

AGENDA
IRVINE RANCH WATER DISTRICT
SUPPLY RELIABILITY PROGRAMS COMMITTEE
THURSDAY, MARCH 18, 2021

Due to COVID-19, this meeting will be conducted as a teleconference pursuant to the provisions of the Governor's Executive Orders N-25-20 and N-29-20, which suspend certain requirements of the Ralph M. Brown Act. Members of the public may not attend this meeting in person.

Participation by members of the Committee will be from remote locations. Public access and participation will only be available telephonically/electronically.

To virtually attend the meeting and to be able to view any presentations or additional materials provided at the meeting, please join online via Webex using the link and information below:

Via Web: <https://irwd.webex.com/irwd/j.php?MTID=ma450dc5b2e1da5552f4eb0df2df8c2be>

Meeting Number (Access Code): 146 995 0796

Meeting Password: j3A3hrJ7HdZ

After joining the meeting, in order to ensure all persons can participate and observe the meeting, please select the "Call in" option and use a telephone to access the audio for the meeting by using the call-in information and attendee identification number provided.

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 3:00 p.m.

ATTENDANCE

Committee Chair: Douglas Reinhart

Member: Peer Swan

ALSO PRESENT

Paul Cook

Rob Jacobson

Kellie Welch

Ray Bennett

Natalie Palacio

Paul Weghorst

Fiona Sanchez

Christine Compton

Jo Ann Corey

Marina Lindsay

PUBLIC COMMENT NOTICE

If you wish to address the Committee on any item, please submit a request to speak via the “chat” feature available when joining the meeting virtually. Remarks are limited to three minutes per speaker on each subject. You may also submit a public comment in advance of the meeting by emailing comments@irwd.com before 12:00 p.m. on Thursday, March 18, 2021.

ALL VOTES SHALL BE TAKEN BY A ROLL CALL VOTE.

COMMUNICATIONS

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

INFORMATION

- | | |
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| <p>5. <u>WATER BANKING PROJECT FACILITIES, CAPACITIES, OPERATIONS AND PROGRAMS – PALACIO / WELCH / SANCHEZ / WEGHORST</u></p> <p>Recommendation: Receive and file.</p> <p>6. <u>UPDATE ON SITES RESERVOIR BENEFITS, OBLIGATIONS, COSTS AND FINANCE ALTERNATIVES – WELCH / SANCHEZ / WEGHORST</u></p> <p>Recommendation: That the Committee provide input on the finance plan alternatives presented for the Sites Reservoir Project.</p> | |
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ACTION

- | | |
|--|--|
| <p>7. <u>OPTIONS FOR USE OF DUDLEY RIDGE WATER DISTRICT SUPPLIES STORED IN IRWD’S WATER BANK – WELCH / SANCHEZ / WEGHORST</u></p> <p>Recommendation: That the Committee concur with staff pursuing an exchange of existing stored State Water Project (SWP) water that must be returned to Dudley Ridge Water District for future Dudley Ridge Table A supplies that could be transferred to IRWD using the SWP Contract Amendment and pursuing other mutually beneficial exchange concepts.</p> | |
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ACTION - Continued

8. ONE-FOR-ONE WATER EXCHANGE WITH DUDLEY RIDGE WATER DISTRICT IN 2021 – SANCHEZ / WEGHORST

Recommendation: That the Board approve delivery of up to 15,000 acre-feet of IRWD's stored non-SWP water for use by Dudley Ridge Water District landowners in Kern County in exchange for State Water Project Table A water from Dudley Ridge Water District consistent with the terms of the 2017 Agreement Between Dudley Ridge Water District and Irvine Ranch Water District For Long-Term Exchange Program.

OTHER BUSINESS

9. Directors' Comments

10. Adjourn

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

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March 18, 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. 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. 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. There are no changes to Exhibits "B" and "C" this month.

Exhibit "D" graphically depicts how storage of State Water Project (SWP) and non-SWP water has changed in the Strand and Stockdale Integrated Banking Projects through time. The table provided as Exhibit "E" 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" and "E", as well as the figure provided as Exhibit "D", 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 "F", "G" and "H", 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 Water District, and Metropolitan Water District. These diagrams are provided as Exhibits “I”, “J”, “K”, “L”, “M” and “N”, as described in the List of Exhibits.

Other Recharge Opportunities:

IRWD has been pursuing additional opportunities to secure water for recharge. At the Committee meeting, staff will provide an update on efforts to secure water from Antelope Valley-East Kern Water Agency and other sources.

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” – Historic Water Storage in Strand and Stockdale Projects
- Exhibit “E” – Dedicated Capacities of Current Water Banking Projects
- Exhibit “F” – Map of Water Banking Project Wells and Pipelines
- Exhibit “G” – Map of Water Banking Recharge Basins and Cross Valley Canal Turnout Facilities
- Exhibit “H” – Map of Water Banking Recharge Rates
- Exhibit “I” – Diagram of IRWD-Rosedale Water Banking and Exchange Program Agreements
- Exhibit “J” – 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 “K” – Diagram of Unbalanced Exchange Program Diagram with Dudley Ridge

Supply Reliability Programs Committee: Water Banking Project Facilities, Capacities,
Operations and Programs

March 18, 2021

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Exhibit “L” – Diagram of Coordinated Operating, Water Storage, Exchange and Delivery
Agreement with Metropolitan

Exhibit “M” – Diagram of Template Wheeling Agreement with Metropolitan

Exhibit “N” – 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
March 18, 2021

WATER BANKING PROJECT	OWNERSHIP AND WELL INFO			ALLOCATED CAPACITY (AF)					1 ST PRIORITY RECOVERY CONDITIONS (CFS)		2 ND PRIORITY RECOVERY CONDITIONS (CFS)	
	IRWD OWNED	WELLS EXISTING	WELLS PROPOSED OR UNDER CONST.	TOTAL STORAGE CAPACITY	ANNUAL RECHARGE 1 ST PRIORITY	ANNUAL RECHARGE 2 ND PRIORITY	ANNUAL RECOVERY 1 ST PRIORITY	ANNUAL RECOVERY 2 ND PRIORITY	RECOVERY CAPACITY AS PLANNED ¹	ESTIMATED RECOVERY CAPACITY (APR. 2019 CONDITIONS) ²	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 ³	No	-	-	50,000	-	-	-	-	-	-	-	-
Drought Relief Project Wells ³	No	3	-	-	-	-	-	-	15.0	15.0	-	-
Kern Water Bank Storage Account ⁵	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 ⁴				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	

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

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

³IRWD has use of Acquired Storage and Drought Relief Project wells until January 12, 2039, unless the term of the agreement is extended.

⁴One half of storage capacity at Stockdale West and Strand Ranch will be allocated for partners.

⁵Kern 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.

Exhibit "B"

TABLE 2
IRWD's Water Banking Storage, Recharge and Recovery Operations - BEFORE LOSSES
 March 18, 2021

TRANSACTIONS	WATER BANKING ENTITY					TOTAL BY WATER TYPE AND STORAGE LOCATION
	IRWD		BUENA VISTA (BVWSD)	CENTRAL COAST (CCWA)	DUDLEY RIDGE WATER DISTRICT (DRWD) ³	
	SWP ¹	NON-SWP ²	NON-SWP	SWP	SWP	
BEGINNING WATER IN STORAGE 2020 (AF)						
Total Kern Water Bank (estimated)	-	4,683	-	-	-	4,683
Total MWD System ⁴	8,039	-	-	-	308	8,347
Total Kern County	4,929	24,596	11,177	636	3,491	44,828
TOTAL STORED WATER (1/1/2020)	12,968	29,279	11,177	636	3,799	57,858
(RECOVERY) AND RECHARGE IN 2020 (AF)						
MWD Water to Jackson Ranch ⁵	-	-	-	-	(96)	(96)
Kern Water Bank Deliveries ⁶						-
2020 SWP Allocation (20%) ³	175	-		-	175	350
Kern River Water	-		(7,500)	-	-	(7,500)
SWP Table A					-	-
2017 Reserve Water	106	258	258	11	95	728
TOTAL 2020 TRANSACTIONS	281	258	(7,242)	11	174	(6,518)
Total Kern Water Bank	-	4,683	-	-	-	4,683
Total MWD System	8,039	-	-	-	212	8,251
Total Kern County	5,210	24,855	3,935	647	3,761	38,406
TOTAL STORED WATER (1/1/2021)	13,249	29,538	3,935	647	3,973	51,340
(RECOVERY) AND RECHARGE IN 2021 (AF)						
MWD Water to Jackson Ranch (estimated)	-	-	-	-	-	-
Kern Water Bank Deliveries	-	-	-	-	-	-
2021 SWP Allocation (10 %) ³	87		-	-	87	175
Kern River Water (estimated)	-	-	(2,681)	-	-	(2,681)
TOTAL ESTIMATED 2021 TRANSACTIONS	87	-	(2,681)	-	87	(2,506)
ESTIMATED WATER IN STORAGE 2021 (AF)						
Total Kern Water Bank	-	4,683	-	-	-	4,683
Total MWD System	8,039	-	-	-	212	8,251
Total Kern County	5,297	24,855	1,254	647	3,848	35,900
TOTAL ESTIMATED STORED WATER TO DATE	13,336	29,538	1,254	647	4,060	48,834

NOTES:

-MWD = Metropolitan Water District of Southern California.

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

² IRWD's Non-SWP total includes 2,842 AF, net of losses, of Kern County Water Agency Article 21 Water.

³ DRWD water supply will be returned by MWD or IRWD's Strand Ranch to IRWD's Jackson Ranch. 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.

⁴ 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.

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

⁶ A portion of IRWD's 2019 SWP deliveries from DRWD include 97 AF of Article 21 water, which was delivered to the Kern Water Bank.

Exhibit "C"

TABLE 3
IRWD's Water Banking Storage, Recharge and Recovery Operations - AFTER LOSSES
 March 18, 2021

TRANSACTIONS	WATER BANKING ENTITY					TOTAL BY WATER TYPE AND STORAGE LOCATION
	IRWD		BUENA VISTA (BVWSD)	CENTRAL COAST (CCWA)	DUDLEY RIDGE WATER DISTRICT (DRWD) ³	
	SWP ¹	NON-SWP ²	NON-SWP	SWP	SWP	
BEGINNING WATER IN STORAGE 2020 (AF)						
Total Kern Water Bank	-	4,215	-	-	-	4,215
Total MWD System ⁴	8,039	-	-	-	308	8,347
Total Kern County	3,926	20,685	9,923	545	2,992	38,072
TOTAL STORED WATER (1/1/2020)	11,965	24,900	9,923	545	3,300	50,634
(RECOVERY) AND RECHARGE IN 2020 (AF)						
MWD Water to Jackson Ranch ⁵	-	-	-	-	(96)	(96)
Kern Water Bank Deliveries ⁷	-	-	-	-	-	-
2020 SWP Allocation (20%) ³	150	-	-	-	150	300
Kern River Water	-	-	(7,500)	-	-	(7,500)
SWP Table A	-	-	-	-	-	-
2017 Reserve Water	101	245	258	10	90	705
TOTAL 2020 TRANSACTIONS	251	245	(7,242)	10	144	(6,591)
Total Kern Water Bank	-	4,215	-	-	-	4,215
Total MWD System	8,039	-	-	-	212	8,251
Total Kern County	4,177	20,931	2,681	556	3,233	31,577
TOTAL STORED WATER (1/1/2021)	12,216	25,145	2,681	556	3,445	44,043
(RECOVERY) AND RECHARGE IN 2021 (AF)						
MWD Water to Jackson Ranch (estimated)	-	-	-	-	-	-
Kern Water Bank Deliveries	-	-	-	-	-	-
2021 SWP Allocation (10%) ³	75	-	-	-	75	150
Kern River Water (estimated)	-	-	(2,681)	-	-	(2,681)
TOTAL ESTIMATED 2021 TRANSACTIONS ⁶	75	-	(2,681)	-	75	(2,531)
ESTIMATED WATER IN STORAGE 2021 (AF)						
Total Kern Water Bank	-	4,215	-	-	-	4,215
Total MWD System	8,039	-	-	-	212	8,251
Total Kern County	4,252	20,931	0	556	3,308	29,046
TOTAL ESTIMATED STORED WATER TO DATE	12,291	25,145	0	556	3,520	41,512

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.

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

² IRWD's Non-SWP total includes 2,842 AF of Kern County Water Agency Article 21 Water.

³ DRWD water supply will be returned by MWD or IRWD's Strand Ranch to IRWD's Jackson Ranch. 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.

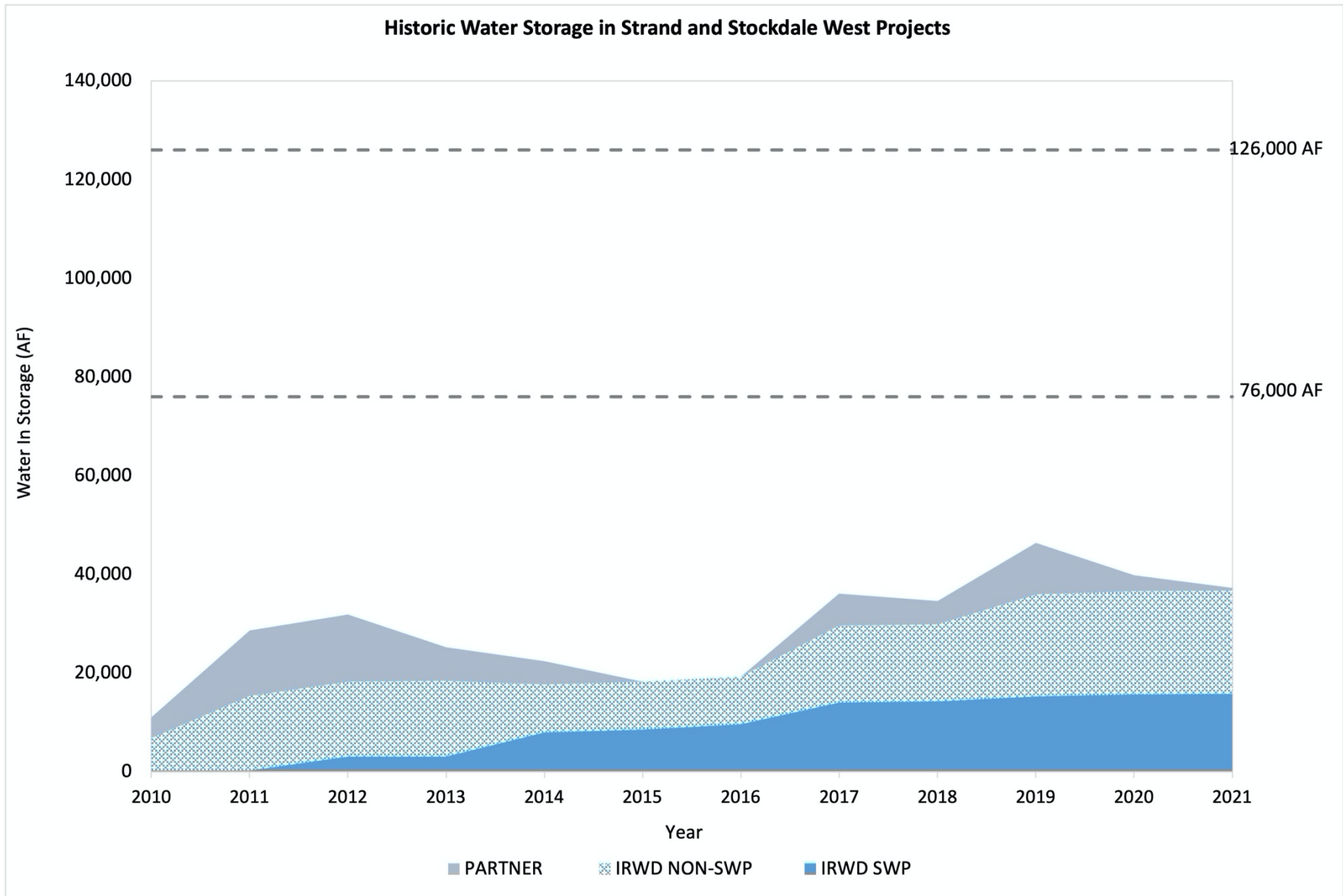
⁴ Beginning balance of water stored in MWD system includes 4,000 AF of 2014 Exchange, 2,853 AF of 2014 borrowed SWP, 1,186 AF of IRWD's 2013-2016 SWP allocations through DRWD.

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

⁶ 2021 transactions may be adjusted for conveyance losses in CVC.

⁷ A portion of IRWD's 2019 SWP deliveries from DRWD include 97 AF of Article 21 water, which was delivered to the Kern Water Bank.

Exhibit “D”



*After losses

Exhibit "E"

TABLE 1
IRWD Dedicated Water Banking Capacities for
Existing and Proposed Exchange Programs
March 18, 2021

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	-	-
CVWD	-	5,000	-	-
Total Dedicated	50,000	25,000	-	-
Total Remaining	-	1,000	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	-	-
CVWD	-	5,000	-	-
Total Dedicated	17,500	25,000	-	-
Total Remaining	-	2,100	-	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	-	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	-	-	-	-

Exhibit "F"



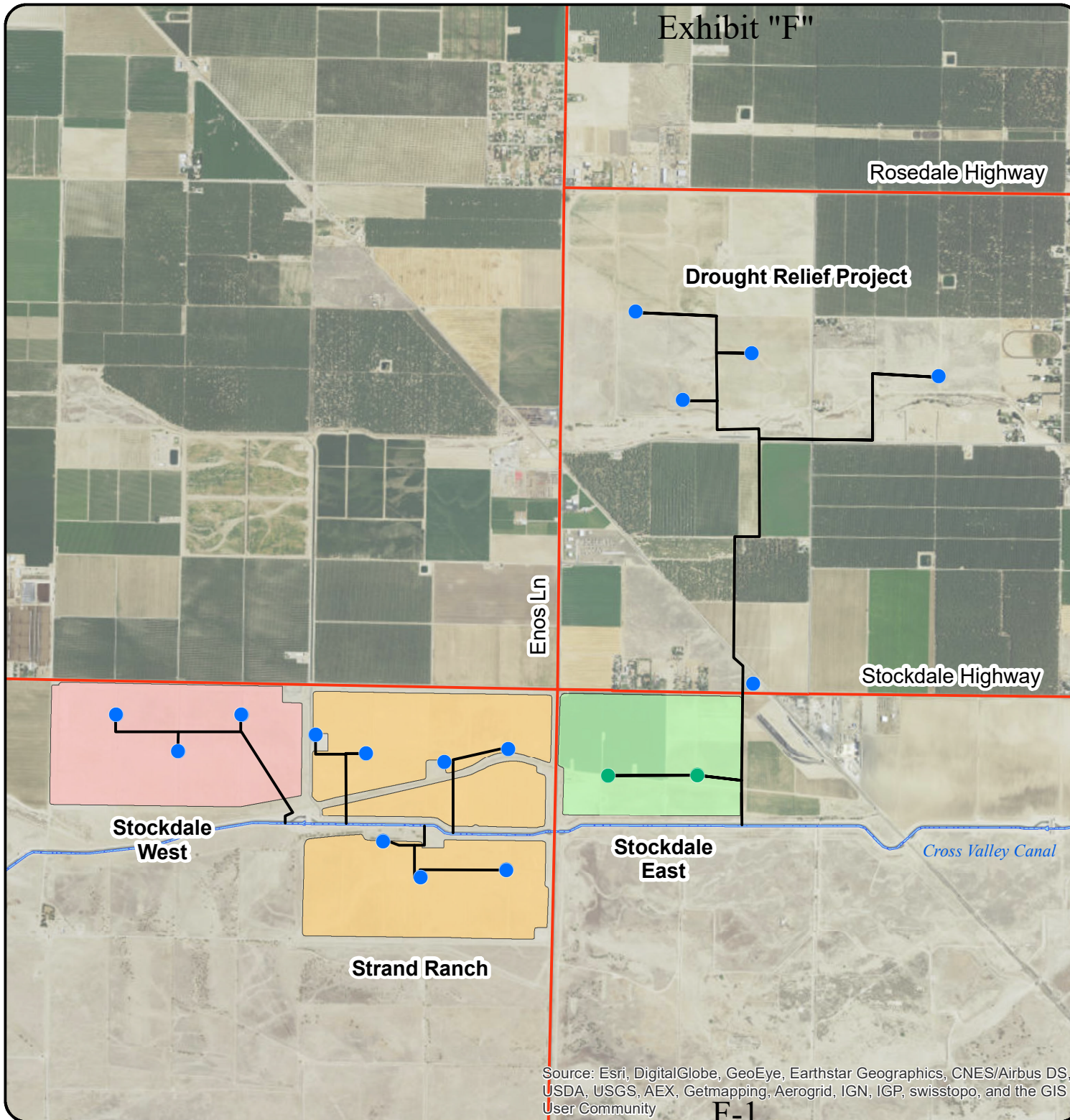
Irvine Ranch
WATER DISTRICT

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



0 0.25 0.5 1 Miles

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

Exhibit "G"

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
User Community

G-1



0 0.25 0.5 1
Miles

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

Exhibit "H"

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

Strand Ranch South
0.13 feet/day
15 CFS

Stockdale Highway

Cross Valley Canal

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

Exhibit "I"

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)

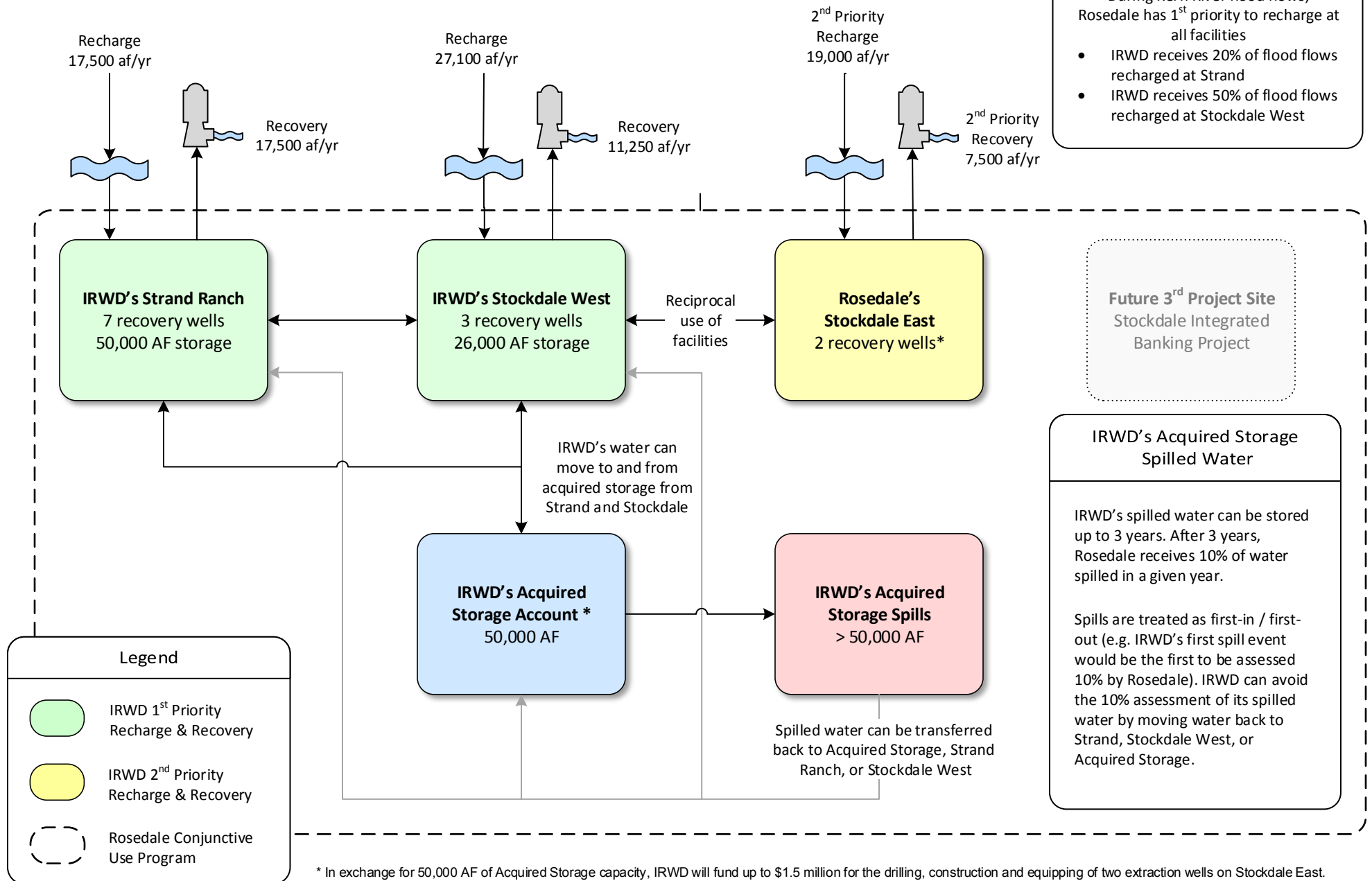
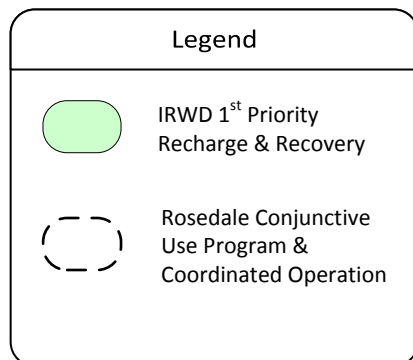
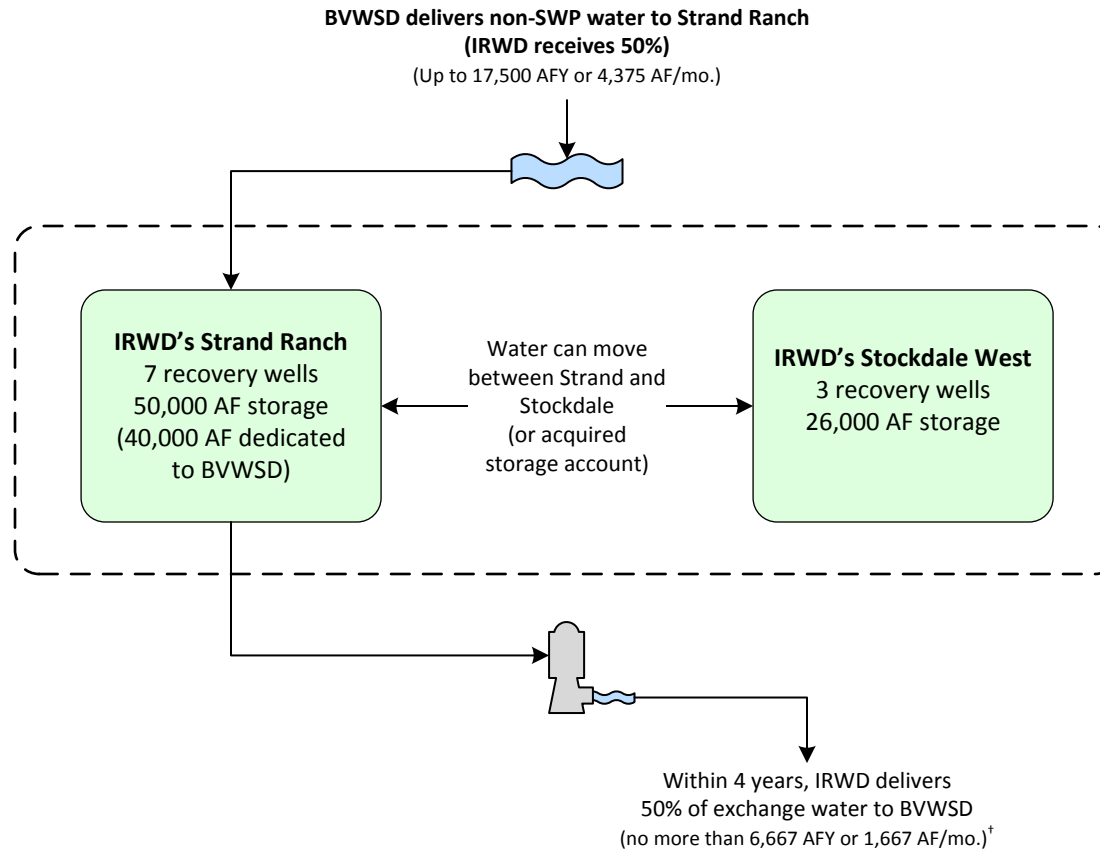


Exhibit "J"

Buena Vista Water Storage District Long Term Water Exchange Program

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

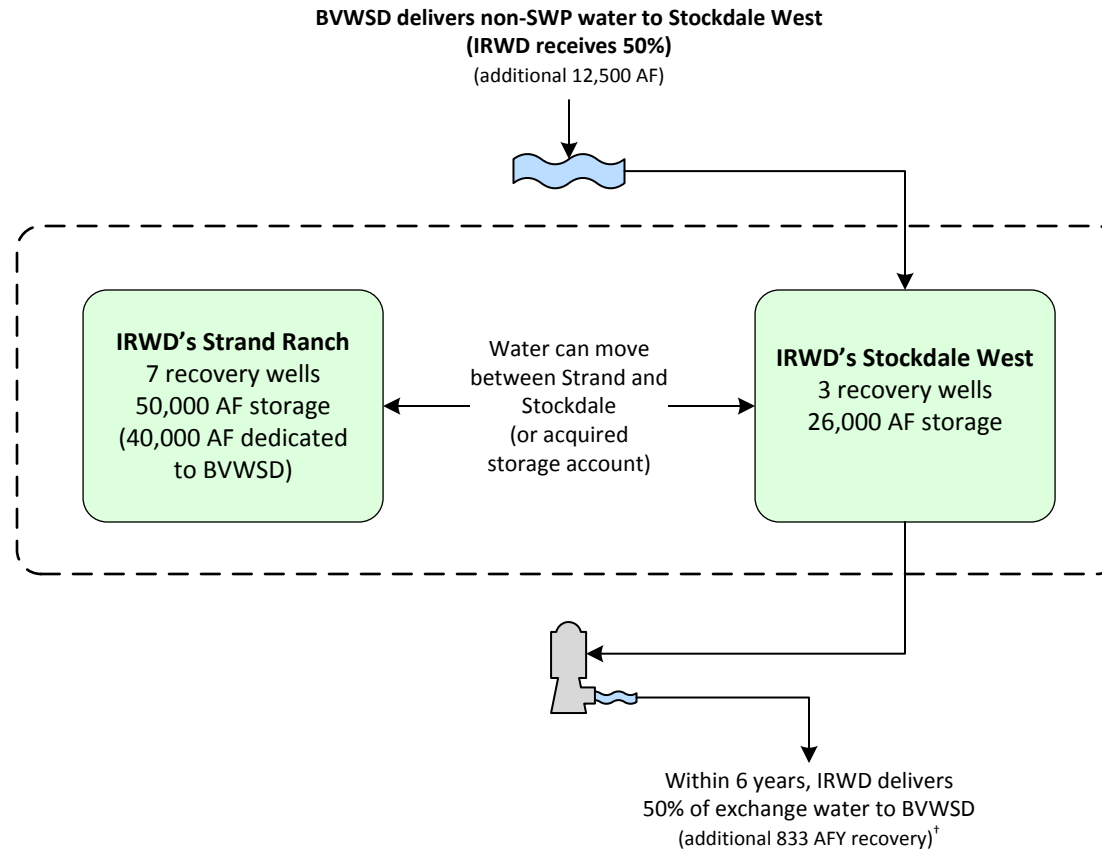




[†]IRWD shall remit one-half of the exchanged supply less one-half of reasonable losses back to BV no later than December 31st of the 4th year following the associated recharge event. IRWD pays for recovery of water returned to BV. Water to be remitted back to BV may remain in storage at Strand Ranch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

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

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

Effective 4/1/2017 through 3/30/2018



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

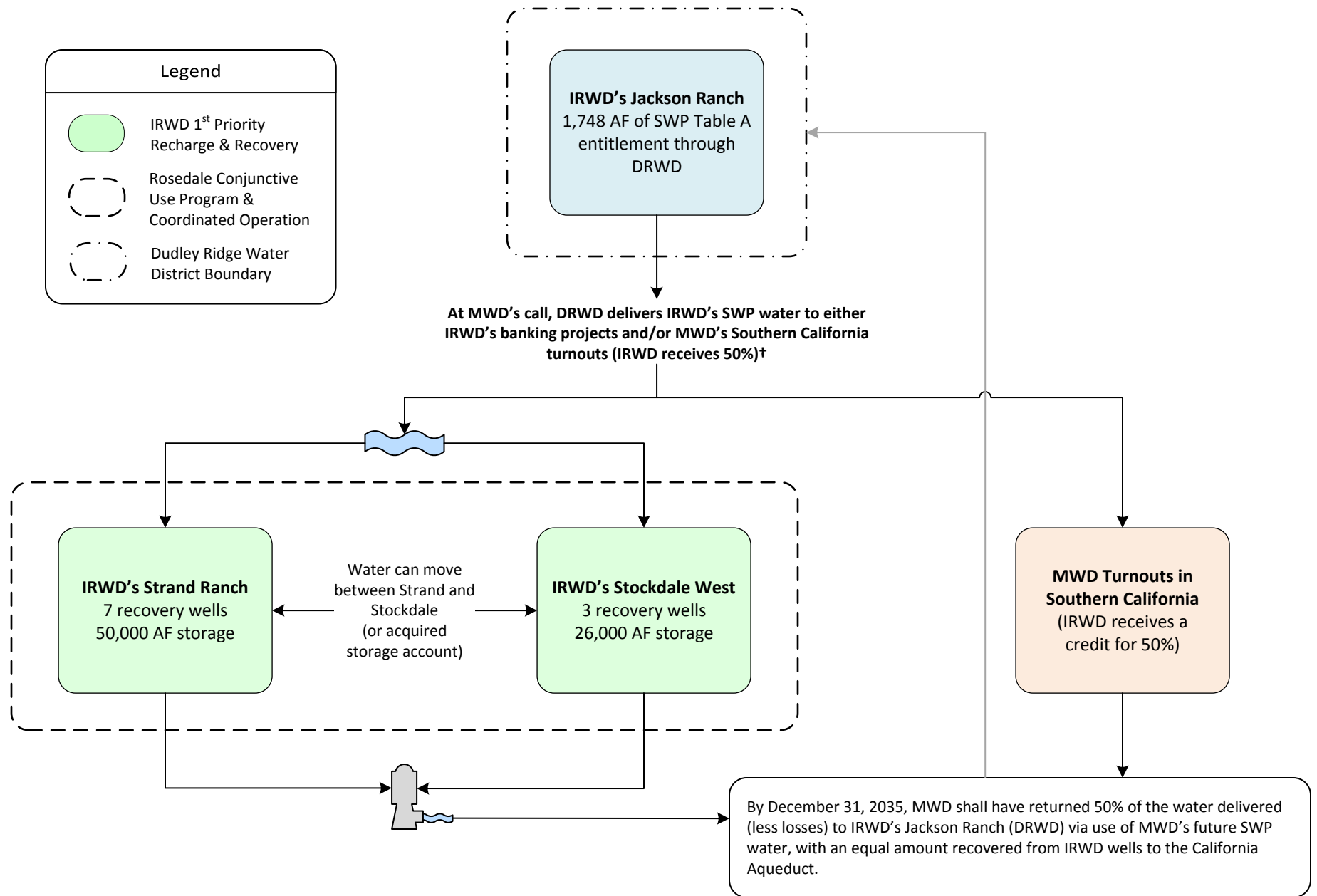
[†]IRWD shall remit one-half of the exchanged supply less one-half of reasonable losses back to BV no later than December 31st of the 6th year following the associated recharge event. IRWD pays for recovery of water returned to BV. Water to be remitted back to BV may remain in storage at Strand Ranch beyond the 6th 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 "K"

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.

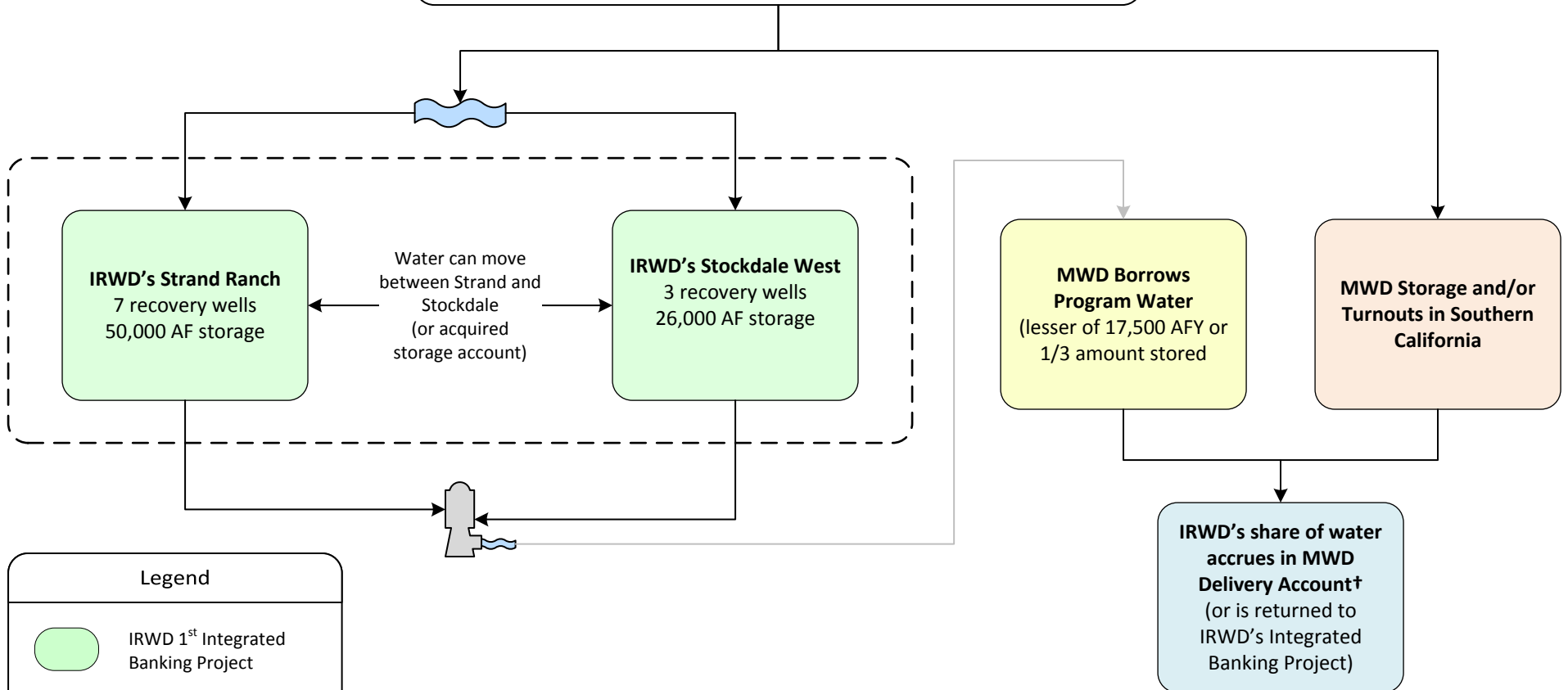
Exhibit "L"

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

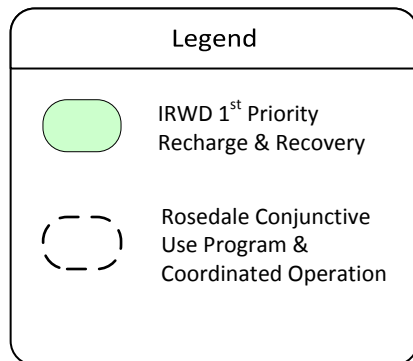
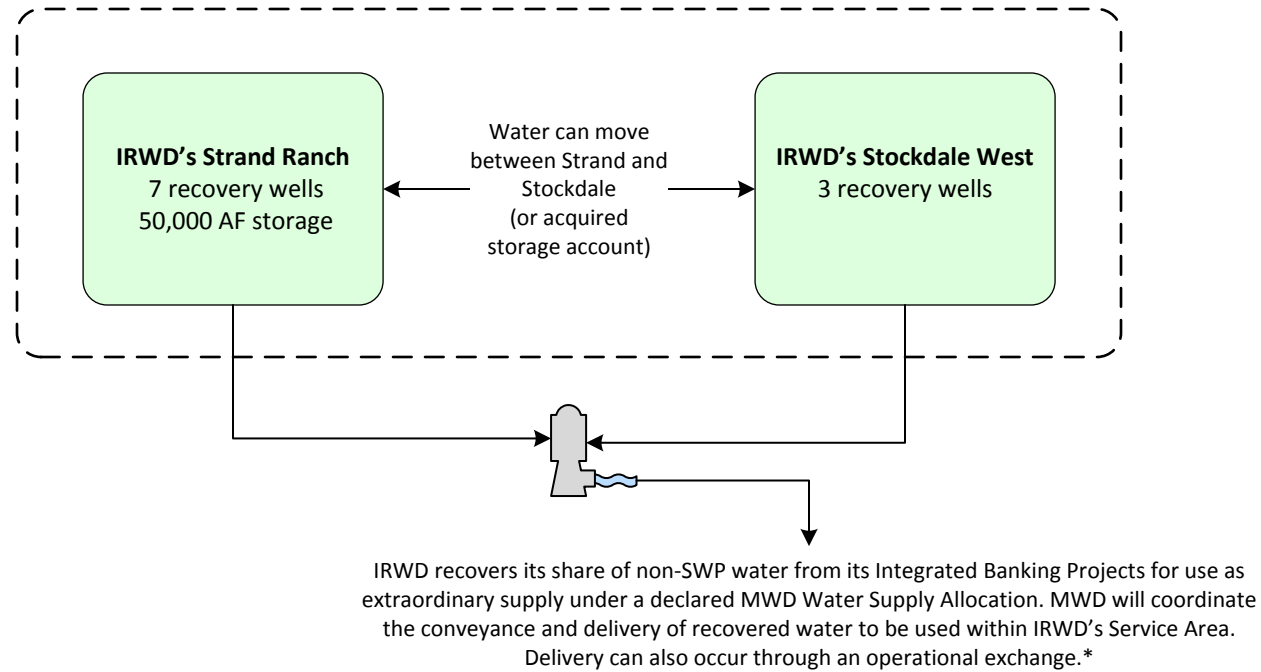
MWD has three options for the use and storage of Program Water:

- 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



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

Exhibit "M"
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.

Exhibit "N"

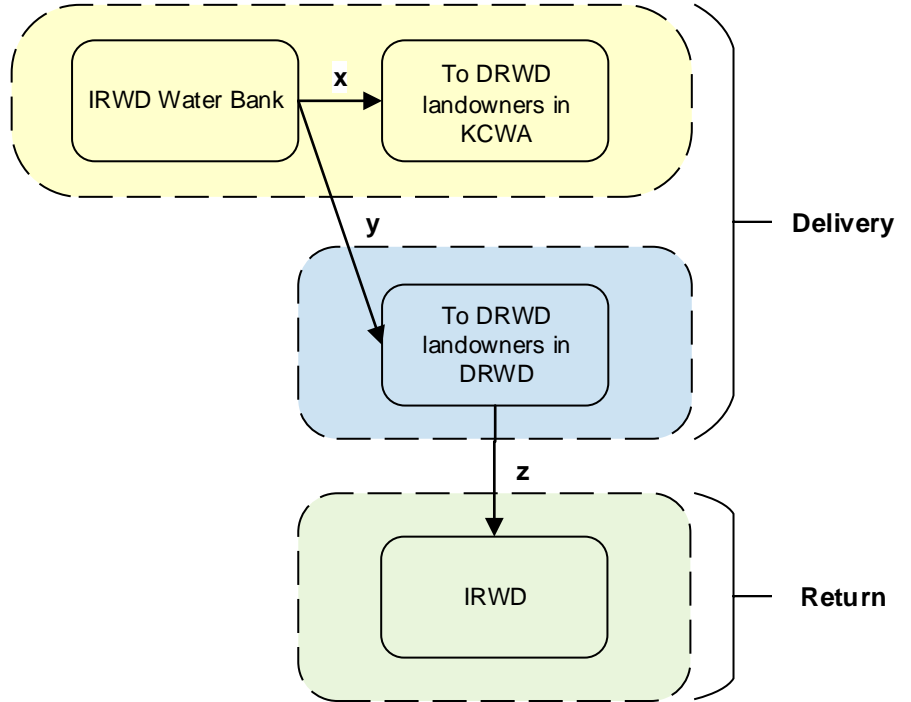
Dudley Ridge Water District Long Term 1-for-1 Water Exchange Program Effective 5/31/2017 through 11/4/2035

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

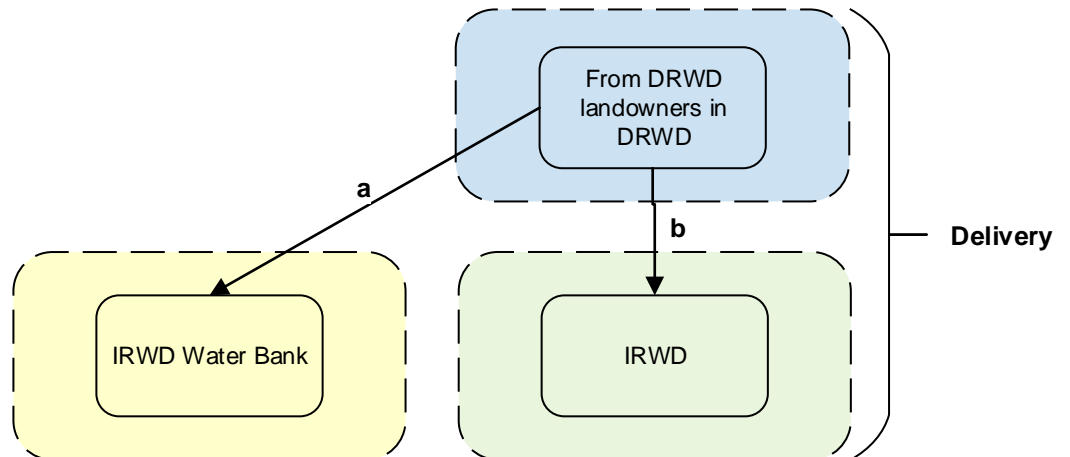
Per Section 4.1.3, z can be delivered to IRWD via in-ground transfer to IRWD, SWP delivery to IRWD banking facilities, or SWP delivery to MWDSC



Scenario B

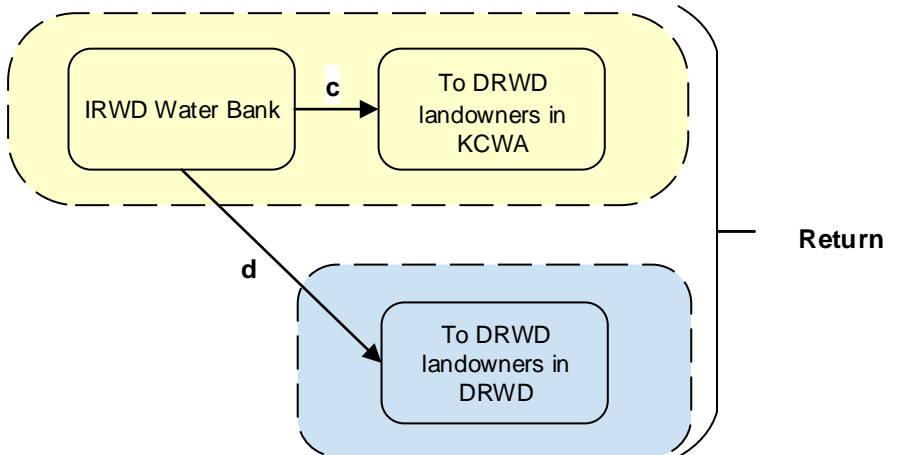
(Per Sections 2, 3, and 4.1.2)

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



Legend

	KCWA Service Area
	DRWD Service Area
	IRWD Service Area



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March 18, 2021

Prepared by: K. Welch

Submitted by: F. Sanchez / P. Weghorst

Approved by: Paul A. Cook



SUPPLY RELIABILITY PROGRAMS COMMITTEE

UPDATE ON SITES RESERVOIR BENEFITS, OBLIGATIONS, RISKS, COSTS AND FINANCE ALTERNATIVES

SUMMARY:

In December 2020, the IRWD Board approved the District'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 water supply of 1,000 AF per year (AFY) on average for its Water Bank and the Kern Fan Groundwater Storage Project. At the meeting, staff will provide an update to the Committee on the benefits, obligations, risks, costs and finance plan alternatives for the Sites Reservoir Project. Staff recommends the Committee provide input on the finance plan alternatives.

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. The stored water would be used by California communities, farms, and businesses. The water also would be used for environmental purposes consistent with the California Water Commission's Water Storage and Investment Program (WSIP).

IRWD Participation:

In December 2020, IRWD executed an agreement with the Sites Authority to participate in the planning and environmental review of the Sites Reservoir Project corresponding to 1,000 AF of release capacity in the project. This capacity would allow IRWD to establish a regulated water supply of 1,000 AFY on average for its Water Bank and the Kern Fan Groundwater Storage Project. The planning and environmental review work is expected to continue until December 31, 2021, and IRWD's pro-rata share of the cost of this work is \$208,500. The agreement does not obligate IRWD to costs associated with the construction or operation of the project.

Recent Sites Authority Workshop:

In February 2021, the Sites Authority Board and the Sites Reservoir Committee held a workshop with all the project participants to review project benefits, obligations, risks, and costs, and to reach a common understanding of alternatives for financing the project. At the Committee meeting, staff will provide an update on the information presented at the workshop.

Sites Project Benefits, Obligations and Risks:

The benefits of the Sites Reservoir Project will be associated with an annual yield from the project of between 207,000 AFY to 260,000 AFY of new water that would be available for the municipal and agricultural participants. Other benefits would be associated with recreation, flood control, ecosystem improvements and local economic benefits.

The obligations of the project will involve payments on project debt service, payment of expenses through construction and future obligations associated with the payment of project operations and maintenance (O&M) as well as replacement costs. The primary risks of the project will be related failure to collect loan payments from project participants, insufficient supply, dam failures, and risks due to unsuccessful delivery of the anticipated project benefits.

Project Costs:

Sites Reservoir Project costs will be allocated to participants based on participant shares and based on which facilities will be used by each participant. The capital costs will also be shared with the state and federal agencies through grant funding. The total long-term capital commitment for the project will be between \$3 billion to \$5 billion with IRWD's share being between \$12 million to \$23 million. 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. The non-grant funding participants will fund the remaining capital costs plus O&M and replacement costs.

Sites Project Finance Alternatives:

The Sites Authority permanent financing options include issuing long-term bonds and securing water infrastructure federal loans, USDA loans, and transportation loans. Financing plan alternatives include establishing:

- A Single finance plan involving all participants;
- Multiple finance plans by individual participants; and
- Pay-as-you-go plans.

A single finance plan in which all participants borrow together is preferred by the Sites Authority. Step-up provisions in which participants would agree to make up shortfalls created by participant payment defaults are being considered by the Authority. Under the preferred single finance plan alternative, the Sites Authority would be responsible for issuing all project debt with the debt being secured by Water Storage & Supply Services Contracts with the participants. At the Committee meeting, staff will review the project finance plan alternatives and recommends the Committee provide input.

FISCAL IMPACTS:

None.

ENVIRONMENTAL COMPLIANCE:

The Site Authority is preparing an Environmental Impact Report for the Sites Reservoir Project.

RECOMMENDATION:

That the Committee provide input on the finance plan alternatives presented for the Sites Reservoir Project.

LIST OF EXHIBITS:

None.

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March 18, 2021

Prepared by: K. Welch

Submitted by: F. Sanchez / P. Weghorst

Approved by: Paul A. Cook



SUPPLY RELIABILITY PROGRAMS COMMITTEE

OPTIONS FOR USE OF DUDLEY RIDGE WATER DISTRICT SUPPLIES STORED IN IRWD'S WATER BANK

SUMMARY:

IRWD receives an allocation of State Water Project (SWP) water supplies through ownership of the Jackson Ranch, located within Dudley Ridge Water District. Currently, IRWD is limited by the SWP Contract to making use of 50% of the allocated SWP Table A supplies in IRWD's service area. Any portion of the water not deliverable to IRWD would need to be returned to Dudley Ridge for use on IRWD's Jackson Ranch or on other lands in Dudley Ridge. At the Committee meeting, staff will present options for the use of existing Dudley Ridge supplies stored in IRWD's water banking projects consistent with the District's Policy Position on Water Banking, Transfer and Wheeling. Staff recommends the Committee concur with staff pursuing an exchange of stored SWP water supplies that must be returned to Dudley Ridge for future Dudley Ridge Table A supplies and pursuing other mutually beneficial exchange concepts. The future Table A supplies could be transferred to IRWD using the recently approved SWP Contract Amendment.

BACKGROUND:

In 2010, IRWD purchased the 883-acre Jackson Ranch for the purpose of providing an SWP water supply to IRWD's Strand and Stockdale Integrated Banking Projects (IRWD Water Bank) located in Kern County. Jackson Ranch is located within the service area of Dudley Ridge, which is an SWP contractor located in Kings County. Through Dudley Ridge, IRWD has the right to receive delivery of up to 1,749 acre-feet (AF) per year of SWP Table A water and to receive Article 21 water when it is available.

Existing Unbalanced Exchange Programs:

IRWD is currently able to make use of up to 50% of its Table A water supplies received from Dudley Ridge in IRWD's service area. These deliveries are facilitated through two unbalanced exchange agreements implemented between the California Department of Water Resources (DWR), Metropolitan Water District, Dudley Ridge, and the Kern County Water Agency (KCWA). The other 50% of the water must be returned for use in Dudley Ridge on the Jackson Ranch or other lands in Dudley Ridge.

2013 Unbalanced Exchange Agreement:

In 2013, an unbalanced exchange agreement was approved, allowing IRWD to deliver up to 8,700 AF of its allocated SWP supplies for the years 2013 through 2017 to be stored either in the IRWD Water Bank or in Metropolitan's system. Fifty percent of this water must be returned to Dudley Ridge by December 31, 2022.

Under this agreement, 6,704 AF was delivered (net of losses), with 3,721 AF being Table A water and 2,983 AF being Article 21 water. Fifty percent of the Table A water can be delivered to IRWD's service area in accordance with IRWD's Coordinated, Operating and Exchange Agreement with Metropolitan (Coordinated Agreement). The remaining Table A water and all of the Article 21 water must be returned for use within the Dudley Ridge service area. As of the end of 2020, a total of 974 AF has been returned to IRWD's Jackson Ranch within Dudley Ridge under this agreement.

2018 Unbalanced Exchange Agreement:

In 2018, a second unbalanced exchange program was approved to provide for the delivery of up to 12,240 AF of IRWD's allocated SWP supplies for the years 2018 through 2027. Similarly, 50% of this water must be returned to Dudley Ridge by December 31, 2035. Under this agreement, a total of 2,284 AF was delivered, net of losses, of IRWD's allocated Table A water including the projected 2021 allocated water. Fifty percent of this water can be delivered to IRWD's service area and the remaining Table A water must be returned to Dudley Ridge.

Water Use on Jackson Ranch:

The current lessee of the Jackson Ranch utilizes an average of 250 AF per year for crop irrigation. The balance of water that must be returned to Dudley Ridge for use on the Jackson Ranch exceeds the current annual average use on the Jackson Ranch. Following are options on how the return water may be used in the future.

Options for the Use of Existing Stored Water:

The following three options are available to IRWD for the use of the existing stored water that must be returned to Dudley Ridge.

Option 1 – Keep the Water for Contract Farming on Jackson Ranch:

IRWD has considered contract farming on the Jackson Ranch, where the District would pay an outside farming entity to farm the property. IRWD would pay for the water supply while receiving the benefit of crop sales. While this option has not been fully vetted, it is likely that the water that must be returned to Dudley Ridge in addition to the banked amount in IRWD's share of the Kern Water Bank (approximately 4,600 AF) would not be sufficient to farm the entire Jackson Ranch. Additional research would be necessary to determine the appropriate acreage that could be irrigated with the available supplies.

Option 2 – Sell the Table A and Article 21 Water:

Under this option, the water that must be returned to Dudley Ridge could be sold to another Dudley Ridge landowner. As a result of the current dry conditions throughout the state and the 10% SWP allocation, Dudley Ridge has expressed interest in acquiring supplemental water for its landowners this year.

IRWD's Policy Position Paper on Water Banking, Transfers and Wheeling was last updated in November 2020. Policy Position 17 states, that:

"When IRWD has enough water in storage to meet its 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 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."

Since IRWD has not yet met its storage objective for Extraordinary Supply and future water supplies are likely to be harder to secure, selling the Dudley Ridge return water to another Dudley Ridge landowner is not a preferred alternative.

Option 3 – Exchange the Return Water (Preferred Option):

Under this option, the Table A and Article 21 water that must be returned to Dudley Ridge could be used by another Dudley Ridge landowner in return for an equal amount of future Dudley Ridge Table A water delivered to IRWD. Under the current dry year conditions, this option would be mutually beneficial by providing dry year supplies to Dudley Ridge while also providing a water supply for the IRWD Water Bank. It is expected that the future Table A water could be transferred to IRWD through the recently approved SWP Contract Amendment. Such transfers would likely require an agreement with DWR. The costs of such an exchange could be equalized between IRWD and Dudley Ridge, similar to the terms of the existing one-for-one exchange of non-SWP water for SWP water.

Exchanging return water for an equal amount of future Table A water is the preferred option for the use of IRWD's SWP supplies that must be returned to Dudley Ridge. This mutually beneficial option would assist Dudley Ridge within a dry year and provide a water supply for the IRWD Water Bank, consistent with IRWD's adopted Policy Position. Staff recommends the Committee concur with staff pursuing an exchange of existing stored SWP water that must be returned to Dudley Ridge for future Dudley Ridge Table A supplies that could be transferred to IRWD using the SWP Contract Amendment and pursuing other mutually beneficial exchange concepts.

FISCAL IMPACTS:

The proposed exchange of existing stored SWP water that must be returned to Dudley Ridge for a transfer of future Dudley Ridge Table A supplies could equalize the cost of water to both IRWD and Dudley Ridge. Consistent with the Coordinated Agreement, IRWD would pay Metropolitan the full service Tier-1 rate for either treated or untreated water delivered to IRWD's service area as a result of the subsequent future transfer of Table A water from Dudley Ridge.

ENVIRONMENTAL COMPLIANCE:

The Jackson Ranch Water Allocation Project Negative Declaration was prepared and circulated for public review in compliance with the California Environmental Quality Act (CEQA) of 1970 (as amended), codified at California Public Resources Code Section 21000 et. seq. and the state CEQA guidelines in the Code of Regulations, Title 14, Division 6, Chapter 3. A Notice of Determination for the final Negative Declaration for the purchase of the property was filed with Kings County on January 14, 2010.

RECOMMENDATION:

That the Committee concur with staff pursuing an exchange of existing stored State Water Project (SWP) water that must be returned to Dudley Ridge Water District for future Dudley Ridge Table A supplies that could be transferred to IRWD using the SWP Contract Amendment and pursuing other mutually beneficial exchange concepts.

LIST OF EXHIBITS:

None.

March 18, 2021

Prepared by: F. Sanchez

Submitted by: P. Weghorst

Approved by: Paul A. Cook



SUPPLY RELIABILITY PROGRAMS COMMITTEE

ONE-FOR-ONE EXCHANGE WITH DUDLEY RIDGE WATER DISTRICT REQUIRING WATER TO BE USED IN KERN COUNTY

SUMMARY:

The IRWD long-term unbalanced exchange program with Buena Vista Water Storage District allows Buena Vista to store its high flow Kern River supplies on a two-for-one basis in the Strand Ranch Integrated Banking Project (Water Bank). In 2017, IRWD entered into a long-term one-for-one exchange agreement with Dudley Ridge Water District. This mutually beneficial agreement allows IRWD to exchange its stored non-State Water Project (SWP) supplies for an equal amount of Dudley Ridge's SWP Table A water. Dudley Ridge landowners are currently evaluating their water needs for the year and may be interested in using IRWD's non-SWP supplies in Kern County consistent with the exchange agreement. Staff recommends the Board approve delivery of up to 15,000 acre-feet (AF) of IRWD's stored non-SWP water for use in Kern County by Dudley Ridge landowners. In exchange, Dudley Ridge would return an equal amount of Table A water to IRWD within five years.

BACKGROUND:

IRWD's long-term unbalanced exchange program with Buena Vista provides IRWD access to high-flow supplies, which are non-SWP supplies stored in the Water Bank. As of March 2021, IRWD has 20,685 AF of non-SWP supplies in storage. In 2017, IRWD entered into a mutually beneficial long-term one-for-one exchange program with Dudley Ridge that allows IRWD to exchange its non-SWP water for an equal amount of Dudley Ridge's SWP Table A water. This agreement, which is provided as Exhibit "A", allows IRWD to make up to 40,000 AF of non-SWP water available for delivery to Dudley Ridge landowners. This one-for-one exchange program provides water supply assistance to Dudley Ridge landowners with agricultural operations in both Kern County and the Dudley Ridge service area through the use of IRWD's non-SWP water in Kern County during water-short years.

This year's SWP allocation is currently set at 10% and, although this may be increased, this year is expected to be dry. Consistent with the terms of the long-term one-for-one exchange agreement, staff recommends the Board approve delivery of up to 15,000 AF of IRWD's stored non-SWP water for use by Dudley Ridge landowners in Kern County. In exchange, Dudley Ridge would return an equal amount of Table A water to IRWD within five years (unless extended) when the SWP allocation is 65% or greater. IRWD would benefit from the exchange by being able to use the SWP water in IRWD's service area consistent with the Coordinated Operating and Exchange Agreement with Metropolitan Water District and MWDOC.

FISCAL IMPACTS:

All costs associated with the program will be allocated on an equitable basis between IRWD and Dudley Ridge as set forth in the one-for-one exchange agreement between the two parties. IRWD is responsible for all costs for the acquisition, storage, recovery and conveyance of non-SWP water made available to Dudley Ridge. DRWD is responsible for all costs for the acquisition, conveyance and recharge of SWP water returned to IRWD. Per the terms of the agreement, costs are reconciled and equalized once the water is returned.

ENVIRONMENTAL COMPLIANCE:

Both the Strand Ranch and Stockdale Integrated Banking Projects are subject to the California Environmental Quality Act (CEQA). In compliance with CEQA, the California Public Resources Code Section 21000 et. seq., and per the California CEQA Guidelines in the Code of Regulations, Title 14, Division 6, Chapter 3, Rosedale as a lead agency, filed Notices of Determinations with the County of Kern and with the California State Clearinghouse for the Strand Ranch Integrated Banking Project Final Environmental Impact Report (EIR) and the Stockdale Integrated Banking Project Final EIR. IRWD, as a Responsible Agency, filed Notices of Determinations with the Counties of Orange and Kern and with the California State Clearinghouse for both the Strand Ranch and Stockdale Integrated Banking Projects Final EIRs.

RECOMMENDATION:

That the Board approve delivery of up to 15,000 acre-feet of IRWD's stored non-SWP water for use by Dudley Ridge Water District landowners in Kern County in exchange for State Water Project Table A water from Dudley Ridge Water District consistent with the terms of the 2017 Agreement Between Dudley Ridge Water District and Irvine Ranch Water District For Long-Term Exchange Program.

LIST OF EXHIBITS:

Exhibit "A" – 2017 Agreement Between Dudley Ridge Water District and IRWD for Long-Term Exchange Program

Exhibit "A"

2017 AGREEMENT BETWEEN DUDLEY RIDGE WATER DISTRICT AND IRVINE RANCH WATER DISTRICT FOR LONG-TERM EXCHANGE PROGRAM

THIS AGREEMENT (the "Agreement"), dated this 31 day of May, 2017, is made and entered into by and between DUDLEY RIDGE WATER DISTRICT ("DRWD") and IRVINE RANCH WATER DISTRICT ("IRWD"), each of the foregoing a California Water District formed under and existing pursuant to Section 34000 *et seq.* of the California Water Code (together, the "Parties" and each a "Party").

RECITALS:

WHEREAS, IRWD has developed and continues to develop the Integrated Banking Project (defined below) in Kern County with storage, recharge and recovery capacities which it operates with Rosedale-Rio Bravo Water Storage District ("Rosedale"); and

WHEREAS, DRWD as an agricultural district holds a long-term Water Supply Contract with the California Department of Water Resources ("DWR") dated December 13, 1963, as amended, pursuant to which it is entitled to receive certain quantities of water from the State Water Project ("SWP"), including without limitation water derived from DRWD's Table A Amount ("Table A Water"); and

WHEREAS, IRWD has entered into the agreement entitled "Coordinated Operating, Water Storage, Exchange and Delivery Agreement" dated as of April 21, 2011 (the "COA"), by and among the Metropolitan Water District of Southern California ("Metropolitan"), the Municipal Water District of Orange County and IRWD; and

WHEREAS, each Party seeks to increase its flexibility and improve water management and reliability by implementing a long term exchange program beginning in 2017, in which IRWD, as a landowner in DRWD, will, at its discretion, recover up to 40,000 acre feet of non-SWP water from the Integrated Banking Project for delivery to DRWD, for use within DRWD's service area or within Kern County, in exchange for which IRWD will receive an equal amount of DRWD's Table A Water in accordance with the COA as provided herein; and

WHEREAS, DRWD will implement such program as a part of, and consistent with, the 2015 Update to its 2012 Agricultural Water Management Plan ("2015 AWMP"); and

WHEREAS, IRWD and DRWD desire to enter into this Agreement for the purpose of setting forth the terms and conditions of the Exchange Program (defined below); and

WHEREAS, Kern County Water Agency ("KCWA") supports a portion of IRWD's non-SWP water originating from Kern River supplies to be used by DRWD landowners within DRWD's service area or within Kern County.

WHEREAS, the Parties intend that this Agreement shall be consistent with that certain Water Banking and Exchange Program Agreement between Rosedale and IRWD dated as of January 13, 2009, as amended (the "Banking Agreement"), and that certain Water Banking, Recovery and Exchange Program Agreement [Stockdale West and Stockdale East Properties] between Rosedale and IRWD dated as of February 4, 2016, understanding that DRWD is not a party to nor bound by either of such agreements.

NOW, THEREFORE, in consideration of the promises and covenants herein contained, DRWD and IRWD agree as follows:

AGREEMENT:

Section 1. Definitions of Certain Terms.

1.1 COA means the agreement entitled "Coordinated Operating, Water Storage, Exchange and Delivery Agreement", dated as of April 21, 2011, by and among Metropolitan, the Municipal Water District of Orange County and IRWD.

1.2 Exchange Program means the program generally described in Section 2 and implemented under this Agreement.

1.3 Exchange Water means the amount of up to 40,000 acre feet of non-SWP water that IRWD determines, at its discretion, is available to recover from the Integrated Banking Project for delivery to DRWD under the Exchange Program while this Agreement is in effect.

1.4 Integrated Banking Project means, consistent with the COA, the project described in the Banking Agreement and such other banking assets or components or interests as IRWD may determine to operate in conjunction with the recharge, storage and recovery facilities on the property known as "Strand Ranch" and other property.

1.5 DRWD POD means the Integrated Banking Project turn-ins on the Cross Valley Canal (the "CVC"), to which IRWD delivers Exchange Water to DRWD or for its account pursuant to Section 3.

1.6 IRWD POD means the Integrated Banking Project turn-outs in Reach 2 of the CVC to which DRWD delivers Return Water to IRWD or for its account pursuant to the option for physical delivery of Return Water to the Integrated Banking Project described in Section 4.1.

1.7 Return Water means Table A Water or other SWP supplies available to or controlled by DRWD that will be delivered to IRWD in exchange for Exchange Water as provided herein.

1.8 Table A Water means water derived from DRWD's Table A Amount under DRWD's long-term Water Supply Contract with DWR.

Section 2. Exchange Program. IRWD shall make up to 40,000 AF of Exchange Water available at IRWD's discretion for delivery to DRWD over the term of this Agreement when and if DRWD requests Exchange Water and such request is approved by IRWD, in exchange for an equal amount of Return Water, to be delivered by DRWD to IRWD pursuant to Section 4 of this Agreement. IRWD may use for this purpose any water supplies that IRWD banks under a program that may be recovered and delivered to or as directed by DRWD in a manner acceptable to DRWD for its use either in or out of Kern County.

Section 3. Conveyance of Exchange Water.

3.1 IRWD will utilize its recovery capacity to recover and deliver the Exchange Water to the DRWD POD.

3.2 DRWD will take possession of the Exchange Water at the DRWD POD, when it is physically able to take delivery of Exchange Water, and will be responsible for conveying the Exchange Water for use by DRWD landowners.

Section 4. Return Water.

4.1 General. The timing and the location for the delivery of Return Water shall be as provided in this Section 4.1.

4.1.1 Within five (5) years of receiving a delivery of Exchange Water (the "Return Period"), and when the June 1 SWP allocation is 65% or greater, at a time of the year selected by DRWD, DRWD shall deliver an equivalent amount of Return Water, as provided herein, to IRWD. If the Return Period ends without a year with a June 1 SWP allocation of 65% or greater, then the Return Period will be extended one year at a time until a year occurs with the June 1 SWP allocation of 65% or greater which will trigger the delivery of the Return Water to IRWD. No more than five (5) one-year extensions would be provided. In the event five (5) extensions occur, DRWD's delivery of the Return Water shall be completed prior to the end of the fifth extension year. DRWD may also deliver Return Water to IRWD in any year when the June 1 SWP allocation is less than 65%.

4.1.2 With IRWD's approval, at the request of DRWD, DRWD may also pre-deliver Return Water prior to receiving a delivery of Exchange Water, up to an amount equal to, but not greater than, the amount of non-SWP water then stored by IRWD in the Integrated Banking Project. Within five (5) years of receiving a pre-delivery of Return Water, at a time of year selected by IRWD, and when DRWD is physically able to take delivery of Exchange Water and has demand therefor, IRWD shall, unless otherwise mutually agreed upon by IRWD and DRWD, deliver an equivalent amount of Exchange Water, as provided in Section 3. Exchange Water delivered as a result of a pre-delivery of Return Water shall be at an annual rate of twenty (20) percent of the pre-delivered amount until the return obligation has been fulfilled. At DRWD's request, IRWD may at IRWD's sole discretion provide Exchange Water at an increased rate per year. If by the end of the fifth year of a pre-delivery of Return Water, DRWD has not had the physical ability and demand to take delivery of all Exchange Water, then not more than one additional year would be allowed for Exchange Water deliveries.

4.1.3 Delivery of Return Water shall be made by either (i) if preferred by DRWD, an in-ground transfer of DRWD Table A Water from DRWD's Kern Water Bank account to the Integrated Banking Project, or otherwise (ii) as directed by Metropolitan, (A) delivery of Return Water from the California Aqueduct to the IRWD POD or (B) delivery to Metropolitan for subsequent delivery to Southern California. DRWD shall provide thirty (30) days written notice to IRWD before it delivers Return Water and will confer with IRWD as to the date(s) and location(s) of delivery.

4.2 Return Water To Constitute Program Water. The Parties acknowledge and agree that Return Water shall be deemed by IRWD to be Program Water, as defined in the COA, including Return Water delivered by in-ground transfer as provided in clause (i) of Section 4.1 and Return Water delivered as directed by Metropolitan as provided in clause (ii) of Section 4.1. However, all obligations to comply with the COA with respect to Return Water shall be borne by IRWD.

4.2.1 In accordance with the COA, Program Water delivered to the Metropolitan service area shall be under the control of Metropolitan, and any transfer, exchange or other transaction for water to be moved to Metropolitan's service area or to be made Program Water requires Metropolitan's prior consent; Metropolitan's consent to the Exchange Program shall be obtained as provided in Section 7 below.

4.2.2 Any provisions of Sections 10.2 and 10.3 to the contrary notwithstanding, control, carriage, handling, use, disposal, or distribution of water that has been delivered to Metropolitan for subsequent delivery to Southern California turnouts shall be governed as provided in the COA and DRWD shall have no responsibility therefor.

Section 5. Delivery Schedule.

5.1 General. As and when requested by DRWD and approved by IRWD, and pursuant to a schedule established pursuant to Section 5.2, IRWD may deliver Exchange Water and DRWD may pre-deliver Return Water within the first fifteen (15) years of the execution of this Agreement. DRWD shall provide Return Water on a first-in and first-out basis as provided in Section 4 and any pre-delivered Return Water shall be credited to DRWD as directed by DRWD for such purpose. All Return Water shall be delivered to IRWD by the end of the term of this Agreement. All Exchange Water to be provided upon the pre-delivery of Return Water shall be delivered as provided in Section 3 by the end of the term of this Agreement.

5.2 Exchange Water. At DRWD's request, IRWD will provide a preliminary accounting of the amount of Exchange Water that IRWD has determined to be available. In any calendar year when DRWD requests and IRWD approves an Exchange Water delivery, DRWD shall supply a preliminary delivery schedule with dates and amounts to IRWD by May 1. IRWD will confirm its determination of the quantity of Exchange Water available, the Parties will meet and confer as necessary and shall finalize the delivery schedule by June 1 of such calendar year. Exchange Water delivery shall be scheduled in coordination with the KCWA.

5.3 Return Water. The delivery of Return Water shall be scheduled in accordance with the applicable agreements governing Table A Water and the COA, and also in coordination with KCWA when the Return Water is returned to the Integrated Banking Project.

Section 6. Losses. Losses will be accounted for on an equitable basis. Exchange Water will be delivered to DRWD's POD net of losses determined in accordance with the applicable "Memorandum of Understanding" between Rosedale and adjoining entities which amount to 15 percent for water that was diverted to the Integrated Banking Project by IRWD. DRWD may incur other losses up to 2 % through the CVC conveyance as assigned by KCWA or any other losses that may be incurred with delivery to DRWD's service area. To ensure a 1-for-1 exchange, all Return Water (including water pre-delivered in accordance with this Agreement) will be delivered to IRWD considering applicable losses, such that the quantity of Return Water delivered by in-ground transfer or delivered to the IRWD POD or to the point where Metropolitan takes control of the water under the COA if delivered to Southern California, as determined pursuant to Section 4.1, is equal to the amount necessary to provide for the applicable losses associated with the method of return. For example, if the Return Water is delivered by in-ground transfer or delivered to Southern California, then there would be no losses to provide for. If the Return Water is delivered to the IRWD POD by DRWD, then 10% losses associated with the Memorandum of Understanding will need to be provided for in the Return Water deliveries. Exhibit "A" provides the adjustment factors to be used in providing for losses for each method of delivering Return Water. Exhibit "A" also includes examples of adjusting for losses associated with each method of making Return Water deliveries to ensure a 1-for-1 exchange. IRWD may incur other losses up to 2 % through the CVC conveyance as assigned by KCWA or any other losses that may be incurred with delivery to the IRWD POD.

Section 7. Coordination of Approvals and Agreements.

7.1 Coordination and Costs. The Exchange Program will require approvals from DWR, KCWA, and Metropolitan. IRWD and DRWD shall jointly coordinate using their respective staff resources in the development of all agreements necessary to deliver Exchange Water to DRWD and to deliver Return Water to IRWD. IRWD and DRWD shall each be responsible for their own costs associated with such coordination. IRWD and DRWD shall each execute reasonable indemnification agreements, consistent with their respective responsibilities as set forth in Section 10, to the extent required in connection with such approvals; provided, that neither Party shall be required to execute any such agreement that is unacceptable to its board of directors.

7.2 Contingent Effectiveness. The effectiveness of this Agreement shall be contingent upon consent to the herein-described Exchange Program by Metropolitan, as indicated by its signature below, and approval of the herein-described Exchange Program by DWR as required for SWP delivery between SWP contractors, and approval by KCWA to the extent required by such DWR authorizing agreement(s). If within one (1) year of the execution of this Agreement by the Parties (the "Contingent Effectiveness Period"), any of the approvals described in the preceding sentence are not obtained, this Agreement shall cease to be effective; provided, the Parties may mutually agree to and make any modifications of this Agreement that they determine are necessary to gain such consent or approval.

Section 8. Costs.

8.1 Per Acre Foot Costs. All per acre foot costs associated with the Exchange Program will be paid as set forth in this Section. An illustrative table that assumes that Return Water is delivered to the IRWD POD using current approximate costs is set forth in Exhibit "B" attached and incorporated herein. As indicated in Exhibit "B", the use of assumed non-SWP water costs and SWP allocation percentage reflect the Parties' overall intent to approximately equalize to each Party the per acre foot cost, and if the assumptions materially change, the Parties agree to make adjustments to the cost responsibilities in Sections 8.1.1 and 8.1.2 to approximately equalize the allocation of costs. The costs listed in Exhibit "B" are by way of example and not limitation, and if a new per acre foot cost attributed to the Exchange Program is incurred that was not anticipated in the costs listed in Exhibit "B", each of the Parties shall be responsible for one-half of the new cost unless the Parties agree otherwise.

8.1.1 Exchange Water Costs. Notwithstanding any other provision of this Agreement, IRWD shall be responsible for all per acre foot costs for acquisition and storage of Exchange Water prior to its delivery to the DRWD POD. IRWD shall be responsible for all costs of recovery of the Exchange Water, including recovery operation and maintenance, Rosedale administrative charges for recovery and CVC conveyance to the DRWD POD. Each of the Parties shall be responsible for one-half of all KCWA fees, including transaction set-up fees, per acre foot transaction request fees and third-party out-of-county fees.

8.1.2 Return Water Costs. Notwithstanding any other provision of this Agreement, DRWD shall be responsible for all per acre foot costs for Return Water. DRWD shall be responsible for all costs of delivery of the Return Water to the IRWD POD, including CVC pumping to the IRWD POD, CVC conveyance to the IRWD POD, and Rosedale administrative charges for recharge in the Integrated Banking Project. For water delivered to the IRWD POD via the CVC or to Southern California, the water delivery costs charged by the DWR (variable OMP&R and off-Aqueduct charges) are to be paid by Metropolitan under the COA. The costs of providing for applicable losses upon the delivery of Return Water to the IRWD POD can be allocated to equalize the cost per acre foot paid by the Parties as shown in the example provided as Exhibit "B".

8.2 Out of Pocket Costs Other Than Coordination Costs Or Per Acre Foot Costs. Without limiting the generality of Section 10.1 of this Agreement in any way, each Party shall bear its own expenses and costs incurred in connection with activities undertaken by such Party relating to the Exchange Program, except for costs of coordination otherwise provided for in Section 7.1 or per acre foot costs described and otherwise provided for in Section 8.1. A Party's expenses to be borne by such Party under this Section include without limitation (i) actual out-of-pocket expenses incurred by such Party (including costs of its staff), (ii) the actual amount of legal fees, consulting fees and similar third-party charges incurred by such Party in connection with the Exchange Program, including without limitation the costs incurred by such Party in connection with preparing and reviewing any environmental documentation, (iii) all costs of litigation (including without limitation attorneys' fees) actually incurred by such Party in defending any action brought by a third party as the result of or challenging such Party's actions in connection with the Exchange Program, and (iv) damages actually payable by such Party relating to any activities such Party undertakes in connection with the Exchange Program, except

to the extent such damages were the direct result of the willful misconduct of the other Party that would otherwise be indemnified under Section 10 unless otherwise mutually agreed by the Parties.

8.3 Payments. The Parties agree to promptly process statements, invoices, payments, and reimbursements as needed to effectuate this Section 8 and Section 7.1.

Section 9. Environmental Compliance. On May 27, 2008 Rosedale certified an environmental impact report (SCH 2007041080) for the Integrated Banking Project ("Strand Ranch EIR") and subsequently on said date IRWD approved the Strand Ranch EIR as a responsible agency. On January 14, 2010 IRWD certified a Negative Declaration (SCH 2009111097) for the IRWD / Jackson Ranch Water Allocation Project ("Jackson ND"). On December 8, 2015 Rosedale certified an environmental impact report (SCH 2010091076) for the Stockdale Integrated Banking Project ("Stockdale EIR") and subsequently on December 14, 2015 IRWD approved the Stockdale EIR as a responsible agency. The Strand Ranch and Stockdale EIRs evaluated, among other things, the banking project facilities and the delivery of water from the facilities to IRWD for use in the IRWD service area.

DRWD has adopted a Negative Declaration (SCH 201621110) for DRWD's 2015 AWMP that addresses long-term banking and exchange programs, including the (a) IRWD Strand Ranch and Stockdale Integrated Banking Projects, (b) transfers with other SWP contractors or their member units, and (3) transfers with other SWP contractors or their member units with established water banking or exchange programs. Accordingly DRWD has determined that the Exchange Program has been adequately addressed by California Environmental Quality Act ("CEQA") action(s). Additionally, not as a requirement, but as an accommodation to approval agencies, DRWD has adopted a Notice of Exemption prior to DRWD taking action on this Agreement.

Section 10. Indemnification.

10.1. In the event of an administrative challenge and/or litigation related to the Exchange Program, this Agreement or either of the Parties' environmental compliance in connection therewith (a "Challenge"), the Parties will promptly meet and confer to perform a risk assessment of the Challenge and cooperate in good faith to determine how to proceed in light of the Challenge. In the event of a Challenge, either Party may at any time elect to terminate the Agreement by 20 days' written notice to the other Party; provided, that upon any such termination, this Agreement shall remain in effect solely with respect to any Return Water that must be provided as of the date of the termination notice. If neither Party elects to terminate the Agreement and the Challenge is not withdrawn, the Parties shall jointly defend the Challenge with counsel mutually acceptable to the Parties. All out of pocket costs of the joint defense and any damages, awards or losses resulting therefrom shall be split equally by the Parties. Any costs associated with a Challenge incurred by counsel or other third parties engaged by only one of the Parties shall be borne solely by that Party.

10.2 IRWD, its officers, agents, and employees shall not be liable for the control, carriage, handling, use, disposal, or distribution of Exchange Water downstream of the DRWD POD, or for the control, carriage, handling, use, disposal, or distribution of Return Water upstream of the IRWD POD, nor for any claim of damage of any nature whatsoever, including

but not limited to property damage, personal injury or death, arising out of or connected with the control, carriage, handling, use, disposal or distribution of such water, unless such damages or claims are a result of negligent, intentional or reckless misconduct on the part of IRWD.

10.3 DRWD, its officers, agents, and employees shall not be liable for the control, carriage, handling, use, disposal, or distribution of Return Water downstream of the IRWD POD or downstream of the point of delivery of Return Water to Metropolitan for delivery to Southern California or for the control, carriage, handling, use, disposal, or distribution of Exchange Water upstream of the DRWD POD, nor for any claim of damage of any nature whatsoever, including, but not limited to, property damage, personal injury or death, arising out of or connected with the control, carriage, handling, use, disposal, or distribution of such water, unless such damages or claims are a result of negligent, intentional or reckless misconduct on the part of DRWD.

10.4 In-ground transfers which are accounting transfers not involving a physical delivery or POD are not deemed to be subject to the provisions of the preceding two paragraphs.

10.5 Neither IRWD nor DRWD shall be liable to the other for any claims related to the impairment of the quality of water as a result of storage in any Party's banking facilities or the aquifer from any cause.

10.6 Except as otherwise provided in Section 10.1, each Party shall at all times indemnify, defend and save the other Party free and harmless from, and pay in full, any and all causes of action, claims, liabilities, obligations, demands, losses, judgments, damages or expenses, including reasonable attorney fees and costs ("claims") in any manner arising out of or connected with the indemnifying Party's activities in its performance under the Agreement or its diversion, control, carriage, handling, use, disposal or distribution of water into and out of storage, and any claims relating to any third party claiming a prior right, or interference with their right, to water delivered from one Party to the other, and any claims made by landowners in the respective Party's service area as a result of activities of the indemnifying party or its diversion, control, carriage, handling, use, disposal or distribution of water into and out of storage, excepting any loss, damage or expense and claims for loss, damage or expense resulting in any manner from the negligent act or acts of the other Party, or its Board of Directors, officers, representatives, consultants, contractors, agents or employees.

10.7 In the event a Party entitled to indemnification is made a party to any action, lawsuit, or other adversarial proceeding alleging negligent or wrongful conduct on the part of an indemnifying Party, then (1) the indemnifying Party shall provide a defense to the other or, at the indemnitee's option, reimburse the indemnitee its costs of defense, including reasonable attorneys' fees, incurred in defense of such claims, and (2) the indemnifying Party shall promptly pay any final judgment or portion thereof rendered against the indemnitee(s).

Section 11. **Notices.** All written notices required to be given pursuant to the terms of the Agreement shall be either (i) personally delivered, (ii) deposited in the United States express mail or first class mail, registered or certified, return receipt requested, postage prepaid, (iii) delivered by overnight courier service, or (iv) delivered by facsimile transmission or e-mail, provided that the original of such notice is sent by certified United States mail, postage prepaid, or by overnight courier, no later than one (1) business day following such facsimile transmission

or email. All such notices shall be deemed delivered upon actual receipt (or upon first attempt at delivery pursuant to the methods specified in clauses (i), (ii) or (iii) above if the intended recipient refuses to accept delivery). All such notices shall be delivered to the addresses shown in the Agreement or to such other address as the receiving Party may from time to time specify by written notice to the other Party given in the manner provided herein.

Section 12. Mediation. The Parties agree that any and all disputes, claims or controversies regarding the Exchange Program or this Agreement shall be submitted to mediation in a mutually agreeable venue and if the matter is not resolved through mediation, then it may be submitted to any court of competent jurisdiction. Any affected Party may commence mediation by providing the other Party a written request for mediation, setting forth the subject of the dispute and the relief requested. The Parties shall cooperate with one another in selecting a mediator and in scheduling the mediation proceedings. The Parties covenant that they shall participate in the mediation in good faith, and that they shall share equally in costs charged by the mediator. All offers, promises, conduct and statements, whether oral or written, made in the course of the mediation by any of the Parties, their agents, employees, experts and attorneys, and by the mediator or any of the mediator's employees, are confidential, privileged and inadmissible for any purpose, including impeachment, in any arbitration or other proceeding involving the Parties, provided that evidence that is otherwise admissible or discoverable shall not be rendered inadmissible or non-discoverable as a result of its use in the mediation. The provisions of this Agreement with respect to mediation may be enforced by any Court of competent jurisdiction, and the Party seeking such enforcement shall be entitled to an award of all costs, fees and expenses, including attorneys' fees, to be paid by the Party against whom such enforcement is ordered.

Section 13. Entire Agreement. This Agreement constitutes the entire agreement between the IRWD and DRWD with respect to the subject matter hereof. This Agreement supersedes all prior negotiations, discussions, contracts, agreements or understandings between the parties hereto, and no evidence of any prior or contemporaneous oral agreement or understanding shall be admissible to vary its terms. This Agreement shall not be amended or modified in any way except by a written instrument executed by each party hereto. The foregoing notwithstanding, this Agreement shall not supersede the Agreement Between Dudley Ridge Water District and Irvine Ranch Water District, dated February 25, 2010.

Section 14. Termination For Breach. Either Party may terminate the Agreement if the other Party breaches any material obligation under the Agreement and such breach continues for a period of sixty (60) days, or such other period as may be reasonable under the circumstances, after the date on which written notice is issued by the non-breaching Party. The non-breaching Party shall be entitled to seek any and all legal or equitable damages and/or remedies as a result of the breaching Party's breach.

In the event that either IRWD or DRWD is in material default of the Agreement, the non-defaulting Party shall provide written notice to the defaulting Party, identifying with reasonable specificity the nature of the claimed default. If the defaulting Party has not cured the event(s) of material default which is (are) identified in the notice required by this section within twenty (20) business days after receipt of written notification, or such other period as is reasonable under the circumstances, the non-defaulting Party shall be entitled to any and all remedies which may be

available to it at law or in equity. This provision is not intended to provide a separate termination right, which is set forth in the first paragraph of this Section.

Section 15. Choice of Laws; Venue. The Agreement shall be governed and construed in accordance with the laws of the State of California. Venue for any action brought for the purpose of enforcing any provision of the Agreement shall be in Kern County, California.

Section 16. Cumulative Rights; Waiver. No failure by either Party to exercise, and no delay in exercising any rights, shall be construed or deemed to be a waiver thereof, nor shall any single or partial exercise by either Party preclude any other or future exercise thereof or the exercise of any other right. Any waiver of any provision or of any breach of any provision of this Agreement must be in writing, and any waiver by either party of any breach of any provision of this Agreement shall not operate as or be construed to be a waiver of any other breach of that provision or of any breach of any other provision of this Agreement.

Section 17. Further Action. The Parties agree to and shall take such further action and execute and deliver such additional documents as may be reasonably required to effectuate the Exchange Program, consistent with each and all of the terms and conditions of this Agreement.

Section 18. Assignment. Neither Party shall assign or otherwise transfer its rights or obligations in, under or to the Exchange Program or this Agreement, in whole or in part, without the prior written consent of the other Party, which may be withheld in such other Party's sole and absolute discretion.

Section 19. Force Majeure; Change In Law. The respective obligations of each Party hereto shall be suspended while it is prevented from complying by acts of God; war; riots; civil insurrection; acts of civil or military authority; fires; floods; earthquakes; labor accidents or incidents; rules and regulations of any federal, state, or other governmental agency (other than the Parties themselves); changes in law, rules, or regulations of any federal, state or other governmental agency (other than the Parties themselves); or other cause of the same or other character any of which are beyond the reasonable control of such Party (collectively, "Force Majeure"). In the event of a suspension due to the foregoing, the Party whose obligations are suspended shall promptly notify the other Party in writing of such suspension and the cause and estimated duration of such suspension.

The Party providing such notice shall be excused from fulfilling its obligations under the Agreement until such time as the Force Majeure has ceased to prevent performance or other remedial action is taken, at which time the Party shall promptly notify the other Party of the resumption of its obligations under the Agreement. Any Party rendered unable to fulfill any of its obligations by reason of a Force Majeure shall exercise due diligence to remove such inability with reasonable dispatch within a reasonable time period and mitigate the effects of the Force Majeure. The relief from performance shall be of no greater scope and of no longer duration than is required by the Force Majeure.

Section 20. Interpretation. It is agreed and acknowledged by the parties that the Agreement has been arrived at through negotiation involving their respective counsel, and that each Party has had a full and fair opportunity to revise the terms of the Agreement. Consequently, the

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DUDLEY RIDGE WATER DISTRICT

By 
Manager-Engineer

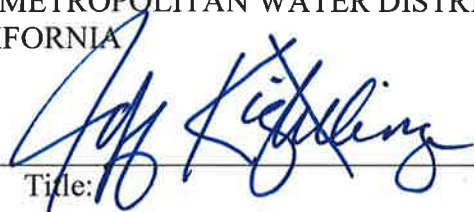
IRVINE RANCH WATER DISTRICT

By 
General Manager

CONSENT:

In accordance with Paragraph 3.2 of that agreement entitled "Coordinated Operating, Water Storage, Exchange and Delivery Agreement," (the "COA") dated as of April 21, 2011, by and among The Metropolitan Water District of Southern California ("Metropolitan"), the Municipal Water District of Orange County and the Irvine Ranch Water District, and in accordance with Section 15(d) of Metropolitan's State Water Project Contract with the California Department of Water Resources, THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA hereby provides its written consent to IRWD's acquisition of State Water Project Water on Metropolitan's behalf as described in the Exchange Program defined herein, so long as that water meets the requirements of the COA.

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

By: 
Title:

By: _____
Secretary

EXHIBIT “A”

Adjustment Factors for Losses Associated with Methods of Delivery of Return Water to Ensure a 1-for-1 Exchange¹

Method of Delivery of Return Water	In-ground Transfer from Kern Water Bank to IRWD Integrated Banking Project	Metropolitan Takes Delivery to Southern California	Delivery to IRWD Integrated Banking Project via Cross Valley Canal ²
Adjustment Factor for Losses	1.0	1.0	1.10

1/ IRWD and DRWD may each incur their own conveyance losses up to 2% through the Cross Valley as assigned by KCWA.

2/ Deliveries to the IRWD Integrated Banking Project are subject to losses defined in the “Memorandum of Understanding” between Rosedale and adjoining entities. Accordingly, Return Water deliveries to the Integrated Banking Project by DRWD as a *SWP Agricultural Contractor* will be subject to 10% losses.

Example 1: If IRWD provides Exchange Water in an amount of 1,000 AF and Return Water is delivered to IRWD’s Integrated Banking Project via the Cross Valley Canal, then the following calculations would provide for Memorandum of Understanding losses upon the delivery of Return Water (10% percent losses would be required):

Exchange Water delivered = 1,000 AF
Return Water delivered = 1,000 AF * 1.10 = 1,100 AF
Net Return Water = 1,000 AF

Example 2: If IRWD provides Exchange Water in an amount of 1,000 AF and Return Water is delivered through in-ground transfer, then the following calculations would provide for losses upon the delivery of Return Water:

Exchange Water delivered = 1,000 AF
Return Water delivered = 1,000 AF * 1.0 = 1,000 AF
Net Return Water = 1,000 AF

Example 3: If IRWD provides Exchange Water in an amount of 1,000 AF and Return Water is delivered to Southern California, then the following calculations would provide for losses upon the delivery of Return Water:

Exchange Water delivered = 1,000 AF
Return Water delivered = 1,000 AF * 1.0 = 1,000 AF
Net Return Water = 1,000 AF

EXHIBIT “B”

Example of Equalizing the Cost Per Acre-Foot Associated with the Exchange Program

All per acre foot costs associated with the Exchange Program will be paid as set forth in Section 8. An illustrative table using current approximate costs for Exchange Water delivered to DRWD and Return Water delivered (or pre-delivered) to IRWD’s Integrated Banking Project via Cross Valley Canal is set forth in this Exhibit B

Estimated per Acre-Foot Costs by Participant (in current dollars)

	DRWD	IRWD	Metropolitan
Exchange Water Costs			
Stored Exchange Water		\$ 84.00	
KCWA Fees: transaction set up fee, per AF transaction request fees, third party out of county fee	\$ 2.50	\$ 2.50	
Recovery of Exchange Water		\$ 72.00	
Recovery operations, maintenance costs		\$ 2.00	
Rosedale admin. charge for recovery at Integrated Banking Project		\$ 3.00	
CVC conveyance of Exchange Water to DRWD		\$ 3.00	
Return Water Costs			
DRWD Table A (assumes 65% SWP allocation)	\$151.00		
Water Toll			\$ 28.00
CVC pumping to Integrated Banking Project	\$ 7.00		
CVC conveyance of Return Water to Integrated Banking Project	\$ 3.00		
Rosedale admin charge for recharge at Integrated Banking Project	\$ 3.00		
Estimated cost with 10% losses associated with delivery of Return Water to Integrated Banking Project via the Cross Valley Canal. Calculated in this example as: $(\$151 + \$7 + \$3 + \$3) * 0.10 / 2$	\$ 8.20	\$ 8.20	
Totals	\$ 174.70	\$ 174.70	\$ 28.00