

AGENDA
IRVINE RANCH WATER DISTRICT
SUPPLY RELIABILITY PROGRAMS COMMITTEE

TUESDAY, OCTOBER 24, 2017

CALL TO ORDER 11:30 a.m., Committee Room, Second Floor, District Office
15600 Sand Canyon Avenue, Irvine, California

ATTENDANCE Committee Alternate: Mary Aileen Matheis _____
Member: Douglas Reinhart _____

<u>ALSO PRESENT</u>	Paul Cook	_____	Kellie Welch	_____
	Rob Jacobson	_____	Patrick Sheilds	_____
	Ray Bennett	_____	Paul Weghorst	_____
	Jo Ann Corey	_____	Dane Johnson	_____
	Fiona Sanchez	_____	Christine Compton	_____
	_____	_____	_____	_____

COMMUNICATIONS

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

INFORMATION

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

Recommendation: Receive and file.

6. KERN FAN GROUNDWATER STORAGE PROJECT UPDATE–WELCH/SANCHEZ/WEGHORST

Recommendation: Receive and file.

ACTION

7. CONCEPTUAL DRAFT TERMS FOR A SHARED RELIABILITY PILOT PROGRAM – WELCH/SANCHEZ/WEGHORST

Recommendation: That the Committee provide input on the Conceptual Draft Terms for a Shared Reliability Pilot Program between IRWD and MWDOC.

Recommendation: Receive and file.

ACTION (CONTINUED)

8. CONCEPTUAL TERMS FOR A STORAGE PROGRAM WITH
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Recommendation: That the Committee provide input on the Conceptual Draft Terms for a Storage and Exchange Program with Metropolitan Water District of Southern California; authorize staff and legal counsel to work with Metropolitan to prepare an agreement based on the draft terms; and to present the agreement for consideration by the full Board of Directors.

OTHER BUSINESS

9. A. Directors' Comments
- B. 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 at the entrance of the meeting room at the District Office. The Irvine Ranch Water District Committee Room is wheelchair accessible. If you require any special disability-related accommodations (e.g., access to an amplified sound system, etc.), please contact the District Secretary at (949) 453-5300 during business hours at least seventy-two (72) hours prior to the scheduled meeting. This agenda can be obtained in an alternative format upon written request to the District Secretary at least seventy-two (72) hours prior to the scheduled meeting.

October 24, 2017

Prepared by: D. Johnson/K. Welch

Submitted by: F. Sanchez/P. Weghorst

Approved by: Paul Cook



SUPPLY RELIABILITY PROGRAMS COMMITTEE

WATER BANKING PROJECT FACILITIES, CAPACITIES, OPERATIONS AND PROGRAMS OVERVIEW

SUMMARY:

Staff has prepared information related to IRWD's water banking facilities, capacities, exchange programs and operations that may serve as reference during Committee meetings. The information is presented in a format that can be updated as necessary to reflect changes in IRWD's projects, programs and operations. At the Committee meeting, staff will review this information and provide an update on ongoing efforts to increase recharge rates and to secure additional water for recharge at IRWD's water banking projects.

BACKGROUND:

To assist with the facilitation of Committee meeting discussions, staff has prepared reference materials in tabular, map and schematic formats that describe IRWD's water banking facilities, capacities, operations and exchange programs. The reference materials will be updated, as needed, to reflect changes to the projects, programs and operations. Following is an overview of the reference materials provided. Information is also provided related to current recharge activities, a study to increase recharge rates and ongoing efforts to secure additional water for recharge at IRWD's water banking projects.

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 and 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. The recharge values shown in Exhibit "C" may be subject to further adjustments for Cross Valley Canal (CVC) conveyance losses. Both Exhibits "B" and "C" include a column that provides totals for each water type and storage location.

2017 Recharge Operations Update:

Exhibits "B" and "C" provide current estimates of the amounts and types of water that have been recharged in 2017. The amount of water delivered in 2017 to the IRWD projects is 19,291 acre-feet (AF). This amount includes 13,654 AF of high flow Kern River Water, 1,574 AF of Table A water and 3,488 AF of Article 21 water delivered to the Strand and Stockdale West Ranch projects. It also includes 575 AF of Article 21 water and other supplies, that are not part of the State Water Project (SWP), that were delivered to the Kern Water Bank. IRWD's entire 2017 Table A water available through Dudley Ridge Water District (DRWD) has been recharged at the IRWD projects.

Recharge at IRWD Projects:

Rosedale-Rio Bravo Water Storage District is currently using the Strand and Stockdale West facilities to recharge water on its own behalf. Member agencies of the Kern County Water Agency (KCWA) are currently maximizing deliveries of SWP supplies resulting in limited available capacity in the CVC to convey water on behalf of out-of-county entities. The current recharge rate at the south recharge basins on the Strand Ranch is approximately 0.27 feet per day. The recharge rate on the north recharge basins is approximately 0.36 feet per day .

The Central Coast Water Authority (CCWA) is expected to deliver approximately 550 AF of Table A water on behalf of Carpinteria Valley Water District to the Strand Ranch during the months of November and December. This water will be delivered to the Strand Ranch consistent with the terms of the unbalanced exchange agreement that was executed between IRWD and CCWA in early 2017. The water will be delivered using IRWD's 4.87 cfs of capacity in the CVC as well as additional capacity as it becomes available. Staff has received approval from KCWA for this delivery.

Strand Pond Infiltration Study:

Staff has been coordinating with Rosedale to conduct a pond infiltration study of the south recharge basins on the Strand Ranch. Initially, flows in and out of the basins and basin water levels will be recorded several times per day to establish baseline recharge rates. Subsequently, deliveries of water into three of the south Strand basins will be terminated, the basin bottoms will be allowed to dry and potentially three different methods of increasing recharge rates will be tested. In conducting these tests, Rosedale will contract to have approximately two inches of silt removed from one of the dried out basins. On the second dried basin, Rosedale will contract to scrape off a fine layer of silt and then to rip the bottom of the basin, though ripping the entire basin may prove to be cost prohibitive. The third dried basin will be allowed to dry and crack with no further treatment. Recharge water will then be reintroduced to each of the basins and recharge rates at each of the three test basins will be compared by taking flow and water level measurements. At the meeting, staff will update the Committee on recent actions related to the study. Staff expects to report the results of the Strand Pond Infiltration Study to the Committee in December.

2018 Recharge Opportunities:

Staff has been pursuing additional opportunities to recharge water at the Strand and Stockdale West Projects for 2018. At the Committee meeting, staff will provide an update on efforts to secure water from:

- Central Coast Water Authority;
- Castaic Lake Water Agency;
- Dudley Ridge Water District; and
- Other Opportunities.

Project Maps:

To support the tables provided as Exhibits “A”, “B” and “C”, staff has prepared maps that depict project wells and pipelines, recharge basins and CVC turnout locations, and current recharge rates. These maps are provided as Exhibits “D”, “E”, and “F”, respectively. The facilities shown on these maps are associated with the Strand Ranch, Stockdale West, Stockdale East and Rosedale Drought Relief Projects.

Program Agreement Diagrams:

Schematic diagrams have been prepared that depict the IRWD water banking and exchange programs with Rosedale, Buena Vista Water Storage District, DRWD and Metropolitan. These diagrams are provided as Exhibits “G”, “H”, “I”, “J” and “K” as described in the List of Exhibits.

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” – Map of Water Banking Project Wells and Pipelines
- Exhibit “E” – Map of Water Banking Recharge Basins and Cross Valley Canal Turnout Facilities
- Exhibit “F” – Map of Water Banking Recharge Rates
- Exhibit “G” – Diagram of IRWD-Rosedale Water Banking and Exchange Program Agreements
- Exhibit “H” – Diagram of Long-Term Water Exchange Program with Buena Vista Water Storage District and Diagram of One-Year Program to Augment Recharge Using Stockdale West Recharge Facilities with Buena Vista Water Storage District
- Exhibit “I” – Diagram of Unbalanced Exchange Program Diagram with DRWD
- Exhibit “J” – Diagram of Coordinated Operating, Water Storage, Exchange and Delivery Agreement with Metropolitan
- Exhibit “K” – Diagram of Template Wheeling Agreement with Metropolitan

Exhibit "A"

TABLE 1
Current and Anticipated Water Banking Projects
Recharge, Storage and Recovery Capacities
October 24, 2017

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 (DEC. 2016 CONDITIONS) ²	RECOVERY CAPACITY AS PLANNED	RECOVERY CAPACITY CURRENT CONDITIONS
Strand Ranch	Yes	7	-	50,000	17,500	-	17,500	-	40.0	27.0	-	-
Stockdale West	Yes	-	3	26,000	27,100	-	11,250	-	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	-	-	-
Kern Water Bank Storage Account ⁵	No	-	-	9,495	3,200	-	6,330	-	-	-	-	-
TOTALS		7	8	126,000	44,600	19,000	28,750	7,500	70.0	27.0	10.0	0.0
Partner Capacities ⁴				36,000	22,300	9,500	12,000	0	35.5	27.0	-	-
IRWD Capacities				90,000	22,300	9,500	16,750	7,500	34.5	0.0	-	-
IRWD's recovery <i>during</i> 6 month partner recovery period (AF)									12,420	0.0	-	-
IRWD's recovery <i>after</i> 6 month partner recovery period (AF)									4,330	6,733	-	-
TOTALS (AF)									16,750	6,733	-	-
Number of months needed to recover IRWD's total AF after partners' recovery (Assumes IRWD has use of total recovery capacity after partners' recovery)									8.1	14.0	-	-

¹ Based on designed Strand recovery capacity assuming 370³ 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 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 (10/26/2015).

Exhibit "B"

TABLE 2
IRWD's Water Banking Storage, Recharge and Recovery Operations - BEFORE LOSSES
 October 24, 2017

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 2016 (AF)						
Total Kern Water Bank	-	4,741	-	-	-	4,741
Total MWD System ⁴	8,349	-	-	-	649	8,998
Total Kern County	437	10,835	-	-	-	11,272
TOTAL STORED WATER (1/1/2016)	8,786	15,576	-	-	649	25,011
(RECOVERY) AND RECHARGE IN 2016 (AF)						
Kern Water Bank	-	24	-	-	-	24
2016 SWP Allocation (MWD system) ³	524	-	-	-	525	1,049
TOTAL 2016 TRANSACTIONS	524	24	-	-	525	1,073
Total Kern Water Bank	-	4,765	-	-	-	4,765
Total MWD System	8,873	-	-	-	1,174	10,047
Total Kern County	437	10,835	-	-	-	11,272
TOTAL STORED WATER (1/1/2017)	9,310	15,600	-	-	1,174	26,084
(RECOVERY) AND RECHARGE IN 2017 (AF)						
Kern Water Bank Deliveries ⁵	529	46	-	-	-	575
2017 SWP Allocation (85%) ³	787	-	-	-	787	1,574
2017 SWP Article 21 ⁶	1,744	-	-	-	1,744	3,488
High Flow Kern River	-	6,827	6,827	-	-	13,654
TOTAL ESTIMATED 2017 TRANSACTIONS ⁷	3,060	6,873	6,827	-	2,531	19,291
ESTIMATED WATER IN STORAGE 2017 (AF)						
Total Kern Water Bank	529	4,811	-	-	-	5,340
Total MWD System	8,873	-	-	-	1,174	10,047
Total Kern County	2,968	17,662	6,827	-	2,531	29,988
TOTAL ESTIMATED STORED WATER TO DATE	12,370	22,473	6,827	-	3,705	45,375

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 SWP allocation water is stored at Strand Ranch.

⁴ Beginning balance of water stored in MWD system includes 4,494 AF 2014 Exchange, 3,206 AF 2014 borrowed SWP, 649 AF IRWD's 2013-2016 SWP allocations through DRWD.

⁵ Article 21 deliveries to Kern Water Bank commenced on 2/15/17. In February, IRWD's share of DRWD's capacity (6.58%) initially yielded about 11 AF/day, and then dropped to about 6 AF/day from 2/25/17 to 5/10/17.

⁶ Article 21 deliveries to Strand Ranch/Stockdale West began 3/8/17. Deliveries made pursuant to the DRWD/MWD Unbalanced Exchange Program at a rate of 130 cfs.

Exhibit "C"

TABLE 3
IRWD's Water Banking Storage, Recharge and Recovery Operations - AFTER LOSSES
 October 24, 2017

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 2016 (AF)						
Total Kern Water Bank	-	4,267	-	-	-	4,267
Total MWD System ⁴	7,393	-	-	-	649	8,042
Total Kern County	389	9,675	-	-	-	10,064
TOTAL STORED WATER (1/1/2016)	7,782	13,942	-	-	649	22,373
(RECOVERY) AND RECHARGE IN 2016 (AF)						
Kern Water Bank	-	22	-	-	-	22
2016 SWP Allocation (MWD system) ³	524	-	-	-	525	1,049
TOTAL 2016 TRANSACTIONS	524	22	-	-	525	1,071
Total Kern Water Bank	-	4,289	-	-	-	4,289
Total MWD System	7,917	-	-	-	1,174	9,091
Total Kern County	389	9,675	-	-	-	10,064
TOTAL STORED WATER (1/1/2017)	8,306	13,964	-	-	1,174	23,444
(RECOVERY) AND RECHARGE IN 2017 (AF)						
Kern Water Bank Deliveries ⁵	476	41	-	-	-	518
2017 SWP Allocation (85%) ³	669	-	-	-	708	1,377
2017 SWP Article 21 ⁶	1,482	-	-	-	1,570	3,052
High Flow Kern River	-	5,803	6,144	-	-	11,947
TOTAL ESTIMATED 2017 TRANSACTIONS ⁷	2,627	5,844	6,144	-	2,278	16,894
ESTIMATED WATER IN STORAGE 2017 (AF)						
Total Kern Water Bank	476	4,330	-	-	-	4,806
Total MWD System	7,917	-	-	-	1,174	9,091
Total Kern County	2,540	15,478	6,144	-	2,278	26,440
TOTAL ESTIMATED STORED WATER TO DATE	10,933	19,808	6,144	-	3,452	40,337

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 SWP allocation water is stored in Kern County.

⁴ Beginning balance of water stored in MWD system includes (net of CVC losses) 3,920 AF 2014 Exchange, 2,824 AF 2014 borrowed SWP, 649 AF IRWD's 2013-2015 SWP allocations through DRWD.

⁵ Article 21 amounts delivered to Kern Water Bank are estimated.

⁶ Article 21 was delivered to Strand Ranch/Stockdale West from 3/8/17 - 3/22/17. Deliveries made pursuant to the DRWD/MWD Unbalanced Exchange Program.

⁷ 2017 transactions may be adjusted for conveyance losses in CVC.

Exhibit "D"



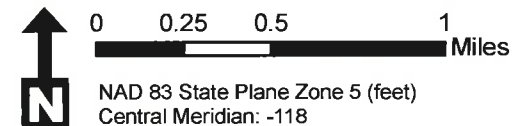
Irvine Ranch
WATER DISTRICT

Location Map: IRWD Water Banking Projects Wells and Turnin Pipelines

MAP FEATURES

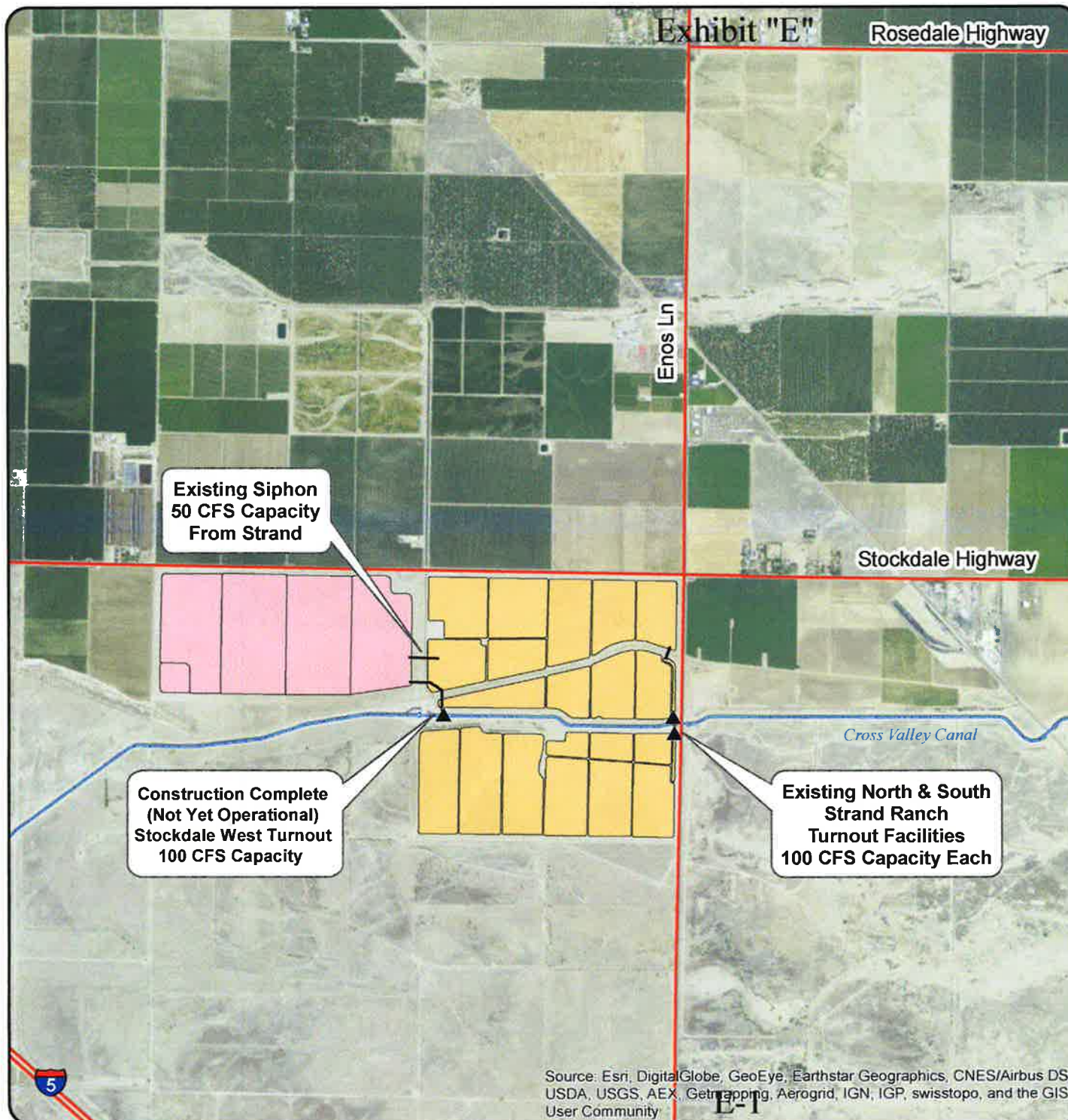
- Existing Extraction Well
- Planned Extraction Well
- Well Under Construction
- Well Discharge Pipelines
- Stockdale East
- Stockdale West
- Strand Ranch

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

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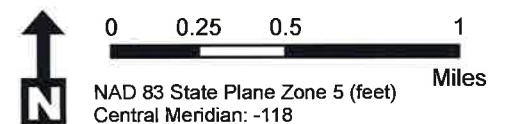


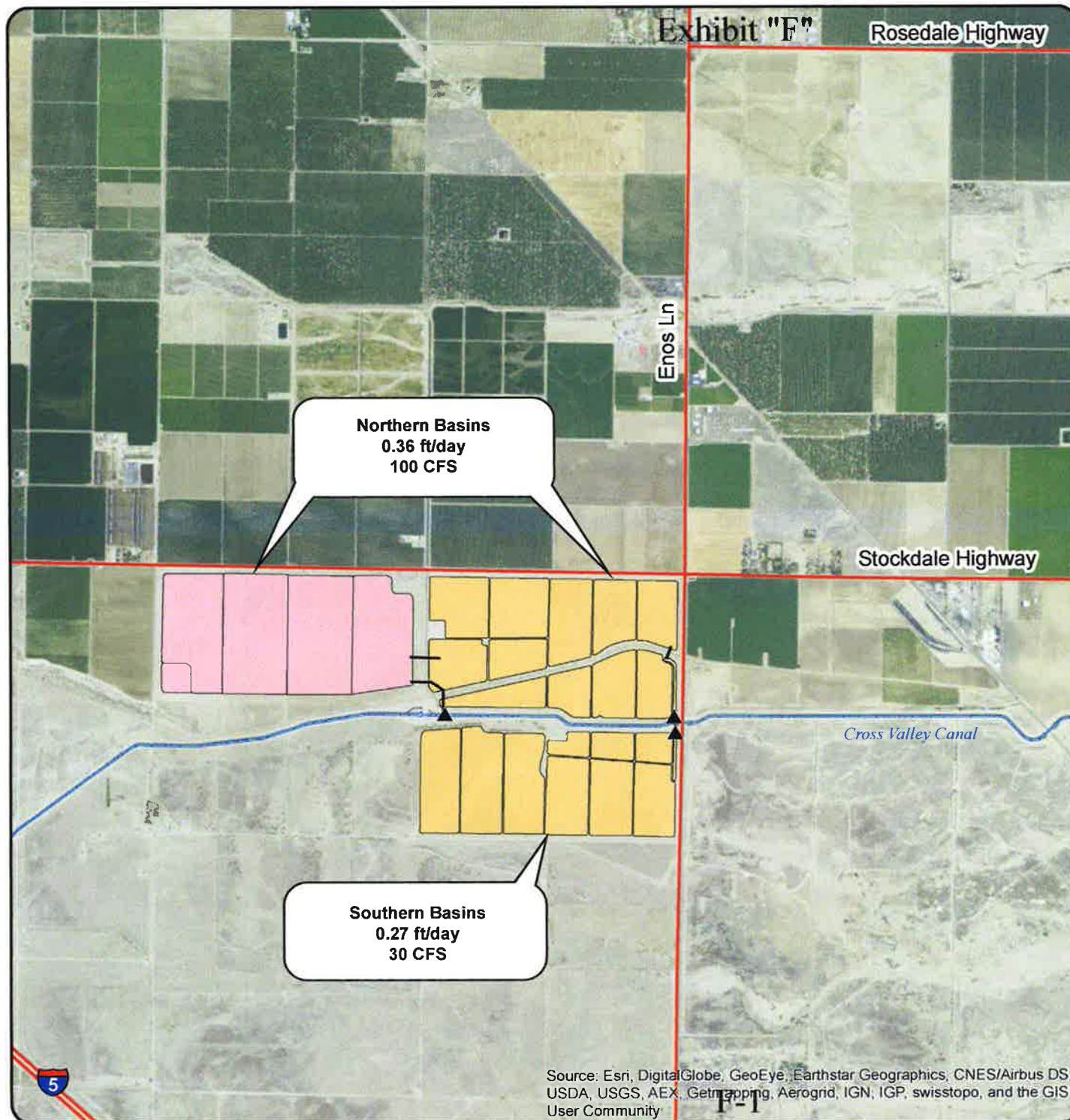
**Location Map:
IRWD Water Banking Projects
Recharge Basins & Turnout
Facilities**

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.





Irvine Ranch
WATER DISTRICT

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 September/October 2017.

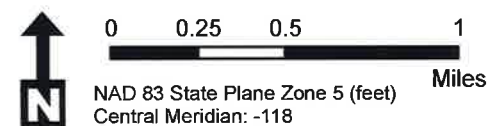


Exhibit "G"

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)

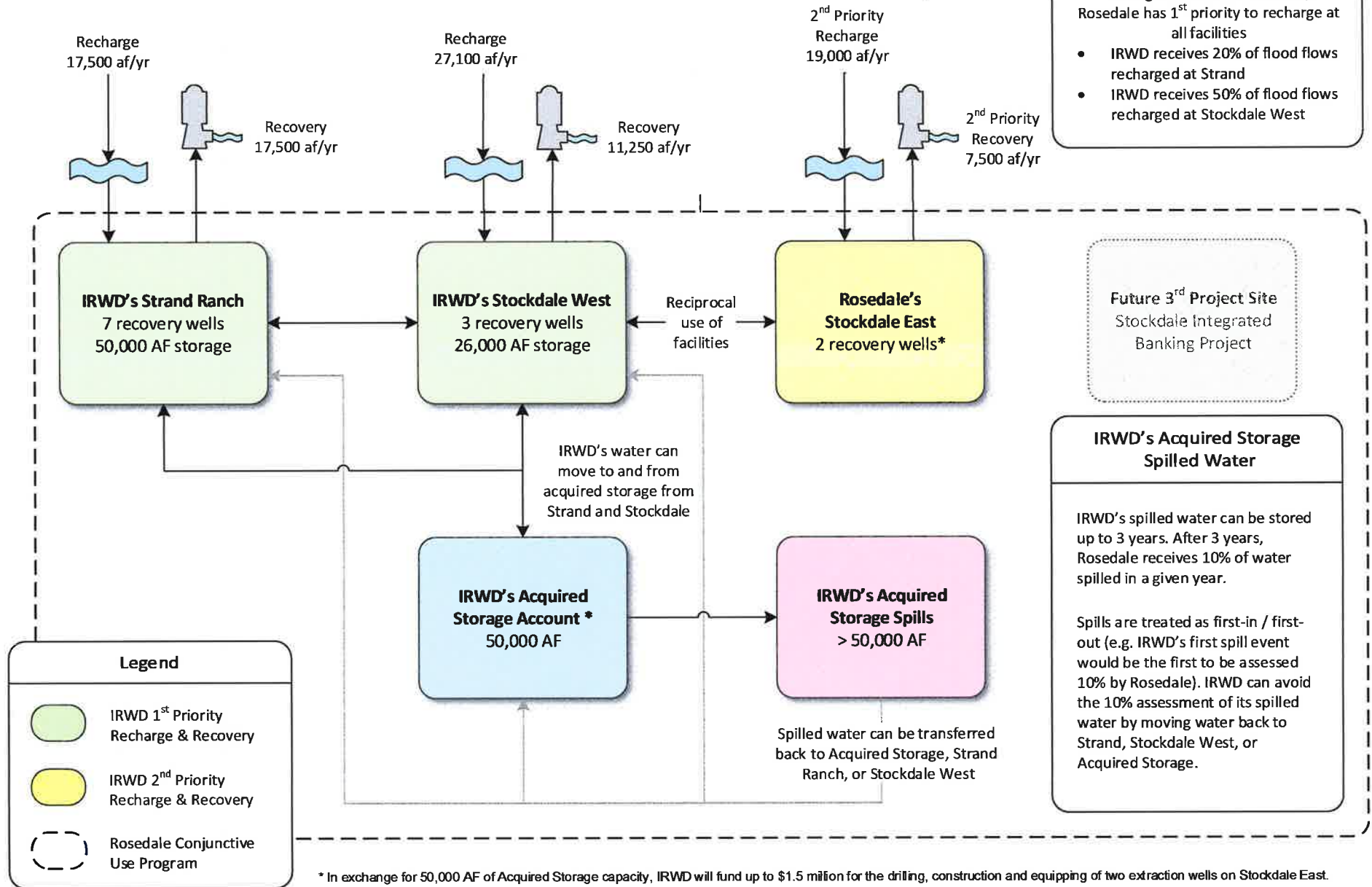
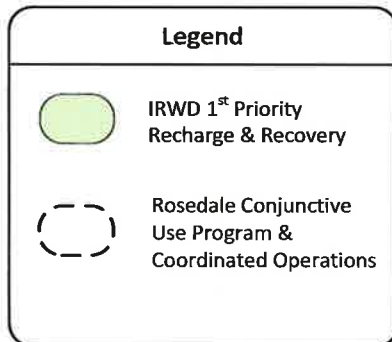
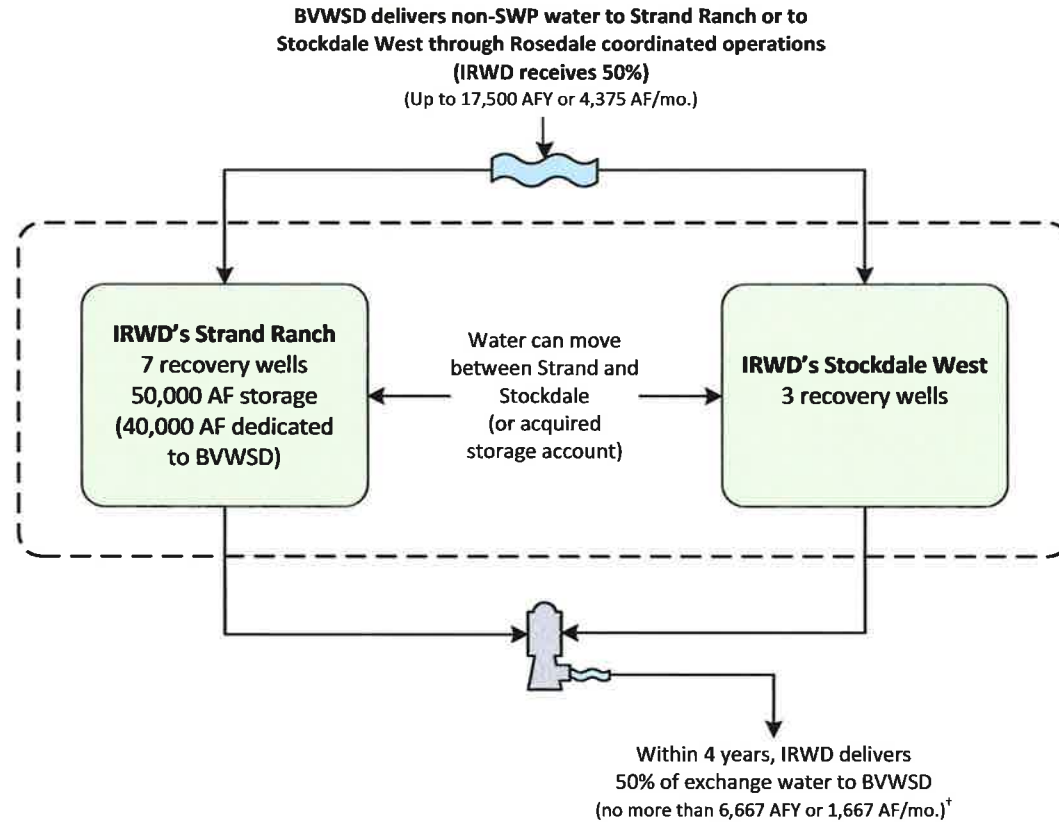


Exhibit "H"

Buena Vista Water Storage District Long Term Water Exchange Program

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

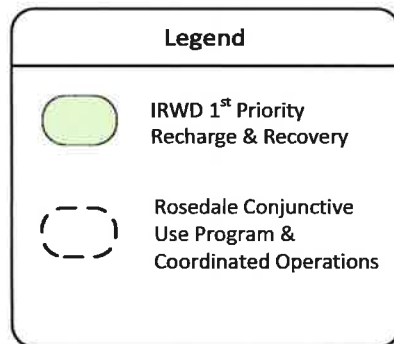
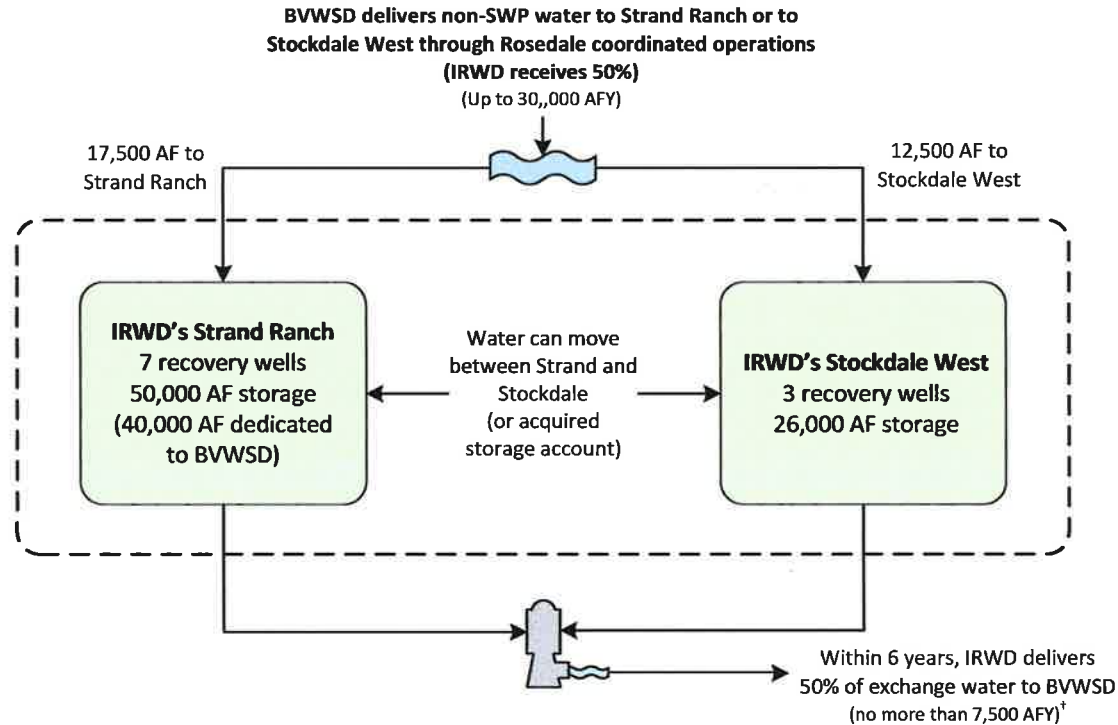


[†]IRWD shall remit one-half of the exchanged supply less one-half of reasonable losses back to BV no later than December 31st of the 4th year following the associated recharge event. IRWD pays for recovery of water returned to BV. Water to be remitted back to BV may remain in storage at Strand Ranch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

Exhibit "H"

Buena Vista Water Storage District One-Year Program to Augment Recharge Using Stockdale West Recharge Facilities Effective 4/1/2017 through 3/20/2018



[†]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:

Modified for 1-Year Recharge Program Only

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 "I"
Dudley Ridge Water District (DRWD) Unbalanced Exchange Program
Up to 8,700 AF delivered from 12/16/2013 through 12/31/2017

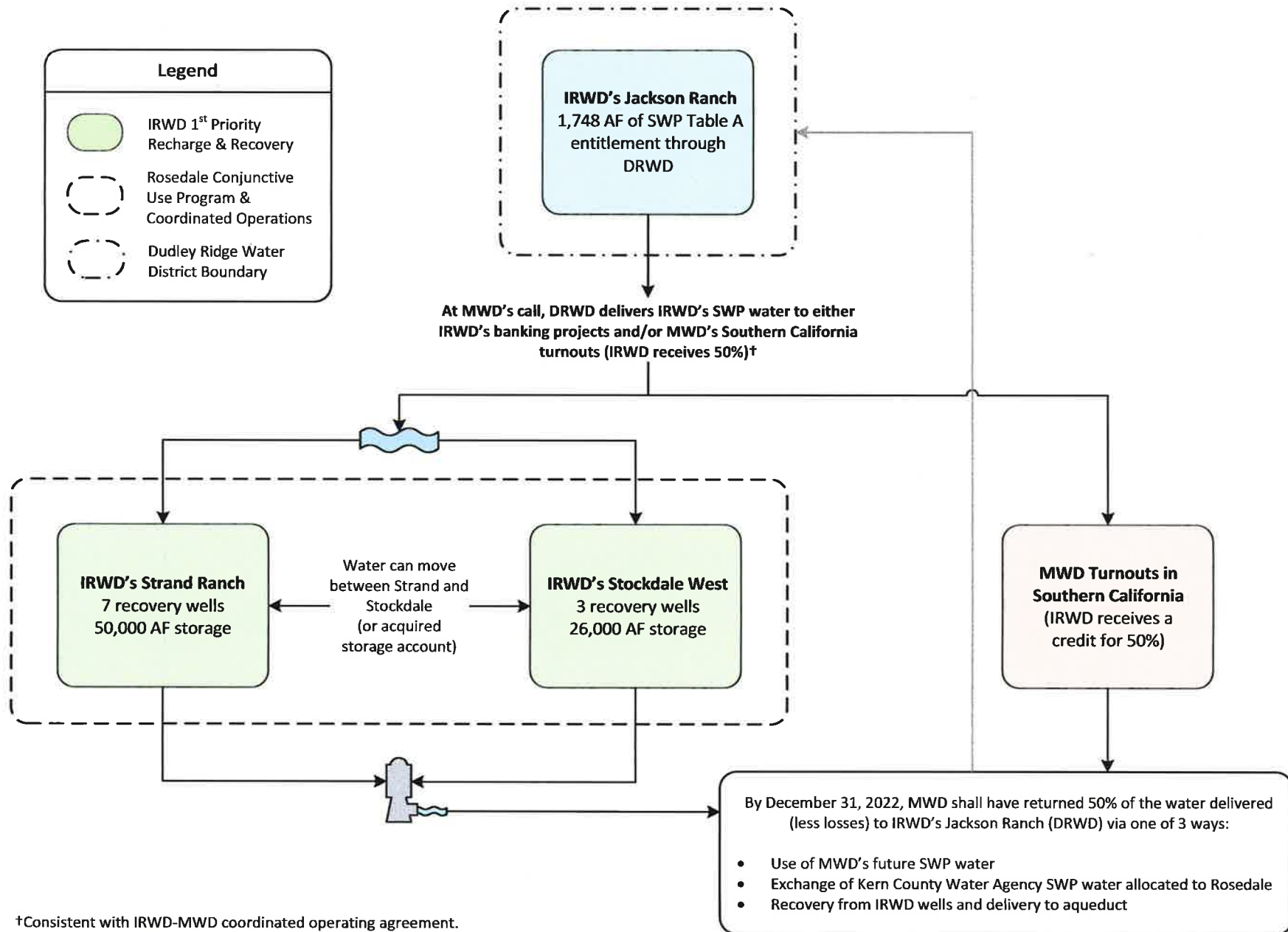


Exhibit "J"

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

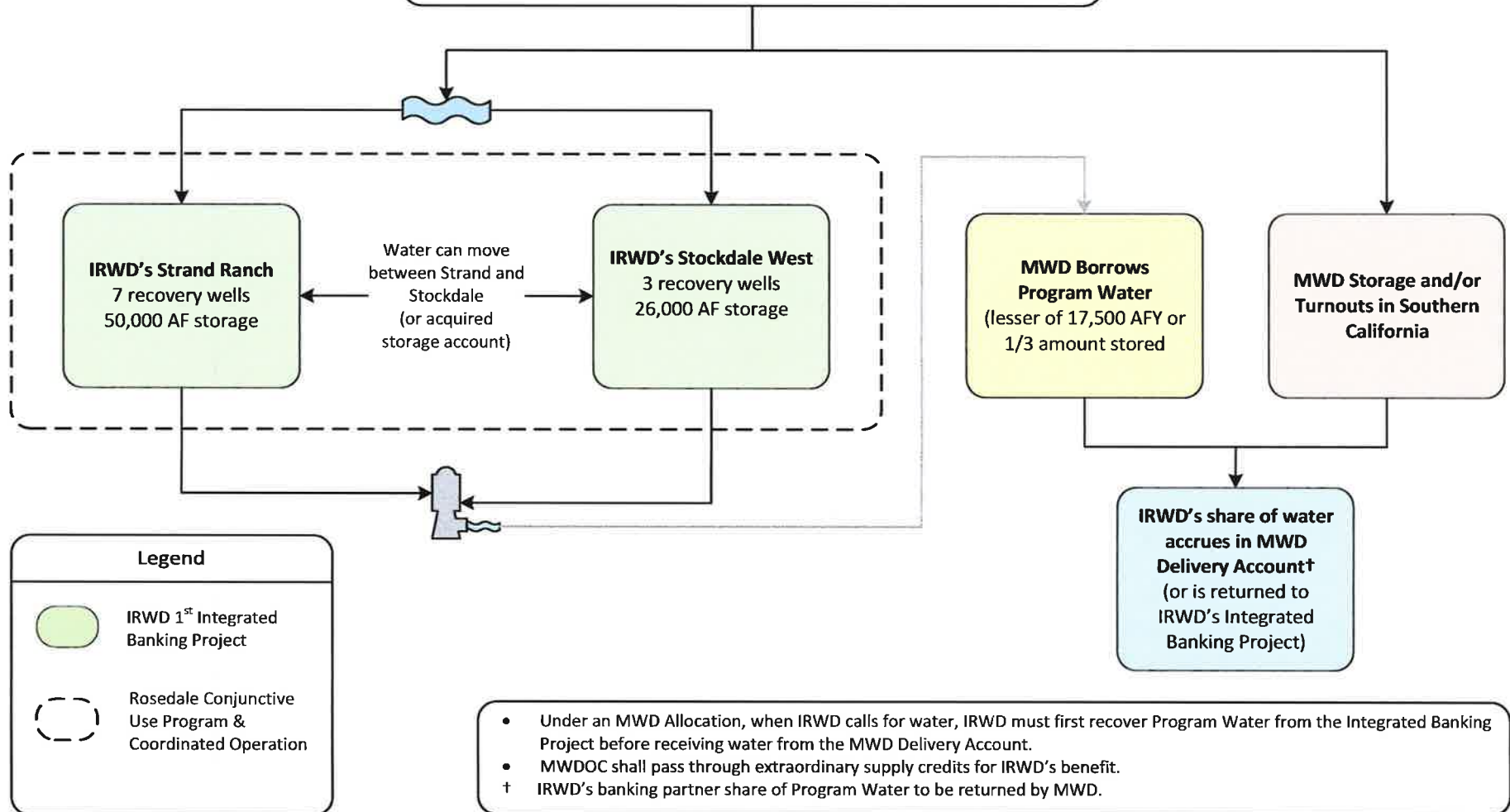
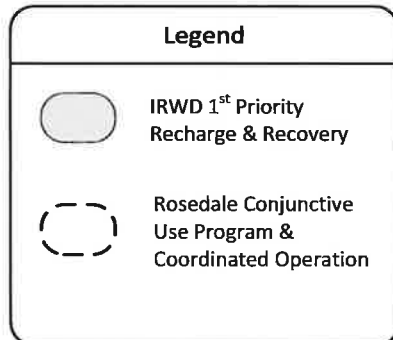
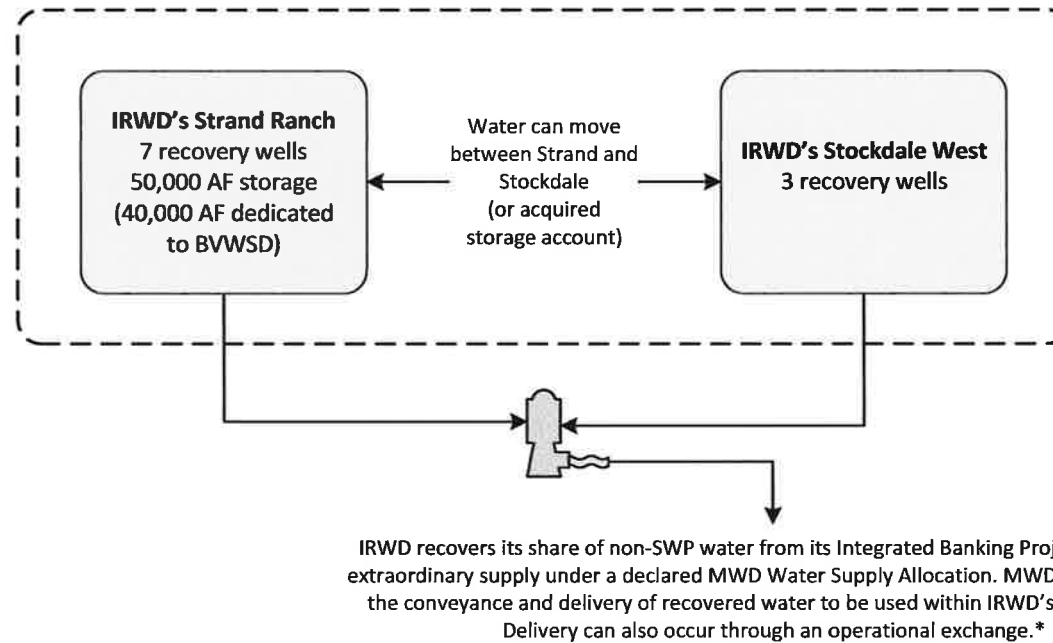


Exhibit "K"
Agreement for Conveyance of Water Between MWD, MWDOC, and IRWD (Wheeling Agreement)
Template for future agreements



*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.

October 24, 2017

Prepared by: K. Welch

Submitted by: F. Sanchez/P. Weghorst

Approved by: Paul Cook 

SUPPLY RELIABILITY PROGRAMS COMMITTEE

KERN FAN GROUNDWATER STORAGE PROJECT UPDATE

SUMMARY:

On August 14, 2017, Irvine Ranch Water District and Rosedale-Rio Bravo Water Storage District jointly submitted a grant application for the proposed Kern Fan Groundwater Storage Project (the Kern Fan Project) to the California Water Commission (CWC). The application seeks Proposition 1 funds that are available through the CWC from its Water Storage Investment Program (WSIP). Following is an update on next steps in establishing terms for an agreement with Rosedale for the joint development of the project. Also provided is an update on efforts to secure options to purchase properties for the project and an update on the status of the CWC's review of Kern Fan Project grant application.

BACKGROUND:

The CWC is currently considering the award of WSIP grant funding for the planning, design and construction of water storage projects that would provide specific public and ecosystem benefits. The funding source for the WSIP is Proposition 1, also known as the Water Quality, Supply and Infrastructure Improvement Act of 2014. The Act provides \$2.7 billion for public benefits associated with water storage projects. In July 2017, the CWC received 12 grant applications for WSIP funding.

IRWD and Rosedale jointly submitted a grant application for the Kern Fan Project, which was the only application received by the CWC under the groundwater storage category. The 11 other applications were submitted for five conjunctive use projects, two local surface storage projects, one regional surface storage project and three large surface storage projects identified in the Cal Fed process.

Kern Fan Project Overview:

The proposed Kern Fan Project would involve developing a regional water bank in the Kern Fan area to capture, recharge and store unallocated Article 21 water during wet hydrologic periods. The stored water would be extracted when needed to provide ecosystem, emergency supply and water supply benefits. The project operations would be coordinated with the State Water Project through the California Department of Water Resources and could be integrated with the operations of other projects, such as Sites Reservoir.

Within the joint grant application, IRWD and Rosedale requested \$86 million in WSIP funding, which is 50% of the estimated total capital cost of \$172 million for the project. If awarded grant funding for the requested amount, IRWD and Rosedale will each fund the remaining \$43 million for the project.

Project Phases:

The Kern Fan Project would be implemented using a two-phased approach. The first phase would be the development of a proposed third project site as contemplated in the Stockdale Integrated Banking Project Environmental Impact Report (EIR). IRWD and Rosedale would jointly 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 convey unallocated Article 21 water to the new recharge facilities.

The second phase of the Kern Fan Project would involve IRWD and Rosedale acquiring an additional 640 acres of land for the expansion of the water banking facilities. The overall project facilities would provide approximately 500 cubic-feet per second of canal capacity from the California Aqueduct, 100,000 acre-feet (AF) of storage capacity, up to 100,000 AF per year (AFY) in recharge capacity and up to 50,000 AFY of recovery capacity.

Terms for Project Development Agreement:

Staff has held preliminary discussions with Rosedale regarding developing terms for a Kern Fan Project Development Agreement. It is anticipated that the agreement would address issues associated with IRWD's acquisition of land within Rosedale's service area, design, construction, ownership of facilities, allocation of capacity rights, technical work and environmental review. Staff is taking the lead in the preparation of draft terms for the Development Agreement, and expects to review the terms with the Committee in November 2017.

Securing Land Purchase Options:

On October 10, 2017, staff participated in a meeting with Rosedale and Alliance Appraisal to identify next steps in securing options to purchase land for the Kern Fan Project. Rosedale proposed that, prior to soliciting land options, potential properties would be screened to ensure that only prime recharge areas are targeted for consideration. At the meeting, Rosedale identified an area of interest of approximately 9,000 acres within the project area that could potentially yield the best infiltration rates. An action plan was developed to screen the 9,000 acres through the following steps:

- Alliance will prepare a map showing the saturated hydraulic conductivity of the lands within the area of interest that can be used to identify optimal recharge areas;
- Alliance will create a potential list of properties based on the map;
- Rosedale will screen the list of properties based on its knowledge of its service area;
- Rosedale will solicit assistance from a local farm management group to further screen the properties; and
- The properties will be prioritized and the landowners will be contacted by Alliance to gauge interest in selling their properties or in selling options to sell their property.

Project Eligibility:

Pursuant to WSIP regulations, the CWC staff reviewed the 12 grant applications for completeness and basic project eligibility. On August 31, 2017, the CWC provided written requests to applicants asking them to provide additional information that is required to complete their respective applications. Staff received a request from CWC to submit the environmental habitat model and associated input-output data files that were used by consultants at Cramer Fish Sciences in calculating the ecosystem benefits of the Project. After providing the model and data files as requested, staff confirmed with CWC staff that they would recommend to the Commission that the Kern Fan Project grant application is complete and that it meets the basic eligibility of the WSIP.

At the October 18, 2017 CWC meeting, the Commission validated that the IRWD and Rosedale application for the Kern Fan Project was complete and that the project meets basic project eligibility. The Commission One rejected one project because it did not meet the requirements of the regulations governing the WSIP. At the meeting, the Commission invited project proponents to present their projects to the Commission at a future meeting.

Next Steps:

Now that the Commission has established that 11 of the 12 project grant applications are complete and that the projects meet basic eligibility requirements, CWC staff will perform a technical review of the information contained in the applications to identify whether the projects meet additional eligibility requirement for funding under the WSIP. One additional requirement that must be met is that a qualified project must provide measurable ecosystem improvements to the Sacramento-San Joaquin Delta and its tributaries.

During the technical review, the CWC staff will evaluate, score and rank each project based on public benefit ratios that are determined for each project. The rankings are expected to be released in January 2018. Applicants will have three weeks after the release of the rankings to submit an appeal to the CWC for a better public benefit ratio. The CWC will release its final project funding decisions in May 2018.

FISCAL IMPACTS:

If the CWC awards a grant to IRWD and Rosedale for the Kern Fan Project, a request for funding of the District's estimated \$43 million cost share for the project will be included in the proposed FY 2018-19 Capital Budget.

ENVIRONMENTAL COMPLIANCE:

A Final 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 Projects with the County of Kern. IRWD, as a responsible agency, filed Notices of Determination with the

County of Orange and with the County of Kern. The EIR includes a program-level analysis of impacts of a third project site. When a third Stockdale project site is identified, subsequent project-level environmental review will be necessary prior to implementation of the phase one project. It is expected that a new EIR will be required for the construction and operation of the second phase facilities contemplated in the proposed Kern Fan Project.

RECOMMENDATION:

Receive and file.

LIST OF EXHIBITS:

None.

October 24, 2017

Prepared by K. Welch

Submitted by: F. Sanchez / P. Weghorst

Approved by: Paul Cook 

SUPPLY RELIABILITY PROGRAMS COMMITTEE

CONCEPTUAL DRAFT TERMS FOR A SHARED RELIABILITY PILOT PROGRAM

SUMMARY:

At the July 2017 Supply Reliability Programs Committee meeting, staff presented possible concepts for providing water supply reliability assistance to member agencies of the Municipal Water District of Orange County (MWDOC). At the meeting, the Committee approved the development of terms for a Shared Reliability Pilot Program with MWDOC. Following is an overview of the need for the Pilot Program and conceptual draft terms that staff has developed for implementation of the program. Staff recommends that the Committee provide input on the conceptual draft terms.

BACKGROUND:

Staff first reviewed with the Committee a conceptual framework for providing water supply reliability assistance to Orange County retail agencies in September 2016. The framework relied upon the use of water from IRWD's Strand and Stockdale Water Banking Projects (the IRWD Water Bank) consistent with the existing Coordinated Operating Water Storage, Exchange and Delivery Agreement between Metropolitan Water District of Southern California, MWDOC and IRWD. At the July 2017 Strategic Planning Workshop, staff reviewed various options for establishing a shared reliability program with MWDOC. Later that month, staff reviewed with the Committee proposed next steps associated with sharing reliability benefits from the IRWD Water Bank. At that meeting, the Committee approved the development of terms for a Shared Reliability Pilot Program with MWDOC that would be based upon the sale of options to purchase water at a set price during periods of water supply allocations or system interruptions.

Improving Orange County Reliability:

In 2016, MWDOC completed an Orange County Reliability Study that investigated the long-term future reliability of water supplies available in Orange County. This study was conducted as a cooperative effort that relied upon input from numerous interested retail water agencies.

The Orange County Reliability Study concluded that factors that affect imported water supplies provided by Metropolitan could result in infrequent and short term water supply shortages for south Orange County retail water agencies. One of the strategies that the study identified for improving south Orange County's ability to meet the supply shortfall (as described in the Orange County Reliability Study) is to have the affected retail water agencies to participate in Central Valley water banking projects. The study contemplated that the agencies could participate in water storage programs such as the one operated by Semitropic Water Storage District or the IRWD Water Bank.

Conceptual Terms for a Pilot Program:

On August 22, 2017, staff met with MWDOC to discuss how water supply benefits from the IRWD Water Bank could be extended to MWDOC member agencies through a Shared Reliability Program that would be managed by MWDOC. At the meeting, staff described IRWD's proposal to implement a Pilot Program that would be based upon the sale of options to purchase water at a set price during periods of water supply allocations or system interruptions. MWDOC's response to program concept was favorable, and they expressed a willingness to consider terms and costs for participating in such a program. Based on this feedback, staff has prepared the conceptual draft terms and costs for the Pilot Program that are provided as Exhibit "A". At the Committee meeting, staff will present an overview of the proposed terms and costs. Staff recommends that the Committee provide input on the draft terms and costs.

FISCAL IMPACTS:

The conceptual draft terms for the Pilot Program include costs that MWDOC would pay to IRWD that would allow IRWD to recover a portion of its capital investments in its Water Bank and to ensure that IRWD is financially whole on every element of the associated water transactions.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

RECOMMENDATION:

That the Committee provide input on the Conceptual Draft Terms for a Shared Reliability Pilot Program Between IRWD and MWDOC.

LIST OF EXHIBITS:

Exhibit "A" – Conceptual Draft Terms for a Shared Reliability Pilot Program Between IRWD and MWDOC

EXHIBIT "A"
Conceptual Draft Terms for Shared Reliability Pilot Program
Between Irvine Ranch Water District and
Municipal Water District of Orange County
(October 13, 2017)

Parties	Irvine Ranch Water District (IRWD) and Municipal Water District of Orange County (MWDOC).
Purpose	IRWD and MWDOC seek to implement a Shared Reliability Pilot Program (Pilot Program) for the benefit of participating MWDOC member agencies utilizing IRWD's Strand and Stockdale Water Banking Projects (Water Bank). The Pilot Program will provide the participants with an assured supplemental water supply during periods when Metropolitan Water District of Southern California (Metropolitan) declares a Water Supply Allocation or during system emergency conditions.
Term of the Pilot Program	5 Years
Annual Option	During the term of the Pilot Program MWDOC will pay, on behalf of its participating agencies, an annual option payment for the right to call on Pilot Program water during the same year.
Pilot Program Water	IRWD would make up to 5,000 acre-feet (AF) of water (net of Kern County losses) from its Water Bank for delivery to MWDOC over the Term of the Pilot Program.
IRWD's role	IRWD would: • Make available Pilot Program Water from its Water Bank; • Operate its Water Bank; and • Coordinate the recovery and delivery of water consistent with the Coordinated Operating Water Storage, Exchange and Delivery Agreement among IRWD, MWDOC and Metropolitan (Coordinated Agreement).
MWDOC's role	MWDOC would: • Implement the Pilot Program as a member agency "Choice Program"; • Enter into agreements with its member agencies that desire to participate in the Pilot Program; • Coordinate with Pilot Program participants on exercising annual options; • Communicate requests to IRWD for the recovery and delivery of Pilot Program Water; • Coordinate deliveries into MWDOC service area; and • Invoice the Pilot Program participants.
MWDOC pays to IRWD	MWDOC would pay to IRWD: • A \$5,000 one-time program set-up fee; and • Annual Option Payments in the amount of \$35 per AF for the right to call on Pilot Program Water in the same year. If MWDOC exercises an option and calls on water, then it would pay IRWD: • Up to \$512 per AF for the cost of water, recovery costs, and capital facility use fees; and • \$500 transaction fee each time an option is exercised.
MWDOC pays to Metropolitan	MWDOC would pay to Metropolitan all Full Service Rates for the Pilot Program Water pursuant to the Coordinated Agreement.
Pilot Program Participants Pay to MWDOC	MWDOC member agencies participating in the program would pay to MWDOC: • Pro-rata share of all costs paid by MWDOC to IRWD; and • All full service rates assessed to MWDOC by Metropolitan pursuant to the Coordinated Agreement.

October 24, 2017

Submitted by: P. Weghorst

Approved by: Paul Cook 

SUPPLY RELIABILITY PROGRAMS COMMITTEE

CONCEPTUAL TERMS FOR A WATER STORAGE AND EXCHANGE PROGRAM WITH METROPOLITAN

SUMMARY:

In some wet hydrologic years, Metropolitan Water District of Southern California (Metropolitan) has access to more State Water Project (SWP) water than it has capacity to store. To facilitate the ability to store such wet year supplies for the mutual benefit of IRWD and Metropolitan, staff has prepared Draft Conceptual Terms for a Storage and Exchange Program. This program would allow Metropolitan to deliver excess SWP water to IRWD's Strand and Stockdale Integrated Banking Projects (IRWD Water Bank) for the purpose of fulfilling existing and future obligations incurred by Metropolitan in the implementation of IRWD's unbalanced exchange programs. At the Committee meeting, staff will provide an overview of the Draft Conceptual Terms and the benefits of the associated program. Staff recommends that the Committee:

- Provide input on the Conceptual Draft Terms for a Storage and Exchange Program with Metropolitan;
- Authorize staff and legal counsel to work with Metropolitan to prepare an agreement based on the draft terms; and
- Authorize staff to present the agreement for consideration by the full Board of Directors.

BACKGROUND:

In April 2011, IRWD entered into the Coordinated Operating, Water Storage, Exchange and Delivery Agreement (Coordinated Agreement) with Metropolitan and the Municipal Water District of Orange County (MWDOC). This agreement allows IRWD to secure SWP supplies through unbalanced exchanges with State Water Project Contractors (Contractors) to which Metropolitan provides its written consent. In implementing these exchanges, Metropolitan incurs obligations to return unbalanced amounts of water to the originating Contractors. In return for facilitating these exchanges, the Coordinated Agreement gives Metropolitan the ability to borrow the SWP supplies secured by IRWD.

Storing Wet Year Supplies:

The year 2017 has been a very wet hydrologic period and large amounts of SWP water have been available to Metropolitan. Metropolitan has been able to capture and store record amounts of this water in its groundwater storage programs and surface reservoirs. Even with record volumes of water being delivered into storage, there are SWP supplies that could be captured and stored by Metropolitan if other storage facilities and programs were available.

Staff has had discussions with Metropolitan about providing an opportunity for Metropolitan to store water in the IRWD Water Bank during periods when it has excess SWP supplies. The storage of excess supplies could be facilitated through the development and execution of an agreement between IRWD and Metropolitan that would establish a Water Storage and Exchange Program. Staff has prepared the draft conceptual terms for such a program that are provided as Exhibit "A". Following is an overview of these conceptual terms.

Conceptual Terms for Storage and Exchange Program:

The Draft Conceptual Terms for a Storage and Exchange Program, that are provided as Exhibit "A", would allow Metropolitan to deliver water to the IRWD Water Bank as a pre-delivery of State Water Project (SWP) water to fulfill future obligations incurred by Metropolitan through IRWD's unbalanced exchange programs to which Metropolitan has issued its consent. In exchange, IRWD would in the future recover from the ground an equal amount of water (after consideration of losses) to be used in meeting Metropolitan's obligations pursuant to the unbalanced exchanges. Following is a summary of key terms of the proposed program:

- IRWD in its sole discretion could allow Metropolitan to store SWP water in the IRWD Water Bank;
- The amount that IRWD would allow Metropolitan to store would not impede IRWD's abilities to meet its own water supply reliability needs or impede IRWD's ability to fulfill obligations associated with its existing and future programs; and
- Water recovered by IRWD from the IRWD Water Bank, to fulfill Metropolitan's obligations, would occur in priority to the unbalanced exchanges for which the Return Water is being delivered relative to IRWD's use of wells to fulfill its own requirements or the requirements of IRWD's other program partners.

Program Costs:

The costs associated with the implementation of the program would be assessed to IRWD and Metropolitan as follows:

- IRWD would pay all Cross Valley Canal pumping costs and Rosedale administration fees for the delivery of the pre-delivered SWP water to the IRWD Water Bank;
- Metropolitan would pay all DWR variable charges for the delivery of Exchange Water to the IRWD Water Bank;
- IRWD would pay the costs associated with the recovery of water from the IRWD Water Bank to fulfill obligations incurred by Metropolitan pursuant to IRWD's unbalanced exchange programs; and
- IRWD would be entitled to the reimbursement of all costs associated with the recovery of water pursuant to the terms and conditions of IRWD's unbalanced exchange program agreements.

At the Committee meeting, staff will provide an overview of the conceptual draft terms as well as the benefits of the proposed Storage and Exchange Program with Metropolitan. Staff recommends that the Committee provide input on the conceptual draft terms.

FISCAL IMPACTS:

The costs associated with the implementation of the proposed Storage and Exchange Program would be divided between IRWD and Metropolitan consistent with the terms of the Coordinated Agreement and the terms of IRWD's unbalanced exchange programs to which Metropolitan has incurred future obligations.

ENVIRONMENTAL COMPLIANCE:

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 Committee provide input on the Conceptual Draft Terms for a Storage and Exchange Program with Metropolitan Water District of Southern California; authorize staff and legal counsel to work with Metropolitan to prepare an agreement based on the draft terms; and to present the agreement for consideration by the full Board of Directors.

LIST OF EXHIBITS:

Exhibit "A" – Draft Summary of Proposed Terms for Water Storage and Exchange Program Between IRWD and Metropolitan

EXHIBIT "A"

DRAFT

**Summary of Proposed Terms for
Storage and Exchange Program
Between Irvine Ranch Water District and
Metropolitan Water District of Southern California
(October 23, 2017)**

GENERAL TERMS	
Parties:	Irvine Ranch Water District (IRWD), and Metropolitan Water District of Southern California (Metropolitan)
Description:	IRWD and Metropolitan seek to establish a Storage and Exchange Program as described in this Summary of Proposed Terms pursuant to an Exchange Program Agreement as defined below. The Storage and Exchange Program would allow Metropolitan to deliver State Water Project (SWP) water to IRWD's Strand and Stockdale Integrated Banking Projects (Water Bank) as a pre-delivery to fulfill future obligations incurred by Metropolitan (Exchange Water) through any agreement that Metropolitan has issued its consent to with another SWP Contractor that contains provisions for Program Water to be moved to Metropolitan's service area as described in Paragraph 3.11 of the Coordinated Operating, Water Storage, Exchange and Delivery Agreement that was executed in 2011 between IRWD, Metropolitan, and the Municipal Water District of Southern California (Coordinated Agreement). The Exchange Water would be delivered into storage in exchange for IRWD recovering from the ground, in the future, an equal amount of water after consideration of losses to be used in meeting Metropolitan's obligations pursuant to the Coordinated Agreement (Return Water).
Effective Date:	January 1, 2018
Term:	Termination date shall be November 4, 2035 which is coterminous with Coordinated Agreement.
Water Bank:	The IRWD Water Bank is currently comprised of the Strand and Stockdale Integrated Water Banking Projects that are located in Kern County. The projects are owned by IRWD and operated

	by Rosedale-Rio Bravo Water Storage District (Rosedale) pursuant to the agreements between Rosedale and IRWD for Water Banking and Exchange Programs that were executed in 2009 and 2016 (Rosedale Agreements).
General Expenses:	Each party would be responsible for its own fees and expenses arising out of the negotiation and execution of the Exchange Program Agreement.
Coordination:	IRWD and Metropolitan would jointly coordinate with the California Department of Water Resources (DWR) and the Kern County Water Agency in the development of all approvals and agreements necessary to deliver Exchange Water to the Water Bank. IRWD and Metropolitan would each be responsible for their own costs associated for such coordination.
CEQA Compliance:	Both parties would comply with CEQA and cooperate with one another with respect to CEQA compliance that may be required by DWR for the proposed Storage and Exchange Program. IRWD has already conducted environmental review under CEQA for the Water Bank that takes into consideration the delivery of SWP water to the Water Bank. 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.
Permit Costs:	No permits are expected to be required for the Storage and Exchange Program; however IRWD and Metropolitan would share equally any and all regulatory and permitting fees and

	costs associated with the implementation of the Storage and Exchange Program.
Water Rights:	It is expressly agreed, understood, and acknowledged by IRWD that any Exchange Water that is stored in the Water Bank by Metropolitan would not result in or be considered a sale or transfer of Metropolitan's contractual rights to SWP water.
Control:	The Exchange Water shall be deemed to be placed under the valid and continuing right and authority of Metropolitan, as transferee or exchangee, to control and/or use such water to meet future Metropolitan obligations that are incurred by Metropolitan associated through implementation of the Coordinated Agreement, with all necessary legal rights, entitlements, approvals and permissions under Metropolitan's SWP Contract and the laws of the State of California, if any, in full force and effect.
Exchange Program Agreement	Contract language that incorporates these Summary of Proposed Terms into an agreement between the Parties.
STORAGE AND EXCHANGE PROGRAM TERMS	
Exchange Water:	Metropolitan shall have the ability to request to IRWD the ability to pre-deliver SWP water to the Water Bank to fulfill future obligations incurred by Metropolitan through any agreement that Metropolitan has issued or will issue its consent to with another SWP Contractor that contains provisions for Program Water to be moved to Metropolitan's service area as described in Paragraph 3.11 of the Coordinated Agreement. The Exchange Water would be SWP water that would otherwise be lost or other SWP water deemed to be available by Metropolitan that does not impact its other programs and obligations.
Quantity:	IRWD in its sole discretion, may upon Metropolitan's request, allow Metropolitan to deliver Exchange Water to the Water Bank up to an amount deemed by IRWD that would not impede IRWD's abilities to meet its own water supply reliability needs or impede IRWD's ability to fulfill obligations associated with its existing and future programs. Any amount of Exchange Water approved by IRWD would be subject to available

	conveyance and recharge capacities at the time the Exchange Water is made available.
Return Water:	In the future, IRWD shall recover an equivalent amount of water to the Exchange Water that was delivered into storage, after consideration of losses, to be used in meeting Metropolitan's obligations pursuant to the Coordinated Agreement. Return Water recovered by IRWD from the Water Bank would occur in priority to the unbalanced exchange for which the Return Water is being delivered relative to IRWD's use of wells to fulfill its own requirements or the requirements of IRWD's other program partners.
Quality:	The quality of both Exchange Water and Return shall meet the water quality standards established by DWR for pump-in to the California Aqueduct as of the date of the Exchange Program Agreement.
Point of Deliveries:	Metropolitan will deliver Exchange Water to the IRWD point of delivery (IRWD POD) which will be the Strand Ranch or Stockdale West Turnouts on the Cross Valley Canal or other Rosedale diversion locations as specified by Rosedale-Rio Bravo Water Storage District pursuant to the Rosedale Agreements. Exchange Water could also be delivered into storage at the Water Bank through underground transfers of water from other Metropolitan banking, storage or exchange programs. IRWD shall deliver Return Water to the Metropolitan point of delivery (Metropolitan POD) which will be the Cross Valley Canal.
Losses:	Exchange Water that is delivered into storage at the Water Bank would be subject to the loss provisions of any applicable "Memorandum of Understanding" between Rosedale and adjoining entities applicable to or affecting the Storage and Exchange Program consistent with the Rosedale Agreements. Losses for banking operations currently are fifteen percent (15%) for evaporation, migration and out-of-county use. Accordingly, an equivalent of 85 percent of the Exchange Water would be available to be recovered as Return Water by IRWD to meet future obligations incurred by Metropolitan.

Costs:	IRWD shall pay all Cross Valley Canal pumping costs and Rosedale Administration Charges for the delivery of Exchange Water to the Water Bank pursuant to the Rosedale Agreements. Metropolitan shall pay all DWR administrative charges and DWR Variable OMP&R charges for the delivery of Exchange Water to the Water Bank. IRWD shall pay the applicable costs charged by Rosedale pursuant to the Rosedale Agreements for recovery by in-lieu exchange or by extraction, including Administrative Charges as specified therein, of Return Water from the Water Bank to fulfill obligations incurred by Metropolitan pursuant to the Coordinated Agreement. IRWD shall be entitled to the reimbursement of these costs pursuant to the terms and conditions of the unbalanced agreements that Metropolitan issued its consent to.
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