

AGENDA
IRVINE RANCH WATER DISTRICT
SUPPLY RELIABILITY PROGRAMS COMMITTEE
THURSDAY, APRIL 16, 2020

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.my.webex.com/irwd.my/j.php?MTID=m3298a4fccf9593e3f4049f1f20126b0a>

Meeting Number (Access Code): 623 953 270
Meeting Password: N2RaKN27cZa

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.

ATTENDANCE

Committee Chair: Peer Swan _____
Member: Douglas Reinhart _____

ALSO PRESENT

Paul Cook	_____	Paul Weghorst	_____
Rob Jacobson	_____	Fiona Sanchez	_____
Kellie Welch	_____	Christine Compton	_____
Ray Bennett	_____	Jo Ann Corey	_____
Natalie Palacio	_____		_____
	_____		_____

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, April 16, 2020.

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

- | | |
|----|--|
| 5. | <u>WATER BANKING PROJECT FACILITIES, CAPACITIES, OPERATIONS AND PROGRAMS – PALACIO / WELCH / SANCHEZ / WEGHORST</u>

Recommendation: Receive and file. |
| 6. | <u>KERN FAN GROUNDWATER STORAGE PROJECT UPDATE – SANCHEZ / WEGHORST</u>

Recommendation: Receive and file. |

OTHER BUSINESS

7. Directors’ Comments

OTHER BUSINESS - Continued

8. CLOSED SESSION CONFERENCE WITH REAL PROPERTY NEGOTIATORS –
Pursuant to Government Code Section 54956.8:

Property: Parcels 103-110-02; 103-110-04; 103-110-09; 103-120-14; 103-120-15; 103-120-16; 103-120-17; 103-130-01; 103-130-03; 103-130-05; 103-130-07; 103-140-02; 103-140-05; 103-140-06; 103-140-12; 103-140-15; 103-140-16; 103-140-17; 103-140-18; 103-140-19; 103-180-01; 103-180-05; 103-180-07; 103-190-13; 103-190-14; 103-200-23; 103-200-25; 103-200-26; 103-200-27; 103-200-28; 103-200-29, County of Kern

Agency negotiators: Paul Cook, General Manager, & Rob Jacobson,
Treasurer/Director of Risk Management

Negotiating parties: Tech Ag Financial Group, Inc. and Rosedale-Rio Bravo Water
Storage District

Under negotiation: Price and Terms of Payment

9. Open Session

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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April 16, 2020

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 the 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 attached 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" reflect the adjusted Central Coast Water Authority 2019 delivery amount after Cross Valley Canal losses, estimated recovered amount for Buena Vista Water Storage District, and corrections to the State Water Project (SWP) allocation of 15% for 2020.

Exhibit "D" 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 "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 the 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” and “M”, 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;
- Dudley Ridge Water District; 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 BVWSD and Diagram of One-Year Program to Augment Recharge Using Stockdale West Recharge Facilities with BVWSD

Exhibit “K” – Diagram of Unbalanced Exchange Program Diagram with DRWD

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

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

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Exhibit "A"

TABLE 1
Current and Anticipated Water Banking Project
Recharge, Storage and Recovery Capacities
April 16, 2020

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	

¹ 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.

² Strand Ranch and Stockdale West wells currently idle.

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

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

⁵ 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
April 16, 2020

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 2019 (AF)						
Total Kern Water Bank	-	4,656	-	-	-	4,656
Total MWD System ⁴	8,349	-	-	-	879	9,228
Total Kern County	3,567	17,704	5,202	289	2,698	29,460
TOTAL STORED WATER (1/1/2019)	11,916	22,360	5,202	289	3,577	43,344
(RECOVERY) AND RECHARGE IN 2019 (AF)						
MWD Water to Jackson Ranch ⁵	-	-	-	-	(440)	(440)
Kern Water Bank Deliveries ⁶		97				97
2019 SWP Allocation (75%) ³	656	-	-	-	656	1,311
Kern River Water	-	5,975	5,975	-	-	11,949
SWP Table A (CCWA 2019 Exch.)	347			347	-	694
TOTAL 2019 TRANSACTIONS	1,003	6,072	5,975	347	216	13,611
Total Kern Water Bank	-	4,753	-	-	-	4,753
Total MWD System	8,349	-	-	-	439	8,788
Total Kern County	4,570	23,679	11,177	636	3,354	43,414
TOTAL STORED WATER (1/1/2020)	12,919	28,432	11,177	636	3,793	56,955
(RECOVERY) AND RECHARGE IN 2020 (AF)						
MWD Water to Jackson Ranch (estimated)	-	-	-	-	-	-
Kern Water Bank Deliveries	-	-	-	-	-	-
2020 SWP Allocation (15 %) ³	131	-	-	-	131	262
Kern River Water	-	-	(3,770)	-	-	(3,770)
TOTAL ESTIMATED 2020 TRANSACTIONS	131	-	(3,770)	-	131	(3,508)
ESTIMATED WATER IN STORAGE 2020 (AF)						
Total Kern Water Bank	-	4,753	-	-	-	4,753
Total MWD System	8,349	-	-	-	439	8,788
Total Kern County	4,701	23,679	7,407	636	3,485	39,906
TOTAL ESTIMATED STORED WATER TO DATE	13,050	28,432	7,407	636	3,924	53,447

NOTES:

-MWD = Metropolitan Water District of Southern California.

¹ IRWD's SWP includes 437 AF from CVWD that stays in Kern County.

² IRWD's Non-SWP total includes 3,158 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 2019 SWP allocation water is stored in Kern County. It is assumed that IRWD's 2020 SWP allocation will be stored in Kern County.

⁴ Beginning balance of water stored in MWD system includes: 4,494 AF from 2014 Exchange, 3,206 AF of 2014 borrowed SWP, 649 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.

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Exhibit "C"

TABLE 3
IRWD's Water Banking Storage, Recharge and Recovery Operations - AFTER LOSSES
 April 16, 2020

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 2019 (AF)						
Total Kern Water Bank	-	4,233	-	-	-	4,233
Total MWD System ⁴	7,393	-	-	-	879	8,272
Total Kern County	3,046	15,564	4,532	246	2,395	25,783
TOTAL STORED WATER (1/1/2019)	10,439	19,797	4,532	246	3,274	38,288
(RECOVERY) AND RECHARGE IN 2019 (AF)						
MWD Water to Jackson Ranch ⁵	-	-	-	-	(440)	(440)
Kern Water Bank Deliveries ⁷	-	87	-	-	-	87
2019 SWP Allocation (75%) ³	557	-	-	-	557	1,114
Kern River Water	-	5,078	5,377	-	-	10,455
SWP Table A (CCWA 2019 Exch.)	298	-	-	298	-	595
TOTAL 2019 TRANSACTIONS	855	5,166	5,377	298	117	11,812
Total Kern Water Bank	-	4,320	-	-	-	4,320
Total MWD System	7,393	-	-	-	439	7,832
Total Kern County	3,901	20,642	9,909	543	2,952	37,947
TOTAL STORED WATER (1/1/2020)	11,294	24,963	9,909	543	3,391	50,100
(RECOVERY) AND RECHARGE IN 2020 (AF)						
MWD Water to Jackson Ranch (estimated)	-	-	-	-	-	-
Kern Water Bank Deliveries	-	-	-	-	-	-
2020 SWP Allocation (15%) ³	112	-	-	-	112	224
Kern River Water	-	-	(3,770)	-	-	(3,770)
TOTAL ESTIMATED 2020 TRANSACTIONS ⁶	112	-	(3,770)	-	112	(3,546)
ESTIMATED WATER IN STORAGE 2020 (AF)						
Total Kern Water Bank	-	4,320	-	-	-	4,320
Total MWD System	7,393	-	-	-	439	7,832
Total Kern County	4,013	20,642	6,139	543	3,064	34,401
TOTAL ESTIMATED STORED WATER TO DATE	11,406	24,963	6,139	543	3,503	46,554

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 DRWD and 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 389 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 2019 SWP allocation water is stored in Kern County. It is assumed that IRWD's 2020 SWP allocation will be stored in Kern County.

⁴ Beginning balance of water stored in MWD system includes (net of CVC losses): 3,920 AF of 2014 Exchange, 2,824 AF of 2014 borrowed SWP, 649 AF of IRWD's 2013-2016 SWP allocations through DRWD.

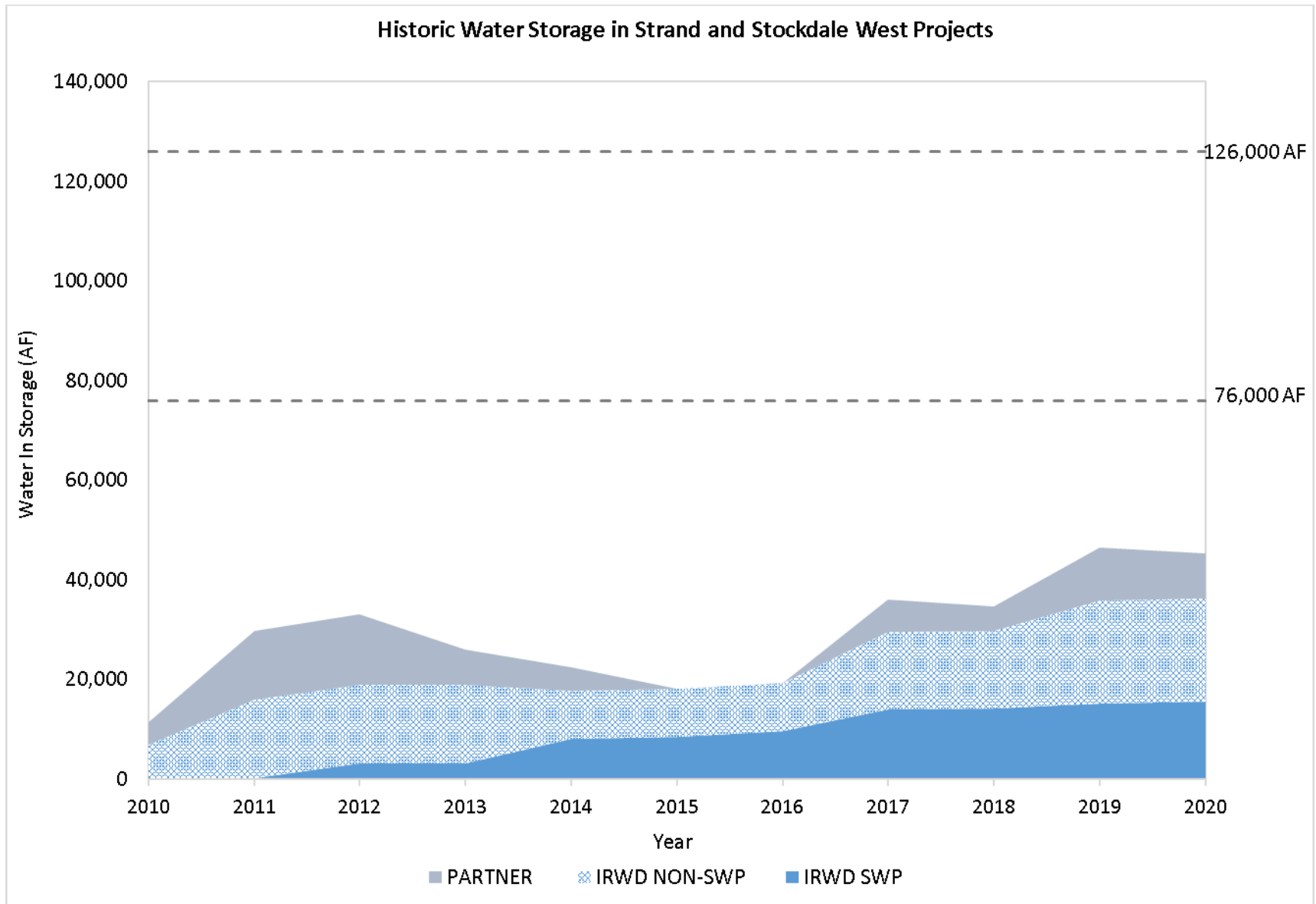
⁵ Water returned to DRWD by MWD for use on IRWD's Jackson Ranch.

⁶ 2020 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.

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Exhibit “D”



*After losses

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Exhibit "E"

TABLE 1
IRWD Dedicated Water Banking Capacities for
Existing and Proposed Exchange Programs
April 16, 2020

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	-	-	-	-

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Exhibit "F"



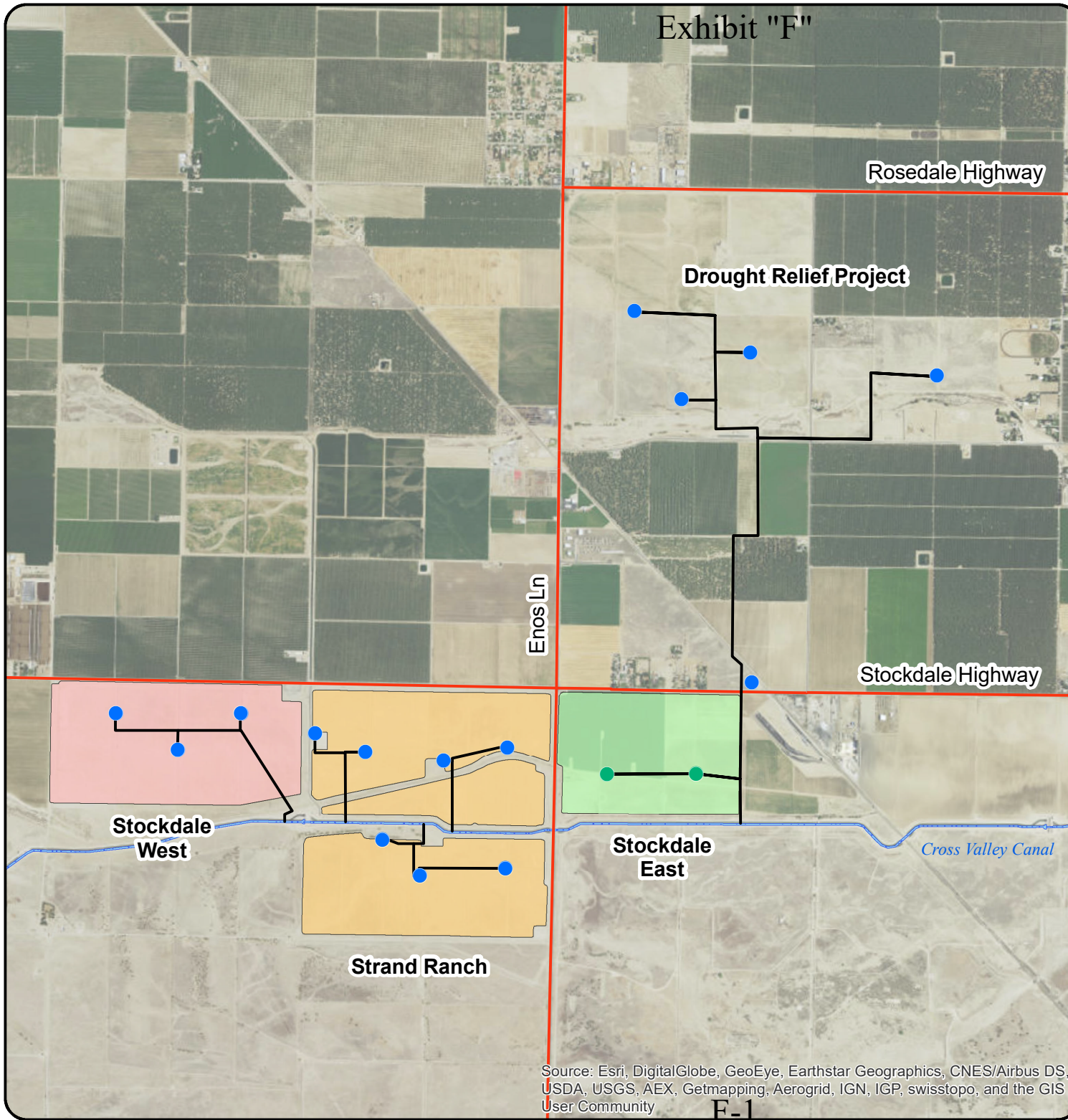
Irvine Ranch
WATER DISTRICT

Location Map: IRWD Water Banking Projects Wells and Turnin Pipelines

MAP FEATURES

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

This figure shows the location of IRWD's water banking project sites as well as existing and proposed 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

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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 as well as existing and anticipated 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



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Miles

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

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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



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Miles

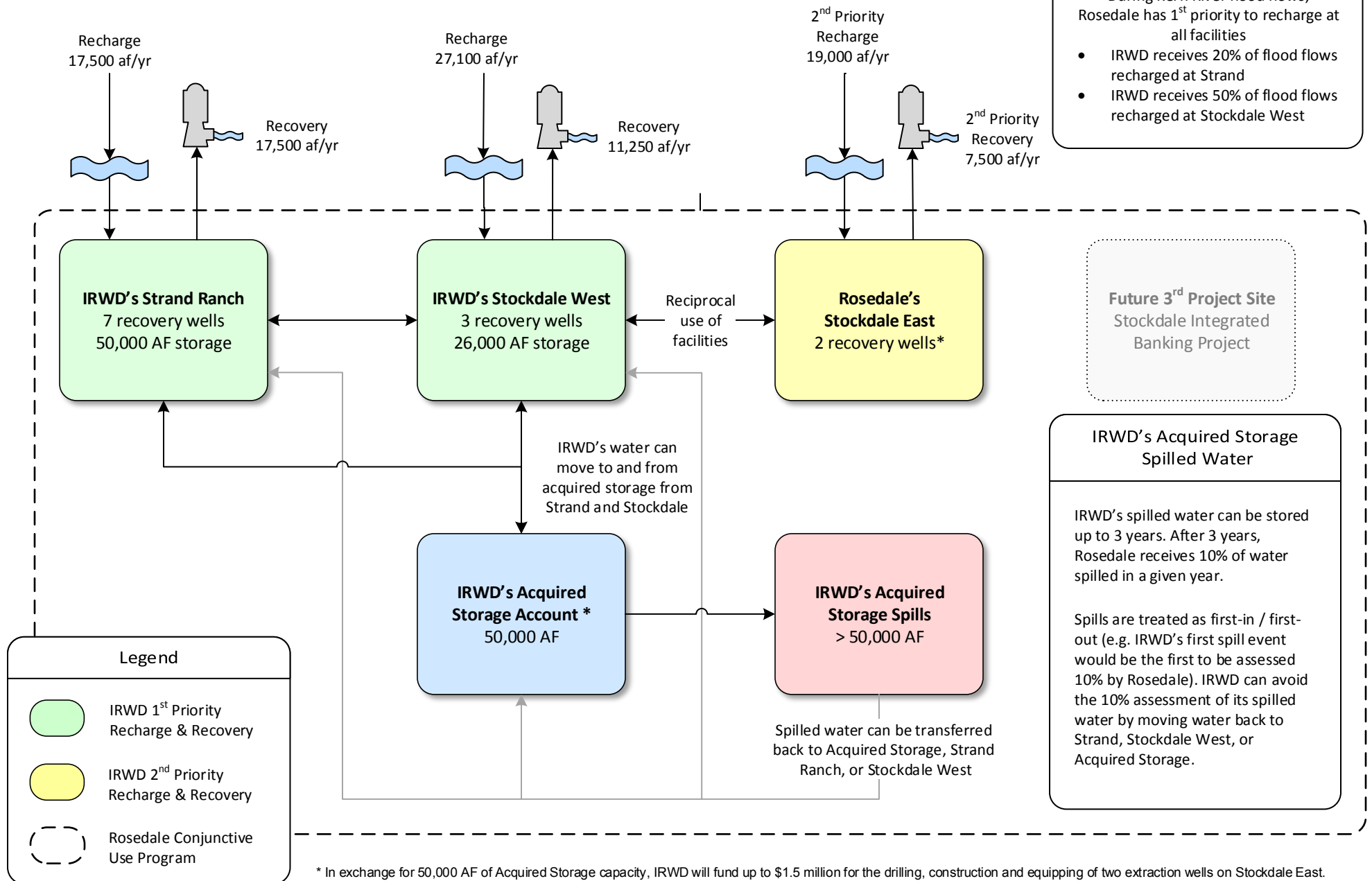
NAD 83 State Plane Zone 5 (feet)
Central Meridian: -118

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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)

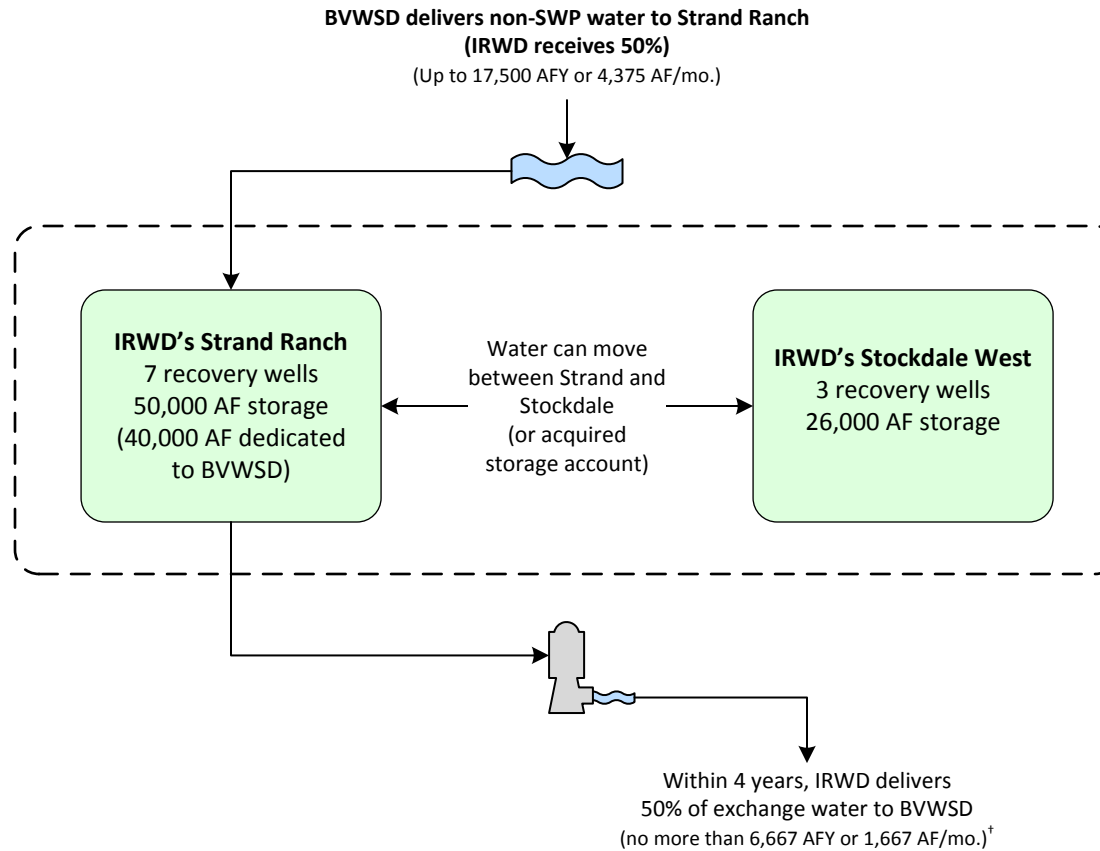




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Exhibit "J"

Buena Vista Water Storage District Long Term Water Exchange Program

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

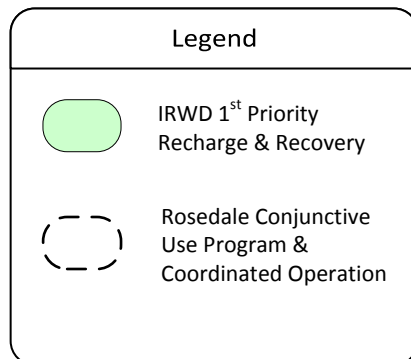
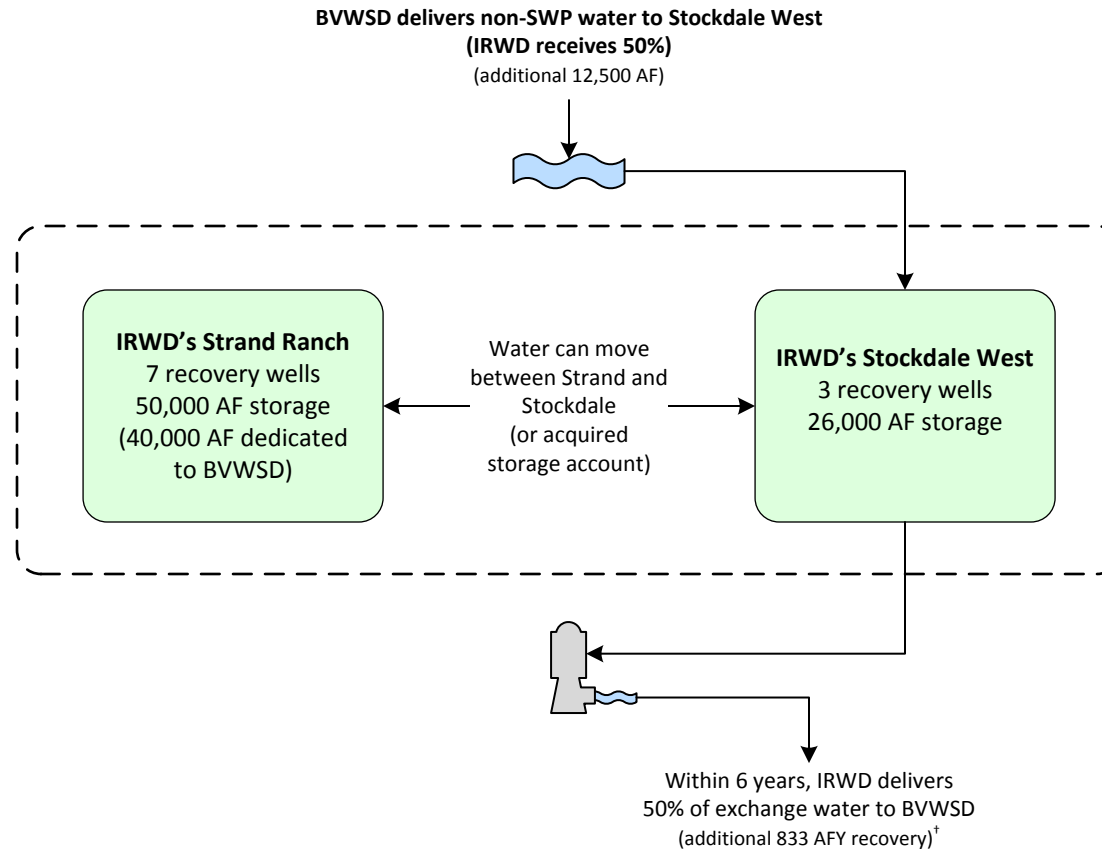


Legend	
	IRWD 1 st Priority Recharge & Recovery
	Rosedale Conjunctive Use Program & Coordinated Operation

[†]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 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



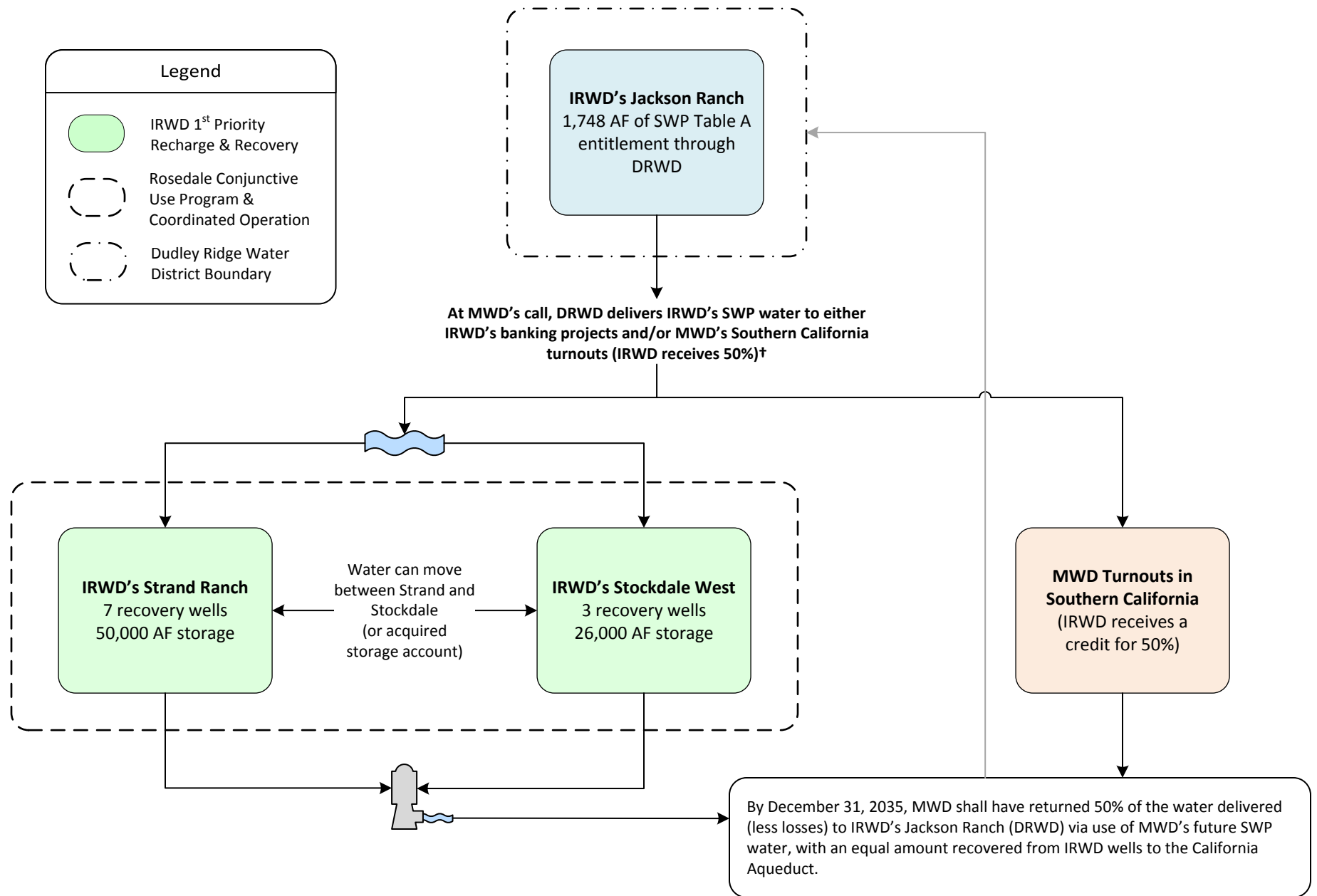
[†]IRWD shall remit one-half of the exchanged supply less one-half of reasonable losses back to BV no later than December 31st of the 6th year following the associated recharge event. IRWD pays for recovery of water returned to BV. Water to be remitted back to BV may remain in storage at Strand Ranch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

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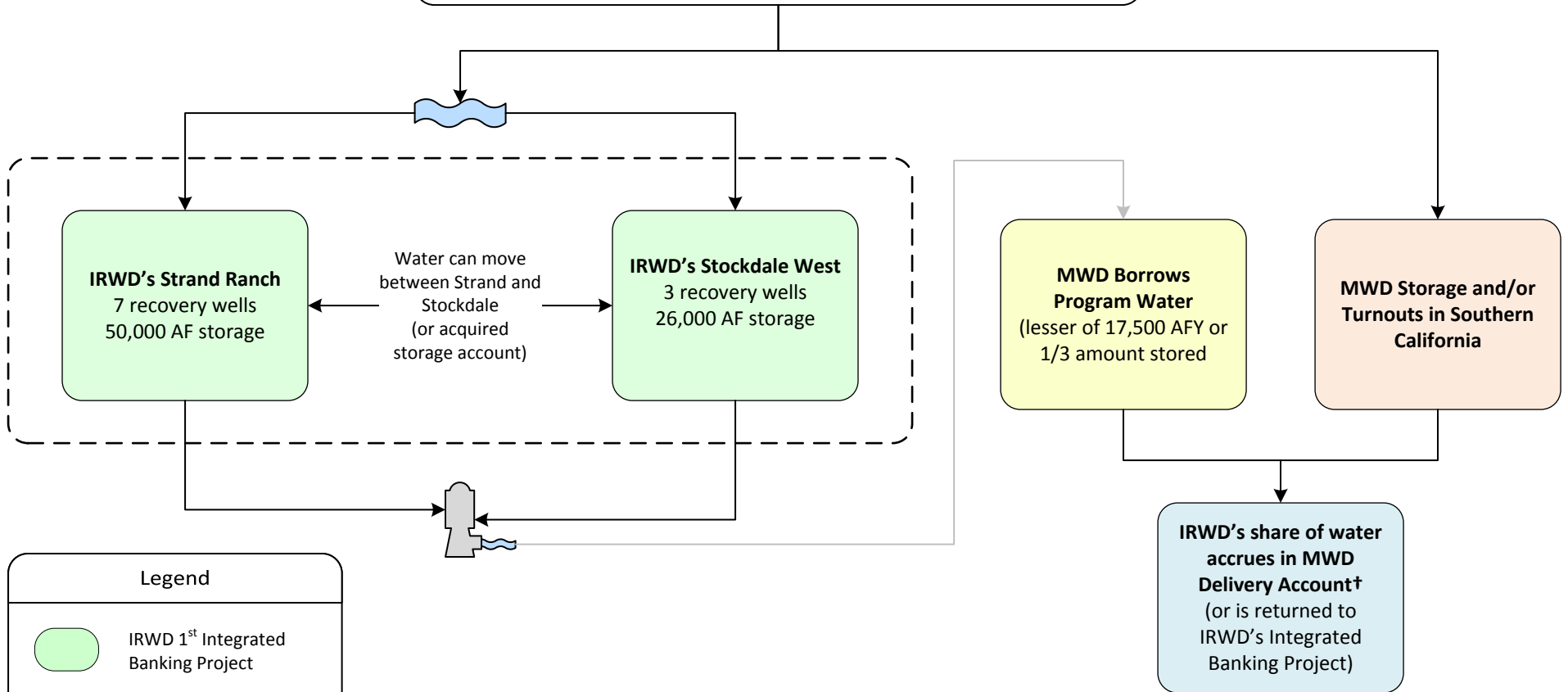
Exhibit "L"

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:

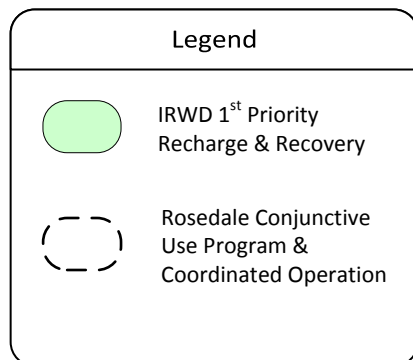
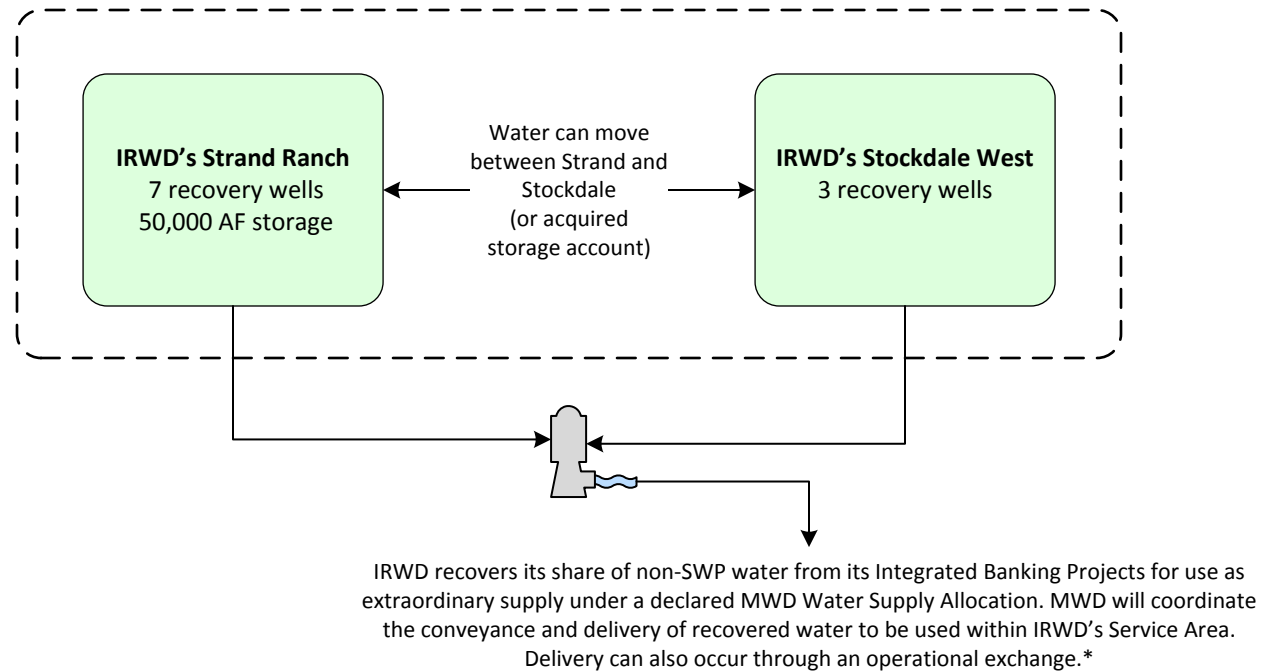
- Storage of water in IRWD's Integrated Banking Project
- Delivery to Southern California for immediate use and/or storage in MWD system
- Borrow a portion of Program water, with accrual in MWD Delivery Account



- 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.

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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.

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April 16, 2020

Prepared by: F. Sanchez

Submitted by: P. Weghorst

Approved by: Paul A. Cook



SUPPLY RELIABILITY PROGRAMS COMMITTEE

KERN FAN GROUNDWATER STORAGE PROJECT UPDATE

SUMMARY:

This item is to provide an update on the progress being made in developing the Kern Fan Groundwater Storage Project.

BACKGROUND:

The Water Quality, Supply and Infrastructure Improvement Act of 2014, also known as Proposition 1, provides \$2.7 billion for public benefits associated with water storage projects that will provide specific public and ecosystem benefits. These water storage projects are to be funded through the Water Storage Investment Program (WSIP). The California Water Commission (CWC) is administering the grant funding for the planning, design, and construction of water storage projects through the WSIP. IRWD and Rosedale jointly submitted a WSIP grant application for the Kern Fan Project on August 14, 2017. In July 2018, the CWC awarded \$67.5 million in conditional funding for the Project.

Kern Fan Project Overview:

The proposed Kern Fan Project will develop a regional water bank in the Kern Fan area to capture, recharge and store Article 21 water from the State Water Project (SWP) during wet hydrologic periods. The stored water would be extracted when needed to provide ecosystem, emergency supply, and water supply benefits. Project operations would be coordinated with the SWP through an exchange agreement with the California Department of Water Resources (DWR).

Phased Construction:

The Kern Fan Project would be constructed in two phases. In Phase 1 of the Project, IRWD and Rosedale will acquire up to 640 acres in the Kern Fan area and construct recharge and recovery facilities as necessary to develop a fully functioning water banking project. In addition, IRWD and Rosedale would construct a new dedicated conveyance canal from the California Aqueduct to ensure the ability to convey flows from the SWP to the new recharge facilities. In Phase 2 of the Kern Fan Project, IRWD and Rosedale will acquire an additional 640 acres of land to construct additional the water banking facilities. The overall project would consist of approximately 500 cubic feet per second (cfs) of canal capacity from the California Aqueduct, 100,000 acre-feet (AF) of storage capacity, up to 100,000 acre-feet per year (AFY) in recharge capacity and up to 70 cfs, or 50,000 AFY, of groundwater recovery capacity. The recharge and recovery capacities would be shared equally by IRWD and Rosedale. The preliminary Project location map is provided as Exhibit "A".

Project Schedule:

The two phases of Kern Fan Project will require approximately six years to complete. Phase 1 began in September 2018 and is expected to be complete in 2023. Phase 2 would be complete and operational in 2025. An overview of the project schedule is provided as Exhibit “B”. Major components of the schedule include:

- Formation of the Groundwater Banking Authority (a Joint Powers Authority);
- Establishing terms for critical path agreements;
- Executing project agreements;
- Early planning studies;
- Conducting feasibility studies;
- Environmental Documentation and Permitting;
- Land Acquisition;
- Preliminary Design;
- Final Design;
- Canal Right-of-Way Acquisition; and
- An extended bid phase and construction.

Update on Project Tasks:

At the Committee meeting, staff will provide an update on the following project tasks that are structured to ensure that the CWC requirements for funding are met by January 2022 and to ensure that IRWD and Rosedale fulfill requirements for seeking federal funding for the Project:

Formation of Groundwater Banking Authority:

On July 22, 2019, an agreement between Rosedale and IRWD creating the Groundwater Banking Authority to develop and implement the Project was approved by the Boards of Directors of Rosedale and IRWD. These approvals were subject to non-substantive changes and the determination that executing critical path agreements with DWR will be feasible. On April 8, 2020, the agreement forming the Authority was executed with an effective date of July 1, 2020 subject to the terms of a side letter agreement. The side agreement prevents the operation of the Authority until IRWD and Rosedale have received reasonable assurances that it will be feasible to execute the critical path turnout and exchange agreements as described below.

Identifying Optimal Location of Project Facilities and Updated Project Cost:

On March 27, Dee Jaspar and Associates (DJA) provided a draft 30% Design Report for the Kern Fan Project that includes enhanced details for alternative and preferred canal alignments for the Project. The report also addressed comments provided by the Bureau of Reclamation on the preliminary project design, including refining certain elements of the Project. Based on the 30% design, the revised Project capital cost is estimated at \$225 million, which is an increase from the previous estimate of \$197 million. This increase is due to the escalation of costs from 2015 to

2018 levels, a more detailed design and a change in the preferred canal alignment. The final alignment will be determined following any hydraulic modeling of the California Aqueduct that is required to secure DWR approval of an Aqueduct turnout location for the Project.

Preparing Feasibility Study for Federal Funding:

In December 2019, staff submitted a feasibility study that is required by Reclamation to establish that the Kern Fan Project is eligible for \$50.2 million in funding through the federal Water Infrastructure Improvements for the Nation Act (WIIN). Staff expects that other sources of federal funding for water infrastructure may become available as part of a new economic stimulus package. In response to a request from Reclamation, staff prepared and submitted supplemental information, together with an updated feasibility study that includes the 30% Design Report and corresponding project costs prepared by DJA. The feasibility study will also form the basis of a Preliminary Design Report that will satisfy the requirements of the CWC. A copy of the agreement forming the Groundwater Banking Authority was included as support in the updated feasibility study.

Development of Agreements with State Agencies:

The Groundwater Banking Authority will need to execute the following agreements with DWR and the California Department of Fish and Wildlife (CDFW):

- California Aqueduct Turnout Agreement (DWR);
- Exchange Agreement (DWR);
- Water Supply Public Benefits Agreement (DWR); and
- Ecosystem Public Benefits Agreement (CDFW).

The purpose of these agreements will be to coordinate construction and operation of the Kern Fan Project, and to provide the public benefits necessary for the Groundwater Banking Authority to receive \$67.5 million in WSIP funding. Execution of the Aqueduct Turnout and Exchange Agreements are a critical path items for the successful implementation of the Project. Accordingly, negotiating the terms for these agreements with executive management at DWR is a major focus of current work efforts. It is expected that the principles for these critical agreements will be finalized in May 2020. The most recent drafts of the Principles for the Aqueduct Turnout and Exchange Agreements are provided as Exhibit “C” and Exhibit “D”, respectively. At the Committee meeting, staff will provide an update on the status of the various agreements.

Environmental Documentation and Permitting:

In September 2019, IRWD executed an agreement with Environmental Science Associates to conduct an environmental review of the Kern Fan Project and to assist with securing necessary permits for the Project by January 2022. A Notice of Preparation for the development of the Environmental Impact Report (EIR) for the Project was released on April 7, 2020, which announced that a Public Scoping Meeting is scheduled for April 29. The public review draft of the EIR is expected to be released in October 2020.

Land Acquisition:

Based on the optimal location of the Aqueduct turnout and the alignment of the project conveyance facilities, IRWD and Rosedale have been working to identify lands suitable for incorporation into the Project. At the Committee meeting, staff will provide additional information on the potential acquisition of land for the Kern Fan Project.

FISCAL IMPACTS:

The CWC will provide \$67.5 million in WSIP funding for the Kern Fan Project through a grant agreement. Staff has submitted a Project feasibility report to Reclamation seeking \$50.2 million in federal funding. IRWD and Rosedale will fund the remaining cost of the Kern Fan Project.

ENVIRONMENTAL COMPLIANCE:

An EIR for the Stockdale Integrated Banking Project was prepared, certified and approved in compliance with California Environmental Quality Act (CEQA) of 1970 (as amended), codified at California Public Resources Code Sections 21000 et. seq., and the State CEQA Guidelines in the Code of Regulations, Title 14, Division 6, Chapter 3. Rosedale, as lead agency, filed a Notice of Determination for the Stockdale Integrated Banking Project with the County of Kern. IRWD, as a responsible agency, filed Notices of Determination with the County of Orange and with the County of Kern. The EIR includes a program-level analysis of impacts of a third project site, which could include portions of Phase 1 of the Kern Fan Project. A new EIR is being prepared for the construction and operation of Kern Fan Project Phase 1 and Phase 2 facilities. A Notice of Preparation of an EIR for the Kern Fan Project was released on April 7.

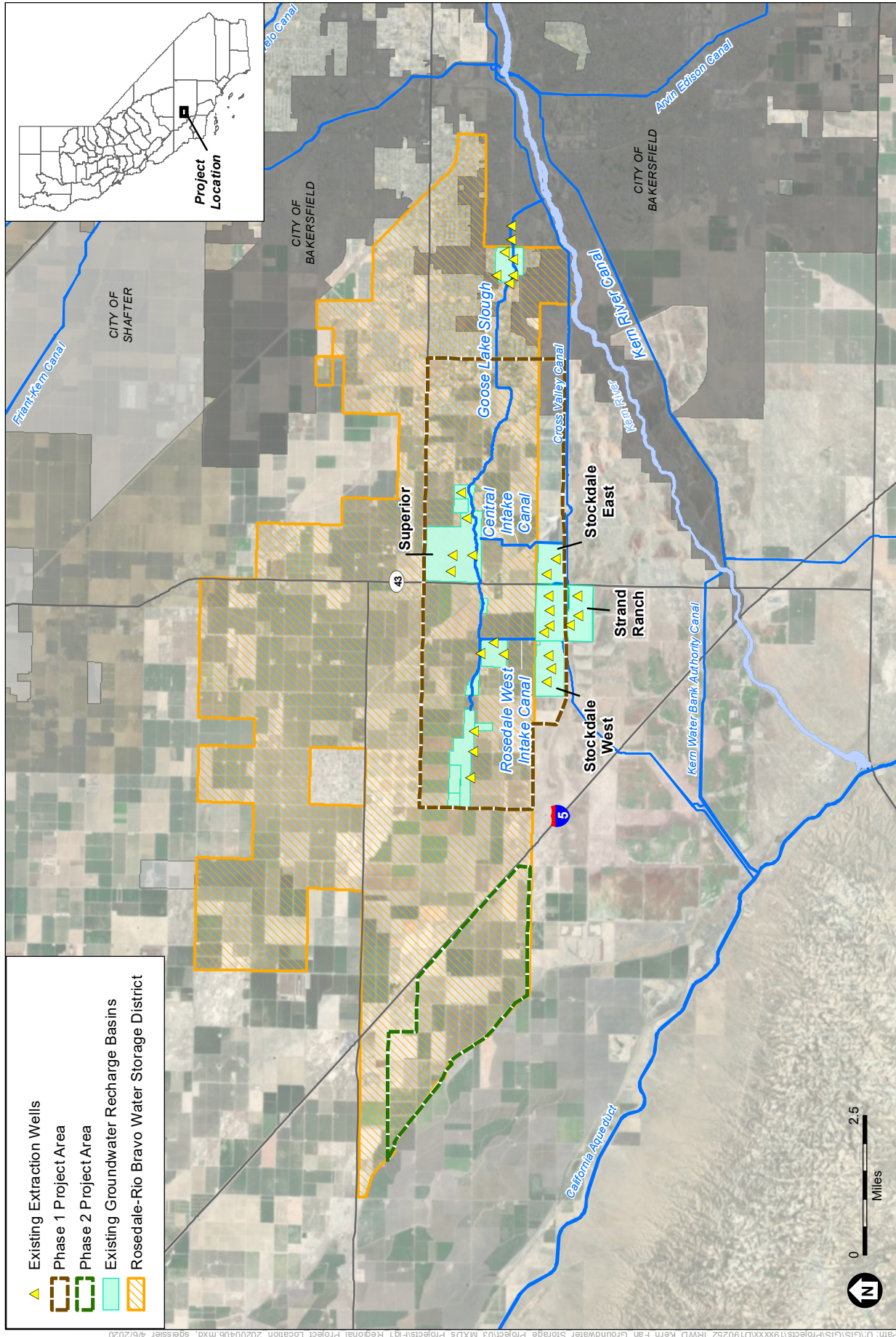
RECOMMENDATION:

Receive and file.

LIST OF EXHIBITS:

- Exhibit "A" – Kern Fan Project Location Map
- Exhibit "B" – Kern Fan Project Schedule
- Exhibit "C" – Draft Principles for Aqueduct Turnout
- Exhibit "D" – Draft Principles for Exchange Agreement

EXHIBIT "A"



Kern Fan Groundwater Storage Project
Figure 1
 Regional Project Location

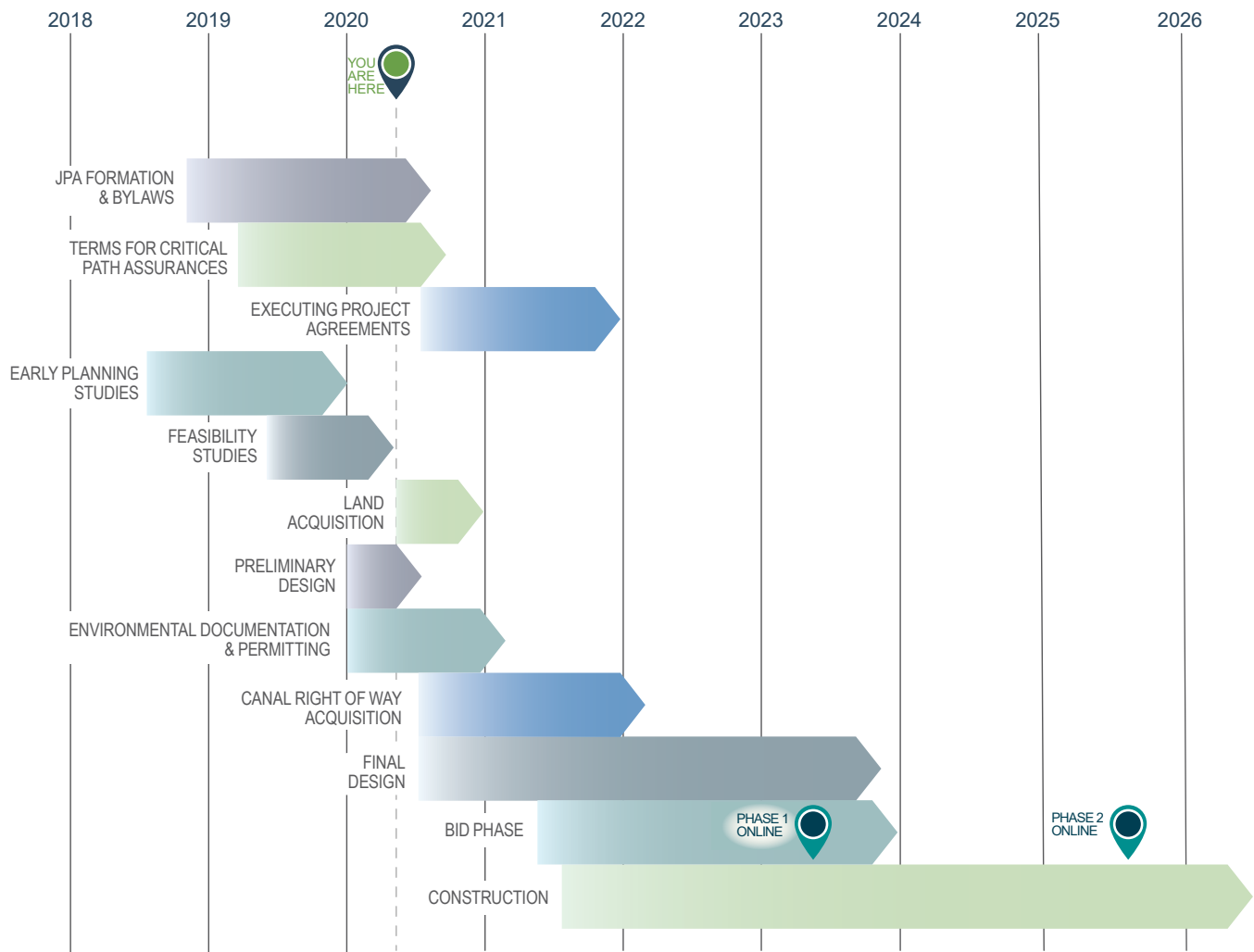
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Exhibit "B"

Kern Fan Project Timeline



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EXHIBIT "C"

DRAFT

4/6/20

Principles for Turnout Construction Related Agreements
Between the Kern County Water Agency, Groundwater Banking Authority and the
California Department of Water Resources for the
Kern Fan Groundwater Storage Project

GENERAL PRINCIPLES:

1. Rosedale Rio-Bravo Water Storage District (RRB) and Irvine Ranch Water District (IRWD) intend to form the Kern Fan Joint Powers Authority (Authority) to develop and administer the Kern Fan Groundwater Storage Project (Kern Fan Project) funded in part through the Proposition 1 Water Storage Investment Program.
2. The California Department of Water Resources (DWR) owns, operates and maintains the State Water Project (SWP) in accordance with various permits and regulatory requirements. DWR will retain all of its associated authorities. DWR has contracts with 29 public agencies (SWP contractors) for a water supply from the SWP that specify the terms and conditions for the delivery of the water supply. DWR is responsible to approve any encroachments to SWP facilities within the SWP right of way, including the subject turnout.
3. RRB is a member unit of the Kern County Water Agency (KCWA) and IRWD is a landowner in Dudley Ridge Water District (DRWD).
4. The proposed Kern Fan Project would develop a regional water bank in the Kern Fan area to capture, recharge, and store Article 21 water from the SWP requested through KCWA and DRWD during wet hydrologic periods conveyed through the California Aqueduct. The Kern Fan Turnout may be used for diversion of other water supplies consistent with approved agreements and policies.
5. The Kern Fan Project includes a proposed 500 cfs canal and corresponding lift stations to supply recharge basins and 100,000 AF of storage capacity.
6. Water would be diverted to the Kern Fan Project canal through a new 500 cfs turnout to be constructed at a Pool location to be determined -of the California Aqueduct (Kern Fan Turnout). If approved, the turnout would be constructed at the expense of the Authority and operated through a SCADA system by DWR.
7. Currently, DWR is preparing designs for near-term, major repairs of the California Aqueduct in the vicinity of the Kern Fan Turnout, This DWR work and any other DWR maintenance or construction will take priority over construction of the Kern Fan Turnout. DWR will endeavor to coordinate work to facilitate the construction of the Kern Fan Turnout. To this end, Kern Fan Turnout proponents will provide DWR permitting and design documents as soon as possible.

The following Terms are examples of terms that may be included in a Turnout Construction Agreement for the construction and operations of the Kern Fan Turnout. The examples are not a complete list of all required terms.

GENERAL TERMS

1. All devices and equipment in the DWR right of way will be owned, operated and maintained by DWR.
2. DWR will structure agreements to implement the Kern Fan Project and the Turnout to be consistent with SWP operations and SWP water supply contracts.
3. Environmental clearance is required for all work

PRE-CONSTRUCTION TERMS:

1. *Drawings, Specifications and Data:* To satisfy DWR's requirements for protection of the Aqueduct, and to accommodate DWR's near-term repairs in the vicinity of the Kern Fan Turnout, the Authority shall furnish permitting documents, contract drawings, specifications, data or calculations as requested by DWR as soon as possible. Authority shall not commence construction of any facilities on right of way that have not been approved by DWR.
2. *Subsidence Concerns:* The Authority shall provide any technical or operational studies deemed necessary by DWR to demonstrate that the location, construction and operation of the proposed Kern Fan Turnout does not -adversely impact the California Aqueduct including, but not limited to: to subsidence impacts, reduced hydraulic conveyance capacity or reduced operational flexibility.
3. *Timing:* DWR and the Authority agree to proceed in good faith to develop an agreement with the goal of completing within ninety days after there is agreement on the location of the Kern Fan Turnout, to be executed upon certification of the Kern Fan Groundwater Storage Project Environmental Impact Report, and any CEQA or other regulatory requirements of DWR. The construction of the Kern Fan Turnout in the California Aqueduct will be under terms and conditions -similar to previously constructed turnouts located within Kern County. DWR will prepare a document showing expected timing of completion of tasks needed to compete the Turnout Construction Agreement.

CONSTRUCTION AND OPERATION TERMS:

1. *Insurance during Construction:* The Authority shall insure DWR against all liability during construction of the Kern Fan Turnout.

2. *Standards of Construction:* All construction within DWR right of way shall conform to DWR standards for protection of the California Aqueduct and to requirements for DWR-approved flow measuring devices.
3. *Inspection and Acceptance:* All of the construction authorized by the turnout agreement shall be subject to inspection by DWR. The Authority shall provide inspection of the construction by a registered professional engineer.

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EXHIBIT "D"

DRAFT

4/6/20

Principles for Exchange Agreement Between the Groundwater Banking Joint Powers Authority and the California Department of Water Resources for the Kern Fan Groundwater Storage Project

GENERAL PRINCIPLES:

1. Rosedale Rio-Bravo Water Storage District (RRB) and Irvine Ranch Water District (IRWD) intend to form the Kern Fan Joint Powers Authority (Authority) to develop and administer the Kern Fan Groundwater Storage Project (Kern Fan Project) funded in part through the Proposition 1 Water Storage Investment Program (WSIP) administered by the California Water Commission.
2. The California Department of Water Resources (DWR) owns, operates and maintains the State Water Project (SWP) in accordance with various permits and regulatory requirements. DWR will retain all of its associated authorities. DWR has water service contracts with 29 public agencies (SWP contractors) that specify the terms and conditions for the delivery of the water supply from SWP.
3. RRB is a member unit of the Kern County Water Agency (KCWA) and IRWD is a landowner in Dudley Ridge Water District (DRWD). KCWA and DRWD are two of the 29 SWP Contractors.
4. The proposed Kern Fan Project would develop a regional water bank in the Kern Fan area to capture, recharge, and store Article 21 water from the SWP during wet hydrologic periods and other supplies conveyed through the California Aqueduct (CA). Portions of the Article 21 water would be used to facilitate exchanges to create ecosystem benefits as described below.
5. The Kern Fan Project would be developed with 100,000 AF of storage capacity.
6. The Authority would reserve 25,000 AF of storage capacity in the Kern Fan Project designated as the "Ecosystem Storage Account". The remaining 75,000 AF of storage would be for use by IRWD and RRB.
7. Ecosystem benefits would be provided by the Kern Fan Project through 1-for-1 exchanges of water stored in Lake Oroville for Article 21 water stored in the Ecosystem Storage Account within the Kern Fan Project when such exchanges could be made without impacting existing SWP obligations or concurrent Aqueduct repairs to restore capacity. DWR may need to limit years when exchanges are possible to avoid risk of impact to SWP carryover storage.

There would be no modification of water rights or SWP contract rights for the 1-for-1 exchange of water. SWP carryover amounts and capacities would not be affected.

8. The California Department of Fish and Wildlife (CDFW) has been identified in statute to be the manager of ecosystem benefits for the environmental water facilitated by the Proposition 1 WSIP. An agreement between DFW and the Authority is required. To achieve the full benefits of pulse flow releases from Oroville Reservoir made after the 1-for-1 exchanges of water, an instream flow dedication by changing a water right, as permitted by Water Code Section 1707 will be required. The parties to the water right will be identified as part of the State Water Resources Control Board process. CDFW interprets the benefits of the pulse flows in the Feather River and through the Delta described in the WSIP application to mean that those flows will exit the Delta as Delta Outflows. DWR and the Authority will cooperate and support the instream flow dedication process.

EXCHANGE TERMS:

1. When available, IRWD/DRWD and RRB/KCWA would take delivery of Article 21 water that is both physically and contractually available at the proposed turnout and deliver it for recharge at the Kern Fan Project. The Article 21 water diverted for the Kern Fan Project will be part of the Article 21 allocation made to KCWA/DRWD.
 - a. 25% of the Article 21 water diverted for the Kern Fan Project, accounted for environmental commitments up to 25,000 AF, would be delivered into the Ecosystem Storage Account until the account is full.
 - i. The water stored in the Ecosystem Storage Account, would be stored as SWP system water for ecosystem benefit purposes.
 - ii. The water stored in the Ecosystem Storage Account would be returned back to the DWR for storage in the SWP through 1-for-1 exchanges.
 - b. The balance of the Article 21 water, diverted for the Kern Fan Project will go into RRB and IRWD storage accounts.
2. On a mutually agreeable time between CDFW and DWR, when water is available in the Ecosystem Storage Account, CDFW could call for, and DWR could effect the 1-for-1 exchange of Table A water in the SWP that is allocated to DRWD and KCWA for water stored in the Ecosystem Storage Account.
 - a. The amount of water exchanged would be dependent on the quantity of Table A water allocated to DRWD and KCWA.
 - b. The exchange would result in the water stored in the Ecosystem Storage Account, being available to DWR in the SWP for release as environmental pulse flows.
 - c. Water stored in the Ecosystem Storage Account in the Kern Fan Project, after the exchange, would be available to IRWD/DRWD and RRB/KCWA. The Exchange

Agreement will specify how this water will be classified and delivered. This water would be moved into separate IRWD/RRB storage accounts.

- d. Because of the regulated environment that the SWP operates in, an exchange to Lake Oroville may not be possible in all years desired by CDFW. The process for implementing the exchange, and any requirements or restrictions, will be specified in the Exchange Agreement.
3. Avoided Delta carriage water losses to occur as a result of the exchanges would be accounted for in relation to the amounts of Article 21 water stored in the Ecosystem Storage Account.

OTHER TERMS:

1. Authority environmental review under California Environmental Quality Act (CEQA) would provide coverage for the 1-for-1 exchanges. DWR has obligations under CEQA that need to be addressed in conjunction with the Authority's environmental reviews including consideration of cumulative impacts from other WISPs. DWR environmental review under CEQA would provide coverage for the pulse flow releases.
2. DWR will structure agreements to implement the Kern Fan Project to be consistent with SWP operations and SWP long term water supply contracts.
3. DWR and the Authority agree to proceed in good faith to develop more detailed terms based upon these principles and conceptual terms with a goal of completing within 180 days from agreement on these Principles. Execution of the Exchange Agreement is contingent upon completion of negotiation of the Exchange Agreement and completion of all environmental and permitting processes. DWR will prepare a document showing expected timing of completion of tasks needed to complete the Exchange Agreement.