

AGENDA

IRVINE RANCH WATER DISTRICT SUPPLY RELIABILITY PROGRAMS COMMITTEE

THURSDAY, NOVEMBER 17, 2016

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 AND PROGRAMS OVERVIEW – JOHNSON/WELCH/SANCHEZ/WEGHORST

Recommendation: Receive and file.

6. DROUGHT RELIEF PROJECT AND STOCKDALE WEST RECOVERY PROJECTS CONSTRUCTION UPDATE – BENNETT/WELCH/McGEHEE/MORI/SANCHEZ/WEGHORST

Recommendation: Receive and file.

OTHER BUSINESS

7. A. Directors' Comments

- B. CLOSED SESSION with real property negotiator (Government Code Section 54956.8).
Property: Parcels: 827-030-004, 827-030-005, 827-110-005, 827-110-006, 827-110-010, 827-110-011, 827-110-014, and 827-110-016, County of Riverside
Negotiating Parties: Lourenco Farm
Agency Negotiator: Paul Cook, General Manager
Purpose of Negotiations: Price and Term of Payment,

CLOSED SESSION with real property negotiator (Government Code Section 54956.8).
Property: Parcels: 878-151-003, 878-210-001, 878-270-001, 878-270-002, 878-260-001, 878-260-002, County of Riverside
Negotiating Parties: Barnes and Berger
Agency Negotiator: Paul Cook, General Manager
Purpose of Negotiations: Price and Term of Payment.

CLOSED SESSION: Conference with Real Property Negotiator (Government Code Section 54956.8).
Property Parcels: 815-180-018, 827-120-010, 827-130-005, 827-140-001, 830-050-004, 830-050-008, 830-50-010, 827-040-005, 827-040-004, 827-072-001, 827-072-002, 827-072-003, 827-072-004, 827-072-005, 827-072-010, 827-120-002, 827-120-001, 827-040-006, 827-050-003, 827-050-007, 827-050-005, 827-050-001, 827-020-002, 827-030-003, 827-020-004, 827-020-001, 827-020-018, 827-040-003, 827-050-002, 827-020-003, 815-180-011, 815-180-006, 815-180-003, 827-120-003, 827-120-004, 827-120-005, 827-120-007, 827-120-006, 827-120-008, 827-120-009, 827-120-011, 827-130-012, 827-040-001, 830-030-004, County of Riverside
Negotiating Parties: Williams
Agency Negotiator: Paul Cook, General Manager
Purpose of Negotiations: Price and Term of Payment.

C. 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.

November 17, 2016

Prepared by: D. Johnson/K. Welch

Submitted by: F. Sanchez/P. Weghorst 

Approved by: Paul Cook 

SUPPLY RELIABILITY PROGRAMS COMMITTEE

WATER BANKING PROJECT FACILITIES, CAPACITIES AND PROGRAMS OVERVIEW

SUMMARY:

Staff has prepared information related to IRWD's water banking facilities, capacities, exchange programs and operations that can be used for reference purposes during Committee meetings. The information is provided in tabular, map and schematic formats that can be updated as necessary to reflect changes in IRWD's projects, programs and operations.

BACKGROUND:

To assist in 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, exchange programs and operations. 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.

Capacity and Operations Tables:

A table has been prepared that presents storage, recharge and recovery capacities of existing and planned IRWD water banking projects including capacities available to IRWD in the Kern Water Bank. Another table has been prepared that provides an update on Strand Ranch recovery and recharge operations and the balance of the stored water in the Kern Water Bank. These tables are provided as Exhibits "A" and "B", respectively.

Project Maps:

To support the tables provided as Exhibits "A" and "B", staff has prepared maps that depict project wells, pipelines and Cross Valley Canal turn-out locations, and recharge basin locations. These maps are provided as Exhibits "C", "D", and "E", 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 IRWD's water banking and exchange programs with Rosedale-Rio Bravo Storage District, Buena Vista Water Storage District, Dudley Ridge Water

District and Metropolitan Water District of Southern California. These diagrams are provided as Exhibits “F”, “G”, “H”, “I” and “J” as described in the List of Exhibits below.

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” – Strand Ranch Storage, Recharge and Recovery Operations
- Exhibit “C” – Map of Water Banking Project Wells and Pipelines
- Exhibit “D” – Map of Cross Valley Canal Turnout Facilities
- Exhibit “E” – Map of Water Banking Recharge Basins
- Exhibit “F” – Diagram of IRWD-Rosedale Water Banking and Exchange Program Agreements
- Exhibit “G” – Diagram of Long-Term Water Exchange Program with Buena Vista Water Storage District
- Exhibit “H” – Diagram of Unbalanced Exchange Program Diagram with Dudley Ridge Water District
- Exhibit “I” – Diagram of Coordinated Operating, Water Storage, Exchange and Delivery Agreement with Metropolitan Water District of Southern California
- Exhibit “J” – Diagram of Template Wheeling Agreement with Metropolitan Water District of Southern California

Exhibit "A"

TABLE 1
Current and Anticipated Water Banking Projects
Recharge, Storage and Recovery Capacities
November 17, 2016

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	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	RECOVERY CAPACITY CURRENT 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	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
Strand Ranch Storage, Recharge and Recovery Operations
November 17, 2016

TRANSACTIONS	WATER BANKING ENTITY				
	IRWD		BUENA VISTA (BVWSD)	CARPINTERIA VALLEY (CVWD)	DUDLEY RIDGE WATER DISTRICT (DRWD) ³
	SWP ¹	NON-SWP ²	NON-SWP	SWP	SWP
BEGINNING WATER IN STORAGE 2015 (AF)					
Total Kern Water Bank	-	4,016	-	-	-
Total MWD System ⁵	7,327	-	-	-	-
Total Strand Ranch	249	9,675	4,341	413	474
TOTAL STORED WATER (1/1/2015)	7,576	13,691	4,341	413	474
(RECOVERY) AND RECHARGE IN 2015 (AF)					
CVWD	-	-	-	(413)	-
BVWSD	-	-	(4,341)	-	-
Kern Water Bank	-	251	-	-	-
2015 SWP Allocation ⁵	175	-	-	-	175
Reserve Water Available in 2015 ⁶	140	-	-	-	-
TOTAL 2015 TRANSACTIONS	315	251	(4,341)	(413)	175
Total Kern Water Bank	-	4,267	-	-	-
Total MWD System	7,502	-	-	-	-
Total Kern County	389	9,675	-	-	649
TOTAL STORED WATER (1/1/2016)	7,891	13,942	-	-	649
(RECOVERY) AND RECHARGE IN 2016 (AF)					
Recharge	TBD	TBD	-	-	-
Kern Water Bank	TBD	TBD	-	-	-
2016 SWP Allocation ⁵	524	-	-	-	525
TOTAL ESTIMATED 2016 TRANSACTIONS	524	-	-	-	525
Total Kern Water Bank	-	4,267	-	-	-
Total MWD System	8,026	-	-	-	-
Total Kern County	389	9,675	-	-	1,174
TOTAL ESTIMATED STORED WATER (1/1/2017)	8,415	13,942	-	-	1,174

NOTES:

-Water in storage has been adjusted to account for losses.

-MWD = Metropolitan Water District of Southern California.

¹ IRWD's SWP includes 229 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 to IRWD's Jackson Ranch.

⁵ MWD is storing IRWD's share of 2013-2016 SWP allocation.

⁶ 4% of banked water is placed into a reserve to account for actual or potential losses. The reserve water may be purchased within 3 years following the end of the calendar year in which the water was banked. If the water is not purchased at the end of 3 years, it is made available for recovery.

Exhibit "C"

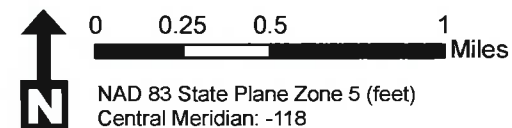


Location Map: IRWD Water Banking Projects Wells and Turnin Pipelines

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

Exhibit "D"

Rosedale Highway



**Location Map:
IRWD Water Banking Projects
Turnout Facilities**

MAP FEATURES

- ▲ Turnouts
- Stockdale East
- Stockdale West
- Strand Ranch

Existing Siphon
50 CFS Capacity
From Strand

Planned
Stockdale West
Turnout Facility
100 CFS Capacity

Existing North & South
Strand Ranch
Turnout Facilities
100 CFS Capacity Each

Stockdale Highway

Cross Valley Canal

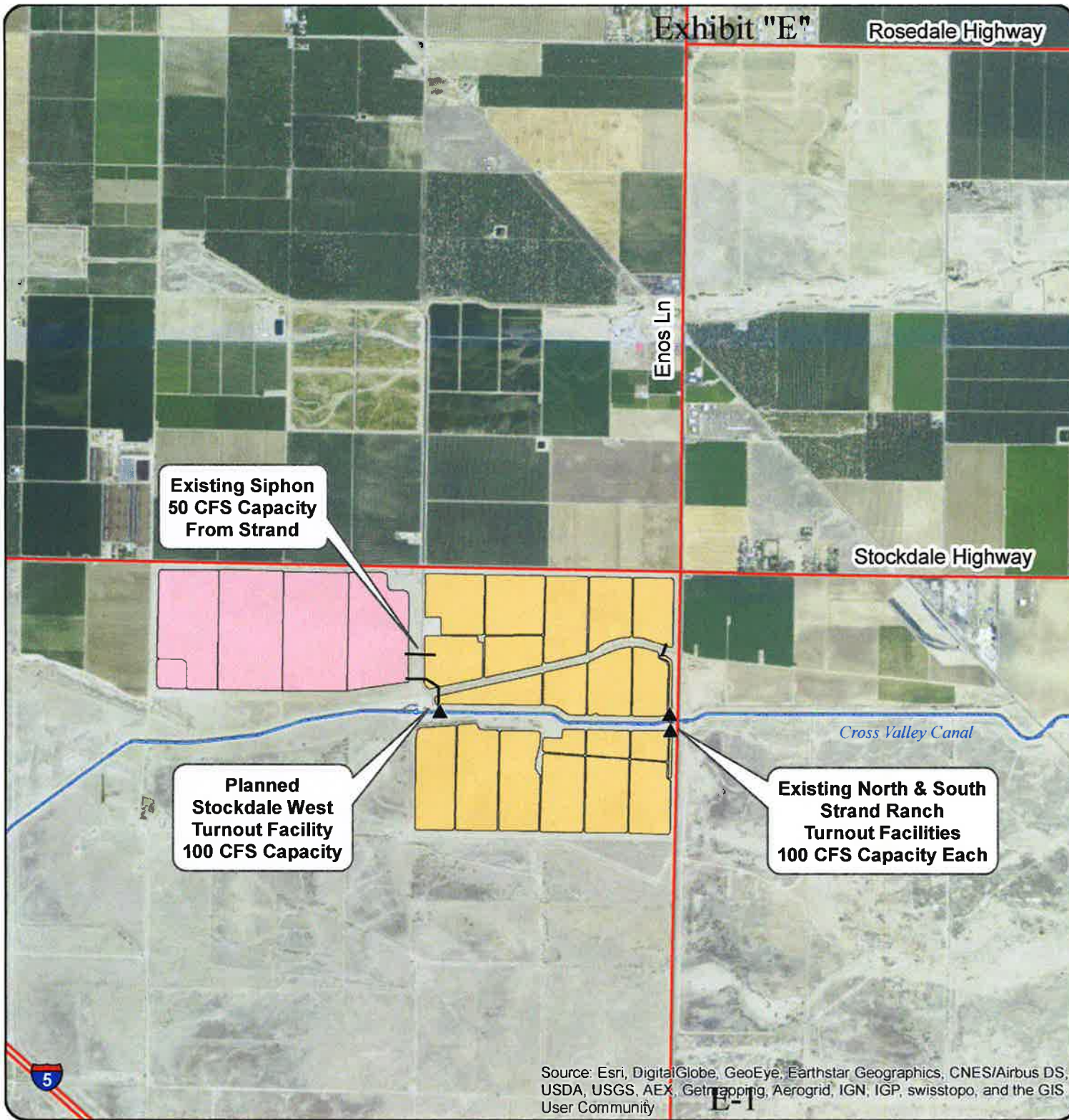
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, IGP, swisstopo, and the GIS User Community



0 0.25 0.5 1

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

Miles



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

MAP FEATURES

- ▲ Turnouts
- Stockdale West
- Strand Ranch

This figure shows the location of recharge basins as well as existing and anticipated pipelines and turnout facilities.



0 0.25 0.5 1
Miles

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

EXHIBIT "F"

IRWD-Rosedale Water Banking and Exchange Program Agreements

Effective 1/12/2009 through 1/12/2039 (Strand Ranch)
2/4/2016 through 1/12/2039 (Stockdale West)

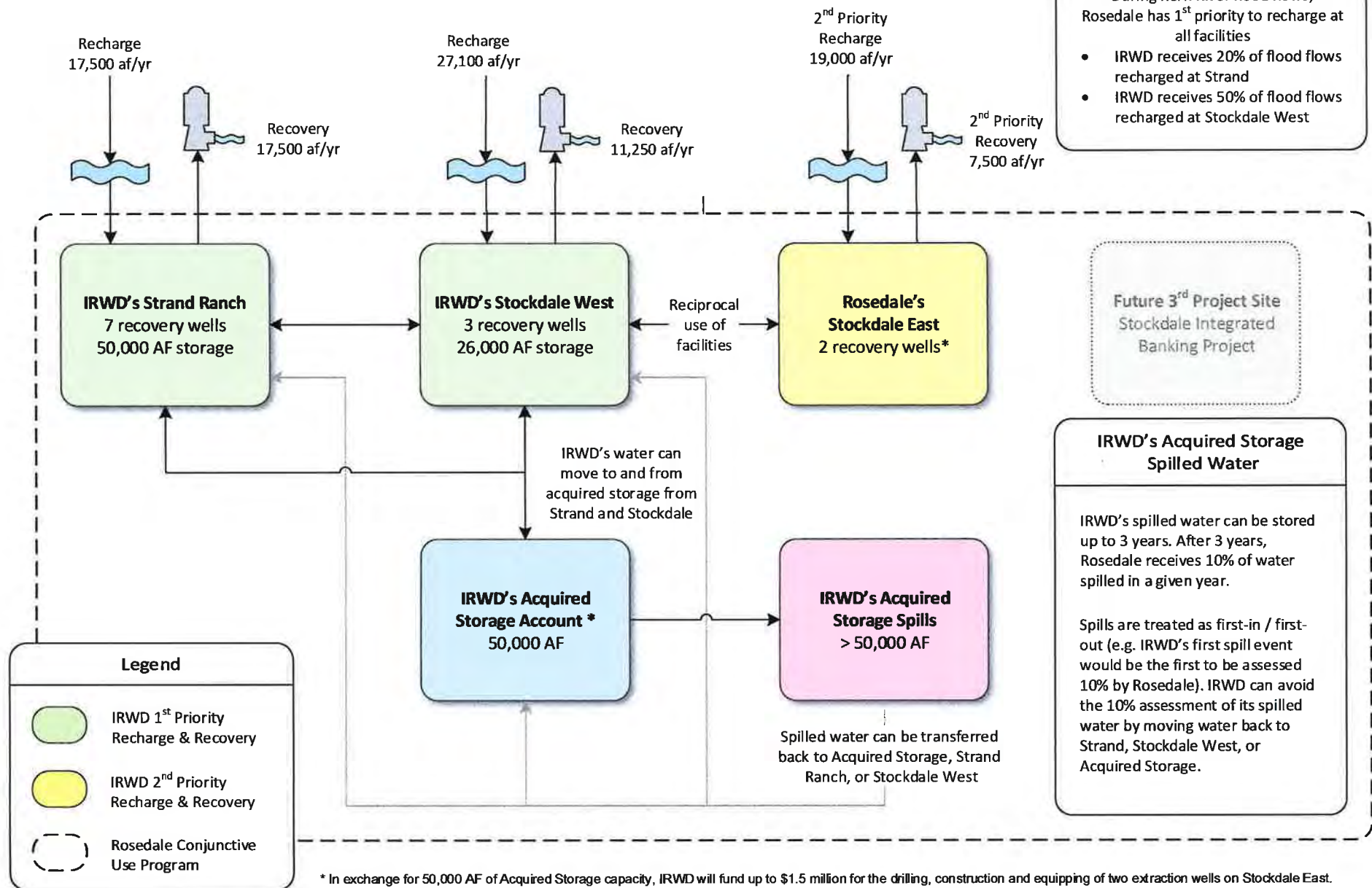
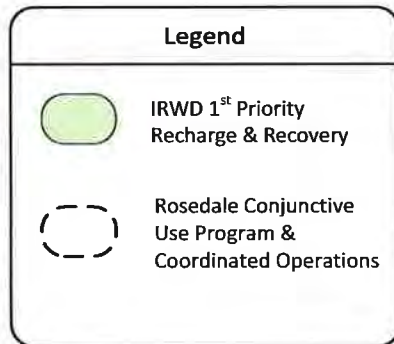
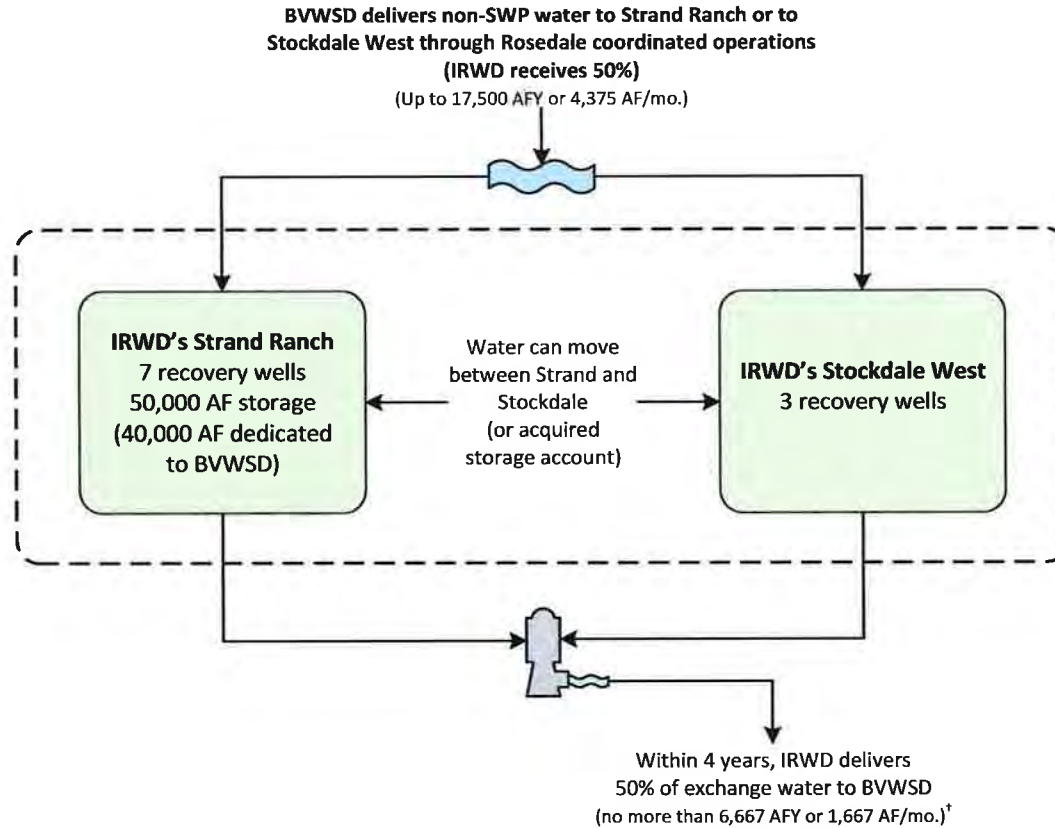


Exhibit "G"

Buena Vista Water Storage District Long Term Water Exchange Program

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



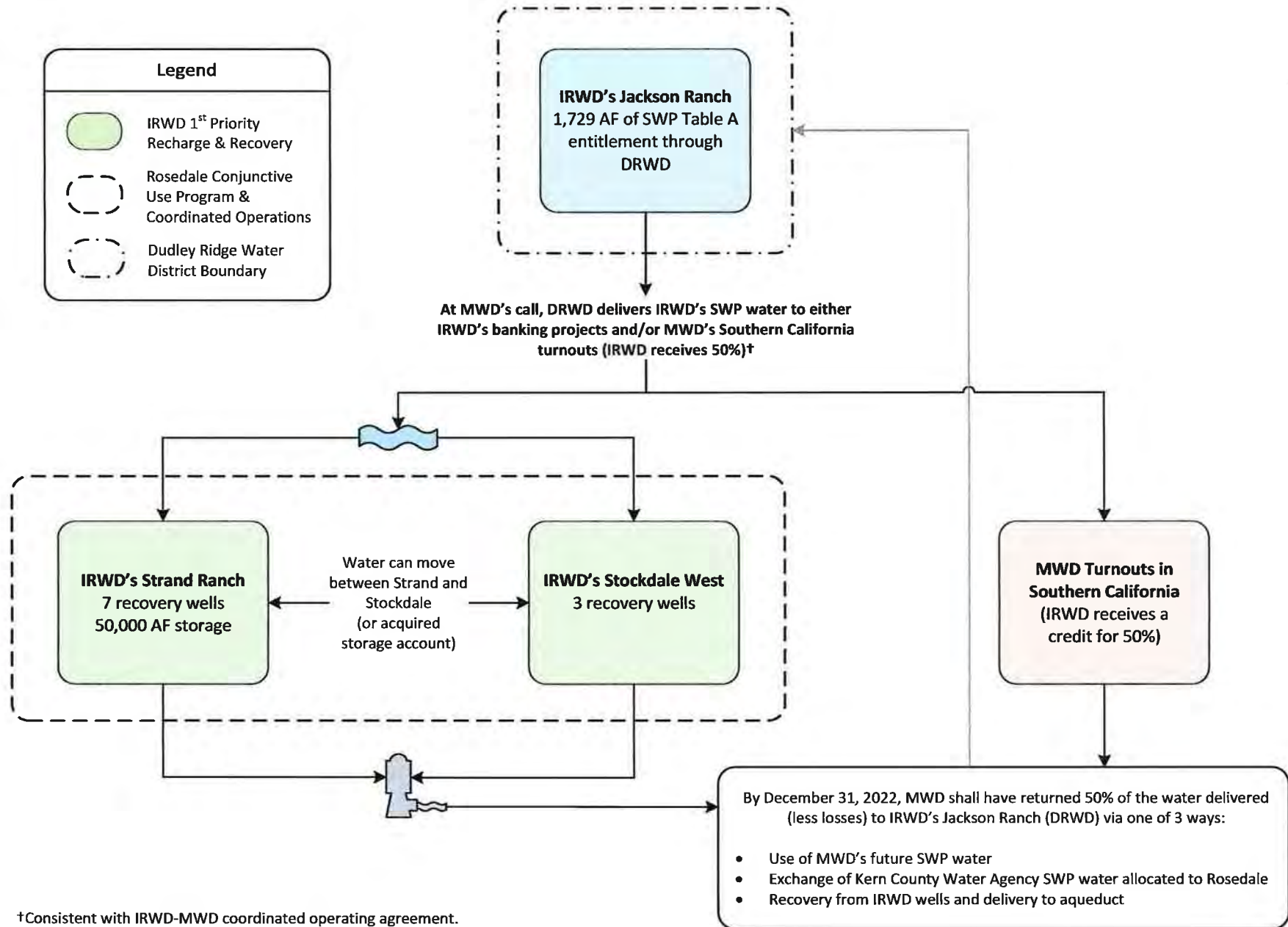
[†]IRWD shall remit one-half of the exchanged supply less one-half of reasonable losses back to BV no later than December 31st of the 4th year following the associated recharge event. IRWD pays for recovery of water returned to BV. Water to be remitted back to BV may remain in storage at Strand Ranch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

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 "I"

Coordinated Operating, Exchange and Delivery Agreement Between MWD, MWDOC and IRWD
Effective 5/1/2011 through 11/4/2035

With MWD's consent, IRWD secures SWP water (Program Water) through exchanges with IRWD Banking Partners for use as extraordinary supply under MWD Water Supply Allocation Plan

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

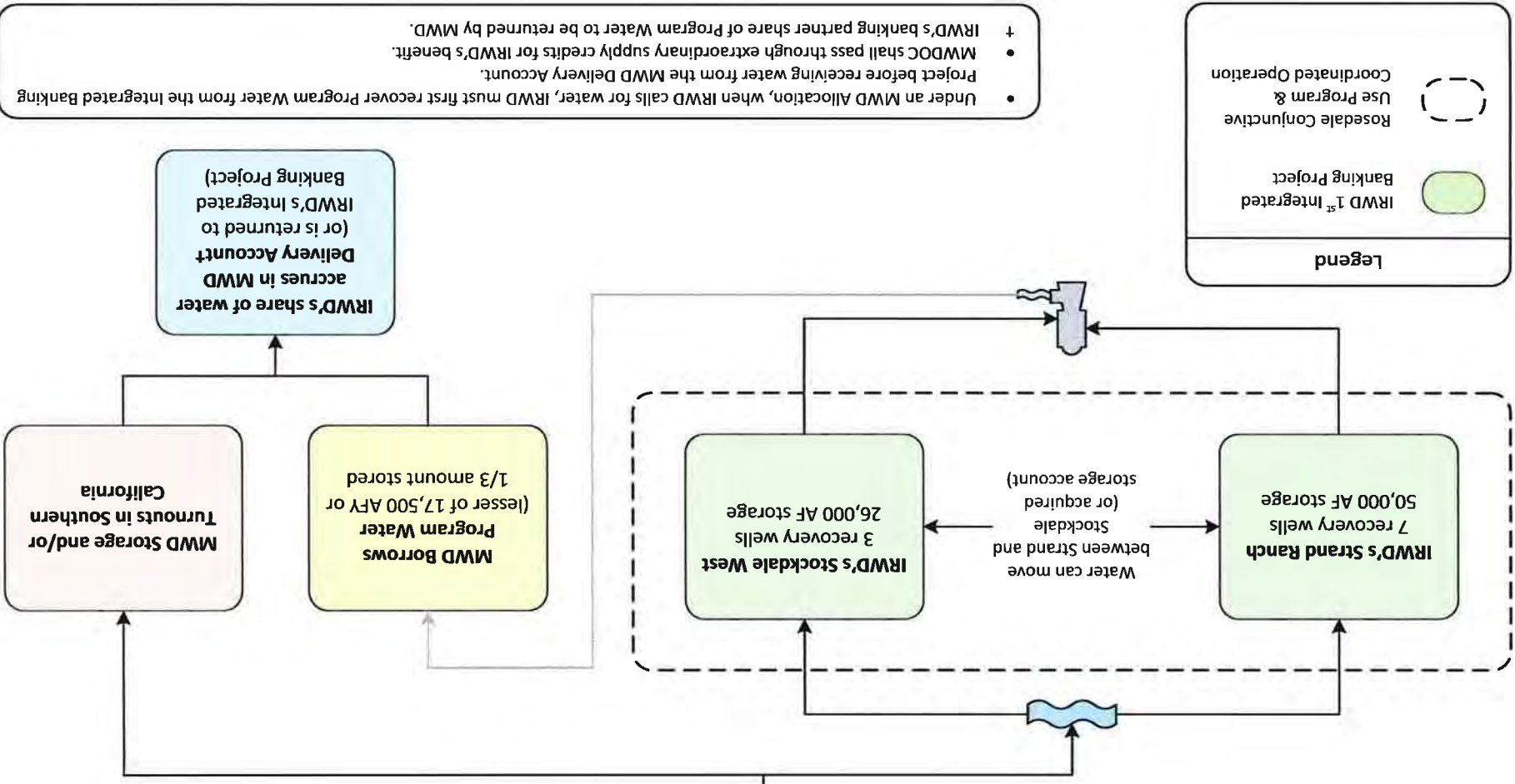
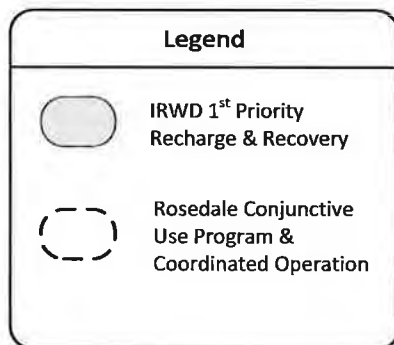
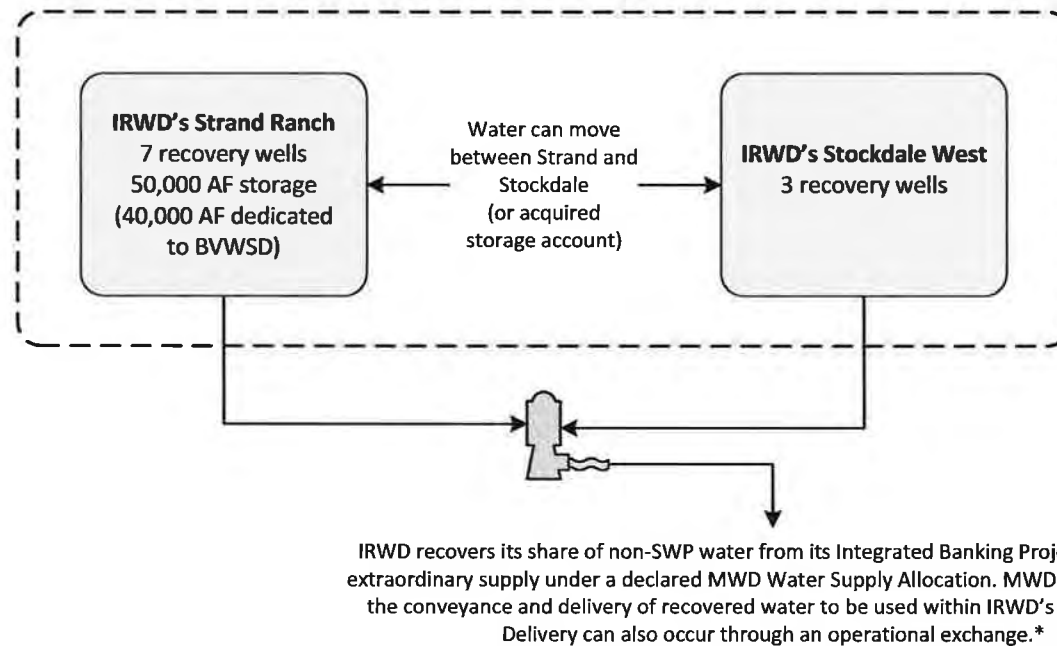


Exhibit "J"
Agreement for Conveyance of Water Between MWD, MWDOC, and IRWD (Wheeling Agreement)
Template for future agreements



*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.

November 17, 2016

Prepared by: R. Bennett /K. Welch

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

Approved by: Paul Cook *PC*.

SUPPLY RELIABILITY PROGRAMS COMMITTEE

DROUGHT RELIEF AND STOCKDALE WEST RECOVERY PROJECTS CONSTRUCTION UPDATE

SUMMARY:

Water banking facilities are currently being constructed for the Drought Relief and Stockdale Integrated Banking Projects. The Drought Relief Project is a joint project being developed by Rosedale-Rio Bravo Water Storage District (Rosedale), Castaic Lake Water Agency (CLWA) and IRWD. This project will allow IRWD and CLWA to share equally in the capacities of six wells and associated conveyance facilities to deliver extracted groundwater to the Cross Valley Canal (CVC). Rosedale and IRWD are jointly developing the Stockdale Integrated Banking Project which includes construction of recovery facilities on IRWD's Stockdale West property and Rosedale's Stockdale East property. The Stockdale West Recovery Project includes three wells, a turn-out structure from the CVC and a turn-in to Rosedale's CVC Return Pipeline. At the Committee meeting, staff will provide an overview of progress on the Drought Relief and Stockdale West Projects.

BACKGROUND:

The Drought Relief and Stockdale West Recovery Projects will provide additional groundwater recovery and associated conveyance capacities to IRWD's water banking and exchange programs. These projects will provide 30 cfs of first priority recovery capacity to IRWD under expected future low groundwater level conditions. When combined with the IRWD's existing recovery capacity at the Strand Ranch, IRWD will be making significant progress towards achieving its 70 cfs objective for instantaneous recovery capacity from IRWD's water banking projects. Following is a brief summary of the Drought Relief and Stockdale West Recovery Projects.

Drought Relief Project:

The Drought Relief Project is being constructed under an agreement between Rosedale, CLWA and IRWD. The agreement provides for cost sharing and the distribution of benefits associated with the design, construction and operation of new groundwater recovery and conveyance facilities located in Rosedale's service area. Rosedale is responsible for managing the construction of the Drought Relief Project facilities which are comprised of nine wells and associated conveyance facilities. Exhibit "A" is a map showing the location of the Drought Relief Project facilities.

The 30 cfs capacity of the six wells located at the Superior East and Superior West Wellfields will be shared equally by IRWD and CLWA with each agency getting access to 15 cfs of first priority recovery capacity. The three wells located in the Western Wellfield will provide first priority recovery capacity for Rosedale. Each agency has a second priority rights to the use of unused capacity in each other's wells. The Superior East and West wells are being constructed to IRWD's specifications.

The Central Intake is a new pipeline that is being constructed that will convey water from the Superior East and West Wellfields to the CVC. The Central Intake has been oversized to accommodate up to four additional wells. The pipeline will also allow reverse flow through the use of a pump station located at the CVC that will allow Rosedale to deliver water to its recharge facilities located in the vicinity of the Superior East and West Wellfields.

Stockdale West Recovery Project:

In 2010, IRWD purchased the Stockdale West property located west of the Strand Ranch. Water Banking facilities are being developed by IRWD on the Stockdale West property and by Rosedale on the Stockdale East property to make use of available storage in the Kern River Fan Area as part of the Stockdale Integrated Banking Project. In 2011, IRWD constructed four recharge basins on the Stockdale West property and a 54-inch siphon under the Rosedale In-Take Channel to allow recharge water to flow from the Strand Ranch to the Stockdale West. Currently, IRWD is drilling, constructing and equipping 3 wells on the Stockdale West property which will provide 15 cfs of recovery capacity to IRWD under expect future low groundwater level conditions. The Stockdale West Recovery Project will also include a turn-out structure from the CVC and a turn-in to Rosedale's CVC Return Pipeline. Exhibit "B" is a map showing the Stockdale West Recovery Project facilities.

At the Committee meeting, staff will provide a presentation on the Drought Relief and Stockdale West Recovery Projects. The presentation will provide an overview of the status of facility construction, project budgets and schedules. The presentation will also provide details on the expected capacity of each well and the quality of water to be produced from the wells.

FISCAL IMPACTS:

None.

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 the six Superior wells of the Drought Relief 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 tie-in facilities were included in the Stockdale Integrated Banking Project EIR.

RECOMMENDATION:

Receive and file.

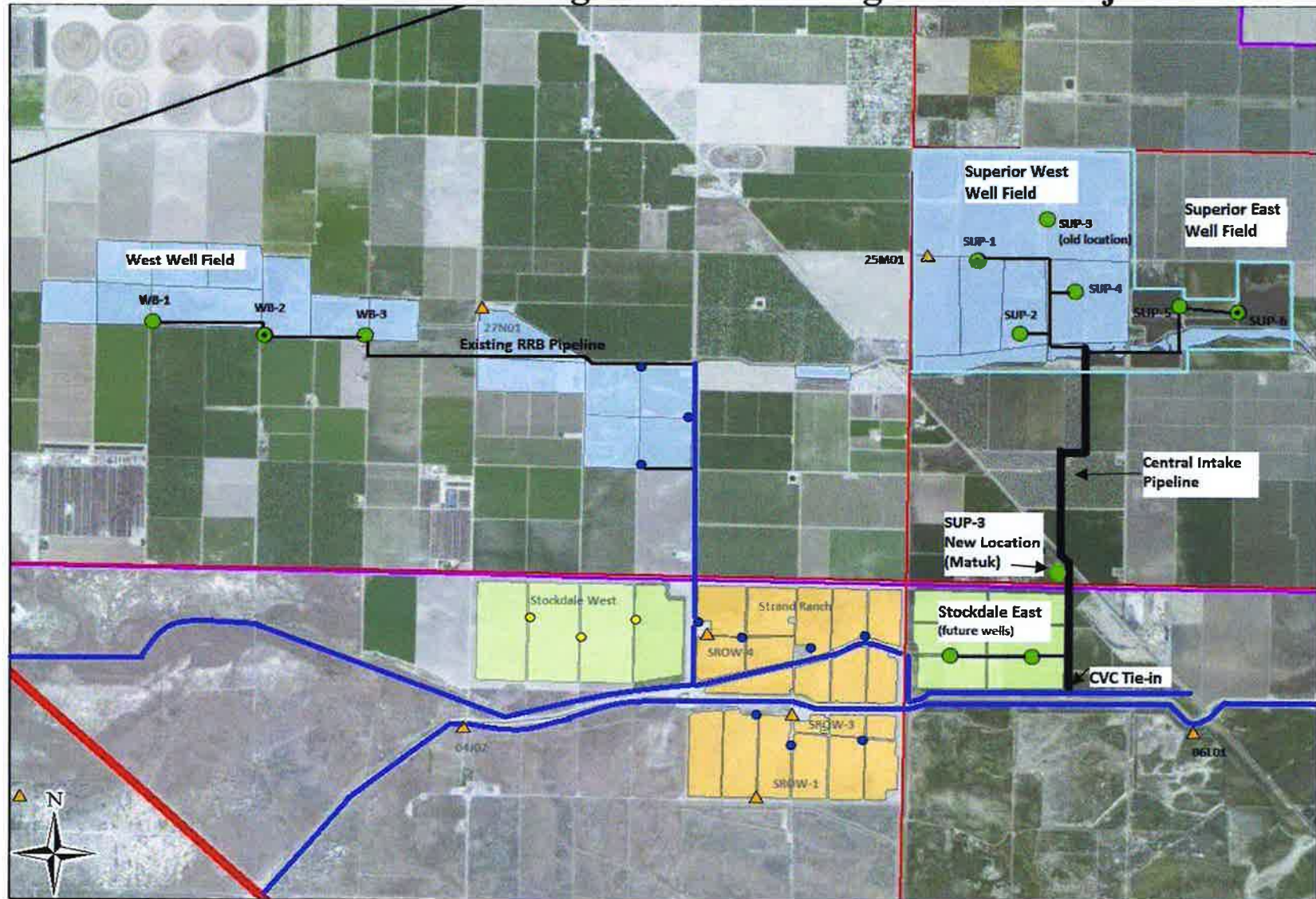
LIST OF EXHIBITS:

Exhibit "A" – Location Map: Drought Relief Project Facilities

Exhibit "B" – Location Map: Stockdale West Recovery Project Facilities

EXHIBIT "A"

Rosedale-Rio Bravo Water Storage District- Drought Relief Project



0 0.25 0.5 1 Miles

NAD 83 State Plane Zone 5

EXHIBIT "B"

Stockdale West Recovery Project

Site Map

