

AGENDA

IRVINE RANCH WATER DISTRICT SUPPLY RELIABILITY PROGRAMS COMMITTEE

THURSDAY, JUNE 29, 2017

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. WATER STORAGE INVESTMENT PROGRAM FUNDING AND GROUNDWATER
STORAGE PROJECT UPDATE – SANCHEZ/WEGHORST

Recommendation: Receive and file.

ACTION

7. REVISED AMENDMENT NO. 1 TO STOCKDALE INTEGRATED BANKING
PROJECT OPERATING AGREEMENT – SANCHEZ/WEGHORST

Recommendation: That the Committee authorize the general manager to execute the revised Amendment No. 1 to the Agreement for a Water Banking, Recovery and Exchange Program for the Stockdale West and Stockdale East Properties.

OTHER BUSINESS

8. A. Directors' Comments

B. **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 - Lease

Negotiating Parties: E & S Farming, LLC

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.

June 29, 2017

Prepared by: D. Johnson/K. Welch

Submitted by: F. Sanchez/P. Weghorst

Approved by: Paul Cook 

SUPPLY RELIABILITY PROGRAMS COMMITTEE

WATER BANKING PROJECT FACILITIES, CAPACITIES, OPERATIONS AND PROGRAMS OVERVIEW

SUMMARY:

Staff has prepared information related to IRWD's water banking facilities, capacities, exchange programs and operations that can be used for reference purposes 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 provide an overview of this information as well as an overview of current recharge rates that have been observed at IRWD's water banking projects.

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, 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. A discussion of the current recharge rates that have been observed at the Strand Ranch and Stockdale West water banking projects is also provided.

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". Exhibit "B" provides an update on water banking recovery and recharge operations and the balance of the stored water in the Kern Water Bank.

2017 Recharge Operations Update:

Exhibit "B" has been updated to provide current estimates of the amounts and types of water that have been recharged in 2017 at the Strand and Stockdale Integrated Banking Projects as well as at the Kern Water Bank. The estimates are shown net of losses and may be subject to further adjustments for Cross Valley Canal conveyance losses.

The total amount of water delivered to the projects, so far in 2017, is approximately 17,400 acre-feet (AF). In June 2017, IRWD continued taking delivery of high-flow Kern River water from Buena Vista Water Storage District (BVWSD). Staff estimates approximately 12,300 AF of Kern River water has been delivered to date. It is expected that another 17,700 AF of high-flow Kern River water will be delivered to the projects by the end of November. To date, 476 AF of water has been recharged into IRWD's account in the Kern Water Bank. At the Committee meeting, staff will provide an update on the status of water supplies that could be available for recharge during the remainder of the calendar year.

Declining Recharge Rates:

Recharge rates have been declining on the Strand Ranch and Stockdale West projects since February. Discussions with geohydrologists at Thomas Harder and Company and Rosedale-Rio Bravo Water Storage District (Rosedale) have confirmed that these reductions are considered normal and are occurring throughout the Kern Fan area. Such reductions occur as a result of groundwater mounding, impacts of semi-permeable layers, settling of fine particles and biological processes.

Recharge Rates at IRWD Projects:

The recharge rates at the basins on the Stockdale West Ranch and at the basins located on the north side of the Strand Ranch were at approximately 0.7 feet per day in February and have declined to approximately 0.4 feet per day in May and June. The recharge rates at the basins on the south side of the Strand Ranch were at approximately 0.5 feet per day in February and have declined to approximately 0.25 feet per day in May and June. These recharge rates are greater than the rates that were observed on the Strand Ranch in 2010 and 2011. The average recharge rate on Strand Ranch during that period was approximately 0.2 feet per day.

Recharge Rates at Other Projects:

Other Kern Fan water banking projects also experience declining recharge rates during long duration recharge events. Long-term average recharge rates at the Pioneer Project are expected to be 0.3 feet per day. At the closest recharge basins on the Kern Water Bank, the long-term average rates are expected to be approximately 0.13 feet per day.

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, 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. Staff recently prepared a new map that shows current recharge rates at the Strand Ranch and Stockdale West water banking projects. This map has been included as Exhibit “F”.

Program Agreement Diagrams:

Schematic diagrams have been prepared that depict IRWD’s water banking and exchange programs with Rosedale, BVWSD, 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 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" – Water Banking 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" – 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 Dudley Ridge Water District
- Exhibit "J" – Diagram of Coordinated Operating, Water Storage, Exchange and Delivery Agreement with Metropolitan Water District of Southern California
- Exhibit "K" – 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
May 18, 2017

WATER BANKING PROJECT	OWNERSHIP AND WELL INFO			ALLOCATED CAPACITY (AF)					1 st PRIORITY RECOVERY CONDITIONS (CFS)		2 nd PRIORITY RECOVERY CONDITIONS (CFS)	
	IRWD OWNED	WELLS EXISTING	WELLS PROPOSED OR UNDER CONST.	TOTAL STORAGE CAPACITY	ANNUAL RECHARGE 1 ST PRIORITY	ANNUAL RECHARGE 2 ND PRIORITY	ANNUAL RECOVERY 1 ST PRIORITY	ANNUAL RECOVERY 2 ND PRIORITY	RECOVERY CAPACITY AS PLANNED ¹	ESTIMATED RECOVERY CAPACITY (DEC. 2016 CONDITIONS) ²	RECOVERY CAPACITY AS PLANNED	RECOVERY CAPACITY CURRENT CONDITIONS
Strand Ranch	Yes	7	-	50,000	17,500	-	17,500	-	40.0	27.0	-	-
Stockdale West	Yes	-	3	26,000	27,100	-	11,250	-	15.0	-	-	-
Stockdale East	No	-	2	-	-	19,000	-	7,500	-	-	10.0	-
IRWD Acquired Storage Account ³	No	-	-	50,000	-	-	-	-	-	-	-	-
Drought Relief Project Wells ³	No	-	3	-	-	-	-	-	15.0	-	-	-
Kern Water Bank Storage Account ⁵	No	-	-	9,495	3,200	-	6,330	-	-	-	-	-
TOTALS		7	8	126,000	44,600	19,000	28,750	7,500	70.0	27.0	10.0	0.0
Partner Capacities ⁴				36,000	22,300	9,500	12,000	0	35.5	27.0	-	-
IRWD Capacities				90,000	22,300	9,500	16,750	7,500	34.5	0.0	-	-
IRWD's recovery <i>during</i> 6 month partner recovery period (AF)									12,420	0.0	-	-
IRWD's recovery <i>after</i> 6 month partner recovery period (AF)									4,330	6,733	-	-
TOTALS (AF)									16,750	6,733	-	-
Number of months needed to recover IRWD's total AF after partners' recovery (Assumes IRWD has use of total recovery capacity after partners' recovery)									8.1	14.0	-	-

¹ Based on designed Strand recovery capacity assuming 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
 June 29, 2017

TRANSACTIONS	WATER BANKING ENTITY				
	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	-	-	-
Total MWD System ⁴	7,502	-	-	-	649
Total Strand Ranch	389	9,675	-	-	-
TOTAL STORED WATER (1/1/2016)	7,891	13,942	-	-	649
(RECOVERY) AND RECHARGE IN 2016 (AF)					
CVWD	-	-	-	-	-
BVWSD	-	-	-	-	-
Kern Water Bank	-	22	-	-	-
2016 SWP Allocation ³	524	-	-	-	525
TOTAL 2016 TRANSACTIONS	524	22	-	-	525
Total Kern Water Bank	-	4,289	-	-	-
Total MWD System	8,026	-	-	-	1,174
Total Kern County	389	9,675	-	-	-
TOTAL STORED WATER (1/1/2017)	8,415	13,964	-	-	1,174
(RECOVERY) AND RECHARGE IN 2017 (AF)					
Kern Water Bank Deliveries ⁵	316	160	-	-	-
2017 SWP Allocation (85%) ³	632	-	-	-	669
2017 SWP Article 21 ⁶	1,534	-	-	-	1,624
High Flow Kern River	-	5,227	5,534	-	-
TOTAL ESTIMATED 2017 TRANSACTIONS⁷	2,482	5,387	5,534	-	2,293
ESTIMATED WATER IN STORAGE 2017 (AF)					
Total Kern Water Bank	316	4,449	-	-	-
Total MWD System	8,026	-	-	-	1,174
Total Kern County	2,555	14,902	5,534	-	2,293
TOTAL ESTIMATED STORED WATER TO DATE	10,897	19,351	5,534	-	3,467

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 in Kern County is adjusted 10% (6% for surface loss and 4% for reserve loss).

-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 will be stored at Strand Ranch.

⁴ Beginning balance of water stored in MWD system includes 4,000 AF 2014 Exchange, 2,853 AF 2014 borrowed SWP, 649 AF IRWD's 2013-2015 SWP allocations through DRWD.

⁵ Article 21 deliveries to Kern Water Bank commenced on 2/15/17. DRWD's capacity was 72 cfs through 2/24/17, then dropped to a capacity of 63 cfs. IRWD's 6.58% yielded 9 AF/day from 2/15-2/24 and yields 8 AF/day from 2/25/17 to current.

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

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

Exhibit "C"

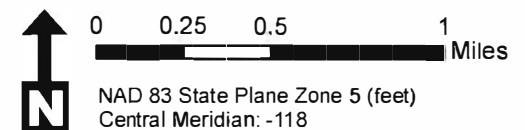


Location Map: IRWD Water Banking Projects Wells and Turnin Pipelines

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

C-1

Exhibit "D"

Rosedale Highway



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

MAP FEATURES

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

This figure shows the location of existing and anticipated pipelines and turnout facilities.

Existing Siphon
50 CFS Capacity
From Strand

Construction Complete
(Not Yet Operational)
Stockdale West Turnout
100 CFS Capacity

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

Stockdale Highway

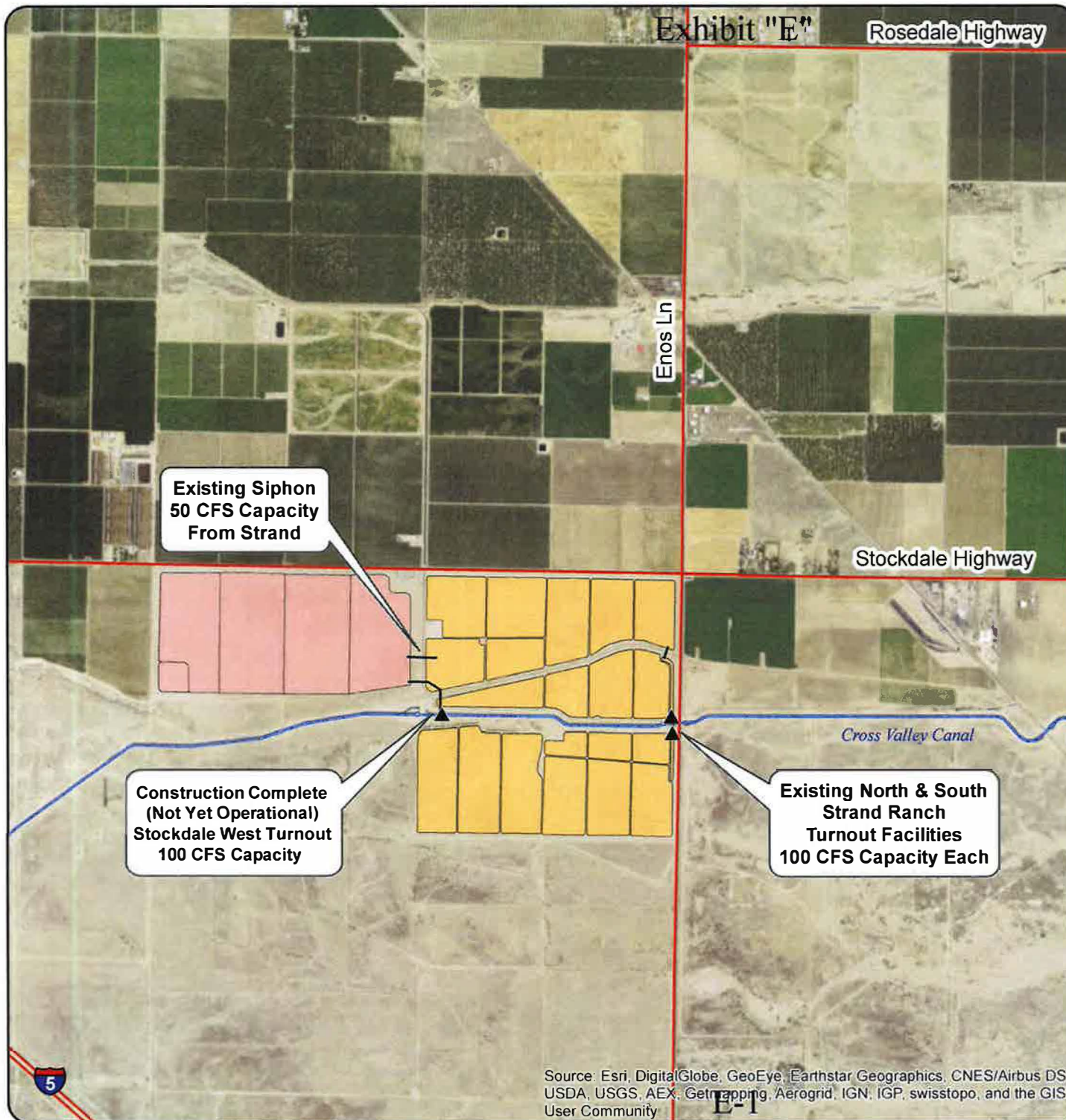
Cross Valley Canal

Enos Ln

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



**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.

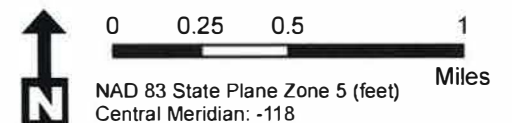


Exhibit "F"

Rosedale Highway



**Location Map:
IRWD Water Banking Projects
Recharge Rates**

MAP FEATURES

- ▲ Turnouts
- Stockdale West
- Strand Ranch

This figure shows the location of recharge basins and their associated recharge rates as of June 2017.

Northern Basins
0.4 ft/day
45 CFS

Southern Basins
0.25 ft/day
20 CFS

Stockdale Highway

Cross Valley Canal

Enos Ln

5

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

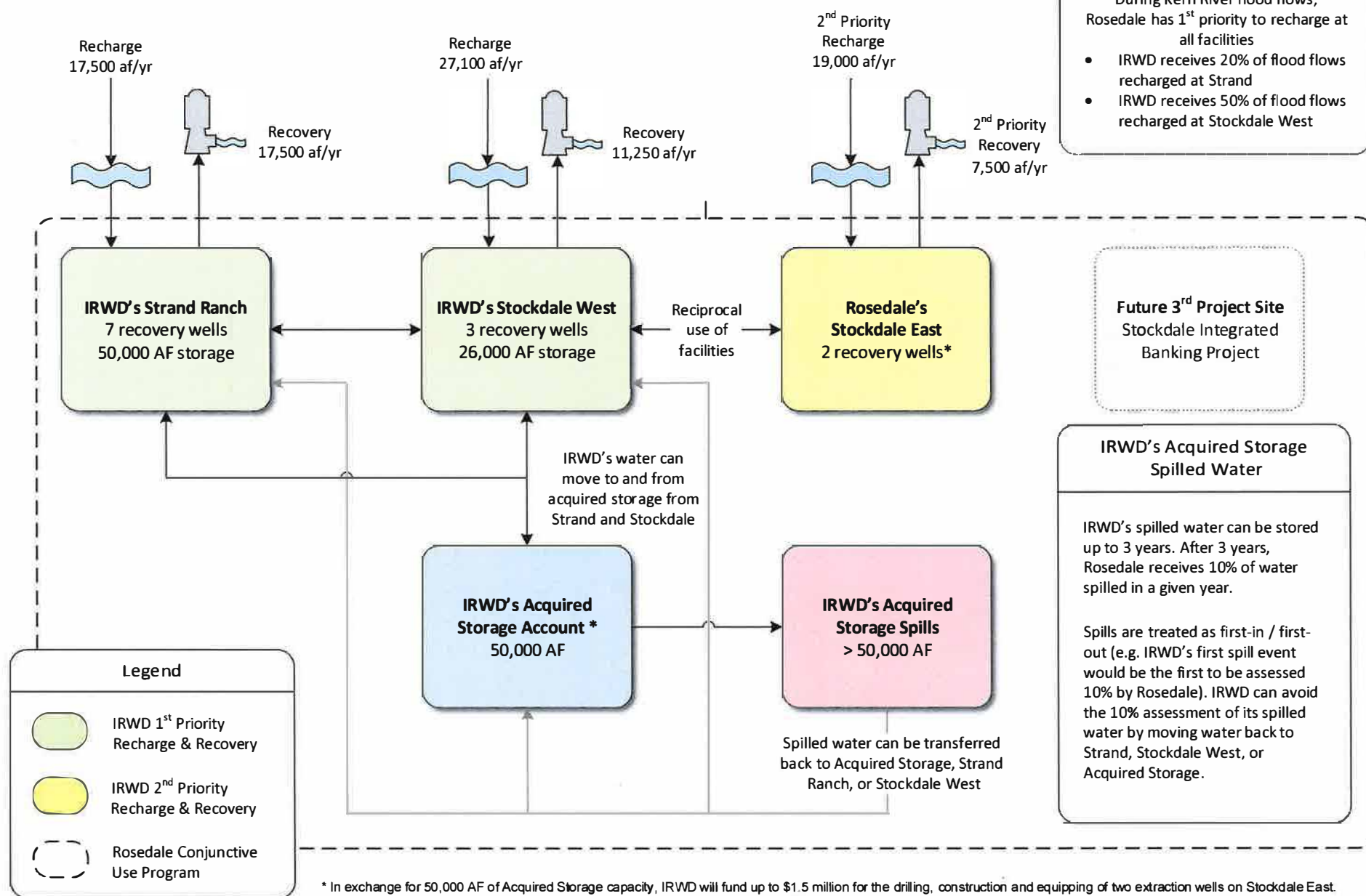


0 0.25 0.5 1
Miles
NAD 83 State Plane Zone 5 (feet)
Central Meridian: -118

Exhibit "G"

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)

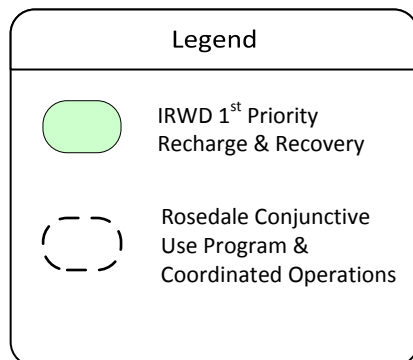
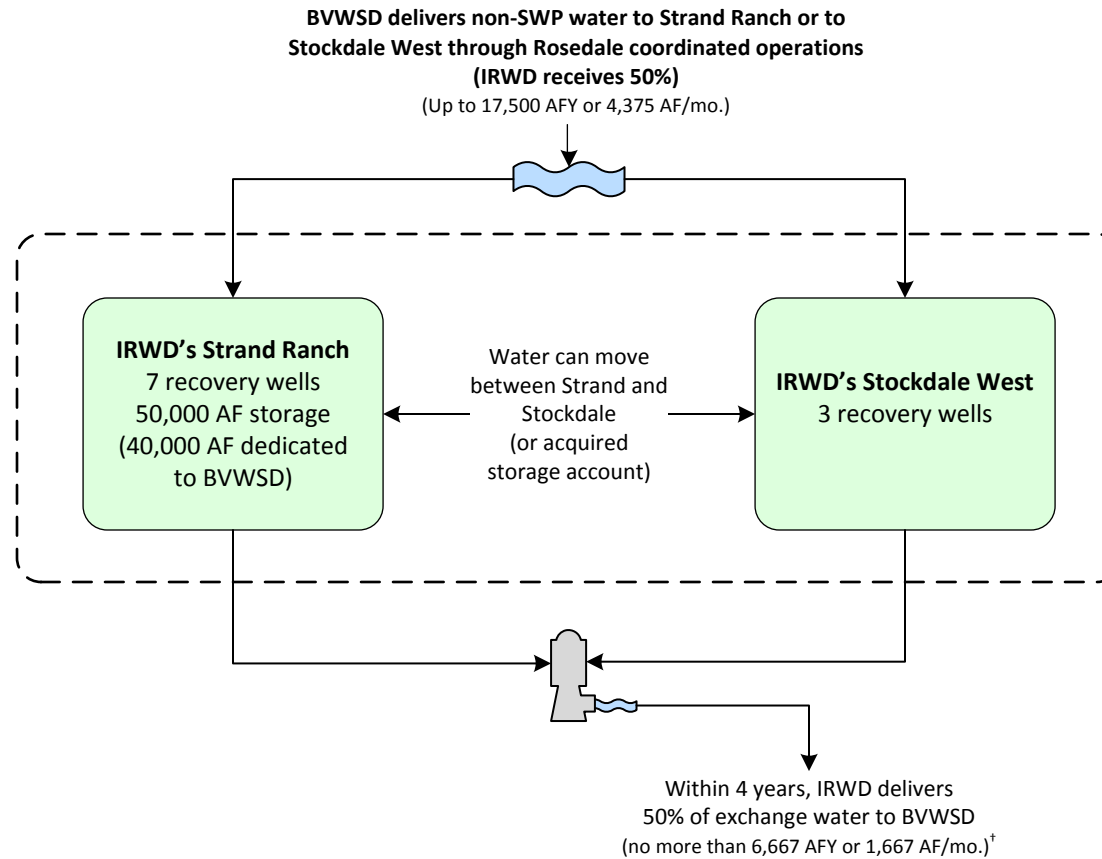


* In exchange for 50,000 AF of Acquired Storage capacity, IRWD will fund up to \$1.5 million for the drilling, construction and equipping of two extraction wells on Stockdale East.

Exhibit "H"

Buena Vista Water Storage District Long Term Water Exchange Program

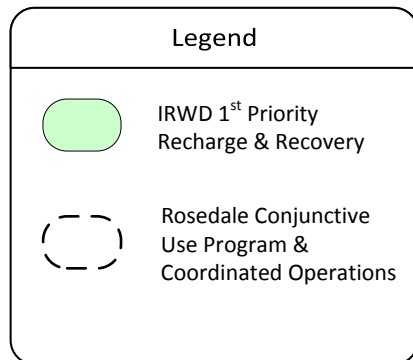
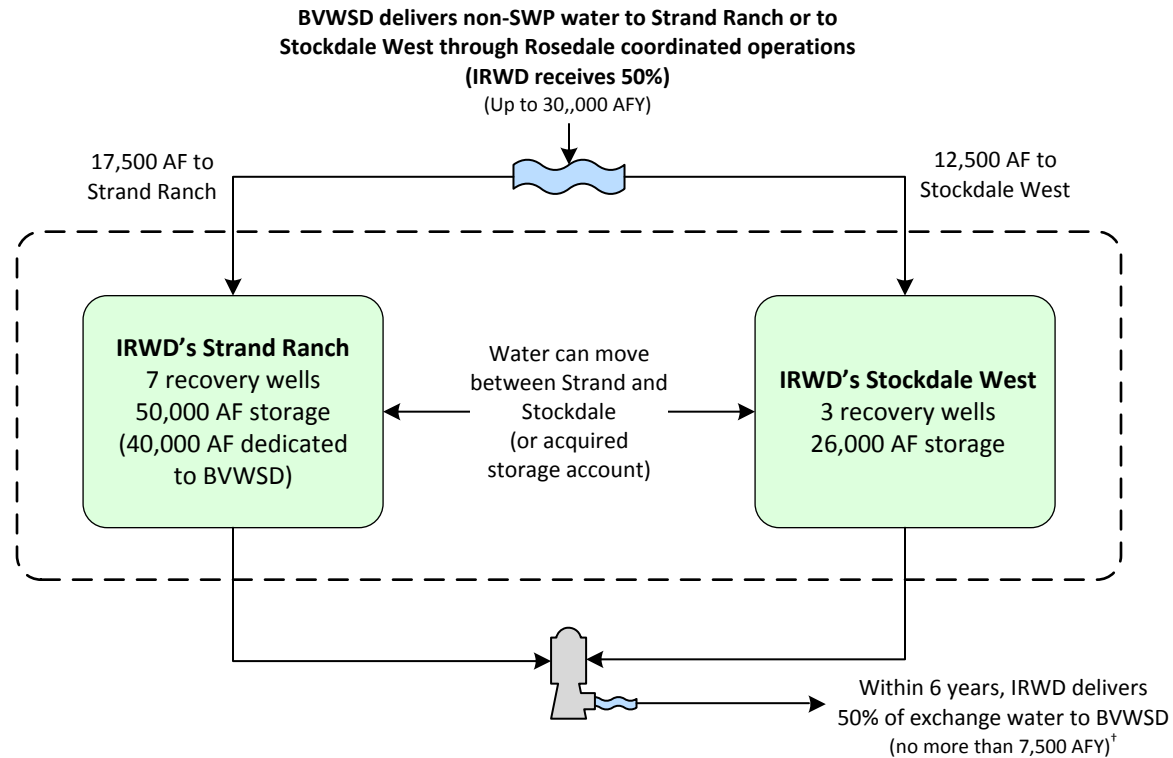
Effective 1/1/2011 through 1/12/2039



[†]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%

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



[†]IRWD shall remit one-half of the exchanged supply less one-half of reasonable losses back to BV no later than December 31st of the 6th year following the associated recharge event. IRWD pays for recovery of water returned to BV. Water to be remitted back to BV may remain in storage at Strand Ranch beyond the 6th year, in exchange for a greater percent being transferred to IRWD as compensation per the table shown to the right:

Modified for 1-Year Recharge Program Only

Year Following Recharge Event	Percent Transferred to IRWD	Percent Returned to BV During or Before Indicated Year
1	50%	50%
2	50%	50%
3	50%	50%
4	50%	50%
5	50%	50%
6	50%	50%
7	75%	25%
8	100%	0%
9	100%	0%

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

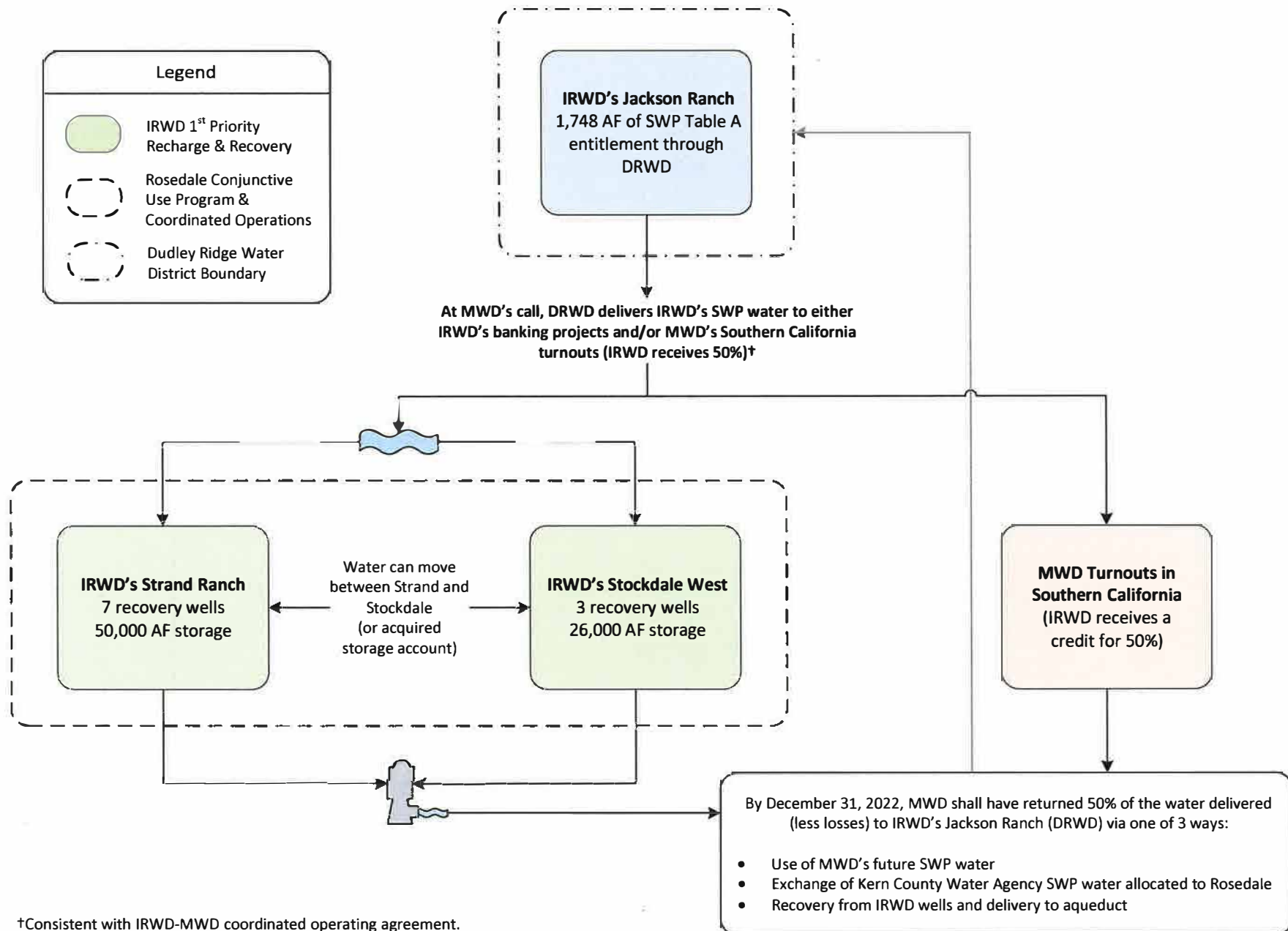


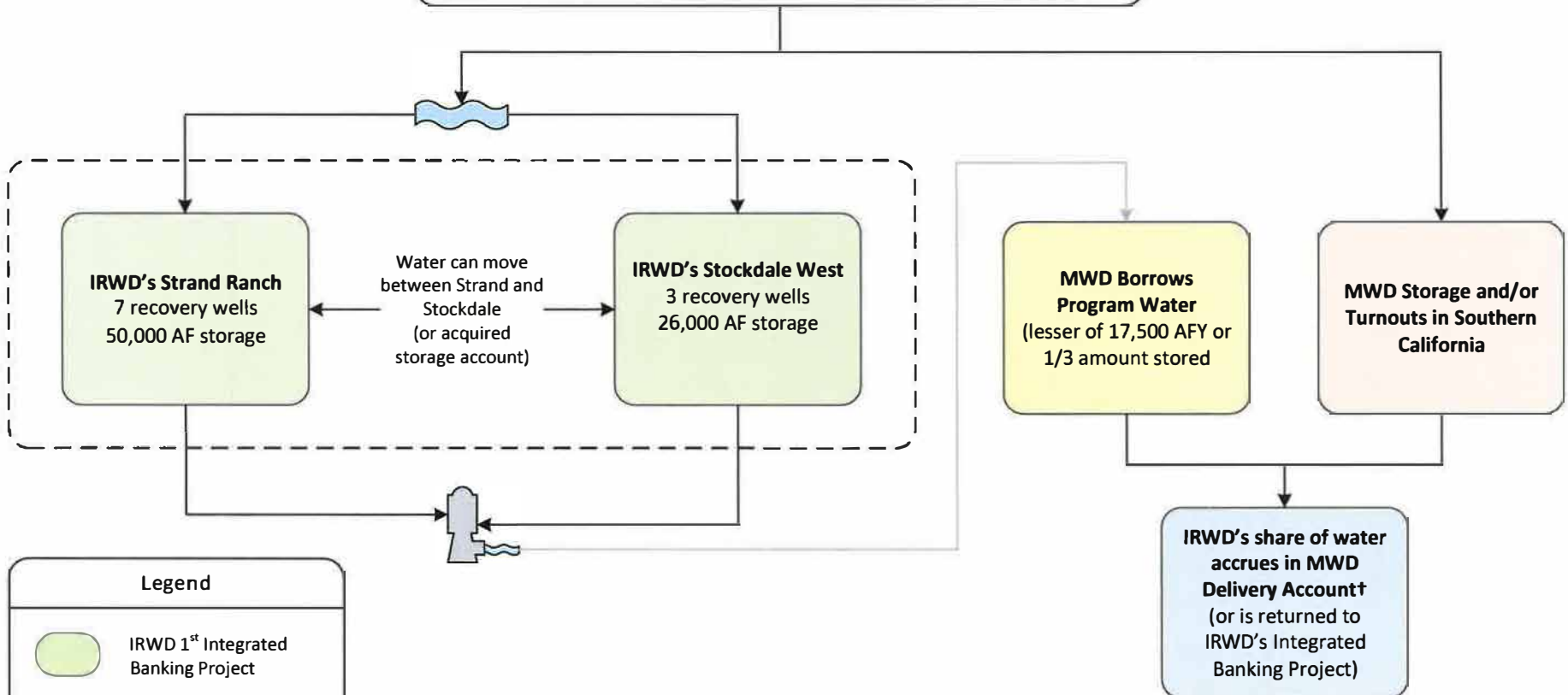
Exhibit "J"

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

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

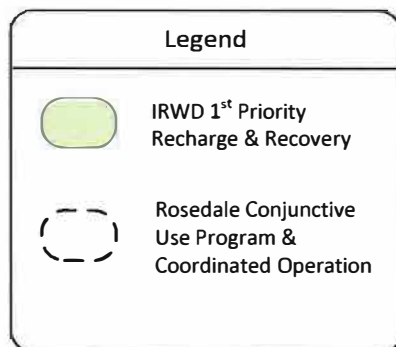
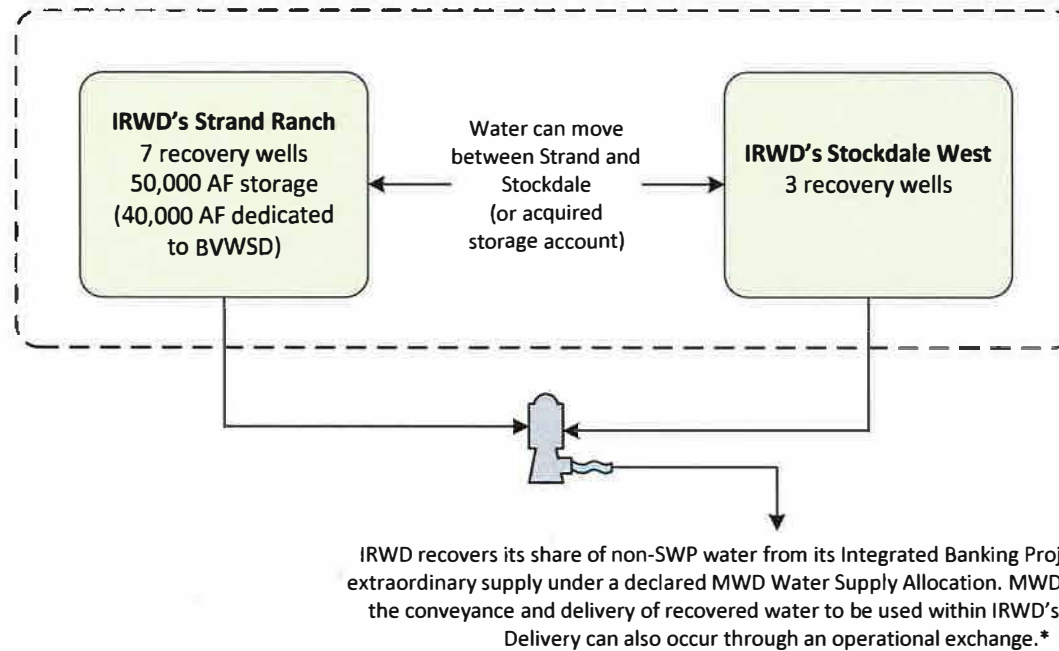
MWD has three options for the use and storage of Program Water:

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



- 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.

June 29, 2017

Prepared by: F. Sanchez

Submitted by: P. Weghorst

Approved by: Paul Cook 

SUPPLY RELIABILITY PROGRAMS COMMITTEE

WATER STORAGE INVESTMENT PROGRAM FUNDING AND GROUNDWATER STORAGE PROJECT UPDATE

SUMMARY:

The California Water Commission (CWC) is accepting applications for Proposition 1 grant funding through the Water Storage Investment Program (WSIP). The goal of the WSIP is to fund water storage projects that provide public benefits, improve the operation of the state water system, and provide a net improvement in ecosystem and water quality conditions. Staff has been working with Rosedale-Rio Bravo Water Storage District in scoping a Kern Fan Groundwater Storage Project (Kern Fan Project) that meets CWC grant funding eligibility criteria and that would provide substantial benefits to IRWD and Rosedale. At the Committee meeting, staff will provide an update on the status of preparing a grant application for the project. Staff will also provide an overview how the project could be operated to provide water supply benefits to IRWD and Rosedale while providing required ecosystem and water quality benefits to the Bay-Delta.

BACKGROUND:

The CWC is accepting applications for grant funding through the WSIP for the planning, design and construction of water storage projects that 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, which provides \$2.7 billion for public benefits associated with water storage projects. The maximum WSIP funding request for a surface and/or groundwater storage project is 50% of the project capital costs. The value of the quantified ecosystem improvement benefits must make up at least 50% of the WSIP cost share, or 25% of the total WSIP funding. Capital costs incurred after November 4, 2014 will be eligible for reimbursement. Applications must be submitted to the CWC by August 14, 2017.

The following is an overview of a conceptual proposal for the Kern Fan Project that was developed with the assistance of Rosedale, an update on the technical studies necessary to complete the grant application and the proposed project benefits.

Kern Fan Groundwater Storage Project:

Staff has worked with Rosedale to develop a concept for a potential Kern Fan Project that could provide the benefits necessary to meet the eligibility criteria for WSIP funding. The project would be a regional water bank in the Kern Fan that would capture and store water during conditions when surface water is abundant. A portion of the water would be returned at a later date through groundwater recovery and implementation of operational exchanges. The project could be integrated with the State Water Project (SWP) and Central Valley Project (CVP) systems through program agreements with project contractors and through the use of turnouts

from the California Aqueduct, the Cross Valley Canal, the Friant-Kern Canal and potential new conveyance facilities.

The Kern Fan Project would be implemented in a two-phased approach. The first phase would be to develop the proposed third project site as contemplated in the Stockdale Integrated Banking Project Environmental Impact Report. IRWD and Rosedale would jointly acquire up to 640 acres in the Kern Fan area and construct conveyance, recharge and recovery facilities as necessary to develop a fully functioning water banking project.

The second phase of the Kern Fan Project would involve IRWD and Rosedale acquiring an additional 640 acres of land for the expansion of the water banking facilities. The overall project would consist of approximately 100,000 AF of storage capacity, up to 100,000 acre feet per year (AFY) in recharge capacity and up to 70 cubic feet per second (cfs) or 50,000 AFY of recovery capacity. Staff anticipates the overall cost of the Kern Fan Project would be about \$100 million and, if qualified, up to \$50 million would be funded through the Proposition 1 grant. IRWD and Rosedale would then each provide \$25 million each for the project.

Preparing Grant Application:

Preparing a CWC grant application involves preparation of numerous documents, supporting attachments and technical studies to convey how the Kern Fan Project will support the WSIP objectives. Several consultants have been engaged to assist in the preparation of the grant application and associated technical studies as follows:

Grant Writing:

A professional services agreement was executed with DDB Engineering in the amount of \$24,000 to assist in writing and compiling the grant application. This work is ongoing and the DDB team is involved in the coordination of the technical work being performed by other consultants.

Water Operations Modeling:

A professional services agreement was executed with MBK Engineers (MBK) in the amount of \$52,066 to develop a model that analyzes the operation of the Kern Fan Project with the operation of the SWP/CVP systems. The model will post-process California Department of Water Resources' (DWR) CalSim II model results to simulate the operation of the SWP/CVP with and without the Kern Fan Project. The comparison of model results, both with and without the project, will be used as the basis to quantify the water supply and public benefits of the project. Additionally, MBK will model the availability of the water supply for the project both with and without the California Water Fix. MBK's analysis will also consider climate change, which is a requirement of the grant application.

Ecosystem Benefit Modeling:

IRWD has executed a professional services agreement with Cramer Fish Sciences in the amount of \$5,000 to conduct initial work with MBK and the project partners to identify the optimal operational scenarios that will maximize Delta ecosystem benefits. Once the optimal operational scenarios have been identified, Cramer Fish Sciences will provide IRWD with a more detailed scope of work and cost estimate to complete the additional analyses required for the grant application. The additional work to be completed by Cramer Fish will involve modeling of the benefits to specific species based on the Kern Fan Project operational scenarios. Cramer will also calculate and monetize the associated ecosystem benefits to the Delta.

Economic Feasibility:

At the request of staff, Dee Jaspar and Associates has provided a proposal in the amount of \$19,698 to develop the required economic feasibility study for the project. The economic feasibility study will include the estimated project capital costs, operations and maintenance costs, repair and replacement and any additional environmental mitigation or compliance obligation costs that may be anticipated. Per the grant requirements, the feasibility estimates will be at the 1% to 15% level of design.

Cost of Preparing Application:

Staff expects that the preparation of the documents and required technical studies that will be incorporated into the Grant application will cost up to \$120,000. Rosedale has agreed to contribute up to \$50,000 toward the cost of the technical studies, modeling and grant application preparation. IRWD funding for the balance of the cost of the technical studies, modeling and application preparation is included in the FY 2016-17 Capital Budget.

Proposed Project Benefits:

At the Committee meeting, staff will provide a presentation on how the Kern Fan Project could be operated to provide water supply benefits to IRWD and Rosedale as well as to provide quantifiable ecosystem benefits to the Delta. Staff will return to the Committee and Board of Directors in July with a recommendation for submitting the grant application for the Kern Fan Project as well as a request for adoption of the required resolution designating an authorized representative to submit the application.

FISCAL IMPACTS:

Funding for the District's proposed cost share for the technical studies, modeling and grant application preparation is included in the FY 2016-17 Capital Budget.

ENVIRONMENTAL COMPLIANCE:

A Final Environmental Impact Report (EIR) for the Stockdale Integrated Banking Project was prepared, certified and approved in compliance with the California Environmental Quality Act

(CEQA) of 1970 (as amended), codified at California Public Resources Code Sections 21000 et. seq., and the State CEQA Guidelines in the Code of Regulations, Title 14, Division 6, Chapter 3. Rosedale, as lead agency, filed a Notice of Determination for the Stockdale Integrated Banking Projects with the County of Kern. IRWD, as a responsible agency, filed Notice of Determinations 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. If and when the third Stockdale project site is identified, subsequent project-level environmental review would need to be conducted prior to implementation of project facilities. It is expected that a new EIR would 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.

June 29, 2017

Prepared by: K. Welch

Submitted by: F. Sanchez/P. Weghorst

Approved by: Paul Cook



SUPPLY RELIABILITY PROGRAMS COMMITTEE

REVISED AMENDMENT NO. 1 TO STOCKDALE INTEGRATED BANKING PROJECT OPERATING AGREEMENT

SUMMARY:

Rosedale-Rio Bravo Water Storage District and IRWD are jointly developing the Stockdale Integrated Water Banking Project in accordance with the Agreement for a Water Banking, Recovery and Exchange Program for the Stockdale West and Stockdale East Properties (Operating Agreement). On April 24, 2017, the Board approved Amendment No. 1 to the Operating Agreement that provided for IRWD's purchase of one-third of the capacity in the Rosedale Cross Valley Canal Return Pipeline (Return Pipeline). The amendment also provided for reimbursement of costs assessed to Rosedale by the Kern County Water Agency (KCWA) that are attributable to the construction of the Cross Valley Canal (CVC) connections at the Stockdale West property. On June 13, 2017, Rosedale's Board of Directors authorized Rosedale's General Manager to execute the amendment subject to non-substantive revisions that affect the pipeline capacity being dedicated to IRWD. Staff and IRWD legal counsel have reviewed Rosedale's revisions and made further modifications that would provide flexibility to IRWD should it decide to expand its water banking projects in the future. Staff recommends that the Committee authorize the General Manager to execute the revised Amendment No. 1 to the Stockdale Operating Agreement for a Water Banking, Recovery and Exchange Program for the Stockdale West and Stockdale East Properties.

BACKGROUND:

In 2010, IRWD purchased the Stockdale West property located west of the Strand Ranch in Kern County. The purpose of the purchase was to allow for the expansion of IRWD's water banking projects. In 2015, Rosedale certified and IRWD approved the Stockdale Integrated Banking Project Final Environmental Impact Report (EIR). The EIR provides for the development of the IRWD Stockdale West and the Rosedale Stockdale East properties to allow both agencies to utilize available storage in the Kern River Fan Area through the construction and operation of recharge and recovery facilities. The project will integrate the developed capacities and facilities into the Rosedale Conjunctive Use Program and will provide dry year water supply reliability for IRWD customers.

Project Operating Agreement:

On February 4, 2016, IRWD and Rosedale executed an Operating Agreement that specifies terms for the development and operation of a long-term water banking and exchange program on the Stockdale West and East properties. The Operating Agreement provides for IRWD and Rosedale to each pay for the design and construction of water banking facilities on their own properties.

Construction of Stockdale West Facilities:

Currently, IRWD is completing construction of recovery facilities on the Stockdale West property including three wells, pipelines and connections to the CVC. IRWD is also completing construction of a new CVC turnout that will provide for conveyance of water from the CVC to the Stockdale recharge basins shown on Exhibit "A". Rosedale, on behalf of IRWD, entered into an agreement with the KCWA, which operates the CVC, to facilitate the construction of the CVC turnout. The executed Operating Agreement did not include a provision allowing IRWD to reimburse Rosedale for related costs that may be assessed by KCWA. As a result, IRWD and Rosedale executed a Memorandum of Understanding (MOU) that provides terms for reimbursements by IRWD and commits the parties to formally memorialize these terms in an amendment to the Operating Agreement.

Recently, IRWD constructed a pipeline connection from the Stockdale West wells to Rosedale's Return Pipeline that will convey water recovered from the Stockdale West wells to the CVC, as shown in Exhibit "B". Prior to construction of this pipeline connection, Rosedale and IRWD entered into a license agreement for IRWD's use of the Return Pipeline. In the license agreement, IRWD's future use of the Return Pipeline is subject to execution of an amendment to the Operating Agreement covering agreed terms for IRWD's purchase of capacity in the Return Pipeline.

In August 2016, the Board of Directors approved terms for IRWD to acquire one-third of the capacity in the Return Pipeline in the amount of \$201,000 and authorized staff to work with Rosedale to develop and execute an amendment to the Operating Agreement to purchase the capacity rights in accordance with the approved terms.

Amendment No. 1 to Operating Agreement:

On April 24, 2017, the Board of Directors approved the execution of Amendment No. 1 to the Operating Agreement. The amendment memorialized the reimbursement terms established in the MOU and provided for IRWD to acquire capacity rights in the Return Pipeline. Specifically, the amendment to the Operating Agreement allowed for:

- IRWD capital cost participation in the amount of \$201,000 to purchase one-third of the capacity in the Rosedale CVC Return Pipeline, and
- IRWD reimbursement to Rosedale for the IRWD share of costs associated with the construction of the CVC turnout to the Stockdale West Ranch recharge facilities.

The Board of Directors authorized the General Manager to execute Amendment No. 1 to the Operating Agreement, subject to non-substantive changes or to substantive changes as approved by the Supply Reliability Programs Committee.

Proposed Revisions to Amendment No. 1:

On June 13, 2017, the Rosedale Board of Directors approved Amendment No. 1 subject to substantive revisions that would reduce IRWD's capacity purchase in the Return Pipeline from one-third of the total capacity to the actual needed capacity. The Rosedale revisions would allow IRWD to purchase the capacity necessary to accommodate the groundwater recovery rate from the Stockdale West Project, or approximately 15 cubic feet per second (cfs), which represents an 18.75% proportional share of the capacity in the Return Pipeline. Based on Rosedale's \$603,000 in actual costs for the Return Pipeline, IRWD's revised capital participation amount for 18.75% proportional share of the pipeline capacity is \$113,063.

Staff and IRWD legal counsel have made further revisions to the amendment that ensure that IRWD shall have an option or first right of refusal to purchase additional available capacity in the Return Pipeline should IRWD expand its water banking projects with Rosedale. A redline copy of the revised Amendment No. 1 to the Operating Agreement is included as Exhibit "C". At the Committee meeting staff will provide an overview of the revisions that have been made to the document. Staff recommends the Supply Reliability Programs Committee authorize the General Manager to execute the revised Amendment No. 1 to the Stockdale Operating Agreement.

FISCAL IMPACTS:

Project 03766 is included in the FY 2016-17 Capital Budget to provide for the construction of the Stockdale West Recovery Facilities. Sufficient funds exist to acquire capacity rights in the Rosedale CVC Return Pipeline for \$113,063, as well as to reimburse Rosedale for costs assessed to Rosedale by KCWA that are attributable to the construction of the Stockdale West turn-out.

ENVIRONMENTAL COMPLIANCE:

This project is 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 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. 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.

RECOMMENDATION:

That the Committee authorize the General Manager to execute the revised Amendment No. 1 to the Stockdale Operating Agreement for a Water Banking, Recovery and Exchange Program for the Stockdale West and Stockdale East Properties.

LIST OF EXHIBITS:

- Exhibit "A" – Cross Valley Canal Turn-out from the Stockdale West Ranch
- Exhibit "B" – Connection to the Rosedale Cross Valley Canal Return Pipeline
- Exhibit "C" – Revised Amendment No. 1 to the Agreement for a Water Banking, Recovery and
Exchange Program for the Stockdale West and Stockdale East properties

Exhibit "A"

Cross Valley Canal Turnout to Stockdale West Ranch

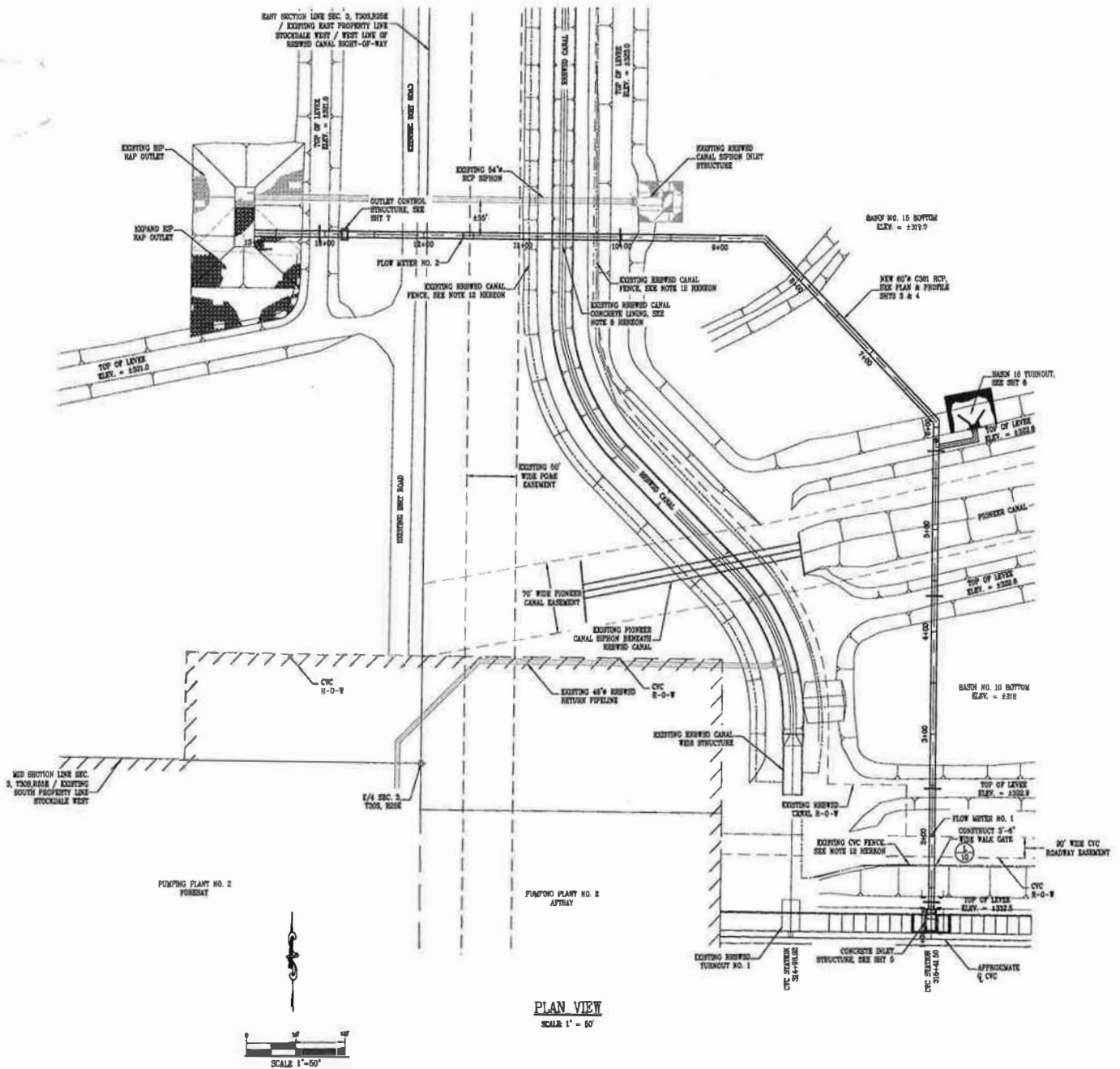


Exhibit "B"

Connection to Rosedale Cross Valley Canal Return Pipeline

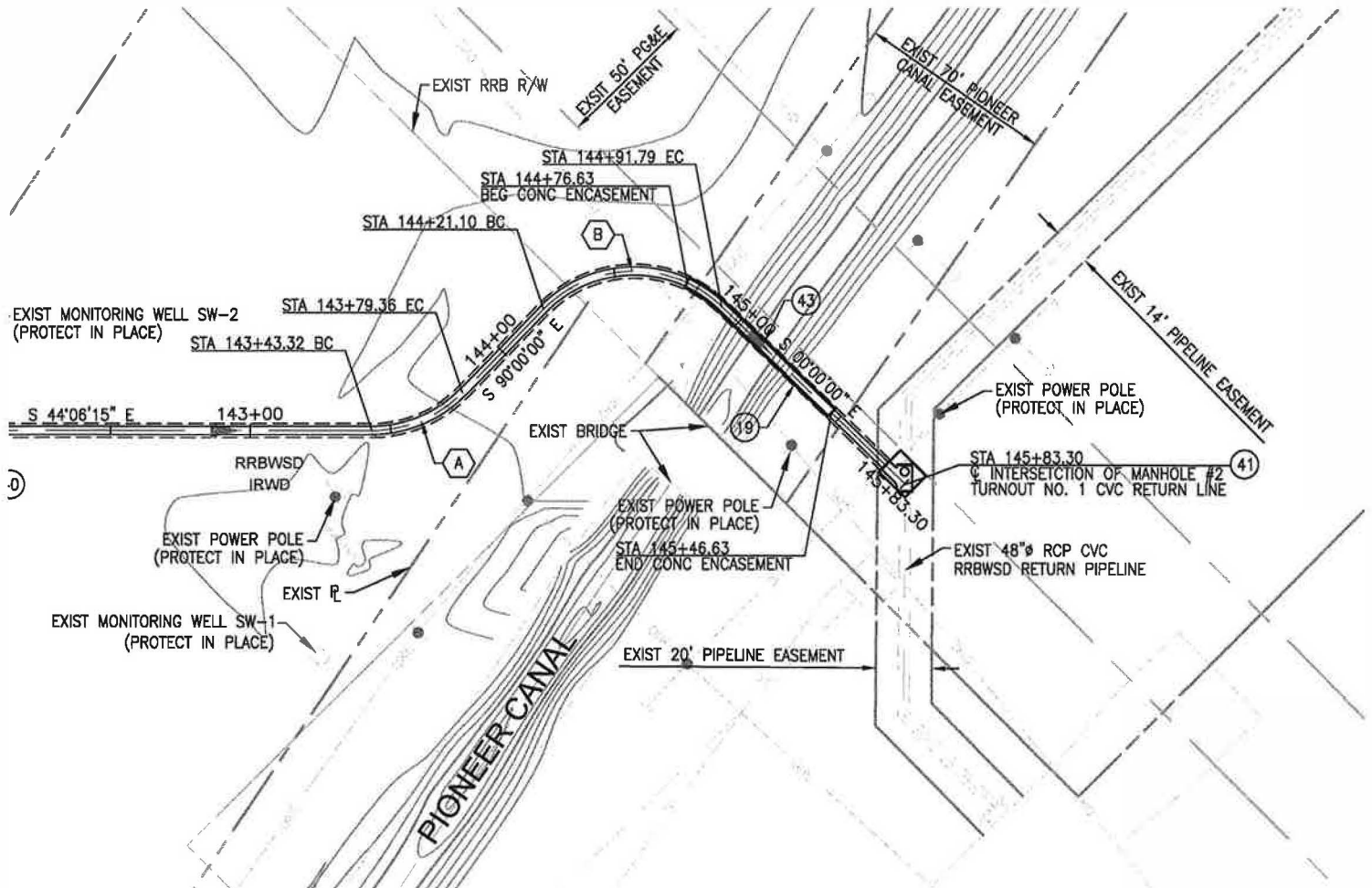


EXHIBIT "C"

06/12/2017 draft (RRB Revisions)

AMENDMENT NO. 1

To

AGREEMENT

ROSEDALE-RIO BRAVO WATER STORAGE DISTRICT
AND
IRVINE RANCH WATER DISTRICT
FOR A
WATER BANKING AND EXCHANGE PROGRAM
[Stockdale West and Stockdale East Properties]

This Amendment ("Amendment") is executed by the Parties on _____, 2016⁷, to amend the below-recited agreement (Water Banking Agreement).

RECITALS:

A. The Parties entered into the agreement between IRWD and Rosedale entitled *Agreement – Rosedale-Rio Bravo Water Storage District and Irvine Ranch Water District for a Water Banking, Recovery and Exchange Program (Stockdale West and Stockdale East Properties)*, including any mutually agreeable extensions, with an effective date of February 4, 2016 ("Water Banking Agreement"). Capitalized terms used herein shall have the meanings ascribed hereto in the Water Banking Agreement.

B. In connection with the use of the Stockdale West Property under the Water Banking Agreement, the parties have agreed to enter into a "Pipeline License Agreement For Connection Into And Use Of District's CVC Turnout No. 1 CVC Return Line Kern County APN: 160-020-04" (the "License").

C. Rosedale-Rio Bravo Water Storage District ("RRB") constructed the Return Line, defined below, as described in the Project EIR, without cost participation by Irvine Ranch Water District ("IRWD"). The Return Line is depicted in Exhibit "A" hereto.

D. Prior to the effectiveness of the License, the Parties desire to set forth terms for IRWD's capital cost reimbursement for, and priority rights in, the Return Line, proportional to the capacity therein that will be allocated to IRWD for use with IRWD's wells on its Stockdale West property ~~and future approved IRWD projects.~~

E. The Parties have determined that as payment for its proportional share of RRB's capital cost of the Return Pipeline, IRWD shall pay to RRB the amount ~~\$201,000~~ \$113,063.625, agreed by the Parties to represent ~~one-third~~ IRWD's proportional share (18.75%) of RRB's capital cost for the design and construction of the Return Pipeline.

F. The Parties intend that upon payment of the proportional share of the Return Pipeline to RRB, IRWD shall receive first priority to the use of ~~one-third a portion~~ of the Return Pipeline's ~~permitted 80 cubic feet per second ("cfs") of capacity (- 26.6 cfs) and one-third of the Return Pipeline's unpermitted 120 cfs of capacity (- 40 cfs; total of 33 1/3 % or 66.6 cfs of permitted and unpermitted) recovery capacity~~ for IRWD's use in conveying water from IRWD's Stockdale West ~~return-recovery facilities to the CVC and future approved IRWD projects;~~ ~~subject to permitting as to the use of currently unpermitted capacity.~~

G. The Parties intend that should IRWD and RRB expect to expand their joint water banking projects, that IRWD will have the option or first right of refusal to purchase additional available capacity in the Return Pipeline.

H. IRWD is installing the CVC Connections, defined herein, as part of the Stockdale West project. In connection with the installation of the CVC Connections, RRB has or will incur KCWA charges.

I. The Effective date of this Amendment ("Effective Date") shall be the date it is executed by the second Party to execute it.

AMENDMENT

1. The Water Banking Agreement is amended as provided below, for the purpose of (1) setting forth the capital cost participation, priority use rights and operation of the Return Line as part of the Stockdale West Facilities and (2) setting forth IRWD's obligation to pay and reimburse RRB for IRWD's share of all costs, including KCWA charges, attributable to the construction of the CVC Connections as part of the Stockdale West Facilities. Provisions of the Water Banking Agreement will apply to the Return Line and the CVC Connections except as provided otherwise in this Amendment No. 1.
2. Subparagraph 1.B of the Water Banking Agreement is amended to read as follows:

B. Stockdale West Property. The Stockdale West property will be developed for recharge by constructing recharge basins of varying shape, size, and depth, with berms, in, over and upon up to approximately 265 acres (or 82%) of the Stockdale West property. The Stockdale West Property will be developed for recovery by constructing wells the number and location of which will be determined based on modeling of subsurface conditions at the site. The facilities constructed on the Stockdale West property are herein referred to as "Stockdale West Facilities". The Stockdale West Facilities shall include, but are not limited to, the CVC Turnout located approximately

125 feet east of the existing RRB Turnout No. 1 in Pool 3 of the CVC in the northern portion of the Strand Ranch Integrated Banking Project, and the CVC Turn-in located primarily on the Stockdale West property and connecting to the Return Line, defined below (collectively, the CVC Turnout and CVC Turn-in are defined as the “CVC Connections”).

3. Subparagraph 1.E is added to the Water Banking Agreement, to read as follows:

E. **Return Line.** The ~~Project Facilities and the~~ Stockdale West Facilities will also include IRWD’s connection to and ~~participation in a one-third proportional share of the recovery capacity permitted and unpermitted (by KCWA) capacity (66 2/3 cfs of 200 cfs)~~ of the CVC Turnout No. 1 CVC Return Line (the “Return Line”). On or prior to the Effective Date of this Amendment, IRWD shall pay to Rosedale the amount of ~~\$201,000~~ \$113,063.625, agreed by the parties to represent ~~one-third~~ IRWD’s proportional share (18.75%) of Rosedale’s capital cost for the design and construction of the Return Line.

4. Subparagraph 2.A.(1) is amended to read as follows:

A. **Priority Rights/Unused Capacity.** Except as provided in Section 2.B. below:

(1) IRWD shall have the priority right to use all recharge and recovery capacity of the Stockdale West Facilities for Project purposes. This shall include the IRWD’s one-third proportional share of the permitted and unpermitted (by KCWA) recovery capacity of RRB’s Return Line (66 2/3 cfs of 200 cfs). More particularly, IRWD shall have a priority right to the use of the Return Line for recovery purposes only, up to the actual constructed capacity of the three wells constructed by IRWD on the Stockdale West property, which is estimated to be approximately 5 cfs per well (for a total recovery capacity of approximately 15 cfs) of one-third of the Return Pipeline’s permitted 80 cubic feet per second (“cfs”) of capacity (- 26.6 cfs) and one-third of the Return Pipeline’s unpermitted 120 cfs of capacity (- 40 cfs). RRB shall have the right to use any and all recharge and recovery capacity of the Stockdale West Facilities, including the Return Line, when not being used by IRWD. ~~It is understood that rights to use capacity not permitted by KCWA will not be effective until such permitting occurs.~~

5. Subparagraph 4.C is added to the Water Banking Agreement, to read as follows:

C. **Reimbursement of KCWA Charges Relating to Construction of CVC Connections.** IRWD agrees to pay and reimburse RRB for IRWD’s share of all costs, including KCWA charges, attributable to the construction of the CVC Connections, including costs and liability incurred by RRB pursuant to the Agreement Between the Kern County Water Agency and Rosedale-Rio Bravo Water Storage District For

Construction, Operation, and Maintenance of Stockdale West Turnout, a Permanent Turnout Within the Cross Valley Canal Right Of Way (CVC # 15001), dated December 10, 2015.

6. In the event IRWD expands its water banking projects with RRB, IRWD shall have the option to purchase additional available capacity in the Return Line for a payment amount that is mutually acceptable to the Parties.

6.7. In the event RRB receives a bona fide offer to transfer rights or capacity in the Return Line to a third party, IRWD shall have a right of first refusal as to such rights or capacity in the Return Line for use in water banking projects with RRB for a payment amount that is mutually acceptable to the Parties.

7.8. The License shall become effective on the Effective Date.

8.9. IRWD shall pay OME&R costs with respect to its use of the Return Line, as provided in Section 9.E of Water Banking Agreement. IRWD shall not be charged for any additional administrative or other costs with respect to the Return Line, except as expressly provided in this Amendment No. 1.

IN WITNESS WHEREOF, each Party has executed this Agreement on the date set forth below opposite its signature, said Agreement to be effective on the later of the two dates, i.e., when both Parties have signed this Agreement (the "Effective Date").

Date: _____

IRVINE RANCH WATER DISTRICT

By: _____

Title: _____

Date: _____

ROSEDALE-RIO BRAVO WATER
STORAGE DISTRICT

By: _____

By: _____

EXHIBIT A

