

AGENDA
IRVINE RANCH WATER DISTRICT
SUPPLY RELIABILITY PROGRAMS COMMITTEE
THURSDAY, JANUARY 18, 2018

CALL TO ORDER 3:00 p.m., Committee Room, Second Floor, District Office
15600 Sand Canyon Avenue, Irvine, California

ATTENDANCE Committee Chair: Peer Swan _____
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 – SANCHEZ/WEGHORST

Recommendation: Receive and file.

ACTION

7. DROUGHT RELIEF PROJECT UPDATE AND COST ACCEPTANCE –
WELCH/BENNETT/SANCHEZ/WEGHORST

Recommendation: That the Board authorize the General Manager to accept the District's remaining share of the Drought Relief Project construction costs for the Central Intake Pipeline and Cross Valley Canal turn-in facility in the amount of \$2,953,243 to be paid to Rosedale-Rio Bravo Storage District consistent with the Drought Relief Project Cost Sharing Agreement.

8. PROPOSED POLICY PRINCIPLES ON ORANGE COUNTY WATER
RELIABILITY IMPROVEMENTS – WEGHORST/COOK

Recommendation: That the Board approve the Revised Policy Principles Paper on Orange County Water Reliability Improvements.

OTHER BUSINESS

9. Directors' Comments

10. Adjourn

Availability of agenda materials: Agenda exhibits and other writings that are disclosable public records distributed to all or a majority of the members of the above-named Committee in connection with a matter subject to discussion or consideration at an open meeting of the Committee are available for public inspection in the District's office, 15600 Sand Canyon Avenue, Irvine, California ("District Office"). If such writings are distributed to members of the Committee less than 72 hours prior to the meeting, they will be available from the District Secretary of the District Office at the same time as they are distributed to Committee Members, except that if such writings are distributed one hour prior to, or during, the meeting, they will be available 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.

January 18, 2018

Prepared by: D. Johnson/K. Welch

Submitted by: F. Sanchez/P. Weghorst *FW*

Approved by: Paul A. Cook *PA 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 regarding IRWD's 2017 year-end summary of water banking operations, an ongoing pond infiltration study, an update on the status of IRWD's water banking project relative to the Sustainable Groundwater Management Act, 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 quantities shown for 2017 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 Operations Summary:

Exhibits "B" and "C" provide current estimates of the amounts and types of water recharged in 2017. As shown in Exhibit "B", a total of 19,869 acre-feet (AF) of water was delivered and recharged at IRWD's water banking projects as follows:

To Strand and Stockdale West Projects:

- 13,654 AF of high flow Kern River Water from Buena Vista Water Storage District;

- 1,574 AF of State Water Project (SWP) Table A water from Dudley Ridge Water District (DRWD);
- 3,488 AF of SWP Article 21 water from DRWD; and
- 578 AF of SWP Table A water from Carpinteria Valley Water District.

To Kern Water Bank:

- 575 AF of SWP Article 21 water combined with other non-SWP supplies.

In October 2017, Metropolitan Water District of Southern California (Metropolitan) delivered a total of 143 AF to IRWD's Jackson Ranch to fulfill a return water obligation under IRWD's unbalanced exchange program with Dudley Ridge Water District. This delivery is reflected in Exhibits "B" and "C".

Pond Infiltration Study:

Staff has been coordinating with Rosedale in conducting a pond infiltration study using the recharge basins on the south side of the Strand Ranch. On November 1, 2017, Rosedale initiated the study by measuring baseline recharge rates. On November 10, water deliveries were terminated into recharge basins numbered 4, 5 and 6 on the Strand Ranch. The locations of these three basins are shown on Exhibits "E" and "F". Once these three basins were sufficiently dried, Rosedale began implementing various land treatments through the use of a contractor. Rosedale contracted to have approximately three inches of silt removed from one of the basins. On the second basin, Rosedale had the contractor scrape off a fine layer of silt and then rip the bottom of the basin to a depth of 30 inches. The third basin was allowed to dry and crack with no further treatment. The land treatments at the three basins were completed on December 18, 2017, and Rosedale then began delivering water to the basins.

Water deliveries are expected to continue through January 2018 with Rosedale performing post-land treatment pond drop tests. At the meeting, staff will update the Committee on recent activities related to the study. Staff expects to present the results of the Strand Recharge Pond Infiltration Study to the Committee in February.

Strand Ranch / Stockdale West Groundwater Sustainability Agency Status:

The Sustainable Groundwater Management Act (SGMA) gives local agencies (cities, counties and water districts) the powers needed to sustainably manage groundwater over the long-term, and requires that Groundwater Sustainability Plans (GSPs) be developed for medium- and high-priority groundwater basins. The Kern County Sub-basin was identified by the state as a high priority basin. Accordingly, there have been several Groundwater Sustainability Agencies (GSAs) formed in Kern County which will be developing GSPs in compliance with SGMA.

Rosedale-Rio Bravo Water Storage District, along with other local Kern County water districts have formed a GSA called the Kern Groundwater Authority. Each agency within the Kern Groundwater Authority GSA will prepare its own GSP. Each agencies GSP will be incorporated into an overall GSP for the Kern Groundwater Authority.

Currently, the Strand Ranch and Stockdale West properties are un-districted and are not included in the Kern Groundwater Authority boundaries. Staff is working with Rosedale on incorporating the Strand and Stockdale West Integrated Banking Projects properties into Rosedale's GSP that will be incorporated into the overall GSP for the Kern Groundwater Authority. At the meeting, staff will update the Committee on these activities and next steps for incorporating Strand Ranch and Stockdale West into Rosedale's GSP.

2018 Recharge Opportunities:

Staff has been pursuing additional opportunities to secure recharge water for 2018. 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;
- Metropolitan Water District of Southern California; 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, along with 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 Water District of Southern California. 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
 January 18, 2018

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 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 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
January 18, 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
SWP Table A (CCWA 2017 Exch.)	289	-	-	289	-	578
High Flow Kern River	-	6,827	6,827	-	-	13,654
MWD Water to Jackson Ranch ⁷	-	-	-	-	(143)	(143)
TOTAL ESTIMATED 2017 TRANSACTIONS	3,349	6,873	6,827	289	2,388	19,726
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	3,257	17,662	6,827	289	2,388	30,423
TOTAL ESTIMATED STORED WATER TO DATE	12,659	22,473	6,827	289	3,562	45,810

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 in Kern County.

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 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. 9 AF of additional CVC losses, split among IRWD and DRWD, are reflected in these amounts.

⁷ Water returned to Kings County by MWD for use on IRWD's Jackson Ranch.

Exhibit "C"

TABLE 3
IRWD's Water Banking Storage, Recharge and Recovery Operations - AFTER LOSSES
January 18, 2018

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	1,479	-	-	-	1,566	3,044
SWP Table A (CCWA 2017 Exch.)	246	-	-	246	-	491
High Flow Kern River	-	5,803	6,144	-	-	11,947
MWD Water to Jackson Ranch ⁷	-	-	-	-	(143)	(143)
TOTAL ESTIMATED 2017 TRANSACTIONS ⁸	2,869	5,844	6,144	246	2,131	17,234
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	2,782	15,478	6,144	246	2,131	26,780
TOTAL ESTIMATED STORED WATER TO DATE	11,175	19,808	6,144	246	3,305	40,677

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 and reflects the delivery of 94 AF to IRWD's Jackson Ranch tenant.

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 2013-2016 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. 9 AF of additional CVC losses, split among IRWD and DRWD, are reflected in these amounts.

⁷ Water returned to Kings County by MWD for use on IRWD's Jackson Ranch.

⁸ 2017 transactions may be adjusted for conveyance losses in CVC.

Exhibit "D"



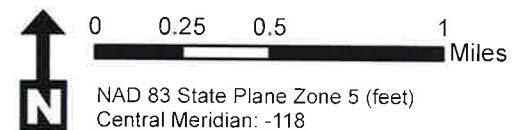
Irvine Ranch
WATER DISTRICT

Location Map: IRWD Water Banking Projects Wells and Turnin Pipelines

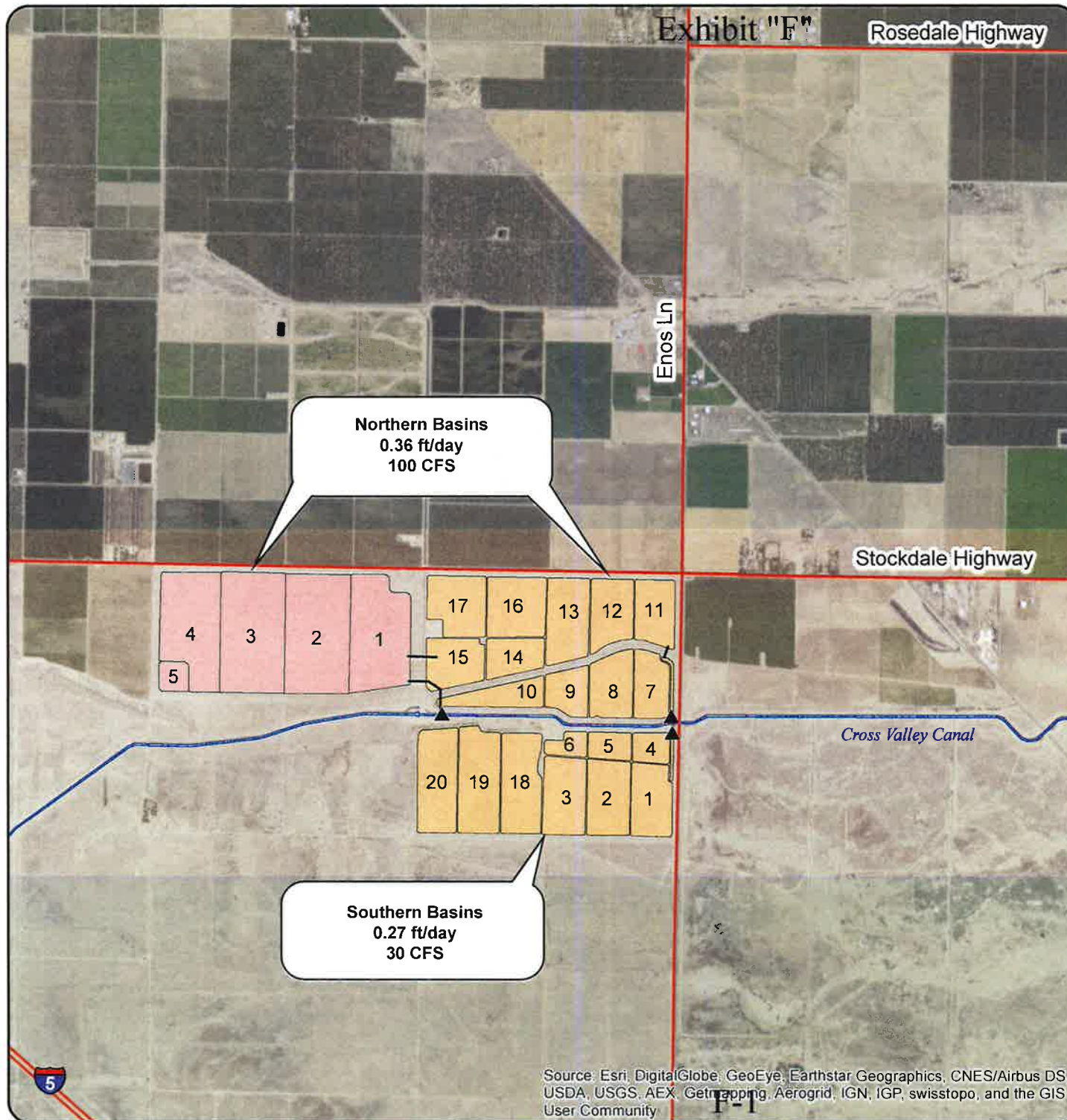
MAP FEATURES

- 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



**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 early December 2017. Recharge rates for Basins 4, 5, and 6 will be updated at the conclusion of the Pond Infiltration Study.

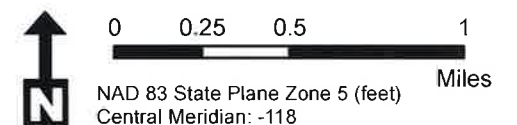
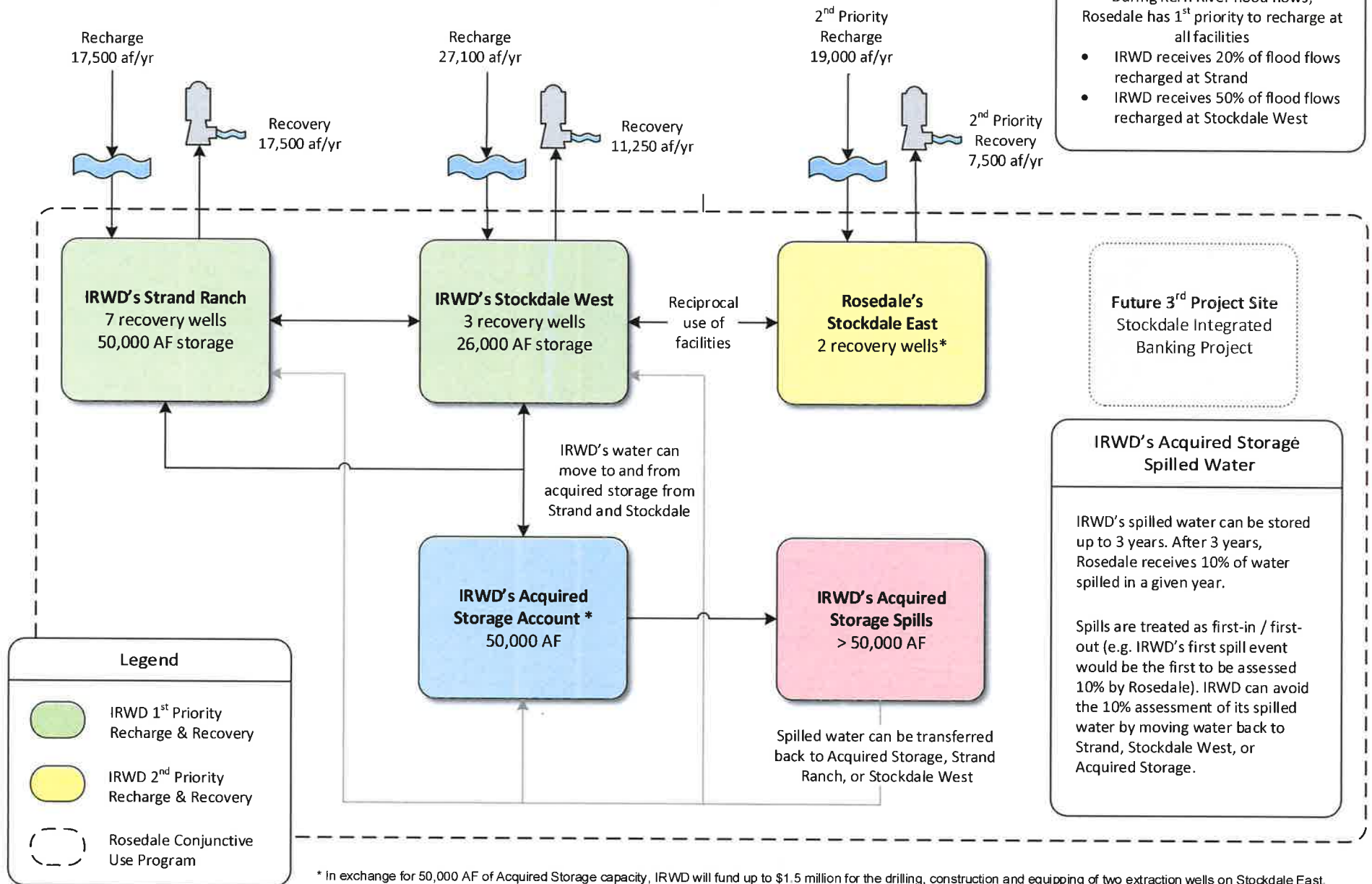


Exhibit "G"

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)

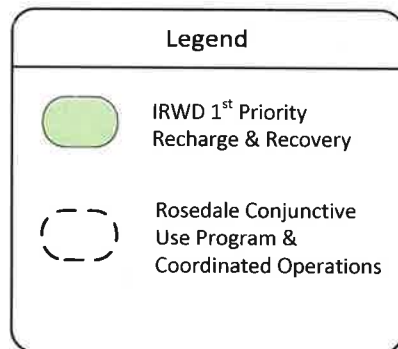
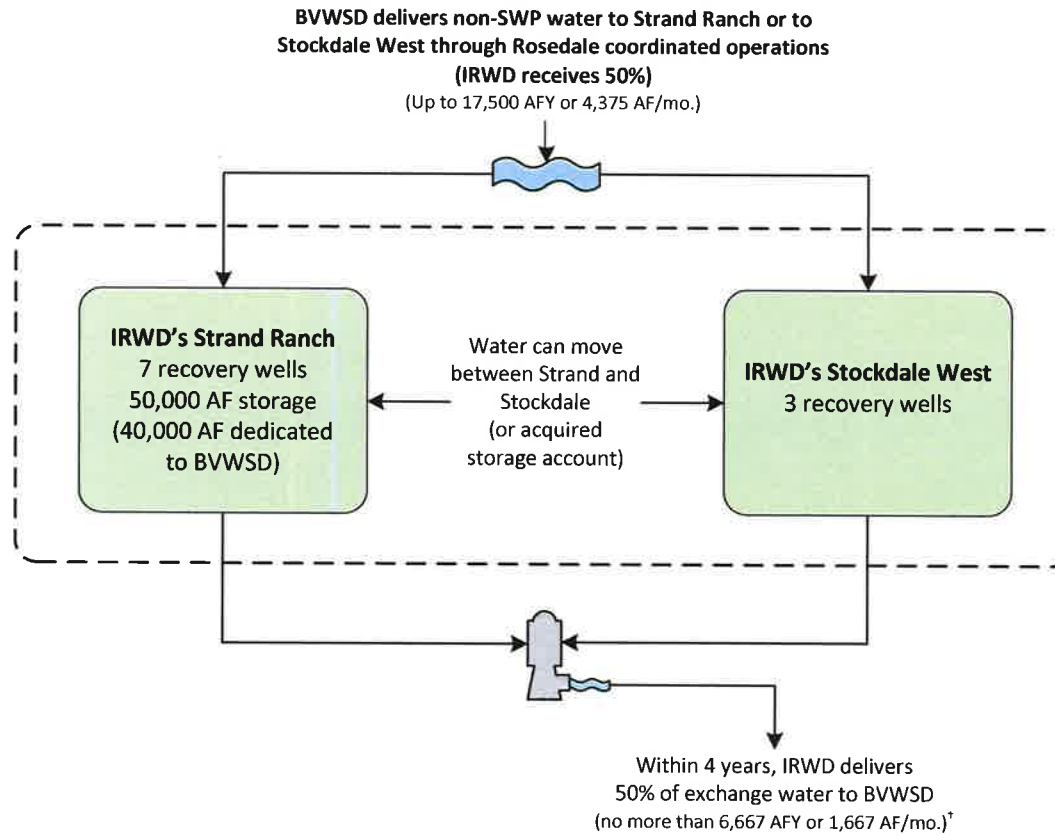


* In exchange for 50,000 AF of Acquired Storage capacity, IRWD will fund up to \$1.5 million for the drilling, construction and equipping of two extraction wells on Stockdale East.

Exhibit "H"

Buena Vista Water Storage District Long Term Water Exchange Program

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

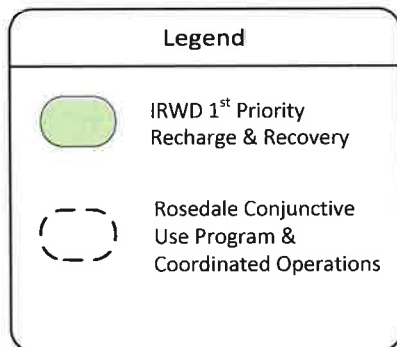
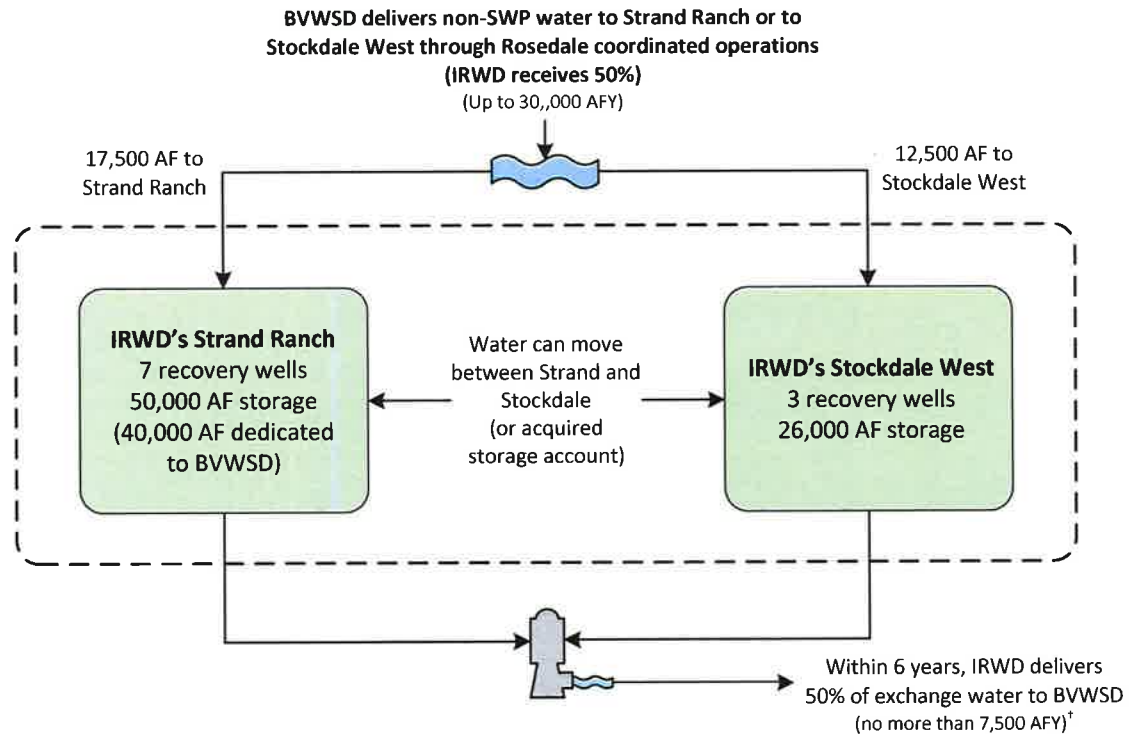


[†]IRWD shall remit one-half of the exchanged supply less one-half of reasonable losses back to BV no later than December 31st of the 4th year following the associated recharge event. IRWD pays for recovery of water returned to BV. Water to be remitted back to BV may remain in storage at Strand Ranch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

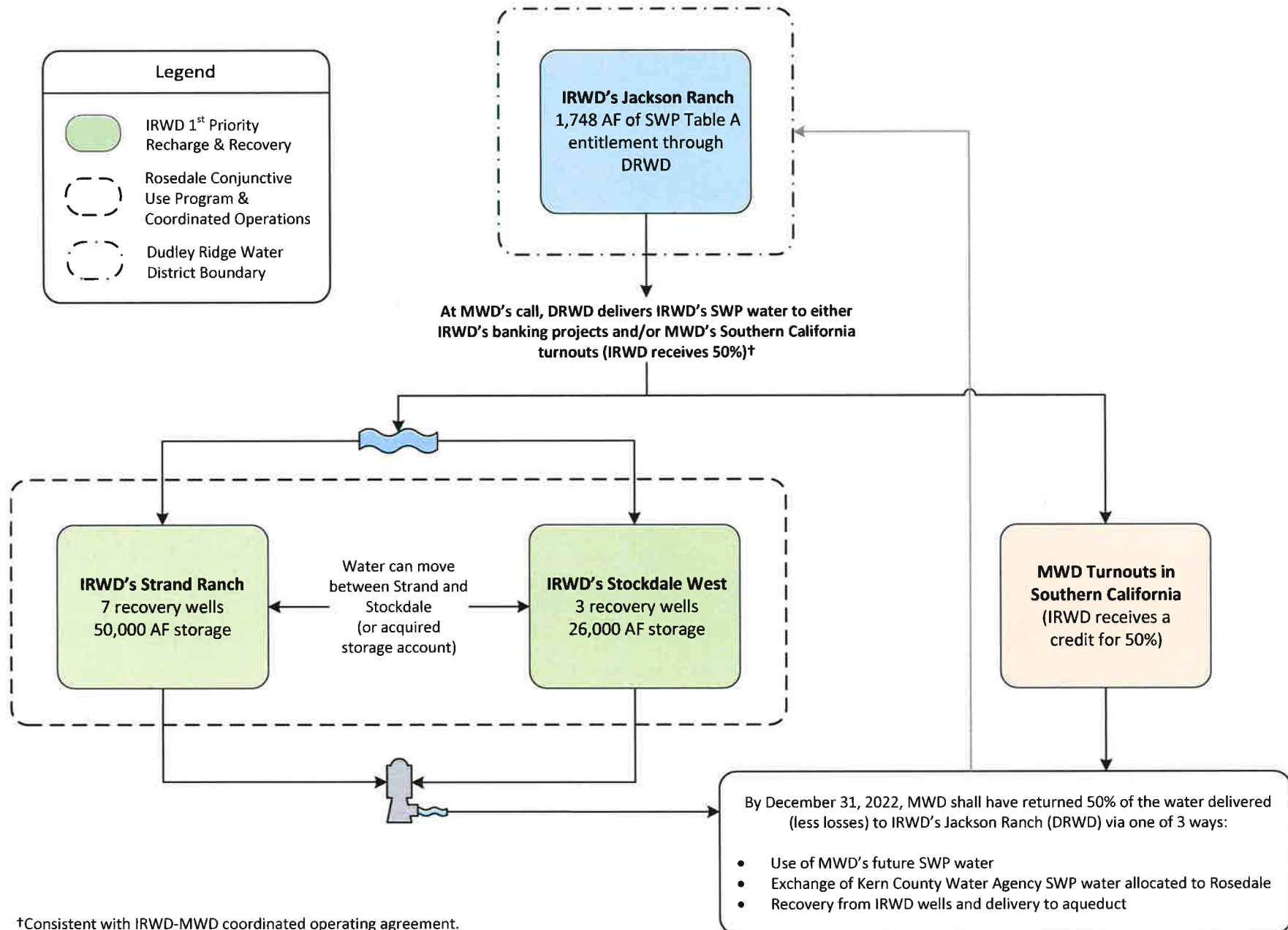
Modified for 1-Year Recharge Program Only

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



†Consistent with IRWD-MWD coordinated operating agreement.

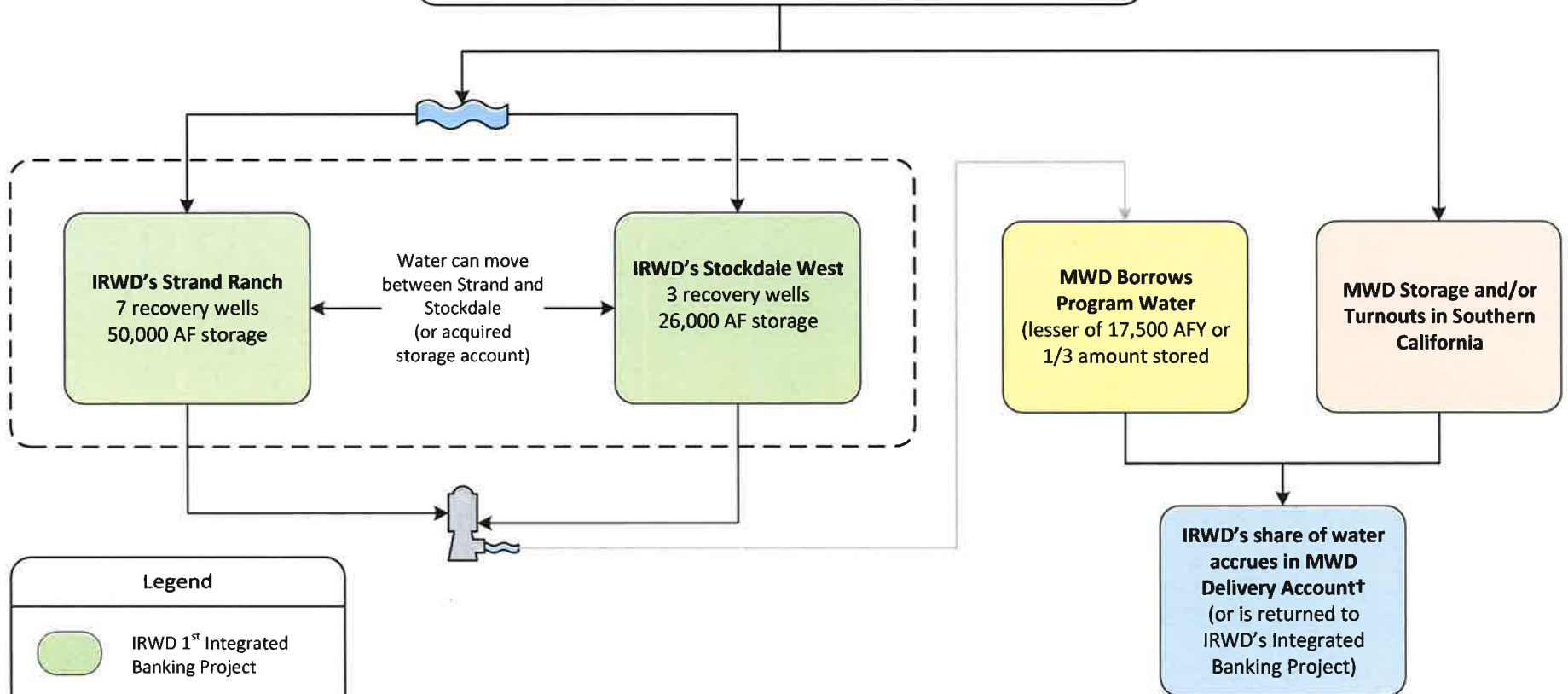
Exhibit "J"

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

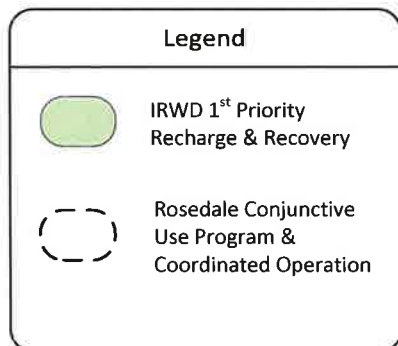
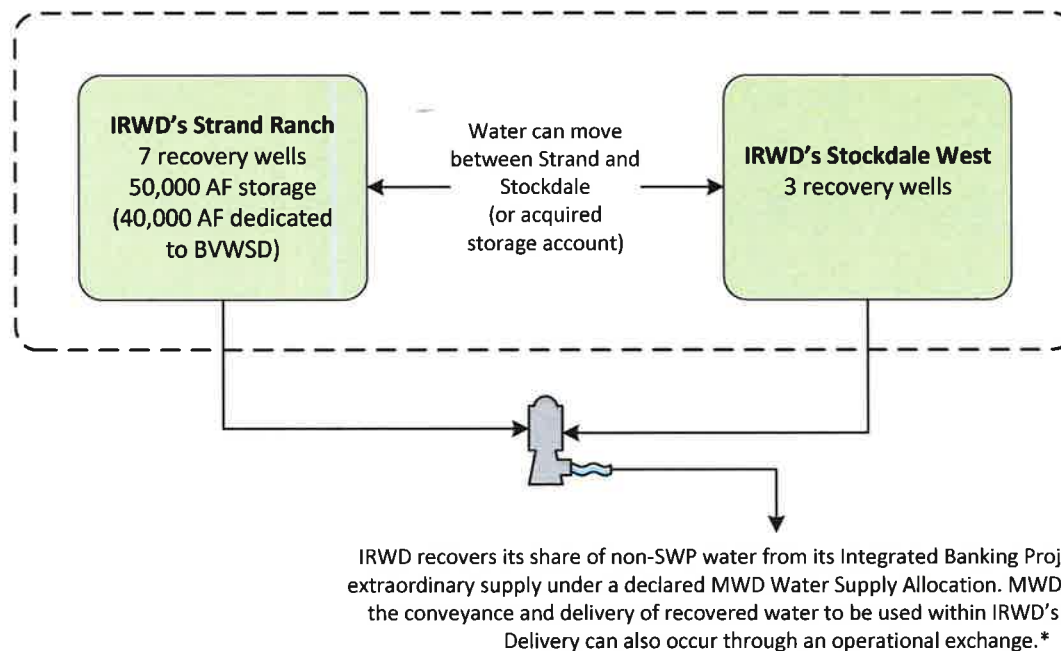
MWD has three options for the use and storage of Program Water:

- 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



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

Exhibit "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.

January 18, 2018
Prepared by: F. Sanchez
Submitted by: P. Weghorst
Approved by: Paul A. Cook 

SUPPLY RELIABILITY PROGRAMS COMMITTEE

KERN FAN GROUNDWATER STORAGE PROJECT UPDATE

SUMMARY:

On August 14, 2017, IRWD and Rosedale-Rio Bravo Water Storage District jointly submitted a grant application for the proposed Kern Fan Groundwater Storage 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). The CWC received applications for 12 projects; it is now reviewing these applications for overall eligibility and the level of public benefits provided. At the Committee meeting, staff will present preliminary feedback received from CWC staff on the CWC's evaluation methodology, preliminary indications regarding the claimed public benefits associated with the Kern Fan Project, and discuss the next steps in the process.

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 in 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 develop 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 Eligibility and Public Benefits:

Pursuant to the WSIP regulations, CWC staff reviewed the 12 grant applications for completeness and initial eligibility. All 12 projects were determined to meet the initial criteria. On December 13, 2017 all applicants presented their projects to the CWC. IRWD staff co-presented the Kern Fan Project with the General Manager of Rosedale. The next step in the CWC review process is the technical evaluation of the public benefits associated with each project. CWC staff is required by regulation to evaluate the basis and rationale for the claimed public benefits and the monetary value of the benefits. The ratio of the value of the public benefits to the requested funding amount is defined as the Public Benefit Ratio (PBR). This month, the CWC invited applicants to individual meetings to provide preliminary feedback on the CWC's PBR evaluation for each applicant's project.

Public Benefit Ratio Evaluation:

On January 10, 2018, CWC staff, legal counsel, technical experts and representatives from the California Department of Fish and Wildlife met with IRWD staff and its consultants to discuss the evaluation of the public benefits associated with the Kern Fan Project. IRWD's consulting team included representatives from four firms: 1) MBK Engineers, 2) Cramer Fish Sciences, 3) MCubed, and 4) Dee Jaspar and Associates.

At the Committee meeting, staff will give a presentation reviewing the preliminary feedback provided by CWC staff on each of the public benefits claimed by IRWD and Rosedale for the Kern Fan Project. The public benefits for the project are summarized in Table 1:

Table 1: Kern Fan Project Public Benefits

Type of Public Benefit	Benefit Value \$ Million
Ecosystem Benefit - Salmon	\$20.9
Ecosystem Benefit - Wetlands	\$39.8
Emergency Response – Extended Drought	\$5.1
Emergency Response – Delta Failure	\$59.9
Total Public Benefits	\$125.7

Next Steps:

On February 1, 2018, CWC will release the initial PBRs for all of the projects. Applicants will have three weeks after the release of the PBRs to submit a written appeal to CWC staff. CWC staff will review the appeals and issue its responses on April 20. The CWC will determine the final PBRs for each project in May during a public meeting of the CWC. The final PBRs will be used to calculate one third of the overall application score for each project. Preliminary application scores will be released on May 25. The CWC will meet in June to determine the final application scores and ranking for each project. The CWC is expected to release the maximum conditional funding eligibility for each project in July 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 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. 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.

January 18, 2018

Prepared by: K. Welch/R. Bennett

Submitted by: F. Sanchez/P. Weghorst

Approved by: Paul Cook

SUPPLY RELIABILITY PROGRAMS COMMITTEE

DROUGHT RELIEF PROJECT UPDATE AND COST ACCEPTANCE

SUMMARY:

The Drought Relief Project (DRP) is being jointly developed by Rosedale-Rio Bravo Water Storage District (Rosedale), Castaic Lake Water Agency (CLWA), and IRWD through the terms of a cost sharing agreement executed in 2015. IRWD and CLWA will each share equally in the capacities of six wells, the Central Intake Pipeline, a Cross Valley Canal (CVC) turn-in facility and associated conveyance facilities. The construction of the Central Intake Pipeline and the six wells were completed in 2017. Construction of the CVC turn-in facility and equipping of the six wells is ongoing. Staff recommends that the Board authorize the General Manager to accept the District's remaining share of the DRP construction costs for the Central Intake Pipeline and the CVC turn-in facility in the amount of \$2,953,243 to be paid to Rosedale consistent with the Drought Relief Project Cost Sharing Agreement.

BACKGROUND:

The DRP includes the design and construction of 11 wells and associated conveyance facilities within the Rosedale service area that will provide additional groundwater recovery and conveyance capacities to IRWD, CLWA, and Rosedale. A Project map is attached as Exhibit "A".

IRWD and CLWA will share equally in the recovery capacity of six of the DRP wells. Five of the six wells were constructed in the Superior Wellfield and one was located at the Matuk site. IRWD and CLWA will also share equally in 70 cubic feet per second (cfs) of capacity in the Central Intake Pipeline and the new CVC turn-in structure. In addition, IRWD and CLWA hold a second priority to the use of each other's unused capacity. Rosedale's DRP facilities include three wells and pipelines at the West Well Field, two wells and pipelines on its Stockdale East property, a 183 cfs diversion from the CVC and a pumping station. The pumping station is capable of reversing the flow in the Central Intake Pipeline to convey flow to the Stockdale East ponds or to the Goose Lake Slough.

Cost Sharing Agreement:

On February 9, 2015, the Board approved entering into the Drought Relief Project Cost Sharing Agreement with CLWA and Rosedale. This agreement provides for the sharing of costs and the distribution of benefits associated with the design, construction, and operation of new groundwater recovery and conveyance facilities associated with the DRP. The Board approved Amendment No. 1 to the Agreement on May 21, 2015. The agreement and amendment are attached as Exhibit "B".

Rosedale is responsible for managing the design and construction of the Project facilities under the terms of the agreement. Rosedale invoices IRWD and CLWA with supporting documentation for the actual costs for each agency's portion of the project.

Project Status:

Construction of the Central Intake Pipeline and the six IRWD/CLWA wells were completed in 2017. The construction of the CVC turn-in and equipping of the six wells are expected to be completed in March 2018 and August 2018, respectively. Construction of all DRP facilities is scheduled to be completed in October 2018.

Project Budget:

Rosedale's estimated total cost of the DRP is shown on Exhibit "C" as \$29,570,371. Rosedale has managed the DRP design and construction contracts carefully and generally within budget. IRWD's estimated share in the cost of the project is also shown on Exhibit "C" as \$9,872,500. The Board has approved a total budget for IRWD's portion of the DRP in the amount of \$9,872,500 for Project 6023. This budget was established through three Board authorizations in 2015 that totaled \$6,641,200 and a FY 2016-17 approved Capital Budget increase of \$3,231,300. Funds associated with the FY 2016-17 increase have not yet been accepted for expenditure through the Cost Sharing Agreement.

Cost Acceptance:

The Central Intake Pipeline was recently completed and the CVC turn-in structure is near completion; both of these facilities are within budget. Staff recommends the Board authorize the General Manager to accept the District's remaining share of the DRP construction costs for the Central Intake Pipeline and CVC turn-in facility in the amount of \$2,953,243 to be paid to Rosedale consistent with the Drought Relief Project Cost Sharing Agreement provided in Exhibit "B".

FISCAL IMPACTS:

Project 6023 is included in the FY 2017-18 Capital Budget in the amount of 9,872,500, which was established through three Board authorizations in 2015 that totaled \$6,641,200 and an FY 2016-17 approved Capital Budget increase of \$3,231,300.

ENVIRONMENTAL COMPLIANCE:

Both the Drought Relief and Stockdale West Recovery 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 a Notice of Determination with the County of Kern on December 8, 2015, and with the California State Clearinghouse on December 9, 2015, for the Stockdale Integrated Banking Project Final Environmental Impact Report (EIR). IRWD, as a Responsible Agency, filed a Notice of Determination with the County of Orange on December 14, 2015, with the California State

Clearinghouse on December 15, 2015, and with the County of Kern on December 21, 2015, for the Stockdale Integrated Banking Project Final EIR. The construction and operation of six IRWD and CLWA wells of the Project was included in the Rosedale Master EIR and the Strand Ranch Integrated Banking Project EIR. The construction and operation of the remaining Project facilities including the Central Intake Pipeline and the CVC turn-in facilities were included in the Stockdale Integrated Banking Project EIR.

RECOMMENDATION:

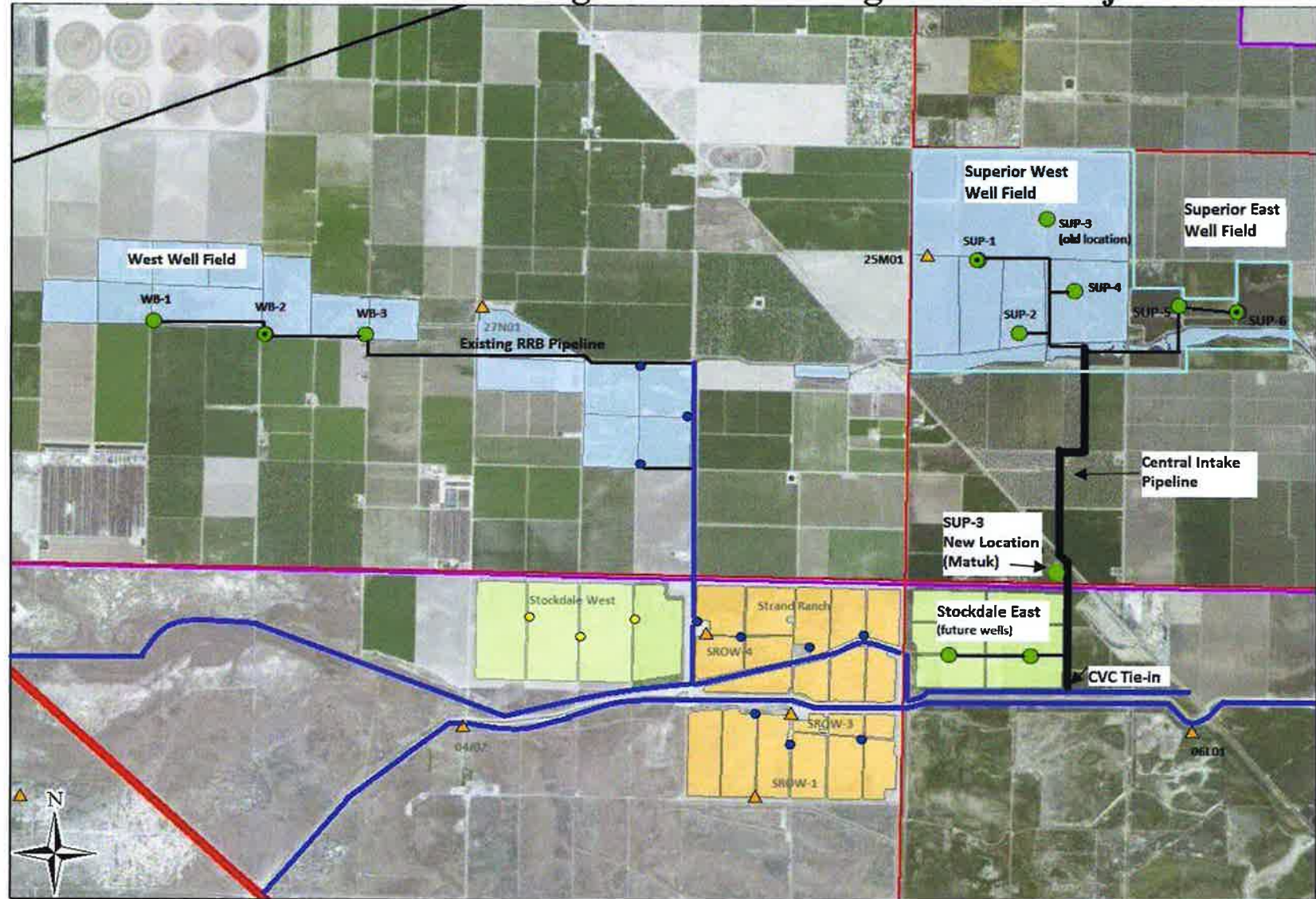
That the Board authorize the General Manager to accept the District's remaining share of the Drought Relief Project construction costs for the Central Intake Pipeline and Cross Valley Canal turn-in facility in the amount of \$2,953,243 to be paid to Rosedale-Rio Bravo Water Storage District consistent with the Drought Relief Project Cost Sharing Agreement.

LIST OF EXHIBITS:

Exhibit "A" – Project Map: Rosedale Rio Bravo Water Storage District – Drought Relief Project
Exhibit "B" – Drought Relief Project Cost Sharing Agreement
Exhibit "C" – Drought Relief Project Budget and IRWD Cost Share

EXHIBIT "A"

Rosedale-Rio Bravo Water Storage District- Drought Relief Project



NAD 83 State Plane Zone 5

EXHIBIT "B"

DROUGHT RELIEF PROJECT **COST SHARING AGREEMENT**

THIS COST SHARING AGREEMENT ("Agreement") is made as of March 9, 2015 ("Effective Date"), by and among the Rosedale-Rio Bravo Water Storage District, a California water storage district ("Rosedale"); Castaic Lake Water Agency, a special act public agency ("Castaic"); and, Irvine Ranch Water District, a California water district ("Irvine") (each sometimes individually referred to as a "Party" and collectively as the "Parties").

RECITALS

The following recitals are a substantive portion of this Agreement:

- A. Rosedale is considering construction of a project referred to as the Drought Relief Project ("Project") which includes the construction of eleven (11) groundwater recovery wells ("Wells") and related facilities, the anticipated locations of which are generally shown on the attached Exhibit A; and
- B. Castaic and Rosedale entered into "Agreement Rosedale-Rio Bravo Water Storage District and Castaic Lake Water Agency for a Water Banking and Exchange Program", dated November 15, 2005 ("Castaic Agreement") which provides Castaic with certain rights relating to the construction of seven (7) Wells and related facilities; and
- C. Irvine and Rosedale entered into "Agreement for a Water Banking and Exchange Program", dated January 13, 2009 ("Irvine Agreement") which provides Irvine with certain rights relating to the construction of up to three (3) Wells within Rosedale; and
- D. The Parties desire to coordinate the construction of the Project Wells and associated facilities, with each of Castaic and Irvine to receive, in satisfaction of its above-described right to have three (3) Wells constructed, a first-priority access right to half of the combined total developed recovery capacity of the six (6) Wells comprising the Superior East and Superior West Wellfields, depicted in Exhibit A, together with a first priority right to the below-described capacity in the Central Intake Pipeline and Central Intake Pipeline connection to the canal commonly referred to as the "Cross Valley Canal" ("CVC"), consistent with the terms of the Castaic and Irvine Agreement(s), except as provided for herein; and
- E. Castaic retains its rights under the Castaic Agreement relating to the construction of up to four (4) other Wells and related facilities; provided, however, that it is not intended by Castaic that the exercise of such rights will include any of the eleven (11) Wells to be constructed as part of the Project; and
- F. The Parties estimate that the total cost of the Project will not exceed \$27,500,000 (Estimated Project Cost). A portion of the cost is anticipated to be funded with proceeds of grants; each Party intends to apply the proceeds of any grant funding it receives to its own share of the cost; and

- G. The parties desire to share the costs relating to the Project, as more specifically set forth in this Agreement; and
- H. The operation and maintenance of the Project facilities shall be consistent with and as provided for in the Castaic Agreement and with respect to Irvine, the Irvine Agreement. Notwithstanding such, the Parties may choose to jointly operate the Project Facilities for the benefit of all of the Parties upon terms and conditions, including appropriate cost sharing provisions, agreed to by the Parties.

NOW, THEREFORE, in consideration of the recitals, covenants, terms and conditions of this Agreement, all of which are incorporated into the following Agreement as if set forth fully therein, the parties agree:

AGREEMENT

1. Feasibility

Feasibility Report. Prior to undertaking the activities described in Section 2, Rosedale has caused the preparation of a Feasibility Report including, among other things, a 30% plan, project costs estimate, and design-basis report to evaluate the feasibility of the Project and establish design criteria for the Project components, and establish the Estimated Project Cost. This Feasibility Report effort shall be considered a design costs and Each Party shall bear their share as described in Exhibit B. Rosedale has retained the consultant(s) necessary to prepare the plans, project cost estimate, and design-basis report in accordance with applicable law and Rosedale's own procedures. The Parties have evaluated the plans to date, project cost estimate, and design-basis report and are committed to proceeding with the Project in accordance with this agreement.

2. Project Components.

- a. Project Management. The Project shall include six (6) Wells to be constructed for Castaic and Irvine in the Superior East and Superior West Well Fields, and up to five (5) Wells to be constructed for Rosedale in the Western and Stockdale East Well Fields, as depicted in Exhibit A. Castaic and Irvine shall each have a first priority right to the use of fifty percent (50%) of the aggregate combined capacity of the six (6) Superior Wells and connecting recovery pipelines and appurtenant facilities. The bid price from the selected contractor for the Central Intake/Alternative No. 6 (48" RCP) as shown on Exhibit C, shall be the basis for Castaic and Irvine funding obligations in the Central Intake Pipeline, described in Exhibit B. Subject to mutual agreement of the Parties, an additional bid alternative, not shown on Exhibit C, may be included and substituted for Alternative 6 as the basis of Castaic and Irvine funding obligations in the Central Intake Pipeline. The additional bid alternative shall be equivalent in capacity to Alternative 6 identified in Exhibit C. Castaic and Irvine shall have, in equal shares, a first priority use of the return capacity associated with Alternative No. 6 or the alternative substituted for Alternative 6 as the Castaic/Irvine funding obligation basis. Rosedale may increase the capacity of the Central Intake Pipeline, through selection of one of the other alternatives provided in Exhibit C and shall pay, on an incremental basis, any increase in the cost

over the cost of Alternative No. 6 or the alternative substituted for Alternative 6 as the Castaic/Irvine funding obligation basis. Rosedale shall have a first priority use of any increase in capacity over the return capacity associated with Alternative No. 6 or the alternative substituted for Alternative 6 as the Castaic/Irvine funding obligation basis.

Except as set forth herein, Rosedale shall manage the design, engineering, bidding and construction of the Project. Rosedale shall be the lead agency for purposes of compliance with the California Environmental Quality Act (CEQA) for the Project, shall prepare the necessary environmental documents for the Project and shall undertake to obtain all governmental and non-governmental reviews and approvals, licenses and permits that are, or may be, required and necessary for the Project, and will enter into contracts with others to obtain all services necessary to construct the Project. Rosedale and its agents and contractors shall comply with all applicable federal, state or local codes, laws and regulations which relate to or affect the Project, and shall comply with all of the commitments and conditions set forth in the environmental documentation. Rosedale shall construct the Project in accordance with the plans and specifications previously reviewed by Castaic and Irvine. Rosedale's General Manager, Irvine's General Manager, and Castaic's General Manager, or their respective designated representatives, (each separately a "Project Representative") shall be authorized to implement this Agreement on behalf of the Parties. Whenever a reference is made herein to an action or approval to be undertaken by a Party, the Project Representative is authorized to act on behalf of such Party unless specifically provided otherwise or the context requires otherwise. Rosedale shall keep Castaic's and Irvine's Project Representatives apprised of the progress of the work by periodic status reports to the Project Representatives (either orally or in writing) at appropriate phases of the Project. If requested by Castaic or Irvine, a monthly meeting shall be held, at the Rosedale office or another mutually agreed upon location, to review, evaluate and discuss the progress of or other aspects of the Project.

b. Property Interests.

(i) Well Sites. Rosedale owns in fee simple all of the sites for the five (5) Wells to be constructed for Rosedale. Rosedale owns in fee simple five (5) of the sites for the six (6) Wells to be constructed for Castaic and Irvine; Rosedale is pursuing the acquisition of the sixth site, anticipated to be at no cost. In the event a fee simple interest in the sixth site cannot be acquired by Rosedale, Rosedale will review with Castaic and Irvine the terms of the easement, license or other property interest to be acquired, and the Parties will meet and confer to determine the terms necessary and adequate for operation of the Well in the manner contemplated to carry out the purposes of the Project. In the event the site cannot be acquired at no cost, the Parties will meet and confer to evaluate site acquisition options and alternative sites. However, in that event, Irvine or Castaic may, at its sole election, but shall have no obligation to, determine that it will acquire a site for the Well.

(ii) Property Other Than Well Sites. Except as provided in paragraph 2.b.(i), above, Rosedale shall acquire all lands, easements, rights of way and any other property interest that is required for construction of the Project. The costs of land, easement and right-of-way acquisition, other than the sites for the Project's eleven (11) Wells, shall be shared by the Parties as set forth in Exhibit B; provided, however, that the shares shall be adjusted as indicated in Exhibit B, with a credit to Rosedale if necessary, in the event Rosedale does not exercise its option to oversize the Central Intake Pipeline on an incremental cost basis. If cost overruns are experienced over the amount budgeted for land,

easement and right-of-way acquisition in the Project Budget (defined below), the Parties shall meet and confer to revise the proposed acquisitions or the Project Budget or take other action.

- c. **Project Design.** Rosedale shall cause the preparation of the plans and technical specifications for the Project work ("**Plans**"), which may include alternatives for bidding purposes. The Plans shall be prepared with input from Irvine and Castaic. Rosedale shall be responsible for retaining all consultants necessary to prepare the Plans ("**Design Consultants**") in accordance with applicable law and Rosedale's own procedures. Rosedale shall distribute 90% complete Plans, including as part of said Plans a refinement and updating of the Estimated Project Cost set forth in the Feasibility Report as well as a detailed Project budget ("**Project Budget**"), to Castaic and Irvine when received by Rosedale from its Design Consultant. If Castaic or Irvine desires any changes to the 90% Plans, it shall notify Rosedale within twenty-one (21) days of receipt of the 90% Plans, after which the Parties shall work together diligently to resolve the request promptly. In the event Rosedale does not receive any comments on the 90% Plans within twenty-one days after delivery of the same, Castaic and Irvine shall be deemed to approve of the 90% Plans. Rosedale shall distribute the final Plans to Castaic and Irvine at least thirty (30) days prior to advertising a request for bids. The Estimated Project Cost as set forth in the Feasibility report shall be updated and refined in accordance with the final Plans. If Castaic or Irvine desires any changes to the final Plans, it shall notify Rosedale within seven (7) days of receipt of the final Plans, after which the parties shall work together diligently to resolve the request promptly. In the event Rosedale does not receive any comments on the final Plans within seven days after delivery of the same, Castaic and Irvine shall be deemed to approve of the final Plans and the Project will be advertised for bid as described in the final Plans. Rosedale shall cause the final Plans and bid documents to incorporate alternatives to permit Castaic's and Irvine's election of Project features that can be accommodated in the Project at Castaic's and Irvine's reasonable request if submitted in the 90% Plan review, for reliability or other purposes. Rosedale's incorporation of Castaic and/or Irvine alternatives shall require Rosedale's approval if they are deemed to increase Rosedale's share of the costs. The Parties shall meet and confer to determine whether and how the Castaic and/or Irvine alternatives can be modified and constructed without increasing Rosedale's share of costs. Notwithstanding the foregoing, the Parties acknowledge that the design of the well drilling component of the Project has already been completed, reviewed and approved by the Parties.

d. **Project Bidding and Construction.**

- (i) **General.** Rosedale shall advertise one or more contracts for construction of the Project for formal bids per applicable sections of the California Public Contracts Code. For those portions of the Project for which Rosedale receives bids, Rosedale shall, upon opening and analyzing bids, promptly provide Castaic and Irvine with the name(s), address(es), copies of the bid and supporting documents and other pertinent information relating to the bidder to which Rosedale intends to award the Contract, bid alternatives selected, or Rosedale's decision to reject all bids and rebid the Project with the same scope

and capacity (in which event the process called for under this paragraph shall be repeated). Rosedale shall provide an explanation to Castaic and Irvine in the event that any bidder selected did not provide the lowest bid for the work. If Castaic or Irvine does not approve of Rosedale's selected contractor, it shall notify Rosedale within five (5) working days after receipt of the contractor's information from Rosedale, unless the parties agree in writing that a specific longer period of review time is necessary. In the event that Rosedale does not receive comments from Irvine or Castaic within the specified time, Castaic and Irvine shall be deemed to agree to Rosedale's recommendation. If the Parties do not agree on a proposed contractor, the Parties will work diligently and in good faith to resolve the matter. If the Parties are unable to resolve the matter within five (5) working days after the date of Castaic or Irvine's response to Rosedale's recommendation and such disputed action must be made to prevent delay, Rosedale may execute a contract with its preferred contractor and the Parties will follow the dispute resolution procedure set forth in Section 4 below, entitled "Resolution of Disputes." Rosedale shall produce and require that all contractors adhere to a construction schedule, with exceptions for delays as may be approved through the Project Changes as described in section 2.e. To the extent applicable, Rosedale will comply with all public contracting laws. If Castaic is awarded an Integrated Regional Water Management Grant for its share of the Project costs, Rosedale will, at Castaic's sole cost and expense, implement a Labor Compliance Plan for the project consistent with the California Department of Industrial Relations requirements.

- (ii) Well Drilling/Pipeline/Central Intake Contracts. Rosedale shall notify Castaic and Irvine in writing within five (5) days following Rosedale's determination, after the opening of bids for all contracts, whether it will make an award or whether it will reject all bids in order to permit rebidding at the same scope and capacity pursuant to paragraph (i) ("Bid Opening Notice"); in no case shall the Bid Opening Notice occur more than thirty (30) days after the opening of bids. Notwithstanding the foregoing, the Parties acknowledge that the Well drilling contract has already been advertised for bid. The Parties waive any deviation of the Well drilling contract from the design and bidding procedures specified herein. The Parties further acknowledge that the Well drilling contract employs a "blind-bid" procedure under which the Parties are required to select alternatives for the purpose of ranking the bidders within seven (7) days of the first bid opening; the Parties agree to select the desired alternatives within said time period or a longer time period if agreed to by the parties and authorized by a valid addendum to the contract documents in advance of the bid opening.
- (iii) Termination of Project. Within thirty (30) days following the giving of each Bid Opening Notice (each, a "Determination Date"), any Party may elect to terminate all or a portion of its interests in the Project and this Agreement, by delivery of a written notice to the other Parties during said thirty (30) day period, specifying the portion of its interest in the Project to be terminated and

the portion, if any, it is retaining, each portion to be stated as a percentage share adjustments to the Project shares. If another Party wishes to acquire any or all of the terminating Party's terminated interests, the Party shall so advise the other Parties during the twenty-one (21) day period following the Determination Date, specifying the amount the acquiring Party wishes to acquire. If two non-terminating Parties give such notice and in the aggregate the amount of the interests they wish to acquire exceeds the amount being terminated, the amount being terminated shall be allocated between them or the Project scope shall be expanded, in either case as the interested Parties may mutually agree. If there are unwanted terminated interests in the Project, the Parties shall proceed as follows: if optional terminations of interest in the Project timely exercised under this Section reduce the Project scope, the remaining Parties may proceed with a reduced Project scope as they mutually agree. If optional terminations of interest in the Project timely exercised under this Section reduce the Project scope such that the Parties do not wish to proceed with it as conceptually described in the Plans, then the Parties shall meet and confer to decide whether to amend or terminate this Agreement to reflect such decision; provided, however, the Parties shall remain responsible for their respective shares of the costs of preparation of the Feasibility Report and Plans irrespective of their decision, and a Party terminating or partially terminating its interests shall, in any event, remain obligated for the share of costs allocable to the terminated interests through the applicable Determination Date, but shall be relieved of its obligations with respect to the terminated share of all subsequently incurred costs. If after a bid opening the Project is reduced in size and redesigned to delete terminated interests, then anything to the contrary herein notwithstanding, no further Determination Date(s) shall be deemed to occur.

- (iv) Notwithstanding anything to the contrary in this Agreement, if a Party chooses to terminate all or a portion of its interest in the Project pursuant to this Section 2(d), the decision to terminate all or a portion of its interest in the Project shall not in any way affect, or reduce, the rights of the terminating party to construct wells and related facilities pursuant to any other agreement with Rosedale. For example, if Castaic decided to terminate all of its interest in the Project pursuant to this Section 2(d), Castaic would still have the right to construct seven (7) wells pursuant to the Castaic Agreement and such termination would not impact such right.
- (v) Equipping of the six (6) Wells to be constructed for Castaic and Irvine shall be addressed under a separate cost share agreement amongst the parties or an amendment to this Agreement.

e. Project Changes.

- (i) Contractor Changes/Claims. Rosedale shall promptly submit to Castaic and Irvine staff for prior review, except in emergency circumstances, each contractor request for a change order, and each contractor notice of a potential

claim for additional compensation related to or increasing Castaic or Irvine's cost for their respective portions of the Project, including a copy of the supporting documents for the change or claim and Rosedale's recommendation, if any, to approve, reject or negotiate the request for a material change or notice of claim. Each Party's decision to approve, reject or negotiate a request shall be weighted according to its share(s) of the affected Project component(s) as set forth in Exhibit B. Rosedale shall have the authority to act without Irvine or Castaic approval upon changes or notices of claims that are not material. Castaic and/or Irvine, as applicable, shall respond to contractor material changes or claims within seven (7) working days after receipt of such proposed change order or notice of potential claims and supporting documents, unless the affected Parties agree in writing that a specific longer period of review time is necessary. In the event that Rosedale does not receive comments from Irvine or Castaic within the specified time, Castaic and Irvine shall be deemed to agree to Rosedale's recommendation for action on the material change order or claim. If the Parties do not agree on the proposed action on the request for material change order or claim, the Parties will work diligently and in good faith to resolve the matter. If the Parties are unable to resolve the matter within five (5) working days after the date of Castaic or Irvine's response to Rosedale's recommendation for action and such disputed action must be made to prevent delay, Rosedale may take its preferred course in such disputed action and the Parties will follow the dispute resolution procedure set forth in Section 4 below, entitled "Resolution of Disputes," as to the allocation of material extra costs or cost reduction for any such actions.

- (ii) Proposed Changes. In the event that a Party proposes any modification or desire the construction of an alternative which has the potential to increase the cost of any component of the Project, Rosedale agrees to review the proposed modification or desired alternative and implement if it concurs with the proposed modification. All increased costs associated with said proposed modifications or the selection of alternatives shall be borne proportionately in accordance with the percentage shares set forth in Exhibit B unless the Parties mutually agree otherwise.
- (iii) Materiality. For purposes of this Section i.e., a change, claim or modification shall be deemed "material," if it would either individually exceed \$100,000, or cumulatively with any previously approved changes, claims or modifications, respectively, cause the total Costs to exceed 15% of the contract price, or would cause the schedule to be delayed by more than ninety (90) days.

f. Project Records.

- (i) Rosedale shall maintain all documents related to the Project, including all daily logs, inspector notes, testing, and correspondence. Upon Castaic or Irvine's reasonable request, Rosedale shall allow the requesting party to

review and copy such Project documents. In addition, Rosedale will obtain and supply "As Built" drawings of the Project improvements to Castaic and Irvine at the conclusion of the Project.

g. Invoicing.

- (i) Rosedale shall provide Castaic and Irvine monthly reports and invoices for the actual cost of all services necessary for the construction of the Project, accompanied by supporting documentation as may be necessary to show the amounts which represent costs of the Project. As soon as possible after the completion and acceptance by Rosedale of the Project, Rosedale shall prepare a final reconciliation and detailed accounting report and deliver to Castaic and Irvine a statement, accompanied by supporting documentation, setting forth the total actual cost of all services necessary for the Project, which shall include the actual dollar-amount of the costs of design/administration, permitting, easement acquisition, and construction (including contract change orders and payment of claims related to such work as approved or resolved pursuant to this Agreement) (excluding the costs of preparation of this Agreement) (the "Costs").

h. Responses.

- (i) If Rosedale receives comments from Castaic or Irvine pursuant to paragraph c, d or e(i) of this Section or notification of disputed amounts pursuant to Section 3c, prior to invoking dispute resolution (if applicable), Rosedale shall provide substantive responses to any comments or disputes that Rosedale does not intend to accept or if Rosedale does not intend to modify its proposed action in accordance with the comment.

3. **Castaic and Irvine Obligations.**

- a. Castaic and Irvine shall reimburse Rosedale for the Costs in proportion to the percentages shown on Exhibit B hereto and only for those items, and no other, shown in Exhibit B.
- b. Within thirty (30) days of execution of this agreement, Castaic and Irvine shall each make payment to Rosedale of \$1,000,000 each in order to establish a project cash flow account. If design or other preliminary Project costs incurred by Rosedale have been advanced by Castaic or Irvine on a voluntary basis prior to the effective date of this Agreement, such Party shall receive a credit for the advanced amount against its Project cash flow payment. After such funds have been exhausted, Castaic and Irvine shall, within forty-five (45) days of receiving each invoice and detailed accounting report, deliver to Rosedale payment for their respective portions of the Costs, less any amounts previously paid pursuant to the monthly invoices. If the Costs previously paid pursuant to the monthly invoices exceed the Costs as reflected in the invoice and detailed accounting report and statement, Rosedale shall refund the respective shares of the difference to Castaic and Irvine within sixty (60) days of completing the final

reconciliation and detailed accounting report.

- c. If Castaic or Irvine disputes the dollar amount of the Cost of any item invoiced by Rosedale, Castaic or Irvine, as appropriate, shall provide written notice of the dispute, with an explanation of the basis for the dispute no later than twenty-one (21) calendar days after receipt of the disputed invoice. Castaic or Irvine's failure to provide timely written notice to Rosedale challenging or disputing the Cost of any item shall be deemed an approval of all undisputed portions or items on the invoice.
- d. If Castaic or Irvine timely provides Rosedale with a written notice of dispute, they shall timely pay Rosedale all undisputed amounts owed to Rosedale. Castaic, Irvine and Rosedale shall negotiate in good faith in an effort to resolve any such disputes. If the parties are unable to resolve such disputes within thirty (30) calendar days after the date Rosedale receives a notice of dispute, the Parties shall submit the matter to dispute resolution as described in Section 4 of this Agreement.

4. Resolution of Disputes.

In the event disputes should arise under this Agreement, the Parties agree to the following procedures:

- a. First Level. At least one individual from each of the involved (two or three) Parties will meet, in person, and attempt to resolve the dispute. If a third party is involved in the dispute, the Parties will make diligent good faith efforts to include that third party in the dispute resolution process set forth in this section. For Rosedale, the first level person shall be Dan Bartel or his designee. For Castaic, the first level person shall be Dirk Marks or his designee. For Irvine, the first level person shall be Irvine's Executive Director of Water Policy or his/her designee.
- b. Second Level. Each involved Party will designate two individuals to whom matters not resolved at the first level shall be referred. Such individuals shall have sufficient authority to resolve the dispute, such as a General Manager or members of the parties' respective Boards of Directors.
- c. Urgent Matters. For any matter designated by the initiating Party as "urgent," the other Parties first level person shall make their first response within twenty-four (24) hours, or within such other period as the first level persons may agree. Unless a matter is designated "urgent" by the initiating Party, the other Party's first level person shall respond within five (5) working days, or within such other period as the first level persons may agree.
- d. Mediation. If the meeting(s) at the second level do not resolve the dispute, the Parties agree to mediate the matter with a mutually selected mediator, with the mediator's fees to be split equally between or among the Parties to the dispute (unless the mediator finds one or more Parties acted in bad faith and otherwise allocates the fees among the

Parties).

- e. Remedies Under Law. If neither the meetings nor the mediation results in a resolution to the dispute, the Parties will have the right to exercise any of their remedies available under law.

5. Miscellaneous Provisions.

- a. CVC Shutdown. The Parties acknowledge that at least one shut down of the CVC will be required for the installation of any tie-in facility connecting the Project to said canal. The Parties shall manage their respective water supplies to accommodate any shut-down(s) of the CVC that are reasonably necessary to construct the Project and will mutually work together to approve a shutdown schedule.
- b. Notices. All notices and other communications under this Agreement shall be in writing and shall be deemed to have been duly given on the date of delivery, (i) if delivered personally to the party to whom notice is given, or (ii) if delivered by email to the email addresses listed below. Notices and other communications sent by mail shall be deemed delivered 48 hours after deposit in the U.S. Mail with first-class postage thereon fully prepaid. Notices and other communications shall be directed to the parties at the addresses shown below. A party may change its person designated to receive notice, its facsimile number, or its address from time to time by giving notice to the other party in accordance with the procedures set forth in this Section.

If to Rosedale: Dan Bartel, Assistant Manager/Engineer
 P.O. Box 20820
 Bakersfield, CA 93390
 Email: dbartel@rrbwsd.com

If to Castaic: Dan Masnada, General Manager
 27234 Bouquet Canyon Road
 Santa Clarita, California 91350
 Email: dmasnada@clwa.org

If to Irvine: Paul Cook, General Manager
 15600 Sand Canyon Ave.
 P.O. Box 57000
 Irvine, CA 92619-7000
 Email: COOK@irwd.com

- c. Non-Liability of Officials. No member, official, employee or agent of any Party shall be personally liable to any other Party, or any successor in interest, in the event of any default or breach by a Party in the obligation under the terms of this agreement.

d. Indemnification and Insurance.

- (i) Government Code Section 895.4. It is understood and agreed that pursuant to Government Code Section 895.4, each of the Parties hereto shall fully indemnify, defend and hold the other Parties, and their respective officers, employees and agents, harmless from any damage or liability imposed for injury (as defined by Government Code Section 810.8) occurring by reason of the acts or omissions of the indemnifying Party, its officers, employees or agents, under or in connection with any work, authority or jurisdiction delegated to such Party under this Agreement. No Party, nor any officer, employee or agent thereof shall be responsible for any damage or liability occurring by reason of the acts or omissions of the other Party hereto, their officers, employees or agents, under or in connection with any work, authority or jurisdiction delegated to such other Parties under this Agreement.
- (ii) The parties agree that the construction and operation of the Project shall comply with the California Environmental Quality Act ("CEQA"). To this end, the construction and operation of the Project facilities have either (1) been adequately analyzed by previously-adopted CEQA documents, which were not challenged, or (2) will be adequately analyzed in an Environmental Impact Report being prepared by Rosedale and Irvine (Stockdale Integrated EIR) with assistance from consultants. In the event any of the Parties are named in an action alleging a violation of CEQA related to the Project or the facilities constructed thereunder, the named party shall provide notice to the other Parties within seven (7) days after receiving notice of the action. In the event the action challenges CEQA compliance pursuant to a previously-adopted CEQA document, all costs of such litigation (e.g., filing fees, administrative record costs, potential attorneys' fees and costs awarded to petitioners, etc. (collectively "litigation costs")) shall be borne by the benefitting Party or Parties whose Project is reliant upon the challenged previously-adopted CEQA document. In the event the action challenges CEQA compliance pursuant to the Environmental Impact Report referenced above, the litigation costs shall be borne by the benefitting Party or Parties whose Project is reliant upon the challenged EIR. In the event of any CEQA action related to the Project, the parties shall each be responsible for the costs of their counsel of choice unless agreed to otherwise.
- (iii) Rosedale shall require and ensure that the Design Consultants, the Contractor, and all subcontractors of those persons and entities shall name each Party as an additional insured and that the Project Design Consultants', Contractors', and all subcontractors' indemnify, defend, hold harmless and insure obligations under all applicable agreements with Rosedale that benefit the Parties in the same manner and to the same extent as Rosedale; Rosedale shall maintain in full force and effect appropriate public liability and property

damage insurance and shall add the names of the Parties, their officers, agents and employees to such policies as additional insureds.

- (iv) Rosedale shall assume the defense of, indemnify and hold harmless the other Parties and each of their officers, employees and agents from and against any and all actions, damages, liability or claims for death, injury, loss, damage or expense to persons or property arising from or related to, or claimed to have arisen from or be related to, the improper or negligent acts or omissions of Rosedale in the design, permitting, construction, construction-related mitigation, replacement, use, operation, maintenance, and/or repair, of the Project, or that result from Rosedale's breach of its obligations under the Agreement, except to the extent such actions, damages, claims, losses, expenses or liabilities have arisen from or relate to the improper or negligent acts or omissions of the indemnified Party, or result from such Party's breach of its obligation under the Agreement.
 - (v) Each of the Parties other than Rosedale shall assume the defense of, indemnify and hold harmless the other Parties and each of their officers, employees and agents from and against any and all actions, damages, liability or claims for death, injury, loss, damage or expense to persons or property arising from or related to, or claimed to have arisen from or be related to, the improper or negligent acts or omissions of, or that result from the breach of this Agreement by, such Party in connection with its participation in the Project, except to the extent such actions, damages, claims, losses, expenses or liabilities have arisen from the improper or negligent acts or omissions of, or result from the breach of this Agreement by, the indemnified Party.
 - (vi) If judgment is entered against all the Parties by a court of competent jurisdiction because of the concurrent active negligence or improper acts of one or more Parties, the Parties agree that liability will be apportioned as determined by the court. No Party shall request a jury apportionment.
- e. Negotiated Terms. The Parties agree that the terms and conditions of this Agreement are the result of negotiations among the Parties and that this Agreement shall not be construed in favor of or against any Party by reason of the extent to which any Party or its professionals participated in the preparation of this Agreement.
 - f. No Third Party Beneficiaries. No person or entity other than Rosedale, Castaic and Irvine or their permitted successors and assigns shall have any right of action under this Agreement.
 - g. Relationship Among the Parties. This Agreement does not create any partnership or agency among the Parties or between any of Parties.
 - h. Entire Agreement; Amendments. This Agreement constitutes the entire and integrated Agreement of the Parties and supersedes all prior negotiations,

representations, or agreements, either written or oral, with respect to the matters addressed in this Agreement. This Agreement may be amended only by written instrument executed by all Parties.

- i. **Waiver.** The waiver by any Party of any right with respect to a default or any other matter arising under this Agreement shall not constitute or be construed as constituting a waiver with respect to any other default or matter.
- j. **Counterparts.** This Agreement may be signed in counterparts. When each Party has signed and delivered at least one such counterpart, each counterpart shall be deemed an original and, when taken together with other signed counterparts, shall constitute one agreement which shall be binding upon and effective as to all Parties.
- k. **Term.** The term of this Agreement shall end 180 days following the acceptance of the Project work by Rosedale.
- l. **Survival.** The obligations regarding: document retention and obligations of Castaic and Irvine to pay Rosedale for approved, agreed upon and invoiced Costs; indemnification; and dispute resolution shall survive the suspension and/or termination of the Agreement, as applicable, and shall remain in effect until terminated or modified in writing by mutual agreement of all Parties or the applicable statute of limitations is reached, whichever occurs first.
- m. **Captions.** The captions used herein are for convenience only and are not a part of this Agreement and do not in any way limit or amplify the terms and provisions hereof.

[SIGNATURES ON THE NEXT PAGE]

IN WITNESS WHEREOF, this Agreement has been executed and is effective as of the date first written above:

ROSEDALE

By: [Signature]

Its: General Manager

CASTAIC

By: [Signature]

Its: General Manager

IBM

IRVINE

By: [Signature]

Its: Governor Morrison

Approved
as to form

JCA

EXHIBIT A - MAP OF FACILITIES

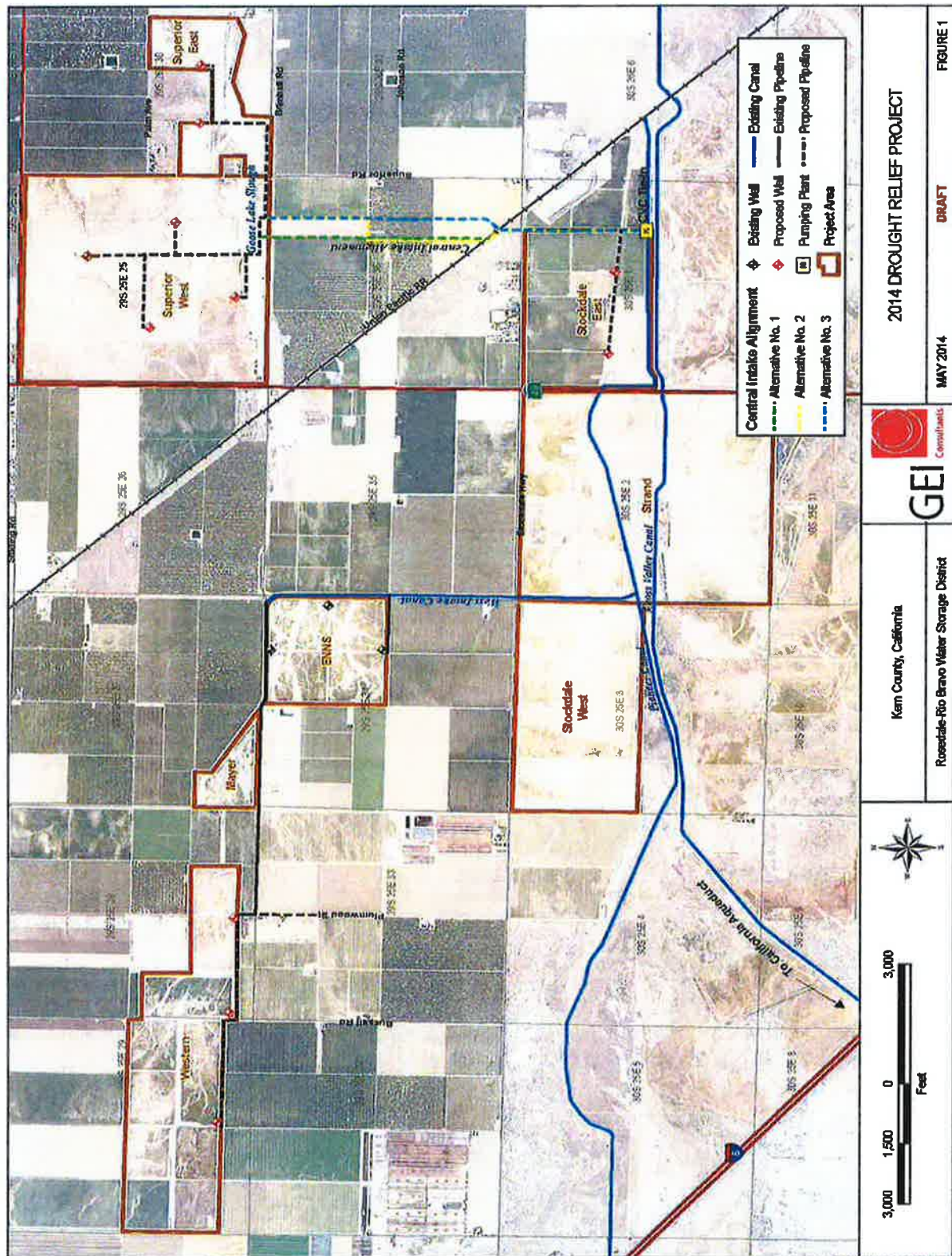


EXHIBIT B – ALLOCATION OF COSTS

All actual Construction costs of the Project shall be allocated to Rosedale (“RRB”), Castaic (“CLWA”) and Irvine (“IRWD”) as follows:

- | | |
|---|-----------------------------|
| 1. Western Well Field – (3) wells and pipelines | 100% RRB |
| 2. Superior East Well Field (2) wells and pipelines | 50% IRWD, 50% CLWA |
| 3. Superior West Well Field (4) wells and pipelines | 50% IRWD, 50% CLWA |
| 4. Central Intake Pipeline ¹ | 50% IRWD, 50% CLWA |
| 5. Pumping Plant | 100% RRB |
| 6. CVC Tie-in | 50% RRB, 25% IRWD, 25% CLWA |
| 7. Stockdale East Well Field (2) wells | 100% IRWD ² |
| 8. Stockdale East Well Field pipelines | 100% RRB |

All actual Design, Project Management, Administration, Permitting and Inspection costs of the Project shall be allocated to the parties as follows:

33 1/3% RRB, 33 1/3% CLWA, 33 1/3% IRWD

Except as provided below, all actual Property and Easement Acquisition costs of the Project shall be allocated to the parties as follows:

33 1/3% RRB, 33 1/3% CLWA, 33 1/3% IRWD

provided, however, if RRB does not select and construct the Central Intake Pipeline to a capacity in excess of the recovery capacity design minimum selected by CLWA and IRWD, such allocation shall be adjusted to the parties as follows:

10% RRB, 45% CLWA, 45% IRWD

All actual Property and Easement Acquisition costs and permitting costs of the Project associated with the Western Well Field (3) wells and pipelines and the Pumping Plant, as such are described in this Exhibit B, shall be allocated to the parties as follows:

100% RRB

All costs associated with implementation of a Labor Compliance Program required for an award of an Integrated Regional Water Management Grant in favor of Castaic shall be allocated 100% to CLWA.

¹Should RRB increase the capacity of the Central Intake Pipeline pursuant to Section 2.a. of this Agreement, RRB will pay for associated increased construction costs on an incremental basis. In such event, the bid price from the selected contractor bid will serve as the basis for the incremental cost calculation, and the Parties % allocations will be adjusted accordingly.

²Up to \$1,500,000 for item 7, per separate agreement between RRB and IRWD.

Lost Sharing Agreement

B-18

1 of 1

COST EST-RRBWS-DROUGHT RELIEF PROJECT-CENTRAL INTAKE WEST OPTION-081814.xlsx

**AMENDMENT NO. 1
TO
DROUGHT RELIEF PROJECT
COST SHARING AGREEMENT**

THIS AMENDMENT NO. 1 TO COST SHARING AGREEMENT ("Amendment") is made as of March 12, 2015 ("Effective Date"), by and among the Rosedale-Rio Bravo Water Storage District, a California water storage district ("Rosedale"); Castaic Lake Water Agency, a special act public agency ("Castaic"); and Irvine Ranch Water District, a California water district ("Irvine") (each sometimes individually referred to as a "Party" and collectively as the "Parties").

RECITALS

The following recitals are a substantive portion of this Amendment:

- A. The Parties entered into the Drought Relief Project Cost Sharing Agreement (the "Original Agreement") as of March 9, 2015, to provide for coordination of the construction of the Project Wells and associated facilities and the sharing of the costs relating to the Project. All capitalized terms used in this Amendment and not otherwise defined herein shall have the meanings ascribed to them in the Original Agreement.
- B. Section 2.d(v) of the Original Agreement provides that equipping of the six (6) Wells to be constructed for Castaic and Irvine (the "Superior East and West Wells") shall be addressed under a separate cost share agreement or an amendment to the Original Agreement.
- C. The Parties desire to augment the provisions of the Original Agreement to provide for the equipping of the Superior East and West Wells.

AMENDMENT

NOW, THEREFORE, in consideration of the recitals, covenants, terms and conditions of this Amendment, all of which are incorporated into the following Amendment as if set forth fully therein, the Parties agree to amend the Original Agreement as follows:

1. Contracts For Equipping Wells.

- a. The equipping of the Superior East and West Wells shall be carried out by the Parties in accordance with the requirements and provisions of the Original Agreement, with the modifications set forth herein. All of the recitals, covenants, terms and conditions of the Original Agreement, other than those expressly limited in their application to the Central Intake Pipeline or the Project Well drilling, shall apply to and govern the equipping of the Superior East and West Wells, except as modified herein.

- b. To facilitate Rosedale's preparation of the Plans and technical specifications for the equipping of the Superior East and West Wells, Castaic and Irvine shall identify revisions necessary to make the bid documents and contract documents that were prepared for the Project Well drilling contract suitable for use by Rosedale in the contract for equipping the Superior East and West Wells.
- c. To prepare the bid documents and contract documents for the equipping of the Superior East and West Wells, Rosedale shall use the Project Well drilling bid documents and contract documents, and shall incorporate therein the revisions identified by Castaic and Irvine as provided in paragraph b, above, and delete therefrom the provisions applicable only to Well drilling.
- d. The contract for the equipping of the Superior East and West Wells shall be separate from the contract(s) prepared by Rosedale for the equipping of the other Project Wells.
- e. In addition to the services that Rosedale shall provide or cause to be provided pursuant to Section 2 of the Original Agreement, Castaic and/or Irvine may, but shall not be obligated to, provide supplemental consulting services, at no cost to Rosedale, relating to the work under the contract for equipping the Superior East and West Wells.

2. **Cost Sharing.**

- a. All actual construction and design costs for the equipping of the Superior East and West Wells shall be allocated in accordance with Exhibit B to the Original Agreement, line items 2 and 3 (50% Irvine and 50% Castaic). The costs of actual project management, administrations, permitting and inspection costs for the equipping of the Superior East and West Wells shall be allocated in accordance with Exhibit B to the Original Agreement, line item specifying the allocation for project management, administration, permitting and inspection costs (33 1/3% Rosedale, 33 1/3% Irvine and 33 1/3% Castaic).

3. **Miscellaneous Provisions.**

- a. Counterparts. This Amendment may be signed in counterparts. When each Party has signed and delivered at least one such counterpart, each counterpart shall be deemed an original and, when taken together with other signed counterparts, shall constitute one agreement which shall be binding upon and effective as to all Parties.
- b. Captions. The captions used herein are for convenience only and are not a part of this Amendment and do not in any way limit or amplify the terms and provisions hereof.

[SIGNATURES ON NEXT PAGE]

IN WITNESS WHEREOF, this Amendment has been executed and is effective as of the date first written above:

ROSEDALE

By: D-BW

Its: Asst GM

CASTAIC

By: [Signature]

Its: GENERAL MANAGER

IRVINE

By: [Signature]

Its: General Manager

EXHIBIT “C”

Drought Relief Project Budget and IRWD Cost Share

Facilities	Project Budget	IRWD's Estimated Cost Share
Superior Wellfield	\$9,120,755	\$4,482,017
Central Intake Pipeline	\$5,269,322	\$2,648,259
CVC Turn-in Facility	\$1,219,935	\$ 304,984
Rosedale's Stockdale East wells	\$2,332,917	Separate project*
Rosedale's Pumping Plant Phases 1 & 2	\$3,434,803	\$0
Rosedale's Stockdale East Basins	\$1,547,006	\$0
Rosedale's West Wellfield	\$3,487,613	\$0
Construction Management/Administration	\$1,215,820	\$ 696,005
Right of Way/Easements, design, engineering, environmental, permits	\$1,942,200	\$871,733
Subtotal	\$29,570,371	\$9,002,999
Packer testing Superior wells	\$0	\$ 61,880
IRWD staff, legal, inspection, wellhead design	\$0	\$ 531,715
Contingency	\$0	\$ 275,907
Total Cost	\$29,570,371	\$9,872,500

*Per the IRWD Rosedale Stockdale Integrated Banking Project Operating Agreement, IRWD shall pay a maximum of \$1,500,000 towards Rosedale's Stockdale East wells in exchange for 50,000 AF of storage capacity in Rosedale's Conjunctive Use Program. Included in the FY 2017-18 Capital Budget, Project 5499.

January 18, 2018

Submitted by: P. Weghorst

Approved by: Paul A. Cook



SUPPLY RELIABILITY PROGRAMS COMMITTEE

PROPOSED POLICY PRINCIPLES ON ORANGE COUNTY WATER RELIABILITY IMPROVEMENTS

SUMMARY:

Staff has prepared an update to IRWD's Policy Principles Paper on South Orange County Water Reliability. The most recent version of this paper was adopted by the Board of Directors on January 13, 2017. Staff has made proposed revisions to the paper taking into consideration opportunities that Orange County Water District is contemplating that would allow Orange County water agencies to implement storage accounts and exchanges in the Orange County Groundwater Basin. Staff recommends that the Board approve the revised policy principles paper, including its change in title.

BACKGROUND:

In 2004, IRWD began producing policy papers on topics of particular interest to the District. Because of IRWD's standing in the water resource industry, the opinion of the District is regularly solicited on issues of importance to the industry and the community. In order to keep these position papers current and usable for explaining the District's position, staff recommends that the Board review the papers and, as needed, incorporate revisions or adopt new papers.

2005 Policy Position Paper:

On June 3, 2005, the Board adopted a Policy Position Paper on South County Water Reliability. This paper took into consideration the results of the 2004 South Orange County System Reliability Plan that recommended several projects to improve water supply and system reliability in South Orange County. The recommendations led to the construction of pump station improvements and pipeline interconnections to facilitate deliveries to South County from IRWD's potable water system. The recommendations also led to the construction of the Baker Water Treatment Plant.

Reliability Improvements:

In 2016, the OC Reliability Study concluded that additional water supply projects and programs will be needed to improve both supply and system reliability during shortage periods in South Orange County. IRWD is in a position to continue working with Orange County water agencies to implement new projects and programs that will further increase their water supply and system reliability. One example is for IRWD to support discussions related to Orange County agencies being able to secure a contractual ability to store or exchange water in the Orange County Groundwater Basin. Water stored or exchanged through the Basin could be recovered for use in a shortage scenario. Other examples would be for IRWD to offer opportunities to share reliability benefits from its water banking projects in Kern County, its right to store and use water from Irvine Lake, its capacity rights in the Baker Plant, and other IRWD water supply assets.

Update to Policy Position Paper:

In January 2017, the Board adopted an update to the District's Policy Position Paper on South County Reliability to reflect the projects and programs that have been implemented since 2005 as well as the potential shared benefits that IRWD could provide from its water supply projects and programs. Recently, staff has made proposed revisions to the paper taking into consideration opportunities that Orange County Water District is contemplating that would allow Orange County water agencies to implement storage accounts and exchanges in the Orange County Groundwater Basin. A version of the paper with revisions shown as tracked changes is attached as Exhibit "A". A version of the paper with all the revisions accepted is provided as Exhibit "B". This revised paper will help guide IRWD in advocating for and pursuing projects and programs to assist Orange County water agencies in improving water supply and system reliability. Staff recommends that the Committee recommend that Board adopt the Revised Policy Position Paper.

FISCAL IMPACTS:

None.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

RECOMMENDATION:

That the Board approve the Revised Policy Principles Paper on Orange County Water Reliability Improvements.

LIST OF EXHIBITS:

- Exhibit "A" – Proposed Policy Principles on Orange County Water Reliability Improvements
(with revisions shown as tracked changes)
- Exhibit "B" – Proposed Policy Principles on Orange County Water Reliability Improvements
(with revisions accepted)

EXHIBIT "A"

IRVINE RANCH WATER DISTRICT POLICY POSITION ~~SOUTH~~ ORANGE COUNTY WATER RELIABILITY IMPROVEMENTS

Revised: January 18, 2018

Issue Summary:

Unplanned interruptions in a retail water agency's ability to provide water can have dire consequences to its customers and local economy. It is in the best interest of all water agencies to work with each other to ensure that all customers in Orange County have access to reliable supplies of water. Irvine Ranch Water District is positioned to continue assisting ~~the South~~ Orange County water agencies to implement new projects and programs that will further increase ~~their~~ water supply and system reliability countywide.

Background:

~~South~~ Orange County water agencies ~~are heavily remain~~ dependent on imported water supplies. These imported water supplies are provided through ~~two~~ major pipeline systems that deliver treated and untreated water from Metropolitan Water District of Southern California (MWD) and through water deliveries made from IRWD's Baker Water Treatment Plant. The Baker Plant makes use of untreated Colorado River water from MWD that is available through the Santiago Lateral. MWD's Diemer Water Treatment Plant provides most of the treated imported water supply to Orange County.

The regional potable water supply system serving South Orange County has limited looping or redundancy options and has limited local storage capacity. A large earthquake or other disaster could damage the East Orange County Feeder Number 2 or the Allen McCulloch Pipeline, potentially causing significant reductions in water deliveries to South Orange County for multiple days. A major earthquake that damages the Diemer Water Treatment Plant could potentially interrupt South Orange County water supplies for more than a month. Many South County water agencies have constructed additional storage facilities to rely upon during such potential supply interruptions and some of the agencies have developed recycled water systems that diversify their water supplies and improve reliability. While these storage and recycled water projects have improved regional supply reliability, they are not expected to provide complete system and supply reliability for South Orange County.

MWDOC's 2004 South County Reliability Plan:

In September 2004, the Municipal Water District of Orange County (MWDOC) and the South Orange County retail water agencies (with support from the Bureau of Reclamation) completed a four-year reliability planning effort with the release of the South Orange County System Reliability Plan. The Plan appraised system risks and identified projects to increase system reliability.

The Plan concluded that water system reliability in South Orange County could be substantially increased by accessing the Orange County Groundwater Basin. It also concluded that some emergency water supplies for retail water agencies in south Orange County could be provided through IRWD's potable water distribution system. It identified IRWD interconnections that would strengthen the backbone distribution system of the South County water agencies.

Emergency Services Agreement:

The 2004 Plan was the impetus for the Emergency Service Program Participation and Operations Agreement for South County and Irvine Ranch Water District Interconnection Projects (Emergency Interconnect Agreement) that was executed in November 2008. This agreement led to the construction of pump station improvements and pipeline connections that provide emergency supplies to participating South County water agencies. The agreement acknowledges that IRWD's ability to deliver such emergency supplies will diminish over time.

Baker Water Treatment Plant:

The plan also contemplated the Baker Water Treatment Plant and an inland well field connected to the East Orange County Feeder No. 2. Construction of the Baker Plant began in 2014 and was placed into service in January 2017. The project provides 28.8 million gallons per day of drinking water to IRWD and four South Orange County water districts. The Baker Plant was designed to treat MWD supplies from the Colorado River; it also has the ability to treat native water available from Irvine Lake. IRWD holds rights to store and use water from Irvine Lake.

2016 OC Reliability Study:

In December 2014, MWDOC initiated a comprehensive assessment of the current and future water supply and system reliability for all of Orange County. This evaluation, known as the "Orange County Water Reliability Study", was completed in 2016. MWDOC led the study efforts with the collaboration of the managers from MWDOC's member agencies, Orange County Water District (OCWD) as well as the cities of Anaheim, Fullerton and Santa Ana. These managers formed the Working Group that provided direction and technical support to the study including the development of study assumptions associated with future water demands, system modeling, scenario development and the implementation of future projects. IRWD staff actively participated in the over 25 meetings of the Working Group.

Study Findings:

The findings of the 2016 OC Reliability Study indicated that if MWD and its member agencies were to implement a reasonable list of projects that have a high likelihood of success, that future water supply shortages in the Brea/La Habra and Orange County Basin areas would be small enough to manage through enhanced groundwater management and additional water conservation efforts. The findings further indicate that shortages in the South Orange County area would require additional water supply projects and programs to improve both supply and system reliability during shortage periods. The study demonstrated that substantial improvements in South County reliability could be achieved through access to water banking projects, water conservation efforts and access to ~~emergency~~ supplies from the Orange County Basin. Such improvements could be realized without having to invest in costly base loaded supplies from sources such as seawater desalination projects. The base loaded supplies from such sources would not be needed in most years and would provide little benefit to Orange County.

Future Water Supply Reliability Improvement Programs:

IRWD Water Banking Benefits Extended to Orange County Agencies:

As IRWD continues to implement its water banking programs in Kern County, it will become possible to share this reliability benefit with other water agencies, especially those within Orange County. IRWD has begun discussions with MWDOC to implement a shared reliability program that would provide access to supplies from IRWD's water banking projects in Kern County to other Orange County water agencies.

Storage Accounts and Exchanges in the Orange County Basin:

OCWD is ~~currently~~ considering the implementation of a pilot storage and exchange program that could provide portions of South County with increased water supply reliability as contemplated in MWDOC's 2004 and 2016 studies. IRWD and the other Orange County Groundwater Producer Agencies have a vested interest in maximizing the use of storage in the Orange County Basin to meet their own water supply reliability needs. These vested interests should be protected and be given first priority consideration by OCWD prior to implementing a storage and exchange program.

Policy Principles:

Following are policy principles to help guide IRWD in advocating for and pursuing projects and programs to assist ~~South~~ Orange County water agencies in improving water supply and system reliability.

- The South Orange County water agencies should be encouraged to pool resources, potentially by contract or through forming a joint powers agency (JPA), to finance the facilities necessary to achieve water reliability. MWDOC should work with affected agencies to encourage participation and should act as a facilitator on behalf of the beneficiary agencies.
- IRWD recognizes that it is uniquely positioned, from both a geographic and hydraulic perspective, to facilitate the conveyance of water into South Orange County. IRWD should continue to work with the South County water agencies to maximize the ability to deliver emergency supplies through the IRWD system by making use of existing interconnections and implementing improvements and programs that will ensure the ability to provide deliveries of water into the future. The development of amendments to the existing emergency interconnect agreement should be considered to facilitate such improvements and programs, based on the availability of capacity within IRWD's facilities.
- The Groundwater Producers and OCWD staff should work together to identify ways to enhance the management of the Orange County Groundwater Basin (Basin) with the goal of maintaining the Basin at reduced levels of accumulated overdraft and providing the Producers increased dry-year water supply reliability;

- IRWD support efforts of MWDOC and the ~~other Orange~~ South County water agencies as they work with the Orange County Water District in securing a contractual ability to store or exchange water in the Orange County Basin; any storage and exchange program within the Orange County Basin should first made available to the Groundwater Producer Agencies and should benefit the Groundwater Basin. ~~and the ability to recover the water for use on an emergency basis.~~
- Concepts, policies, terms, and processes for implementing any water storage and exchange program with South County agencies must first be vetted with the Groundwater Producer Agencies. ~~in collaboration with t~~The terms must ensure that the water supply reliability needs of the ~~Orange County~~ Groundwater Producers ~~Agencies~~ are met as a first priority and that the ~~Producers are and should not result in~~ protected from cost impacts or any infringement on groundwater production rights.
- The implementation of any storage and exchange programs for the benefit of South County agencies must be consistent with the OCWD District Act, the requirements of the California Environmental Quality Act and should not infringe upon the jurisdiction of other Orange County agencies. Existing contractual arrangements, such as the Dyer Road Well Field Agreement and the Emergency Interconnect Agreement, should take priority over any subsequent arrangements.
- IRWD should work to update existing or develop new interconnection agreements that would allow participating South County water agencies to reimburse IRWD, proportionately, for access to existing capital facilities as well as improvements to the IRWD system needed to allow South County water agencies access stored or exchanged water. ~~These improvements could include modifications for the use of existing groundwater wells, upsized transmission pipelines, and improvements to existing pump stations and interconnections.~~ Such reimbursements should take into consideration the ~~operational-total~~ cost of delivering water through the IRWD system including appropriate capital, operational, maintenance, energy, replacement, administration and water purchase expenses.
- Use of IRWD infrastructure by South County agencies should be subject to current and future availability, with the needs of IRWD's customers taking top priority.
- IRWD should work with MWDOC to implement a shared reliability program that would provide access to supplies and the South County water agencies to investigate using from IRWD's water banking projects in Kern County to Orange County agencies by selling options to call on water during water shortage conditions.
- IRWD should also consider using ~~its~~ rights to store and use water from Irvine Lake, its capacity rights in the Baker Plant, and other IRWD water supply assets to provide shared water supply reliability benefits to South County water agencies.
- Any sharing of benefits from IRWD projects with ~~South Orange~~ County water agencies should not result in impacts to the ability of IRWD to meet the water supply needs of its service area

or financially impact its customers. IRWD should be proportionally compensated for its capital investments as well as appropriate operations, maintenance, replacement and administration costs.

EXHIBIT "B"

IRVINE RANCH WATER DISTRICT POLICY POSITION ORANGE COUNTY WATER RELIABILITY IMPROVEMENTS

Revised: January 18, 2018

Issue Summary:

Unplanned interruptions in a retail water agency's ability to provide water can have dire consequences to its customers and local economy. It is in the best interest of all water agencies to work with each other to ensure that all customers in Orange County have access to reliable supplies of water. Irvine Ranch Water District is positioned to continue assisting Orange County water agencies to implement new projects and programs that will further increase water supply and system reliability countywide.

Background:

Orange County water agencies remain dependent on imported water supplies. These imported water supplies are provided through major pipeline systems that deliver treated and untreated water from Metropolitan Water District of Southern California (MWD) and through water deliveries made from IRWD's Baker Water Treatment Plant. The Baker Plant makes use of untreated Colorado River water from MWD that is available through the Santiago Lateral. MWD's Diemer Water Treatment Plant provides most of the treated imported water supply to Orange County.

The regional potable water supply system serving South Orange County has limited looping or redundancy options and has limited local storage capacity. A large earthquake or other disaster could damage the East Orange County Feeder Number 2 or the Allen McCulloch Pipeline, potentially causing significant reductions in water deliveries to South Orange County for multiple days. A major earthquake that damages the Diemer Water Treatment Plant could potentially interrupt South Orange County water supplies for more than a month. Many South County water agencies have constructed additional storage facilities to rely upon during such potential supply interruptions and some of the agencies have developed recycled water systems that diversify their water supplies and improve reliability. While these storage and recycled water projects have improved regional supply reliability, they are not expected to provide complete system and supply reliability for South Orange County.

MWDOC's 2004 South County Reliability Plan:

In September 2004, the Municipal Water District of Orange County (MWDOC) and the South Orange County retail water agencies (with support from the Bureau of Reclamation) completed a four-year reliability planning effort with the release of the South Orange County System Reliability Plan. The Plan appraised system risks and identified projects to increase system reliability.

The Plan concluded that water system reliability in South Orange County could be substantially increased by accessing the Orange County Groundwater Basin. It also concluded that some emergency water supplies for retail water agencies in south Orange County could be provided through IRWD's potable water distribution system. It identified IRWD interconnections that would strengthen the backbone distribution system of the South County water agencies.

Emergency Services Agreement:

The 2004 Plan was the impetus for the Emergency Service Program Participation and Operations Agreement for South County and Irvine Ranch Water District Interconnection Projects (Emergency Interconnect Agreement) that was executed in November 2008. This agreement led to the construction of pump station improvements and pipeline connections that provide emergency supplies to participating South County water agencies. The agreement acknowledges that IRWD's ability to deliver such emergency supplies will diminish over time.

Baker Water Treatment Plant:

The plan also contemplated the Baker Water Treatment Plant and an inland well field connected to the East Orange County Feeder No. 2. Construction of the Baker Plant began in 2014 and was placed into service in January 2017. The project provides 28.8 million gallons per day of drinking water to IRWD and four South Orange County water districts. The Baker Plant was designed to treat MWD supplies from the Colorado River; it also has the ability to treat native water available from Irvine Lake. IRWD holds rights to store and use water from Irvine Lake.

2016 OC Reliability Study:

In December 2014, MWDOC initiated a comprehensive assessment of the current and future water supply and system reliability for all of Orange County. This evaluation, known as the "Orange County Water Reliability Study", was completed in 2016. MWDOC led the study efforts with the collaboration of the managers from MWDOC's member agencies, Orange County Water District (OCWD) as well as the cities of Anaheim, Fullerton and Santa Ana. These managers formed the Working Group that provided direction and technical support to the study including the development of study assumptions associated with future water demands, system modeling, scenario development and the implementation of future projects. IRWD staff actively participated in the over 25 meetings of the Working Group.

Study Findings:

The findings of the 2016 OC Reliability Study indicated that if MWD and its member agencies were to implement a reasonable list of projects that have a high likelihood of success, that future water supply shortages in the Brea/La Habra and Orange County Basin areas would be small enough to manage through enhanced groundwater management and additional water conservation efforts. The findings further indicate that shortages in the South Orange County area would require additional water supply projects and programs to improve both supply and system reliability during shortage periods. The study demonstrated that substantial improvements in South County reliability could be achieved through access to water banking projects, water conservation efforts and access to supplies from the Orange County Basin. Such improvements could be realized without having to invest in costly base loaded supplies from sources such as seawater desalination projects. The base loaded supplies from such sources would not be needed in most years and would provide little benefit to Orange County.

Future Water Supply Reliability Improvement Programs:

IRWD Water Banking Benefits Extended to Orange County Agencies:

As IRWD continues to implement its water banking programs in Kern County, it will become possible to share this reliability benefit with other water agencies, especially those within Orange County. IRWD has begun discussions with MWDOC to implement a shared reliability program that would provide access to supplies from IRWD's water banking projects in Kern County to other Orange County water agencies.

Storage Accounts and Exchanges in the Orange County Basin:

OCWD is considering the implementation of a pilot storage and exchange program that could provide portions of South County with increased water supply reliability as contemplated in MWDOC's 2004 and 2016 studies. IRWD and the other Orange County Groundwater Producer Agencies have a vested interest in maximizing the use of storage in the Orange County Basin to meet their own water supply reliability needs. These vested interests should be protected and be given first priority consideration by OCWD prior to implementing a storage and exchange program.

Policy Principles:

Following are policy principles to help guide IRWD in advocating for and pursuing projects and programs to assist Orange County water agencies in improving water supply and system reliability.

- The South Orange County water agencies should be encouraged to pool resources, potentially by contract or through forming a joint powers agency (JPA), to finance the facilities necessary to achieve water reliability. MWDOC should work with affected agencies to encourage participation and should act as a facilitator on behalf of the beneficiary agencies.
- IRWD recognizes that it is uniquely positioned, from both a geographic and hydraulic perspective, to facilitate the conveyance of water into South Orange County. IRWD should continue to work with the South County water agencies to maximize the ability to deliver emergency supplies through the IRWD system by making use of existing interconnections and implementing improvements and programs that will ensure the ability to provide deliveries of water into the future. The development of amendments to the existing emergency interconnect agreement should be considered to facilitate such improvements and programs, based on the availability of capacity within IRWD's facilities.
- The Groundwater Producers and OCWD staff should work together to identify ways to enhance the management of the Orange County Groundwater Basin (Basin) with the goal of maintaining the Basin at reduced levels of accumulated overdraft and providing the Producers increased dry-year water supply reliability;
- IRWD support efforts of MWDOC and the other Orange County water agencies as they work with the Orange County Water District in securing a contractual ability to store or exchange

water in the Orange County Basin; any storage and exchange program within the Orange County Basin should first be made available to the Groundwater Producer Agencies and should benefit the Groundwater Basin.

- Concepts, policies, terms, and processes for implementing any water storage and exchange program with South County agencies must first be vetted with the Groundwater Producer Agencies. The terms must ensure that the water supply reliability needs of the Groundwater Producers are met as a first priority and that the Producers are protected from cost impacts or any infringement on groundwater production rights.
- The implementation of any storage and exchange programs for the benefit of South County agencies must be consistent with the OCWD District Act, the requirements of the California Environmental Quality Act and should not infringe upon the jurisdiction of other Orange County agencies. Existing contractual arrangements, such as the Dyer Road Well Field Agreement and the Emergency Interconnect Agreement, should take priority over any subsequent arrangements.
- IRWD should work to update existing or develop new interconnection agreements that would allow participating South County water agencies to reimburse IRWD, proportionately, for access to existing capital facilities as well as improvements to the IRWD system needed to allow South County water agencies access stored or exchanged water. Such reimbursements should take into consideration the total cost of delivering water through the IRWD system including appropriate capital, operational, maintenance, energy, replacement, administration and water purchase expenses.
- Use of IRWD infrastructure by South County agencies should be subject to current and future availability, with the needs of IRWD's customers taking top priority.
- IRWD should work with MWDOK to implement a shared reliability program that would provide access to supplies from IRWD's water banking projects in Kern County to Orange County agencies by selling options to call on water during water shortage conditions.
- IRWD should also consider using its rights to store and use water from Irvine Lake, its capacity rights in the Baker Plant, and other IRWD water supply assets to provide shared water supply reliability benefits to South County water agencies.
- Any sharing of benefits from IRWD projects with Orange County water agencies should not result in impacts to the ability of IRWD to meet the water supply needs of its service area or financially impact its customers. IRWD should be proportionally compensated for its capital investments as well as appropriate operations, maintenance, replacement and administration costs.