11,216	29,279	11,177	636	5,526	57,833
(RECOVERY) AND RECHARGE IN 2020 (AF)						
MWD Water to Jackson Ranch <sup>5</sup>	-	-	-	-	(96)	(96)
2020 SWP Allocation (20%) <sup>3</sup>	175	-	-	-	175	350
Kern River Water	-	-	(7,500)	-	-	(7,500)
SWP Table A	-	-	-	-	-	-
2017 Reserve Water	40	258	258	11	160	728
TOTAL 2020 TRANSACTIONS	215	258	(7,242)	11	239	(6,518)
Total Kern Water Bank	-	-	-	-	-	-
Total MWD System	8,027	-	-	-	200	8,226
Total Kern County	3,405	24,855	3,935	647	5,565	38,406
TOTAL STORED WATER (1/1/2021)	11,431	24,855	3,935	647	5,765	46,632
(RECOVERY) AND RECHARGE IN 2021 (AF)						
MWD Water to Jackson Ranch (estimated)	-	-	-	-	-	-
Kern Water Bank Deliveries	-	-	-	-	-	-
2021 SWP Allocation (5 %) <sup>3, 6</sup>	35	-	-	-	35	70
Kern River Water (estimated)	-	(5,000)	(2,681)	-	-	(7,681)
DRWD 1-for-1 Long Term Exchange Credit (estimated) <sup>7</sup>	5,000	-	-	-	-	5,000
TOTAL ESTIMATED 2021 TRANSACTIONS	5,035	(5,000)	(2,681)	-	35	(2,611)
ESTIMATED WATER IN STORAGE 2021 (AF)						
Total Kern Water Bank	-	-	-	-	-	-
Total MWD System	8,027	-	-	-	200	8,226
Total Kern County	3,440	19,855	1,254	647	5,600	30,795
Total DRWD 1-for-1 Long Term Exchange Credit	5,000	-	-	-	-	5,000
TOTAL ESTIMATED STORED WATER TO DATE	16,466	19,855	1,254	647	5,800	44,021

## 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 2,842 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. IRWD's 2013-2016 SWP allocation amounts are stored in the MWD system. IRWD's 2017 through 2020 SWP allocation water is stored in Kern County. It is assumed that IRWD's 2021 SWP allocation will be stored in Kern County.

<sup>4</sup> Beginning balance of water stored in MWD system includes: 4,000 AF from 2014 Exchange, 2,853 AF of 2014 borrowed SWP, 1,186 AF of IRWD's 2013-2016 SWP allocations through DRWD.

<sup>5</sup> Water returned to DRWD by MWD for use on IRWD's Jackson Ranch.

<sup>6</sup> 17 AF of IRWD's 2021 SWP Allocation was used to fulfill an obligation to Pastoria.

<sup>7</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. Of the 10,000 AF total, 5,000 AF was estimated for May and June 2021 deliveries to Wonderful Orchards.

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# Exhibit "C"

**TABLE 3**  
**IRWD's Water Banking Storage, Recharge and Recovery Operations - AFTER LOSSES**  
 July 13, 2021

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	
BEGINNING WATER IN STORAGE 2020 (AF)						
Total Kern Water Bank	-	4,215	-	-	-	4,215
Total MWD System <sup>4, 9</sup>	8,027	-	-	-	296	8,322
Total Kern County	2,435	20,685	9,923	545	4,484	38,072
TOTAL STORED WATER (1/1/2020)	10,462	24,900	9,923	545	4,779	50,609
(RECOVERY) AND RECHARGE IN 2020 (AF)						
MWD Water to Jackson Ranch <sup>5</sup>	-	-	-	-	(96)	(96)
2020 SWP Allocation (20%) <sup>3</sup>	150	-	-	-	150	300
Kern River Water	-	-	(7,500)	-	-	(7,500)
SWP Table A	-	-	-	-	-	-
2017 Reserve Water	38	245	258	10	152	705
TOTAL 2020 TRANSACTIONS	188	245	(7,242)	10	206	(6,591)
Total Kern Water Bank	-	4,215	-	-	-	4,215
Total MWD System	8,027	-	-	-	200	8,226
Total Kern County	2,624	20,931	2,681	556	4,786	31,577
TOTAL STORED WATER (1/1/2021)	10,650	25,145	2,681	556	4,985	44,018
(RECOVERY) AND RECHARGE IN 2021 (AF)						
MWD Water to Jackson Ranch (estimated)	-	-	-	-	-	-
Kern Water Bank Deliveries	-	-	-	-	-	-
2021 SWP Allocation (5%) <sup>3, 7</sup>	30	-	-	-	30	60
Kern River Water (estimated)	-	(5,000)	(2,681)	-	-	(7,681)
DRWD 1-for-1 Long Term Exchange Credit (estimated) <sup>8</sup>	5,000	-	-	-	-	5,000
TOTAL ESTIMATED 2021 TRANSACTIONS <sup>6</sup>	5,030	(5,000)	(2,681)	-	30	(2,621)
ESTIMATED WATER IN STORAGE 2021 (AF)						
Total Kern Water Bank	-	4,215	-	-	-	4,215
Total MWD System	8,027	-	-	-	200	8,226
Total Kern County	2,654	15,931	0	556	4,816	23,956
Total DRWD 1-for-1 Long Term Exchange Credit	5,000	-	-	-	-	5,000
TOTAL ESTIMATED STORED WATER TO DATE	15,680	20,145	0	556	5,015	41,397

## 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); KWB losses are 10%; 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 2,842 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. IRWD's 2013-2016 SWP allocation amounts are stored in the MWD system. IRWD's 2017 through 2020 SWP allocation water is stored in Kern County. It is assumed that IRWD's 2021 SWP allocation will be stored in Kern County.

<sup>4</sup> Beginning balance of water stored in MWD system includes 4,000 AF of 2014 Exchange, 2,853 AF of 2014 borrowed SWP, 1,186 AF of IRWD's 2013-2016 SWP allocations through DRWD.

<sup>5</sup> Water returned to DRWD by MWD for use on IRWD's Jackson Ranch.

<sup>6</sup> 2021 transactions may be adjusted for conveyance losses in CVC.

<sup>7</sup> 17 AF of IRWD's 2021 SWP Allocation was used to fulfill an obligation to Pastoria.

<sup>8</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. Of the 10,000 AF total, 5,000 AF was estimated for May and June 2021 deliveries to Wonderful Orchards

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# Exhibit "D"

## Status of IRWD Purchase and Exchange Programs (AFTER LOSSES)

July 13, 2021

PARTNER	EXCHANGE RATIO	YEAR EXECUTED	AGREEMENT TYPE	WATER TYPE	PARTNER WATER		IRWD WATER								
					PARTNER SHARE (AF)	PARTNER BALANCE (AF)	IRWD SHARE (AF)	IRWD BALANCE				EXPORTABILITY			SELLABLE (Y/N)
								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		2,842		2,842		2,842		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	21,248		20,186		13,089		13,089		13,089		
Antelope Valley East Kern Water Agency	2-for-1	2011	Pilot	SWP Table A	2,229		2,337	2,229	108		2,337	2,337			No
Carpinteria Valley Water District	2-for-1	2011	Pilot	SWP Table A	624		655	624	31		655	655			No
Dudley Ridge Water District <sup>2</sup> (SWPAO #13012)	2-for-1	2013	SWPAO	SWP Table A	1,876	902	1,876	1,174	703		1,876	1,876		902	Yes
				SWP Article 21	3,107	3,107								3,107	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	1,006	1,006	1,006		1,006		1,006	1,006		1,006	Yes
Central Coast Water Agency	2-for-1	2017	Short-Term	SWP Table A	258	258	258		258		258	258			No
Dudley Ridge Water District <sup>4</sup>	1-for-1	2017	Long-Term	SWP Table A						5,000	5,000	5,000			No
Central Coast Water Agency	2-for-1	2019	Short-Term	SWP Table A	298	298	298		298		298	298			No
<b>Total:</b>					<b>35,031</b>	<b>5,571</b>	<b>37,611</b>	<b>8,027</b>	<b>18,585</b>	<b>5,000</b>	<b>31,611</b>	<b>15,430</b>	<b>16,181</b>	<b>5,015</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.

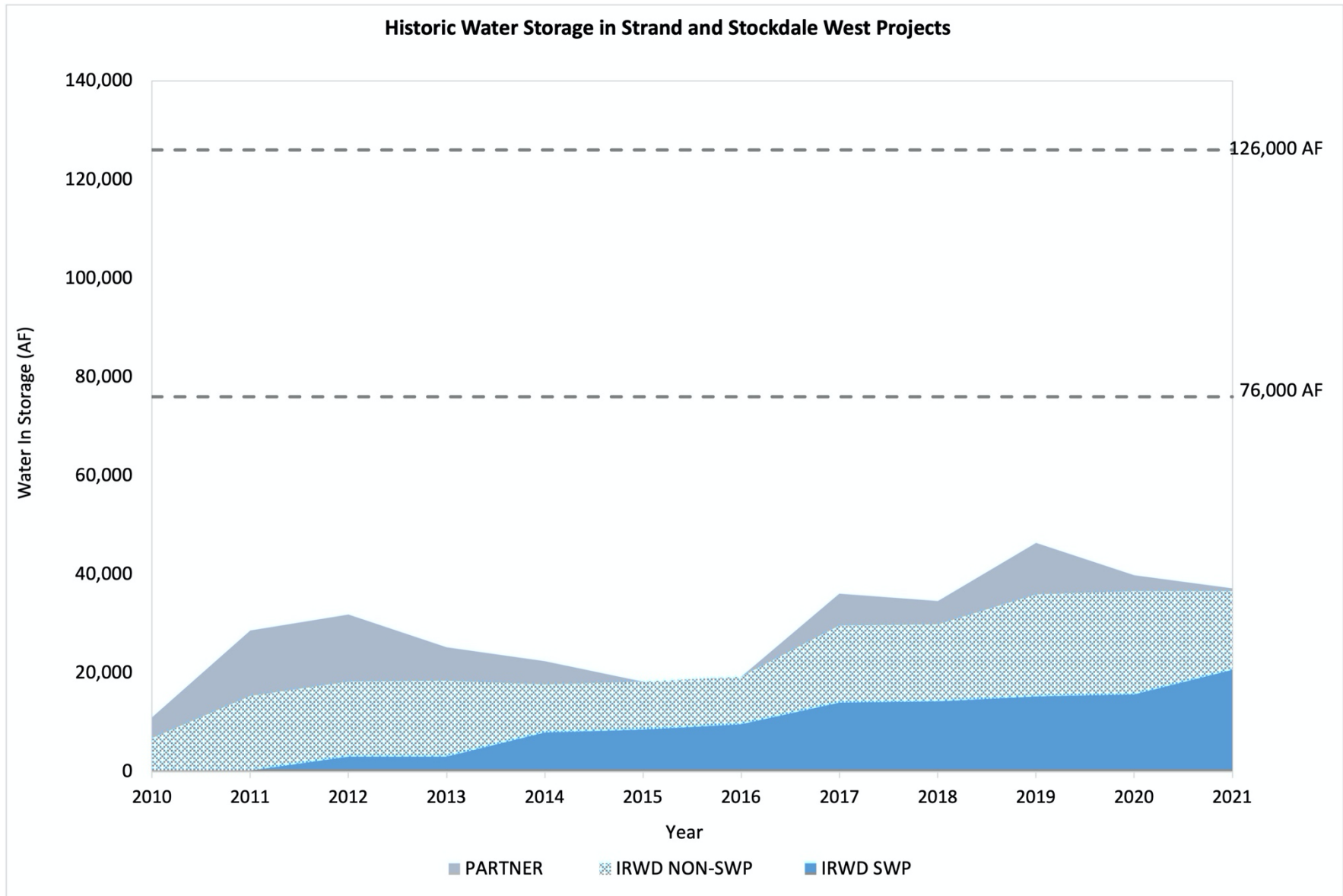
<sup>2</sup> Only the portion of water stored for use on Jackson Ranch in DRWD is sellable.

<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 1**  
**IRWD Dedicated Water Banking Capacities for**  
**Existing and Proposed Exchange Programs**  
**July 13, 2021**

<b>Program</b>	<b>Dedicated Storage Capacity Strand Ranch (AF)</b>	<b>Dedicated Storage Capacity Stockdale West (AF)</b>	<b>Dedicated Storage Capacity Leased Storage Account (AF)</b>	<b>Kern Water Bank Storage Capacity (AF)</b>
Total Capacity	50,000	26,000	50,000	9,495
BVWSD	40,000	-	-	-
DRWD	10,000	-	-	-
AVEK	-	20,000	-	-
CVWD	-	5,000	-	-
Total Dedicated	50,000	25,000	-	-
Total Remaining	-	1,000	50,000	9,495

## RECHARGE CAPACITY

<b>Program</b>	<b>Dedicated Recharge Capacity Strand Ranch (AF)</b>	<b>Dedicated Recharge Capacity Stockdale West (AF)</b>	<b>Dedicated Recharge Capacity Leased Storage Account (AF)</b>	<b>Kern Water Bank Recharge Capacity (AF)</b>
Total Capacity	17,500	27,100	-	3,200
BVWSD	17,500	-	-	-
DRWD	-	-	-	-
AVEK	-	20,000	-	-
CVWD	-	5,000	-	-
Total Dedicated	17,500	25,000	-	-
Total Remaining	-	2,100	-	3,200

## RECOVERY CAPACITY

<b>Program Partner</b>	<b>Dedicated Recovery Capacity Strand Ranch (AF)</b>	<b>Dedicated Recovery Capacity Stockdale West (AF)</b>	<b>Dedicated Recovery Capacity Leased Storage Account (AF)</b>	<b>Kern Water Bank Recovery Capacity (AF)</b>
Total Capacity	17,500	11,250	-	6,330
BVWSD	6,667	-	-	-
DRWD	-	-	-	-
AVEK	-	3,333	-	-
CVWD	-	833	-	-
IRWD	10,833	7,084	-	6,330
Total Dedicated	17,500	11,250	-	6,330
Total Remaining	-	-	-	-

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# Exhibit "G"



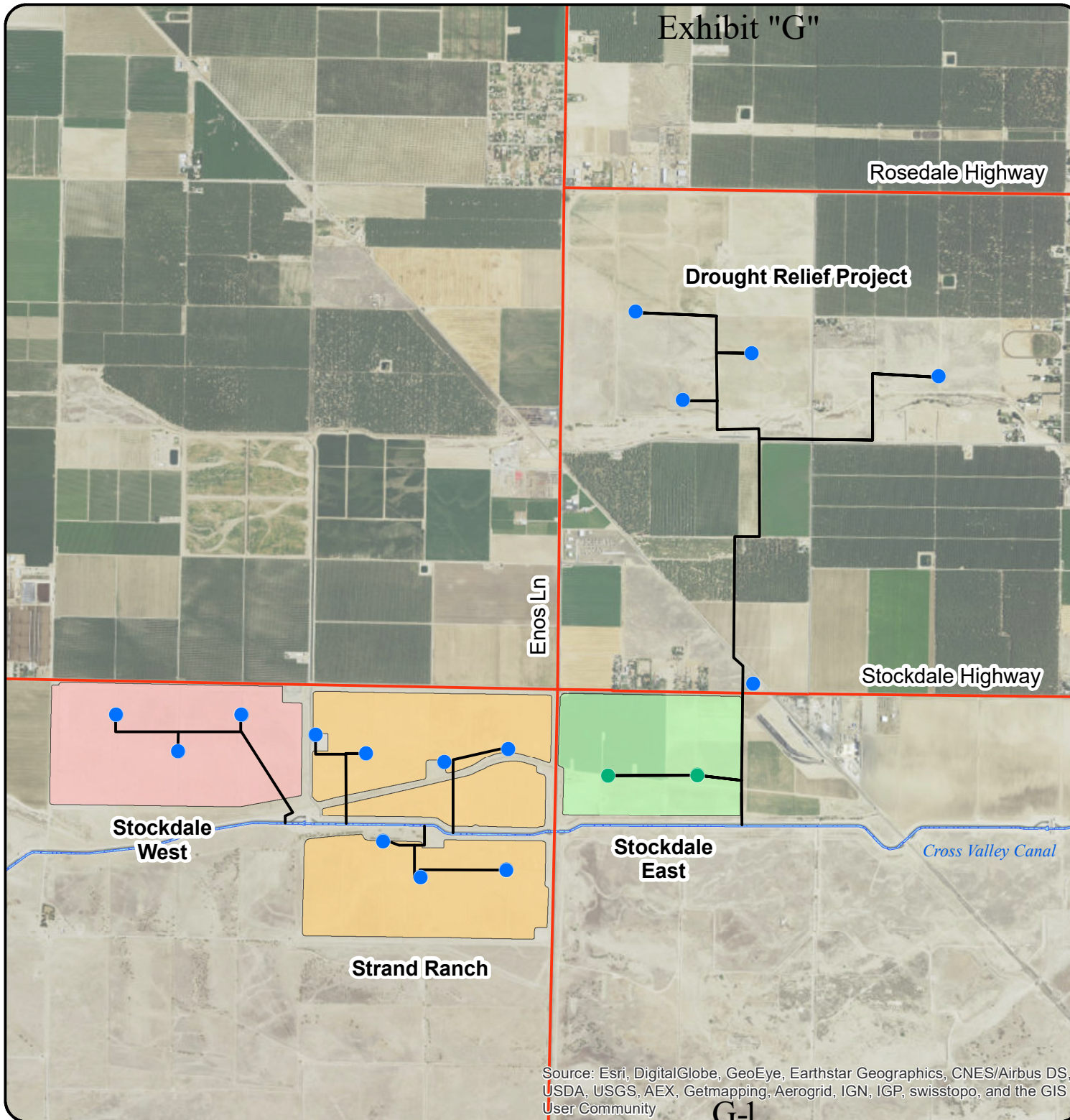
Irvine Ranch  
WATER DISTRICT

## 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

G-1



0 0.25 0.5 1 Miles

NAD 83 State Plane Zone 5 (feet)  
Central Meridian: -118

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# Exhibit "H"

Rosedale Highway



Irvine Ranch  
WATER DISTRICT

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

### MAP FEATURES

- ▲ Turnouts
- Stockdale West
- Strand Ranch

This figure shows the location of  
recharge basins, pipelines and  
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

Cross Valley Canal

Stockdale Highway

Enos Ln

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

User Community



0 0.25 0.5 1  
Miles

NAD 83 State Plane Zone 5 (feet)  
Central Meridian: -118

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# Exhibit "I"

Rosedale Highway



## 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  
0.29 feet/day  
40 CFS

Stockdale Highway

Cross Valley Canal

Strand Ranch South  
0.13 feet/day  
15 CFS

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



0 0.25 0.5 1  
Miles

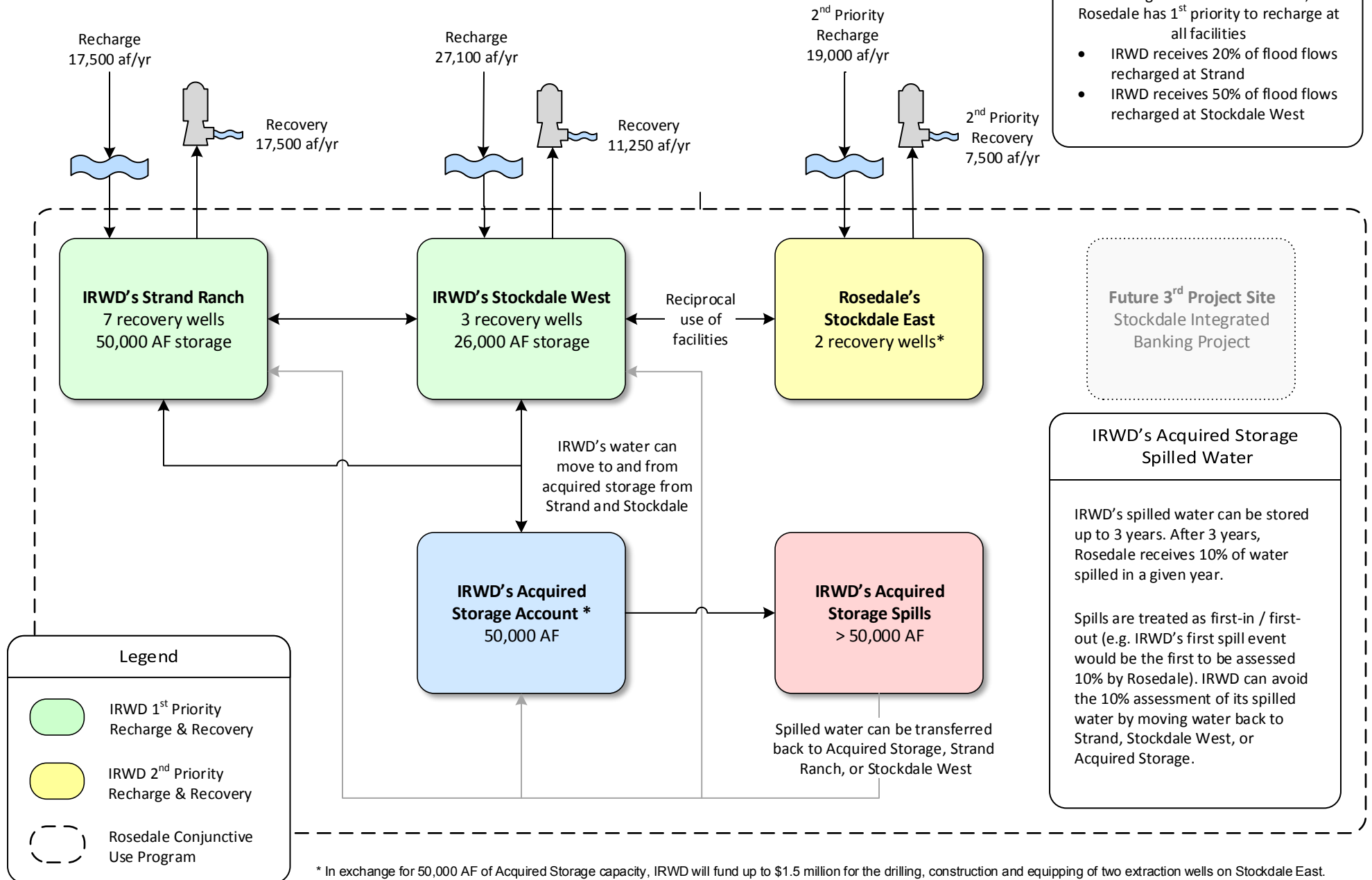
NAD 83 State Plane Zone 5 (feet)  
Central Meridian: -118

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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)



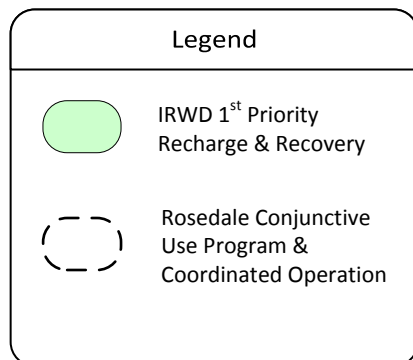
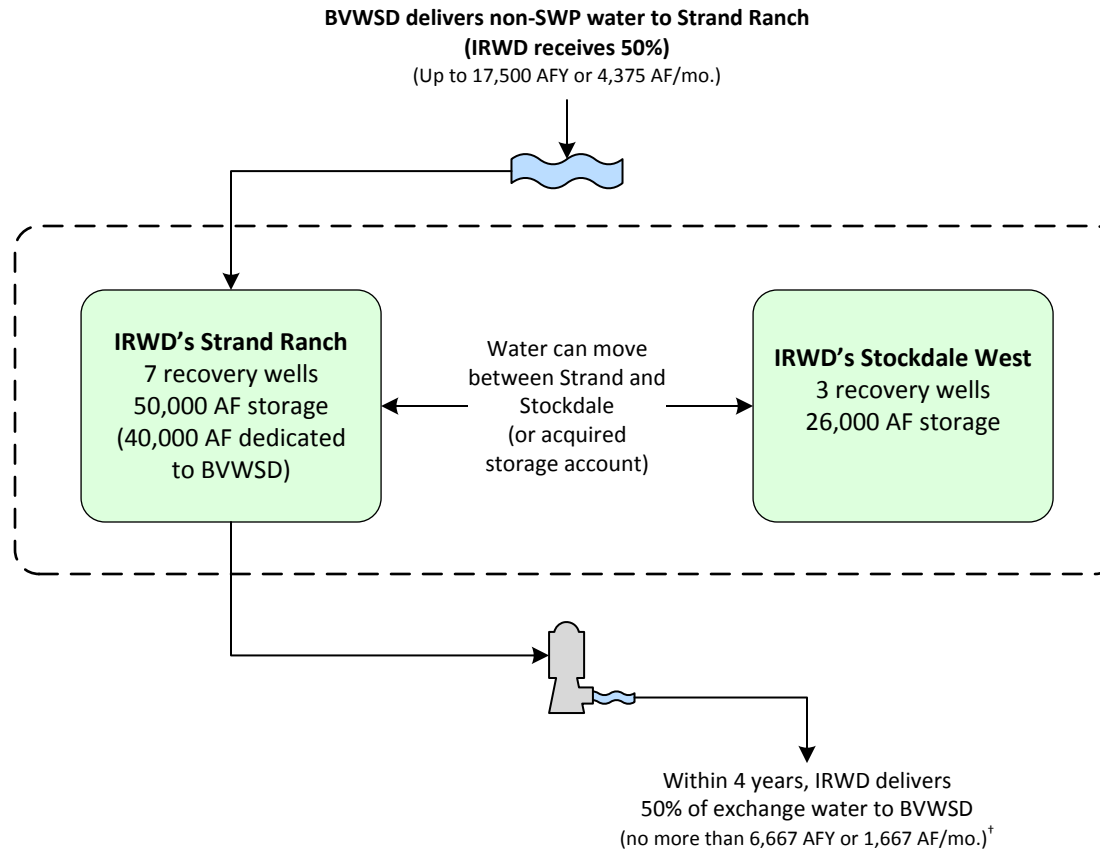
\* In exchange for 50,000 AF of Acquired Storage capacity, IRWD will fund up to \$1.5 million for the drilling, construction and equipping of two extraction wells on Stockdale East.

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# Exhibit "K"

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

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

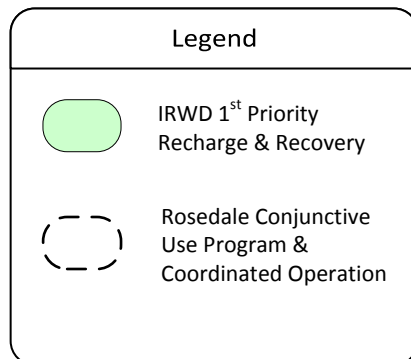
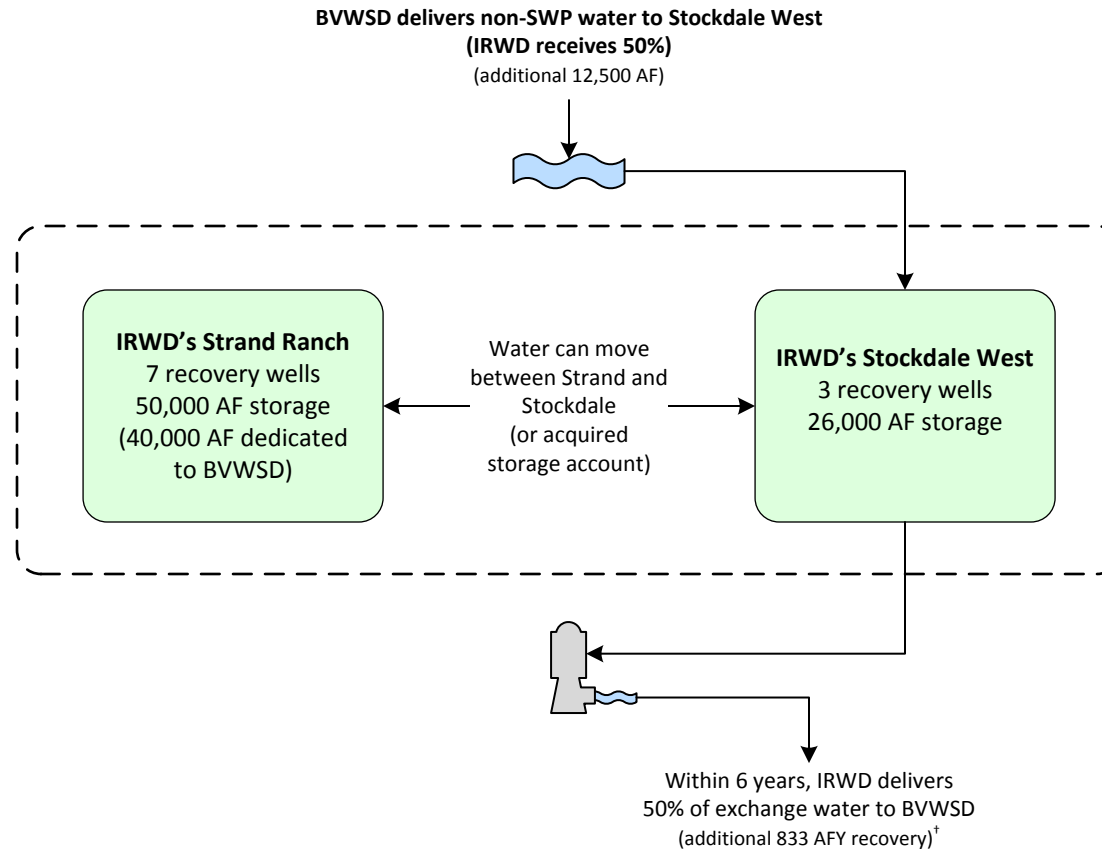


†IRWD shall remit one-half of the exchanged supply less one-half of reasonable losses back to BV no later than December 31<sup>st</sup> of the 4<sup>th</sup> year following the associated recharge event. IRWD pays for recovery of water returned to BV. Water to be remitted back to BV may remain in storage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

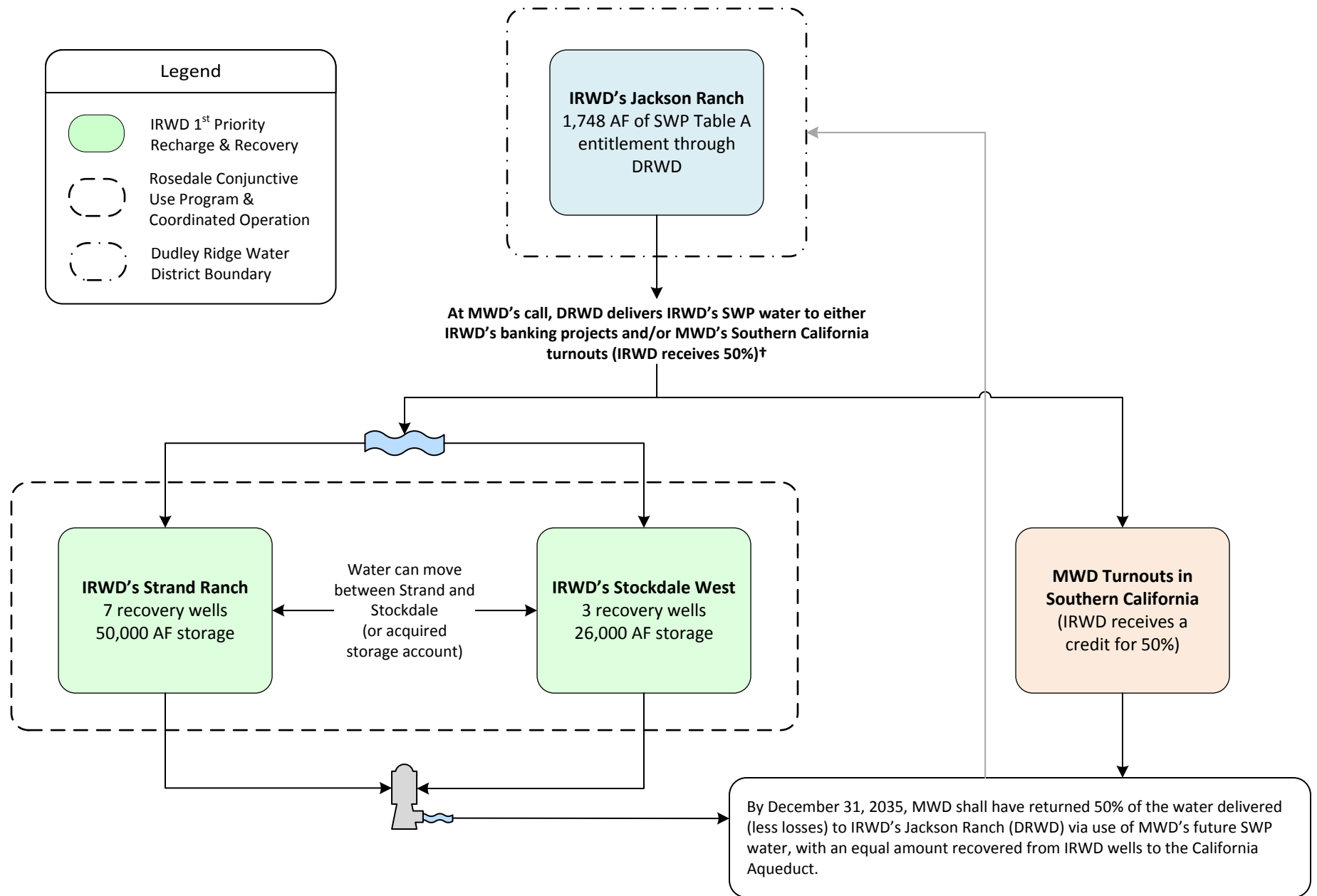


<sup>†</sup>IRWD shall remit one-half of the exchanged supply less one-half of reasonable losses back to BV no later than December 31<sup>st</sup> of the 6<sup>th</sup> year following the associated recharge event. IRWD pays for recovery of water returned to BV. Water to be remitted back to BV may remain 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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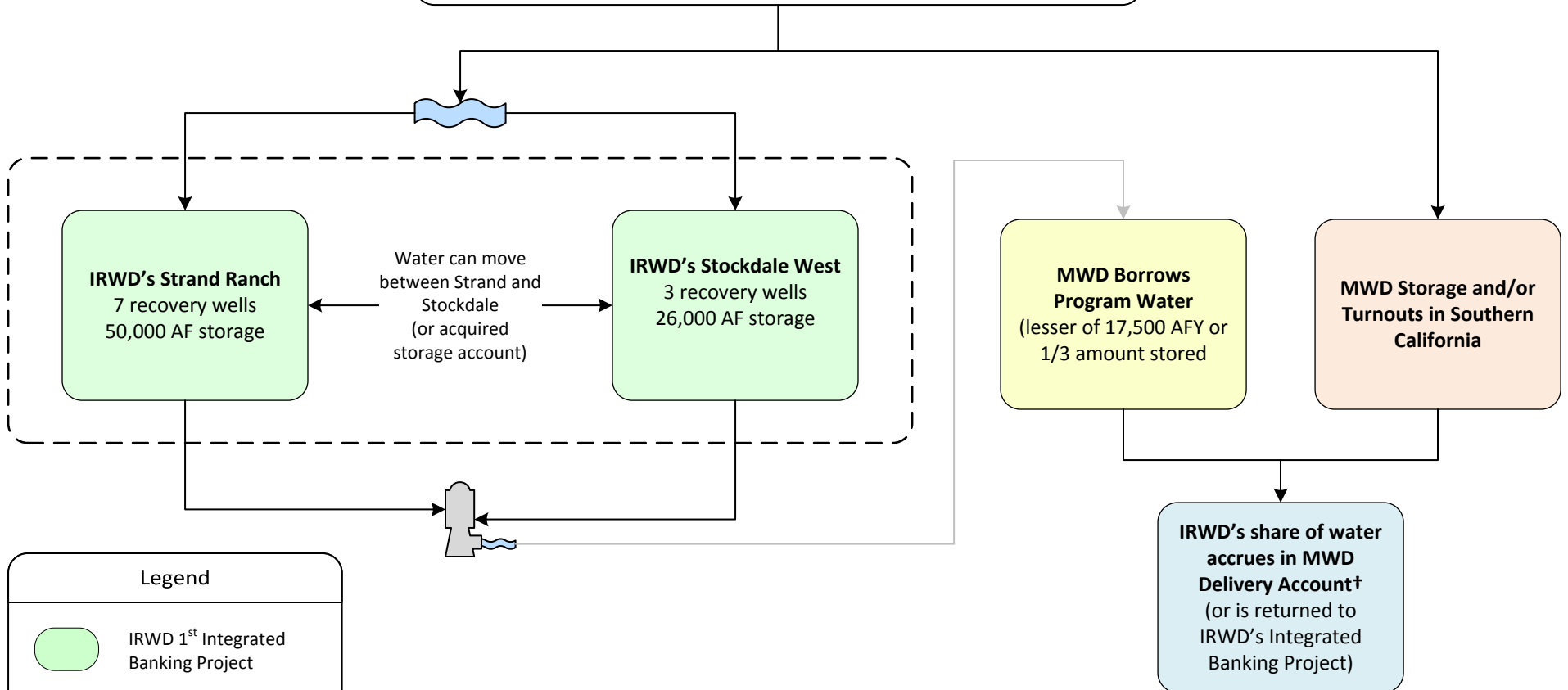
# Exhibit "M"

## Coordinated Operating, Water Storage, Exchange and Delivery Agreement Between MWD, MWDOC and IRWD Effective 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

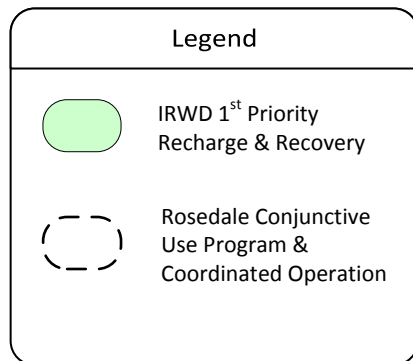
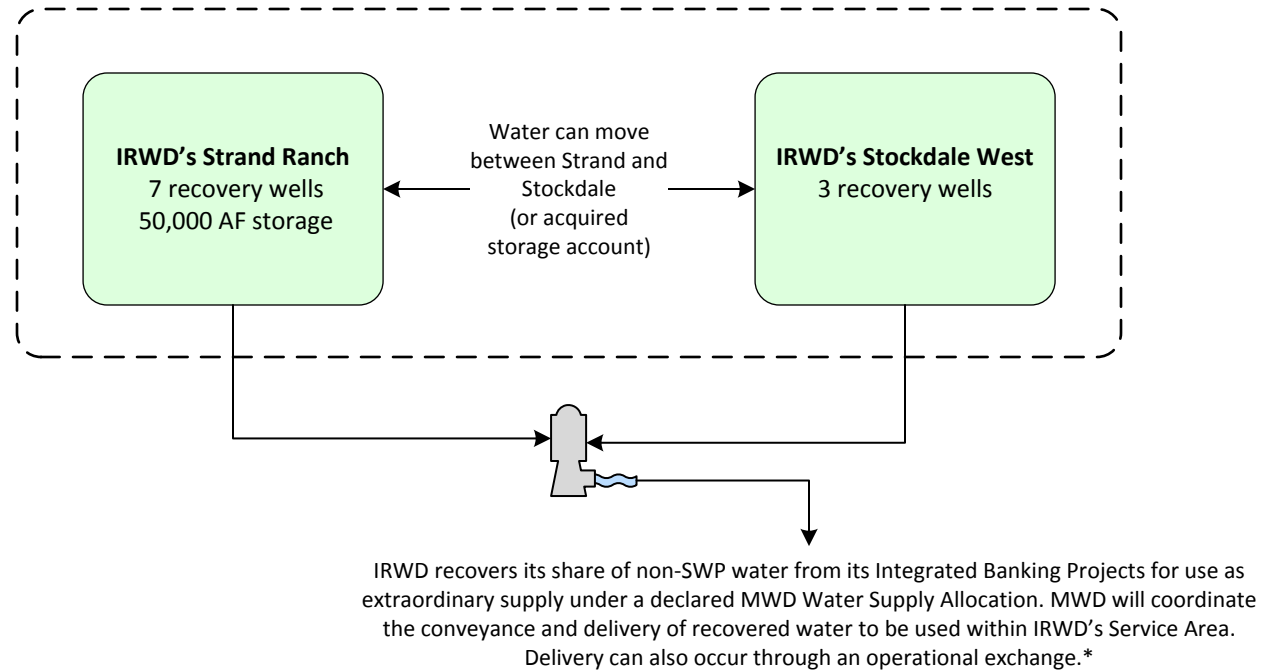
MWD has three options for the use and storage of Program Water:

- 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



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



\*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"

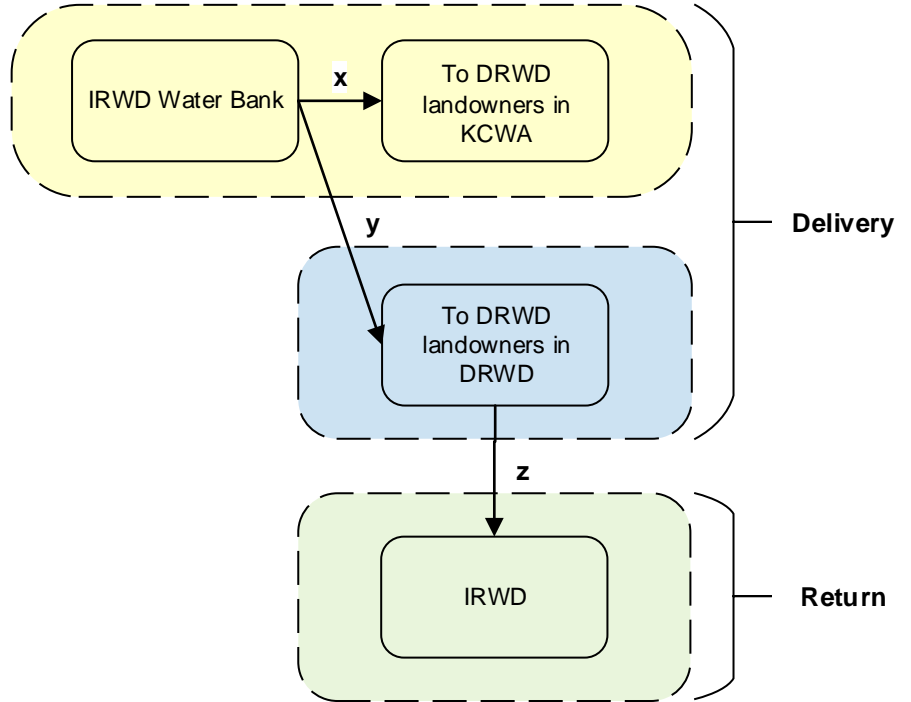
## Dudley Ridge Water District Long Term 1-for-1 Water Exchange Program Effective 5/31/2017 through 11/4/2035

### 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

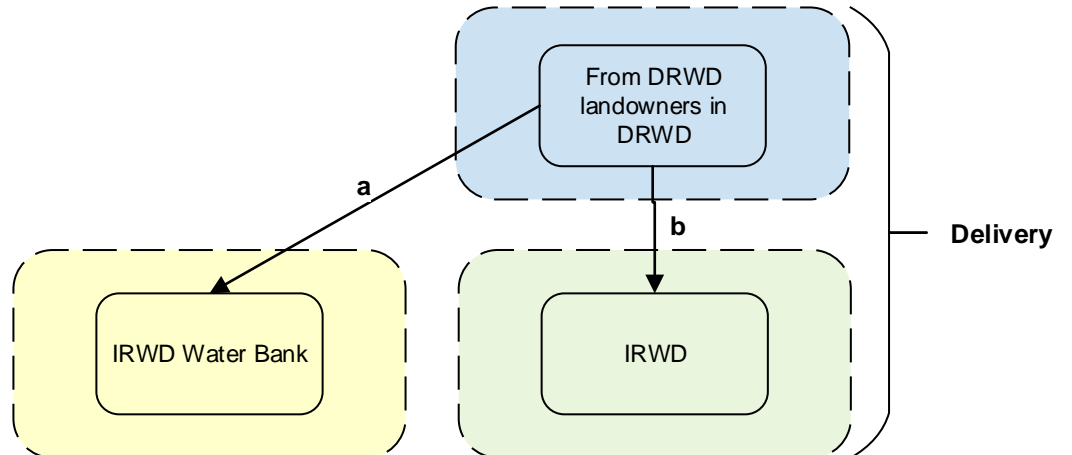
Per Section 4.1.3, z can be delivered to IRWD via in-ground transfer to IRWD, SWP delivery to IRWD banking facilities, or SWP delivery to MWDSC



### Scenario B

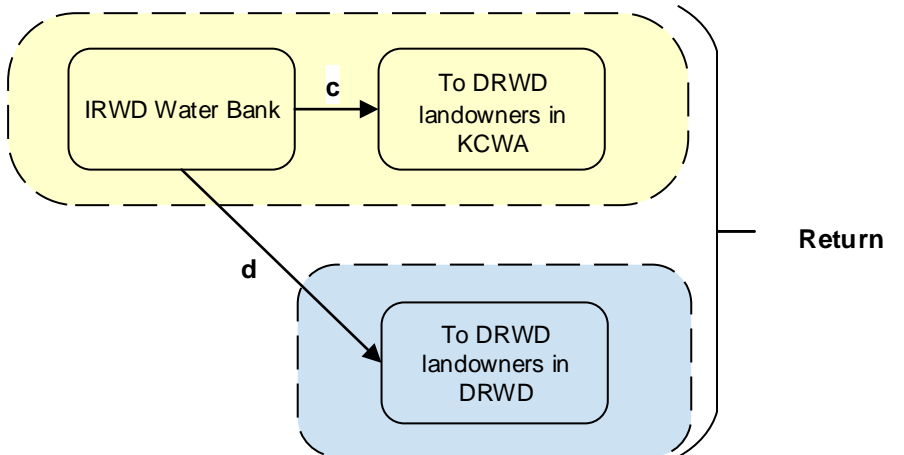
(Per Sections 2, 3, and 4.1.2)

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



### Legend

	KCWA Service Area
	DRWD Service Area
	IRWD Service Area



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July 13, 2021

Prepared by: R. Bennett / K. Welch

Submitted by: F. Sanchez / P. Weghorst

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

## SUPPLY RELIABILITY PROGRAMS COMMITTEE

### SITES RESERVOIR PROJECT UPDATE

#### SUMMARY:

In December 2020, the Board approved IRWD's participation in the planning and environmental review of the Sites Reservoir Project corresponding to 1,000 acre-feet (AF) of release capacity in the project. This capacity would allow IRWD to establish a regulated average water supply of 1,000 AF per year (AFY) for its existing water bank and the Kern Fan Groundwater Storage Project. At the meeting, staff will provide an update on next phases of work, revised estimated project costs, the development of a financing plan and hydrologic modeling efforts for the Sites Reservoir Project.

#### BACKGROUND:

The proposed Sites Reservoir Project will provide 1.5 million AF of off-stream storage in the Sacramento Valley that would capture and store stormwater flows from the Sacramento River after all other water rights and regulatory requirements are met. A map showing the project location is provided as Exhibit "A". The stored water would be used by California communities, farms and businesses. The water would also be used for environmental purposes consistent with the California Water Commission's Water Storage and Investment Program (WSIP) requirements. Other proposed project benefits include recreation, flood control and local economic benefits. The project expects to receive \$836 million in WSIP funding and up to 25% of capital funding from the federal government through the Water Infrastructure Improvements for the Nation Act.

#### Irvine Ranch Water District Participation:

IRWD's participation in the Sites Reservoir Project corresponds to 1,000 AF of annual release capacity and 6,234 AF of storage capacity in the reservoir. As a participant in the Sites Project, IRWD is a member of the Reservoir Committee and participates in all of the Sites Project meetings and workshops. Currently, IRWD has agreed to only fund its share of the current year's work plan, of which IRWD's pro-rata share is \$208,500. This work plan continues through December 31, 2021 and includes planning and environmental review work primarily associated with completing WSIP grant eligibility requirements. During this period, staff is also initiating hydrologic yield and financial modeling of the water supply benefits from the Project.

#### Fulfilling WSIP Grant Eligibility Requirements:

The Sites Project Authority indicates that the project is on schedule to fulfill WSIP grant eligibility requirements by the January 1, 2022 deadline. Those requirements include preparation of a Draft Environmental Impact Report, completion of a Feasibility Study and demonstration of financial capability and commitments to fund the project. The Authority expects to release its

Draft Environmental Impact Report / Environmental Impact Study (EIR/EIS) in August or September 2021 and to submit its Feasibility Report to the California Water Commission in August, which will meet the year-end WSIP eligibility requirements. A Plan of Finance and term sheets are expected to be presented to the Sites Reservoir Committee and Board in August. The final Plan of Finance will be used to demonstrate the Project's financial capability as required under the WSIP.

Proposed Amendment 3 Work Plan:

The Sites Project Authority is preparing a draft work plan for the next phase of the project, referred to as the Amendment 3 Work Plan. This next phase of work would begin on January 1, 2022 and continue for 36 months. The Amendment 3 goals and objectives include completing critical activities within the first 18 months. Those critical activities include responding to comments on the Draft EIR/EIS, land acquisition planning and securing water right permits as well as Department of Fish and Wildlife incidental take permits and a Federal Biological Opinion.

The expected cost of this work phase is approximately \$400 per AF, and IRWD's pro-rata share of this cost would be \$400,000, to be paid in three installments. After the first 18 months, the Sites Project Authority may decide to secure bank financing for the remaining 18 months of work. The Authority expects to present a finalized Amendment 3 Work Plan to the Reservoir Committee and Board in late August 2021. All of the participants' respective boards will then review and consider approving the work plan in the October to November time frame.

Project Cost Estimate Update:

Sites Reservoir Project costs will be allocated to participants based on participant shares and which facilities will be used by each participant. The capital costs will also be shared with state and federal agencies through grant funding. As a result of the Value Engineering process that was completed in 2020, the Sites Project was revised to create a more buildable and permittable project. The size of the proposed reservoir was modified from 1.8 million AF to 1.5 million AF. The appraisal level cost estimates for the right-sized project were previously estimated at approximately \$3 billion. Based on a refined project design, more data and analysis, and updating costs to 2021 dollars, the revised project cost estimate has been updated to \$3.9 billion. The Sites Project Authority considers this amount a feasibility-level cost estimate. The Authority will be conducting an Affordability Workshop on July 23, 2021, during which a complete affordability analysis will be presented.

*IRWD's Estimated Share of Project Cost:*

Based on the previous appraisal-level estimates, IRWD's share of the total long-term capital commitment for the project was estimated at \$12 million. Based on the new feasibility-level estimate, IRWD's share is expected to increase to approximately \$15.6 million. The Sites Project Authority is still refining the alternatives for the proposed Plan of Finance for the project. The Authority plans to bring a Plan of Finance and term sheets to the Reservoir Committee and Board in August 2021.

Modeling Sites Project with Delta Conveyance Project (DCP):

Project participants located south of the San Joaquin-Sacramento River Delta, which includes IRWD, will share the constraints in the existing capacity to convey Sites water across the Delta. The amount of water that IRWD receives from participation in the Sites Project will depend on how water is conveyed across the Delta. The DCP is expected to provide additional capacity that may be used to convey Sites water.

IRWD staff requested and received a scope of work and budget from MBK Engineers to model the potential range of water supply benefits from the Sites Project, when integrated with the Kern Fan Project operations, under the scenarios of with and without the DCP. Other south of the Delta participants have expressed interest in cost sharing the modeling work to encompass their own deliveries from the project. MBK proposes to develop several model runs to help define a reasonable range of water supply benefits from the Sites project. It is anticipated that preliminary modeling study results will be available in September.

FISCAL IMPACTS:

None.

ENVIRONMENTAL COMPLIANCE:

The Site Authority is preparing an Environmental Impact Report / Environmental Impact Study for the Sites Reservoir Project. A draft of the document is expected to be released for public review by September.

RECOMMENDATION:

Receive and file.

LIST OF EXHIBITS:

Exhibit "A" – Location Map of the Sites Reservoir Project

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# EXHIBIT "A"

## Sites Reservoir Location Map

