AGENDA
IRVINE RANCH WATER DISTRICT
SUPPLY RELIABILITY PROGRAMS COMMITTEE
THURSDAY, AUGUST 18, 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 ______

ALSO PRESENT				
	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. UPDATE ON FALLOWING CALLS IN PALO VERDE IRRIGATION DISTRICT – WELCH/SANCHEZ/WEGHORST

   Recommendation: Receive and file.

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

   Recommendation: Receive and file.

7. FORMATION OF GROUNDWATER SUSTAINABILITY AGENCIES IN KERN COUNTY – BENNETT/WELCH/SANCHEZ/WEGHORST

   Recommendation: Receive and file.

INFORMATION - Continued

8. UPDATE ON PROPOSAL FOR IMPLEMENTING AN IN-LIEU PROGRAM IN THE ORANGE COUNTY BASIN – WEGHORST

   Recommendation: Receive and file.

ACTION

9. TERMS TO ACQUIRE CAPACITY RIGHTS IN CROSS VALLEY CANAL RETURN PIPELINE – WELCH/SANCHEZ/WEGHORST

   Recommendation: That the Board approve the proposed terms to acquire capacity rights in Rosedale-Rio Bravo Storage District's Cross Valley Canal Return Pipeline in the amount of $201,000 and authorize staff to work with Rosedale to develop and execute an agreement to purchase the in accordance with these terms.

OTHER BUSINESS

10. A. Directors' Comments

    B. CLOSED SESSION with real property negotiator (Government Code Section 54956.8).

    Property: Parcels 875-240-008, 878-102-006, 878-102-011, 878-102-012, 866-021-004, 866-022-001, 866-022-03, 866-080-004, 866-090-012, 869-020-002, and 869-050-010, County of Riverside
    Negotiating Parties: Hayday Farms, Inc.
    Agency Negotiator: Paul Cook, General Manager
    Purpose of Negotiations: Price and Term of Payment,

    Property: Parcels 824-030-001 and 824-030-002, County of Riverside
    Negotiating Parties: Calabrese
    Agency Negotiator: Paul Cook, General Manager
    Purpose of Negotiations: Price and Term of Payment,

    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, and

OTHER BUSINESS - Continued

10. B. CLOSED SESSION with real property negotiator (Government Code Section 54956.8).

Property: Parcels 827-090-004, 827-090-012, 827-090-013, 827-180-001, 827-180-001-002, County of Riverside
Negotiating Parties: Stroschein
Agency Negotiator: Paul Cook, General Manager
Purpose of Negotiations: Price and Term of Payment.

C. Adjourn

August 18, 2016
Prepared by: K. Welch
Submitted by: F. Sanchez/P. Weghorst
Approved by: Paul Cook

SUPPLY RELIABILITY PROGRAMS COMMITTEE

UPDATE ON FALLOWING CALLS IN PALO VERDE IRRIGATION DISTRICT

SUMMARY:

IRWD recently purchased the Eaton and Martin properties within the Palo Verde Irrigation District (PVID) that will become another element of IRWD's long-term program to increase water supply reliability for its customers. Both properties are enrolled in the Palo Verde Land Management, Crop Rotation and Water Supply Program (Fallowing Program) through agreements with Metropolitan Water District of Southern California and PVID. This report provides an overview of the Fallowing Program, historic fallowing of the Eaton and Martin properties and an update on Metropolitan's current fallowing calls.

BACKGROUND:

In 2016, IRWD purchased the Eaton and the Martin properties in PVID that over the long-term will become an element of IRWD's diverse water supply reliability programs. PVID is located in Riverside and Imperial Counties adjacent to the Colorado River, and has the highest priority rights to water from the Colorado River in California. PVID provides approximately 450,000 acre-feet (AF) of water per year to 91,400 acres of productive farm land on a first priority basis. Additional water is provided on a third priority basis to 16,000 acres of land located in the adjacent mesa area. Both the Eaton and Martin properties include areas that are enrolled in the Fallowing Program.

Fallowing Program Overview:

In 2005, Metropolitan and PVID implemented a 35-year crop rotation / fallowing program whereby Metropolitan makes fallowing payments to participating landowners in PVID to not irrigate a portion of their land for a specific period of time. The conserved agricultural water is then available to Metropolitan for its use. The program provides a flexible water supply for Metropolitan of approximately 100,000 AF per year. Key provisions of the Fallowing Program include:

- The total maximum fallowing allowed in 10 of the 35 contract years is limited to 26,500 water toll acres, which is approximately 29% of PVID's 91,400 acres of lands with Priority 1 water rights;
- The total maximum fallowing allowed in the remaining 25 contract years is limited to 24,000 acres; and
- A minimum base of 6,000 acres must be fallowed each contract year.

Following is a summary of historic fallowing on the Eaton and Martin properties and an overview of Metropolitan's recent fallowing call for 2018 and 2019.

Historic Fallowing on Eaton Property:

The Eaton property consists of approximately 616 acres. IRWD pays water tolls on 598 acres of the property. In July 2005, the previous landowner entered into the standard landowner Fallowing Program agreement with Metropolitan and PVID for a maximum fallowing commitment of 248 water toll acres and a minimum fallowing requirement of 62 water toll acres. The table below shows the history of acres fallowed on the Eaton Property since the commencement of the Fallowing Program.

History of Fallowing on the Eaton Property

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Acres	196	248	112	112	248	248	248	248	62	62	124	248
%	79%	100%	45.16%	45.16%	100%	100%	100%	100%	25%	25%	50%	100%

Per the Fallowing Agreement there is a limit of 10 times that Metropolitan can call for maximum fallowing on enrolled lands. After 10 times, the maximum on the Eaton property can be reduced from 248 to 224 water toll acres. The first two years of the program were not included in this limit, so the Eaton Property has historically had five maximum fallowing calls including 2016.

Historic Fallowing on Martin Property:

The Martin property consists of approximately 80 acres with 73 water toll acres. In May 2005, the previous landowner entered into the Fallowing Program agreement for a maximum fallowing commitment of 25 water toll acres and minimum fallowing of 6 water toll acres. The table below shows the history of acres fallowed on the Martin Property since the commencement of the Fallowing Program.

History of Fallowing on the Martin Property

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Acres	20	25	11	11	25	25	25	25	6	6	13	25
%	79%	100%	45.16%	45.16%	100%	100%	100%	100%	25%	25%	50%	100%

After 10 maximum fallowing calls, the maximum acres would be reduced from 25 to 23 water toll acres. The first two years of the program were not included in this limit, so the Martin Property has had 5 maximum fallowing calls including 2016.

Fallowing Program Calls:

Prior to the start of each contract year, landowners identify to Metropolitan which fields are to be designated for fallowing for the next year based upon Metropolitan's fallowing call percentage. Per the Fallowing Program agreement, Metropolitan issues a two-year fallowing call to landowners one year in advance. Metropolitan's fallowing call cannot be rescinded or reduced. The fallowing calls overlap such that every year is made up of two calls. For example, in 2014 Metropolitan called for 50% fallowing for the 2015 and 2016 years; however, Metropolitan could have made an additional call (one year in advance) for another 50% for 2016 which would have made 2016 a 100% fallowing call.

Fallowing Call for 2018 and 2019:

When IRWD purchased the Eaton and Martin properties in 2016, the fallowing call was 100%. On August 2, 2016, IRWD received Metropolitan's two-year fallowing calls for the periods August 1, 2017, through July 31, 2018 and August 1, 2018, through July 31, 2019. For the 2017-18 year, Metropolitan has called 90% of the maximum water acres which is based on the sum of the second year fallowing level of 50% that was set in the July 2015 fallowing call, plus the new fallowing call of 40%. The current 40% call is in effect for two years from August 1, 2017 through July 31, 2019. The percentage for the second year could be increased if Metropolitan makes another fallowing call before July 31, 2017.

Pursuant to the 2018 and 2019 fallowing call, IRWD will be required to fallow 223 acres on the Eaton property and 23 acres on the Martin property from August 1, 2017 through July 31, 2018. Prior to the due dates, staff will work with the lessees on each of the properties to complete the Land Designation Form which identifies the fields to be fallowed and staff will submit the form to Metropolitan.

At the Committee meeting, staff will present an overview of the acres to be fallowed under Metropolitan's fallowing calls from 2016 through 2019 and the corresponding payments that IRWD is expected to receive.

FISCAL IMPACTS:

None.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

RECOMMENDATION:

Receive and file.

LIST OF EXHIBITS:

None.

August 18, 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 a summary table of the storage, recharge and recovery capacities of existing and planned IRWD water banking projects, including capacities available to IRWD in the Kern Water Bank. A table that provides an update on Strand Ranch recovery and recharge operations and the balance of the stored water in the Kern Water Bank has also been prepared. In addition, maps have been created that show the location of project wells and pipelines and the Cross Valley Canal turn-out locations. At the July 2016 Committee meeting, staff presented a diagram describing the Coordinated Operating, Water Storage, Exchange and Delivery Agreement between Metropolitan Water District of Southern California (Metropolitan), Municipal Water District of Orange County (MWDOC) and IRWD. Staff has prepared an additional diagram depicting the template Wheeling Agreement between Metropolitan, MWDOC and IRWD. At the Committee meeting, staff will provide an overview of this new diagram.

BACKGROUND:

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 wells and pipelines and Cross Valley Canal turn-out locations. The facilities shown on these maps are associated with the Strand Ranch, Stockdale West, Stockdale East and Rosedale Drought Relief Projects. The maps are provided as Exhibits “C” and “D”.

Program Agreement Diagrams:

During the period May through July 2016, staff reviewed with the Committee the diagrams in Exhibits “E”, “F”, “G” and “H” that describe IRWD’s water banking and exchange programs with Rosedale-Rio Bravo Storage District, Buena Vista Water Storage District, Dudley Ridge Water District and Metropolitan. A new diagram has been created to describe the template Wheeling Agreement between Metropolitan, MWDOC and IRWD. This agreement facilitates the conveyance of water that is not State Water Project water that is recovered by IRWD from its Kern County water banking facilities through Metropolitan conveyance facilities to IRWD's service area. The new diagram is presented as Exhibit "I."

FISCAL IMPACTS:

None.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

RECOMMENDATION:

Receive and file.

LIST OF EXHIBITS:

Exhibit "A" – Recharge, Storage and Recovery Capacities of Existing and Planned 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" – Rosedale Water Banking and Exchange Program Agreements Diagram
Exhibit "F" – Buena Vista Long Term Water Exchange Program Diagram
Exhibit "G" – Dudley Ridge Water District Unbalanced Exchange Program Diagram
Exhibit "H" – Metropolitan Water District Coordinated Operating, Water Storage, Exchange and Delivery Agreement Diagram
Exhibit "I" – Template Wheeling Agreement Diagram

Exhibit "A"

TABLE 1
Current and Planned Water Banking Projects
Recharge, Storage and Recovery Capacities
August 18, 2016

WATER BANKING PROJECT	OWNERSHIP AND WELL INFO			ALLOCATED CAPACITY (AF)					1st PRIORITY RECOVERY CONDITIONS (CFS)		2nd PRIORITY RECOVERY CONDITIONS (CFS)	
	IRWD OWNED	WELLS EXISTING	WELLS PROPOSED	TOTAL STORAGE CAPACITY	ANNUAL RECHARGE 1ST PRIORITY	ANNUAL RECHARGE 2ND PRIORITY	ANNUAL RECOVERY 1ST PRIORITY	ANNUAL RECOVERY 2ND 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	18.6	-	-
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	135,495	47,800	19,000	35,080	7,500	70.0	18.6	10.0	0.0

Partner Capacities[4]	38,000	-	-	9,583	-	35.5	35.5	-	-
IRWD Capacities	97,495	-	-	25,497	-	34.5	0.0	-	-

IRWD's recovery ***during*** 6 month partner recovery period (AF)	12,420	0.0	-	-
IRWD's recovery ***after*** 6 month partner recovery period (AF)	13,077	6,733	-	-
TOTALS (AF)	25,497	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)	12.2	18.1	-	-

[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.

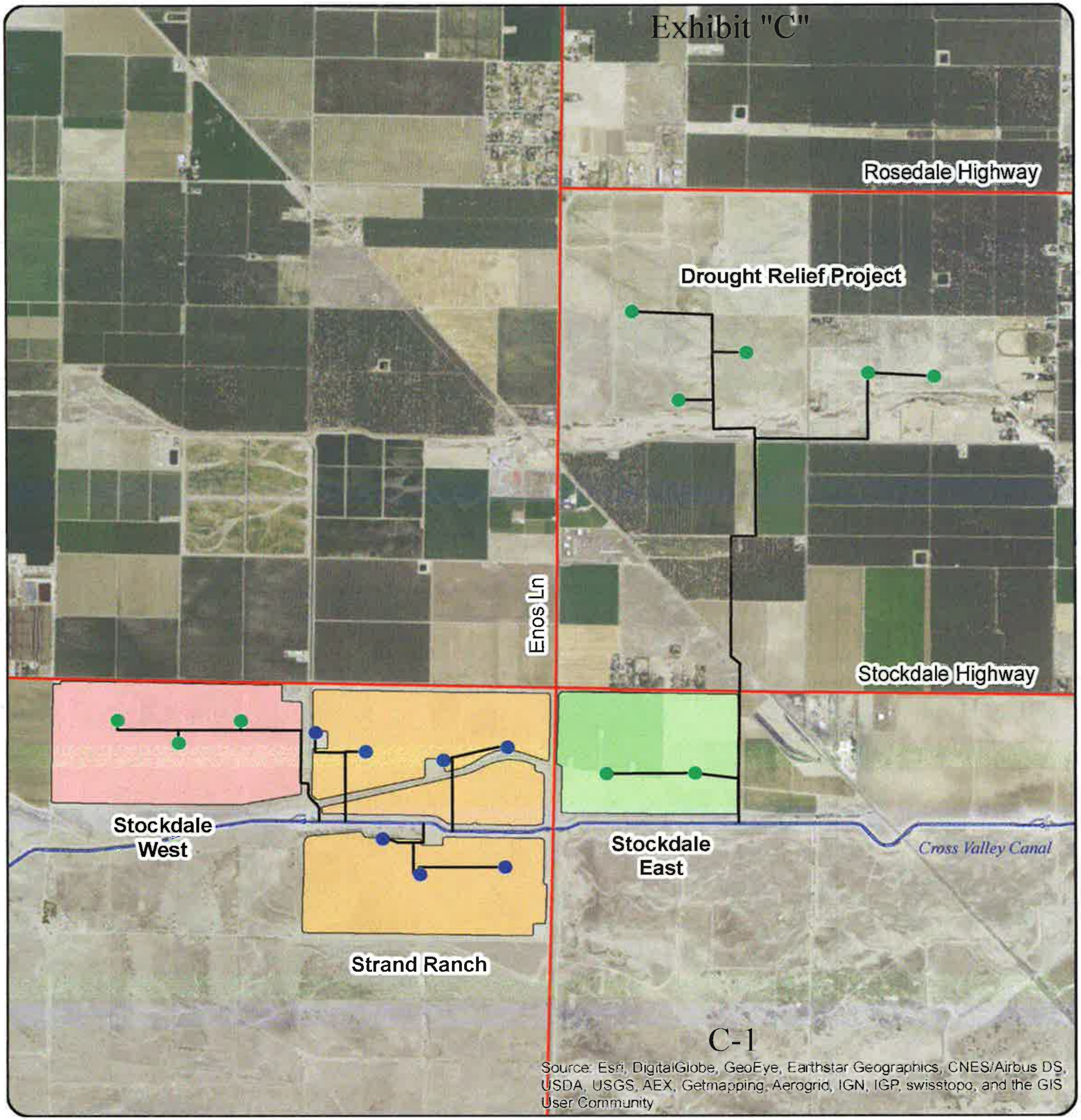
Exhibit "B"

TABLE 2
Strand Ranch Storage, Recharge and Recovery Operations
August 18, 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 Kern County	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	-	-	-	-	-
2016 SWP Allocation (current 60%)[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 2013-2015 SWP allocation (649 AF) and assumes MWD will store 2016 SWP allocation amounts in MWD's system and not at Strand Ranch.
[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"



IRVINE RANCH WATER DISTRICT

Location Map: IRWD Water Banking Projects Wells and Turn-in Pipelines

MAP FEATURES

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

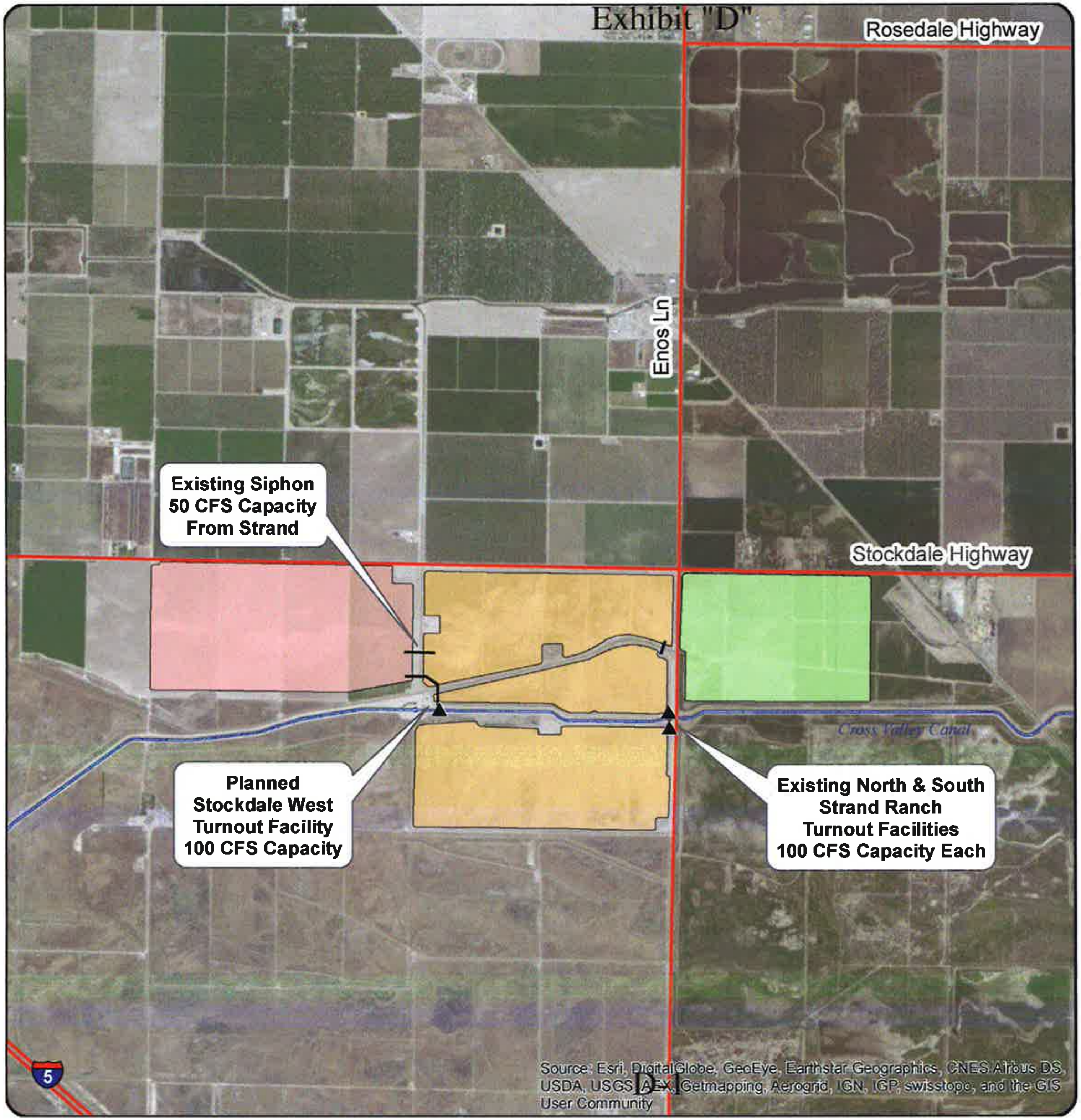
This figure shows the location of IRWD's water banking project sites as well as existing and proposed extraction wells.

0 0.25 0.5 1 Miles

N

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

Exhibit "D"



IRVINE RANCH WATER DISTRICT

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.

N

0 0.25 0.5 1

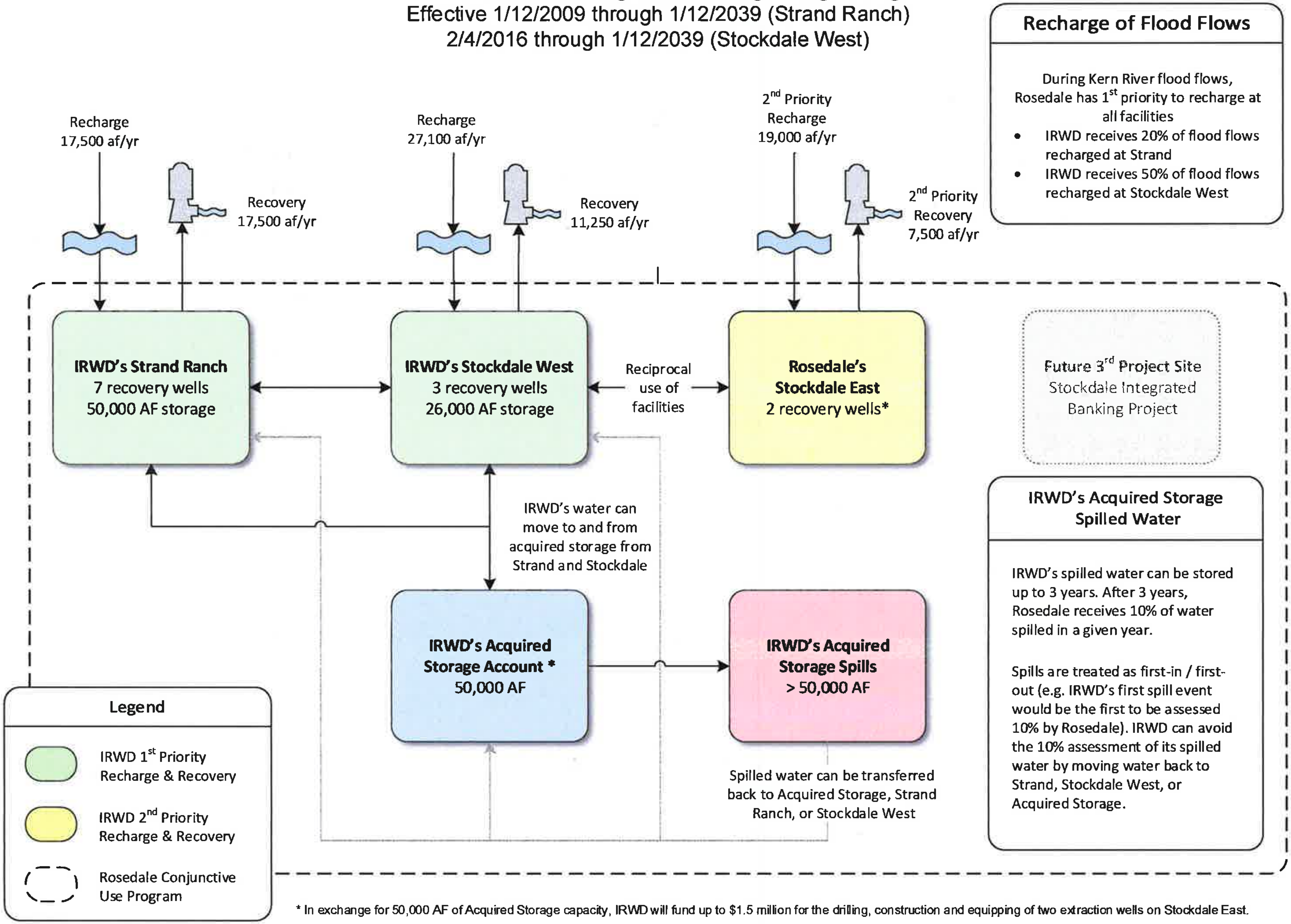
Miles

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

Exhibit "E"

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)

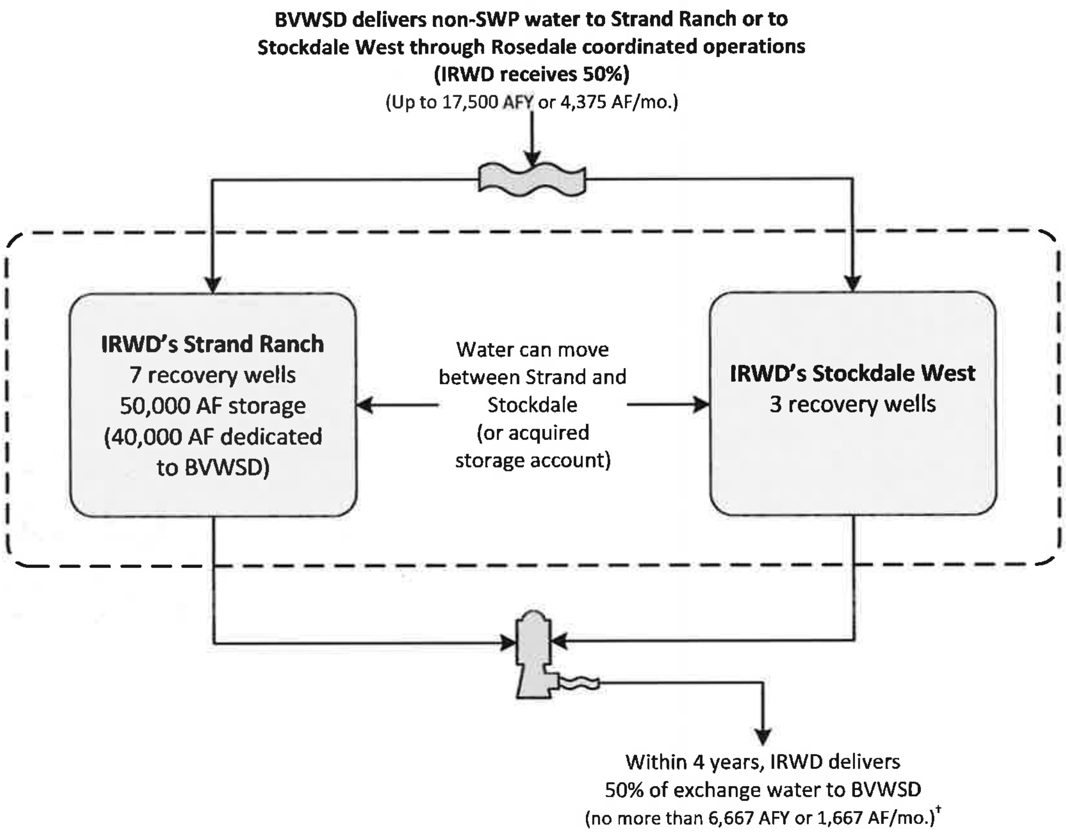


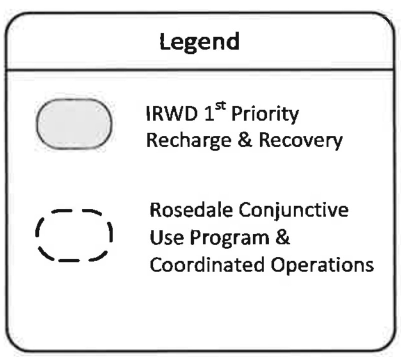
* In exchange for 50,000 AF of Acquired Storage capacity, IRWD will fund up to $1.5 million for the drilling, construction and equipping of two extraction wells on Stockdale East.

Exhibit "F"

Buena Vista Water Storage District Long Term Water Exchange Program

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





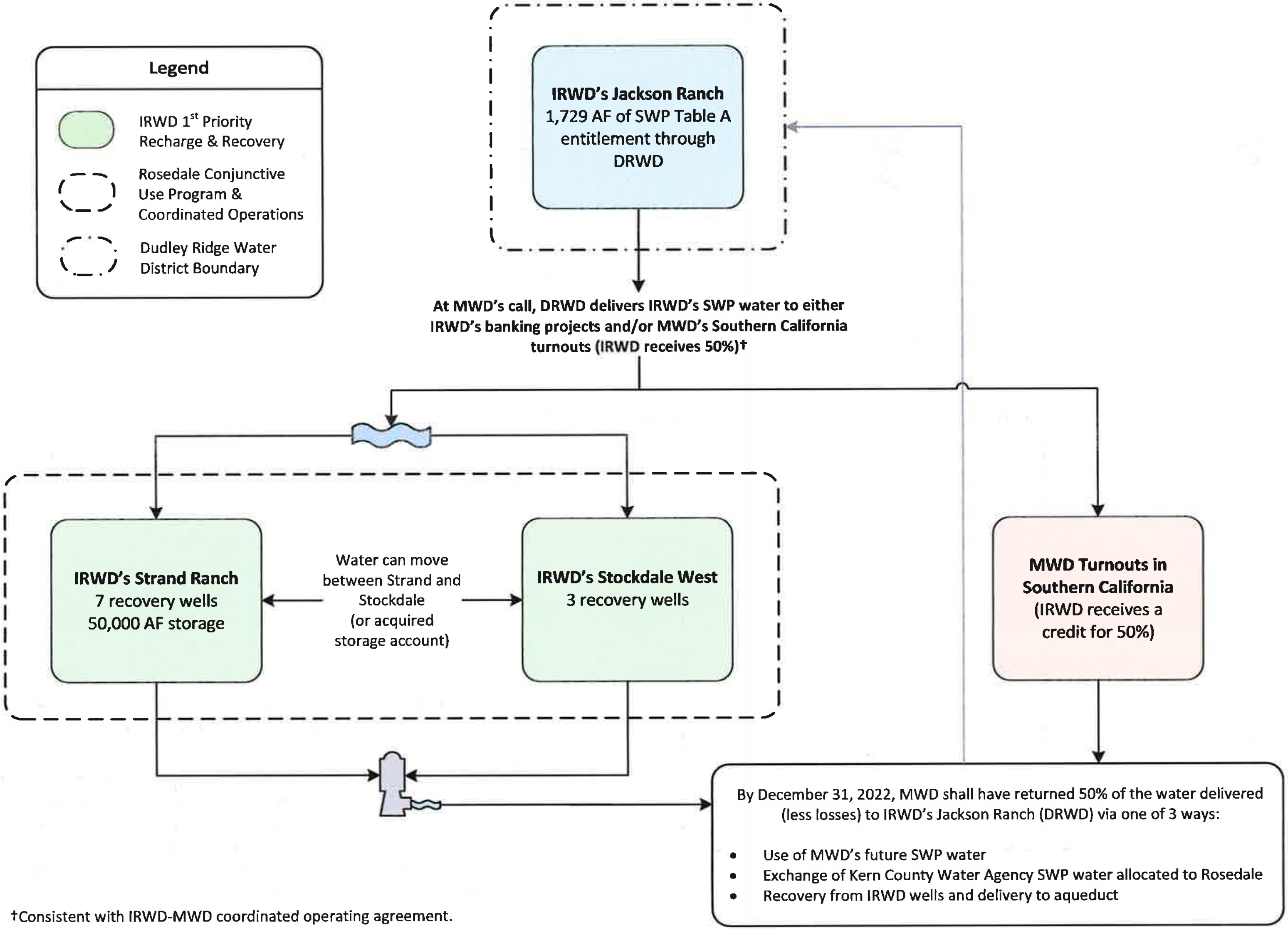
†IRWD shall remit one-half of the exchanged supply less one-half of reasonable losses back to BV no later than December 31st of the 4th year following the associated recharge event. IRWD pays for recovery of water returned to BV. Water to be remitted back to BV may remain in storage at Strand Ranch beyond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

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 "H"

Coordinated Operating, Water Storage, Exchange and Delivery Agreement Between MWD, MWDOC and IRWD

Effective 5/1/2011 through 11/4/2035

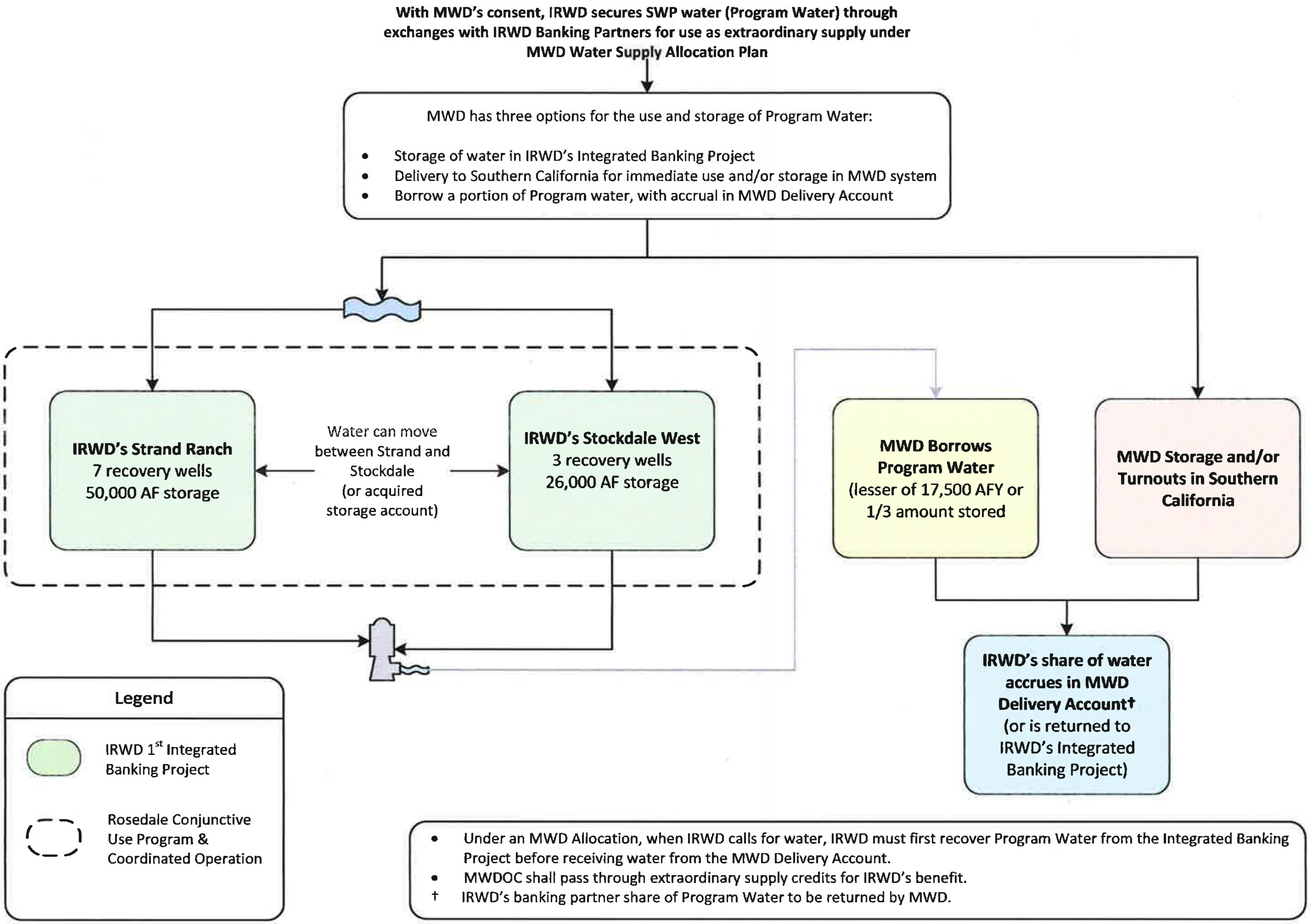
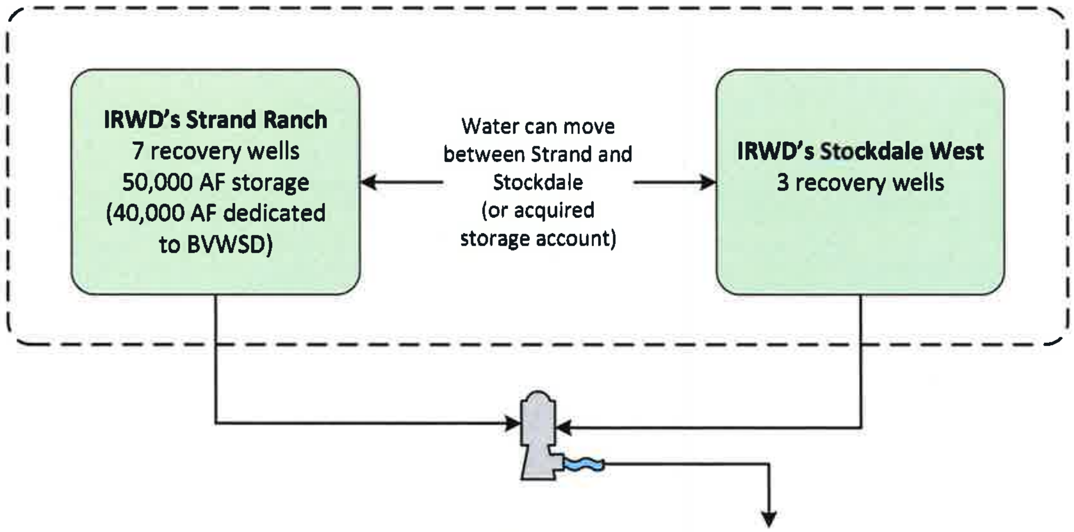


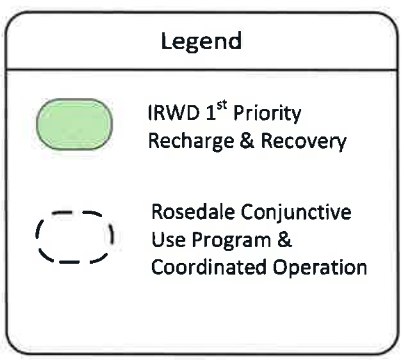
Exhibit "I"

Agreement for Conveyance of Water Between MWD, MWDOC, and IRWD (Wheeling Agreement)

Template for future agreements



IRWD recovers its share of non-SWP water from its Integrated Banking Projects for use as extraordinary supply under a declared MWD Water Supply Allocation. MWD will coordinate the conveyance and delivery of recovered water to be used within IRWD's Service Area. Delivery can also occur through an operational exchange.*



*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.

August 18, 2016
Prepared by: R. Bennett/K. Welch
Submitted by: F. Sanchez/P. Weghorst
Approved by: Paul Cook

SUPPLY RELIABILITY PROGRAMS COMMITTEE

FORMATION OF GROUNDWATER SUSTAINABLITY AGENCIES IN KERN COUNTY

SUMMARY:

On September 16, 2014, the Sustainable Groundwater Management Act (SGMA) was signed into law by Governor Brown. The Act requires the formation of local Groundwater Sustainability Agencies (GSAs) by 2017. GSAs must assess conditions in their local groundwater basins and adopt Groundwater Sustainability Plans (GSP) by the year 2020 or 2022. IRWD's Strand Ranch and Stockdale West water banking facilities are located within the Kern County sub-basin. At the Supply Reliability Committee meeting, staff will present a summary of the various Groundwater Sustainability Agencies that have been formed or are expected to be formed in Kern County.

BACKGROUND:

On September 16, 2014, three bills (SB 1168, AB 1739 and SB 1319) that comprise SGMA were signed into law by the Governor. SGMA was later amended by SB 13 in September 2015. The law's intent is for local and regional agencies to develop and implement sustainable groundwater management plans. Specifically, SGMA does the following:

- Establishes a definition of sustainable groundwater management;
- Establishes a framework for local agencies to develop plans and strategies to sustainably manage groundwater resources;
- Prioritizes basins with the greatest problems (ranked as high and medium priority); and
- Sets a 20-year timeline for implementation.

Key SGMA Requirements:

SGMA mandates that a GSA be formed for each basin by June 30, 2017. Some of the key requirements of SGMA related to the formation of a GSA include:

- All high and medium priority basins must have a GSA made up of one or more local agencies to develop and implement a GSP for the respective basin;
- Groundwater basins managed by a special district, such as the Orange County Water District, are deemed the exclusive groundwater management agency within the basin boundary;
- Adjudicated groundwater basins are not required to form a GSA or develop a GSP;
- Any local agency or combination of local agencies overlying a groundwater basin may form a GSA. Agencies may adopt a single GSP for an entire basin or combine a number of GSPs created by multiple GSAs;

- If there is more than one GSA within a basin, there must be a coordination agreement among all GSAs; and
- If an area within a basin is not within a GSA, the local county is presumed to be the GSA for that area.

Kern County Sub-basin:

The Kern County Sub-basin (Kern Basin) of the San Joaquin Valley Groundwater Basin is bounded on the north by the Kern County line and Tule Groundwater Sub-basin, on the east and southeast by the Sierra Nevada foothills and Tehachapi mountains and on the southwest and west by the San Emigdio Mountains and Coast Ranges. The Kern Basin is an unadjudicated basin and the Department of Water Resources (DWR) has designated it as high priority based on the basin's reliance on groundwater. The high priority designation is not an indication that a basin needs to be managed differently than other groundwater basins. IRWD's Strand Ranch and Stockdale West water banking projects are located in the Kern Basin.

GSAs in the Kern Fan Area:

Based on a review of DWR's website and recent discussions with Rosedale-Rio Bravo Water Storage District, the following four agencies have applied for GSA formation in the Kern Basin:

- Buena Vista Water Storage District;
- Kern River Groundwater Sustainability Agency;
- Greenfield County Water District; and
- County of Kern

Exhibit "A" shows the boundary of the Kern Basin as defined by DWR and the boundaries of the current and expected GSAs. The Buena Vista and Greenfield GSAs include all of the lands contained within their respective district boundaries within Kern County. The Kern River GSA contains lands within the City of Bakersfield, Kern Delta Water District and the Kern County Water Agency Improvement District 4. The County of Kern's recent GSA application was created to overlap the other existing GSAs to ensure that the County's land use issues are addressed by each GSA. If more GSAs are added, the County of Kern may be expected to expand its coverage.

The Kern Groundwater Authority (KGA) is a Joint Powers Authority that was formed in 2014, prior to the signing of SGMA. The KGA Board of Directors is made up of elected and appointed officials from local water and city interests, and includes 19 members. Exhibit "B" includes a list of the current KGA members. KGA is managed by Rosedale's General Manager. The authority's current vision is to become a GSA in the Kern Basin to preserve and maintain local control of groundwater resources and provide long-term surety for all basin users. In the near future, the KGA expects to file a Notice of Intent to the DWR to become the fifth GSA in the Kern Basin.

The KGA boundary includes the service area lands of its members and also includes the un-districted, "fringe areas" such as IRWD's Strand Ranch and Stockdale West and Rosedale's Stockdale East properties. Per Rosedale, managed water banking programs, such as IRWD's Strand Ranch and Stockdale West Integrated Banking Projects, with extraction limited by the amount of water recharged less losses, may be included within a GSA but are not expected to be impacted by the development of a GSA or implementation of a GSP.

Next Steps:

Staff will continue monitoring GSA-related activities within the Kern Basin including KGA's GSA formation and its development of a GSP. Per discussions with Rosedale, there is the potential for one or more of the existing Kern Basin GSAs to merge with another and withdraw their respective GSA applications. In the future, staff will provide further updates to the Committee on changes affecting GSA formation in the Kern Basin.

FISCAL IMPACTS:

None.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

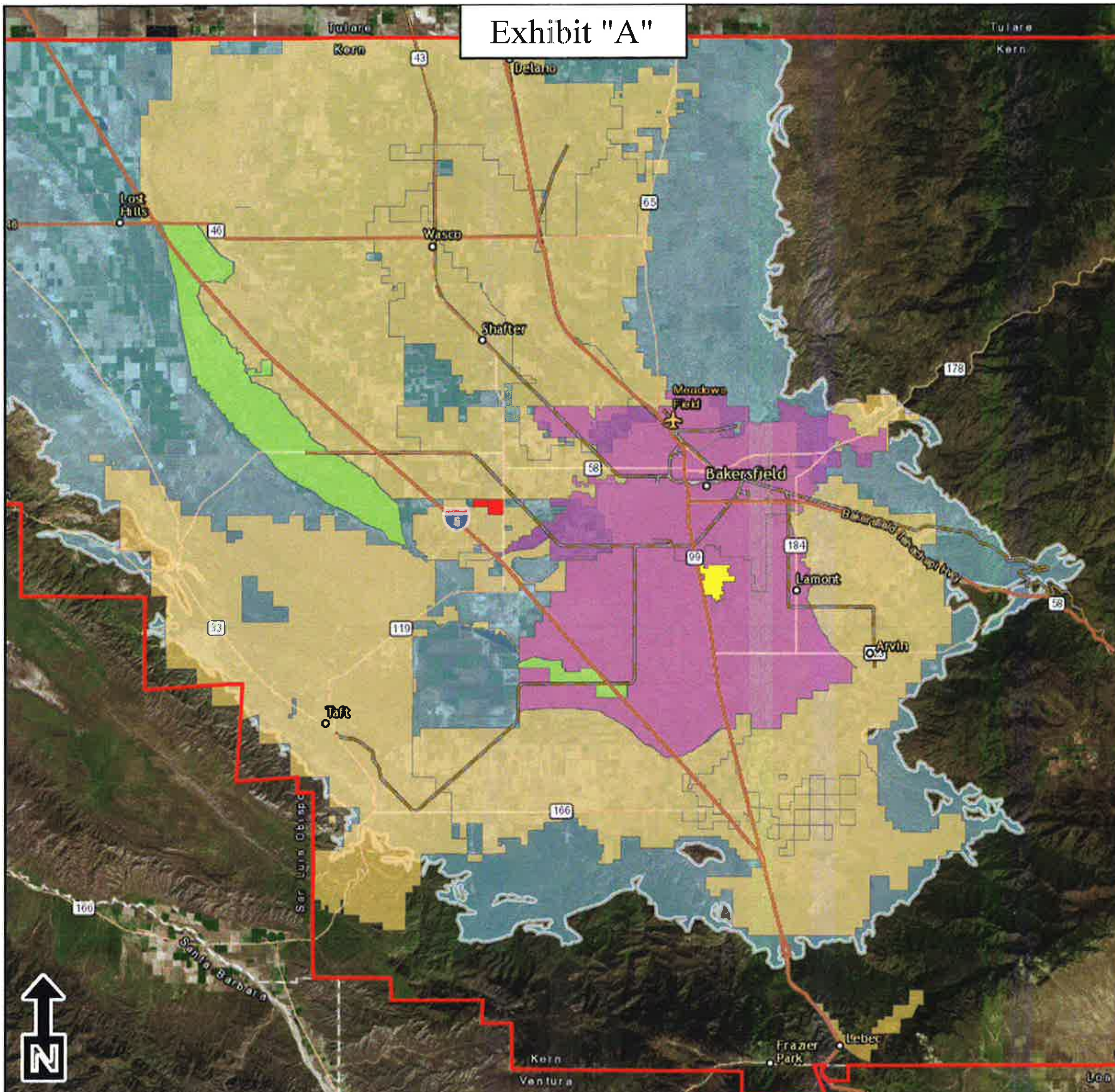
RECOMMENDATION:

Receive and file.

LIST OF EXHIBITS:

Exhibit "A" – Kern County Sub-basin – Existing and Anticipated Groundwater Sustainability Agencies
Exhibit "B" – Kern Groundwater Authority Members

Exhibit "A"



Kern County Groundwater Sustainability Agencies (GSAs)

MAP FEATURES

- Greenfield County WD & Kern County GSA
- Buena Vista Water Storage District GSA
- Kern River & Kern County GSA
- Kern Groundwater Authority GSA (Anticipated)
- Kern County Sub-Basin (Not currently in GSA)
- IRWD Properties
- Kern County Boundary
- Kern County Sub-Basin Boundary

0 4 8 16 24 Miles

Date Prepared: 08/03/2016

EXHIBIT "B"

Kern Groundwater Authority Members

#	Member	Existing GSA Representation
1	Arvin-Edison WSD	
2	Cawelo WD	
3	City of Shafter	
4	Kern County Water Agency Improvement District 4	Yes
5	Kern County Water Agency	Yes
6	County of Kern	Yes
7	Kern Delta WD	
8	Kern-Tulare WD	
9	Kern Water Bank Authority	
10	Olcese WD	
11	North Kern WSD	
12	Rosedale-Rio Bravo WSD	
13	Semitropic WSD	
14	Shafter-Wasco ID	
15	Southern San Joaquin Municipal Utility District	
16	Tejon-Castaic WD	
17	West Kern WD	
18	Westside District Water Authority	
19	Wheeler Ridge-Maricopa WSD	

August 18, 2016
Submitted by: P. Weghorst
Approved by: Paul Cook

SUPPLY RELIABILITY PROGRAMS COMMITTEE

UPDATE ON PROPOSAL FOR IMPLEMENTING AN IN-LIEU EXCHANGE PROGRAM IN THE ORANGE COUNTY BASIN

SUMMARY:

On August 10, 2016, staff provided a letter to Orange County Water District (OCWD) outlining a conceptual In-lieu Exchange Program that would facilitate higher groundwater levels by allowing individual groundwater producing agencies (Producers) to voluntarily improve water supply reliability by storing water in the Orange County Basin. The concepts were discussed at the OCWD Board of Directors Administration and Finance (A&F) Committee meeting on August 11, 2016. Staff will provide an overview of the initial In-lieu Exchange concept, the August 11 discussion at OCWD, and the anticipated next steps.

BACKGROUND:

At the July 2016 Joint Planning Committee meeting of the Board of Directors of OCWD and Municipal Water District of Orange County (MWDOC), IRWD was requested to prepare an overview of how groundwater levels in the Orange County Basin could be restored to much higher levels. On August 10, 2016, staff responded to this request by providing OCWD a letter that outlines a conceptual approach to implementing an In-lieu Exchange Program that would facilitate higher water levels by allowing Producers to voluntarily improve water supply reliability by storing water in the Basin. The letter was addressed to the OCWD General Manager and is attached as Exhibit "A".

On August 11, 2016 staff attended the A&F Committee meeting at OCWD where a conceptual program was discussed during a agendized discussion of options for filling the Basin. The discussion at OCWD was generally positive and productive, with the A&F Committee showing interest in exploring the concept further. At the Supply Reliability Programs Committee meeting, staff will provide an overview of the August 11 discussion and the anticipated next steps associated with working with OCWD staff and the Producers in refining and developing consensus on the implementation of an In-lieu Exchange Program.

FISCAL IMPACTS:

None.

ENVIRONMENTAL COMPLIANCE:

None.

RECOMMENDATION:

Receive and file.

LIST OF EXHIBITS:

Exhibit "A" – IRWD Letter to OCWD on Methods to Restore Groundwater Levels in the Orange County Basin (dated August 10, 2016).

EXHIBIT "A"

IRVINE RANCH WATER DISTRICT

15600 Sand Canyon Avenue • P.O. Box 57000 • Irvine, California 92619-7000 • (949) 453-5300 • www.irwd.com

August 10, 2016

Mr. Mike Markus, P.E.
General Manager
Orange County Water District
18700 Ward Street
Fountain Valley, CA 92708

Subject: Methods to Restore Groundwater Levels in the Orange County Basin

Mike:

At the July 2016 Joint Planning Committee meeting of the Board of Directors of Orange County Water District (OCWD) and Municipal Water District of Orange County (MWDOC), IRWD was requested to prepare an overview of how groundwater levels in the Orange County Basin could be restored to traditional (much higher) levels. The purpose of this letter is to share concepts for expanding on the list of approaches to refilling the Basin as follows:

1. Lower the Basin Production Percentage (BPP), in accordance with the OCWD Board-approved Groundwater Management Plan.
2. Purchase the maximum amount of imported water available to benefit the basin *directly* through recharge and *indirectly* through a traditional in-lieu program.
3. Establish a new In-lieu Exchange Program through which groundwater producer agencies can voluntarily store water without financially impacting OCWD.

Management of the Basin Production Percentage (BPP):

In 2013, the OCWD Board of Directors adopted a policy to establish a stable BPP with the goal of achieving an average BPP of 75%. For the purpose of sustainably managing the Basin for current and future generations, OCWD has established within its Groundwater Management Plan the Storage Management Actions presented in the following table:

Orange County Water District
Groundwater Basin Storage Management Actions*

Accumulated Overdraft	Basin Management Actions to Consider
Less than 100,000 acre-feet	Raise the BPP.
100,000 to 300,000 acre-feet	Maintain and/or raise BPP towards 75% goal.
300,000 to 350,000 acre-feet	Seek additional supplies to refill Basin and/or lower the BPP.
Greater than 350,000 acre-feet	Seek additional supplies to refill Basin and lower the BPP.

* OCWD Board-adopted Policy

The current estimated accumulated overdraft of the Basin is 370,000 acre-feet (AF). By June 30, 2017, OCWD staff predicts that the accumulated overdraft will be reduced to 353,000 AF in part due to purchases of 50,000 AF of water from Metropolitan Water District of Southern California (Metropolitan). These purchases are included in OCWD's Fiscal Year 2016-17 Operating Budget.

Taking Action Now:

In accordance with OCWD's Groundwater Management Plan, actions should have already been taken to reduce the BPP and to seek additional supplies of water to fill the basin. We understand that OCWD is currently taking water from Metropolitan at full direct recharge capacity. OCWD could be taking full advantage of additional existing supplies that are currently available from Metropolitan through the implementation of a multi-year in-lieu recharge program. Under such a program, the Producers that volunteer to participate would pay OCWD the Replenishment Assessment (RA) ($402 per acre-foot) and the avoided cost of pumping ($97 per acre-foot) while OCWD would pay the cost of the Full Service Treated Tier-1 water and associated costs to Metropolitan ($1,044 per acre-foot). Since the Producer would have paid to OCWD the RA for the same amount of water had it been produced from the Basin, the payments to the OCWD by each participating producer would not offset OCWD costs of the full-service water from Metropolitan. This would result in a net cost to OCWD of $947 per acre-foot ($1,044 – $97) that would need to be budgeted for and recovered through corresponding increases in the Replenishment Assessment (RA).

To implement an in-lieu recharge program in a way that is cost neutral to OCWD, it is recommended that OCWD consider implementing an In-lieu Exchange Program as described below.

Conceptual In-lieu Exchange Program:

The OCWD Act allows for the execution of exchanges in the Basin. A hybrid in-lieu recharge program could be created that incorporates exchange concepts for the purpose of allowing individual producers to improve reliability by storing water in the Basin. Conceptual principles associated with the implementation of such an In-lieu Exchange Program are described in the following:

- The Producers would have the option to voluntarily purchase Full-Service Tier-1 treated water from Metropolitan in-lieu of pumping groundwater.
- The reduction in pumping by the participating Producers would result in additional water in storage in the aquifer that would be received by OCWD in exchange for the Producers' right to recover an equivalent amount of water in the future to offset future pumping above the BPP.
- The participating Producers would pay Metropolitan the cost of the Full-Service Tier-1 treated water and associated costs ($1,044 per acre-foot).
- The participating Producers would also pre-pay the RA to OCWD for the future recovery of the water at the current OCWD Board adopted rate ($402 per acre-foot).

- OCWD would provide the participating producers a credit for the future recovery of the water for use in-lieu of paying RA and Basin Equity Assessments on future pumping above the BPP.
- OCWD could extinguish the credits by reimbursing a participating Producer for the Full-Service Tier-1 treated rate that was previously paid by the Producer ($1,044 per acre-feet).
- Under this program, OCWD would be cost-neutral.

An overview of the how such an In-lieu Exchange Program would work financially is provided in Exhibits "A" and "B". This concept would provide a creative solution to increasing the amount of water stored in the Basin, improving water supply reliability to the producing agencies, while ensuring that OCWD remains cost-neutral.

We hope that the concepts described above will assist you in your discussion with the OCWD Board of Directors Administration / Finance Issues Committee meeting on August 11, 2016 where you will be presenting options to refill the Basin. We look forward to working with you and your staff as well as the interested producer agencies in refining the In-Lieu Exchange Program concepts presented above. Please contact me at (949) 453-5590 or cook@irwd.com so that we can schedule a meeting to discuss these concepts.

Sincerely,

Paul A. Cook, P.E.
General Manager

EXHIBIT "A"

Example of Recharge of Water Through In-Lieu Exchange

- Costs of Recharge -

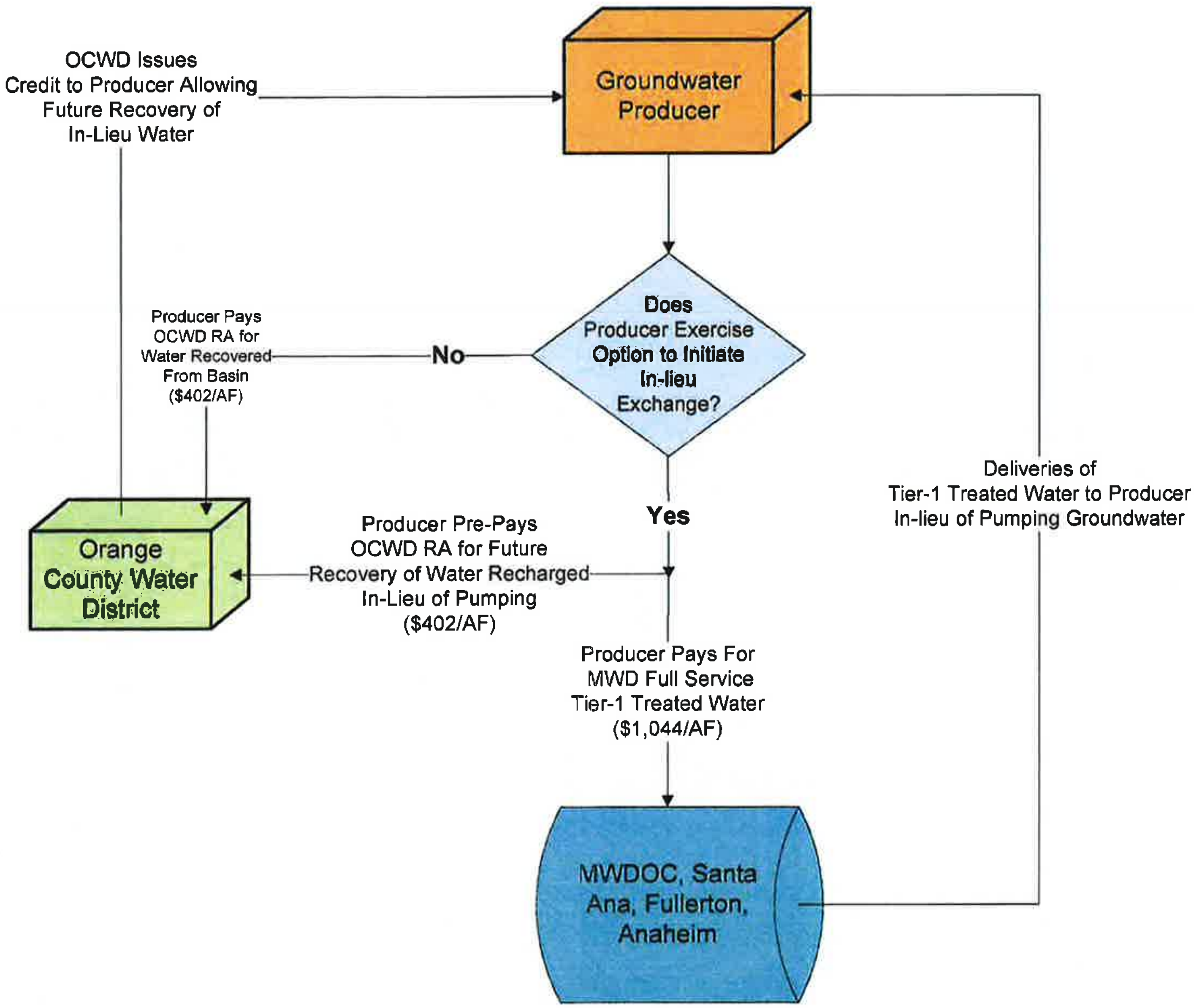
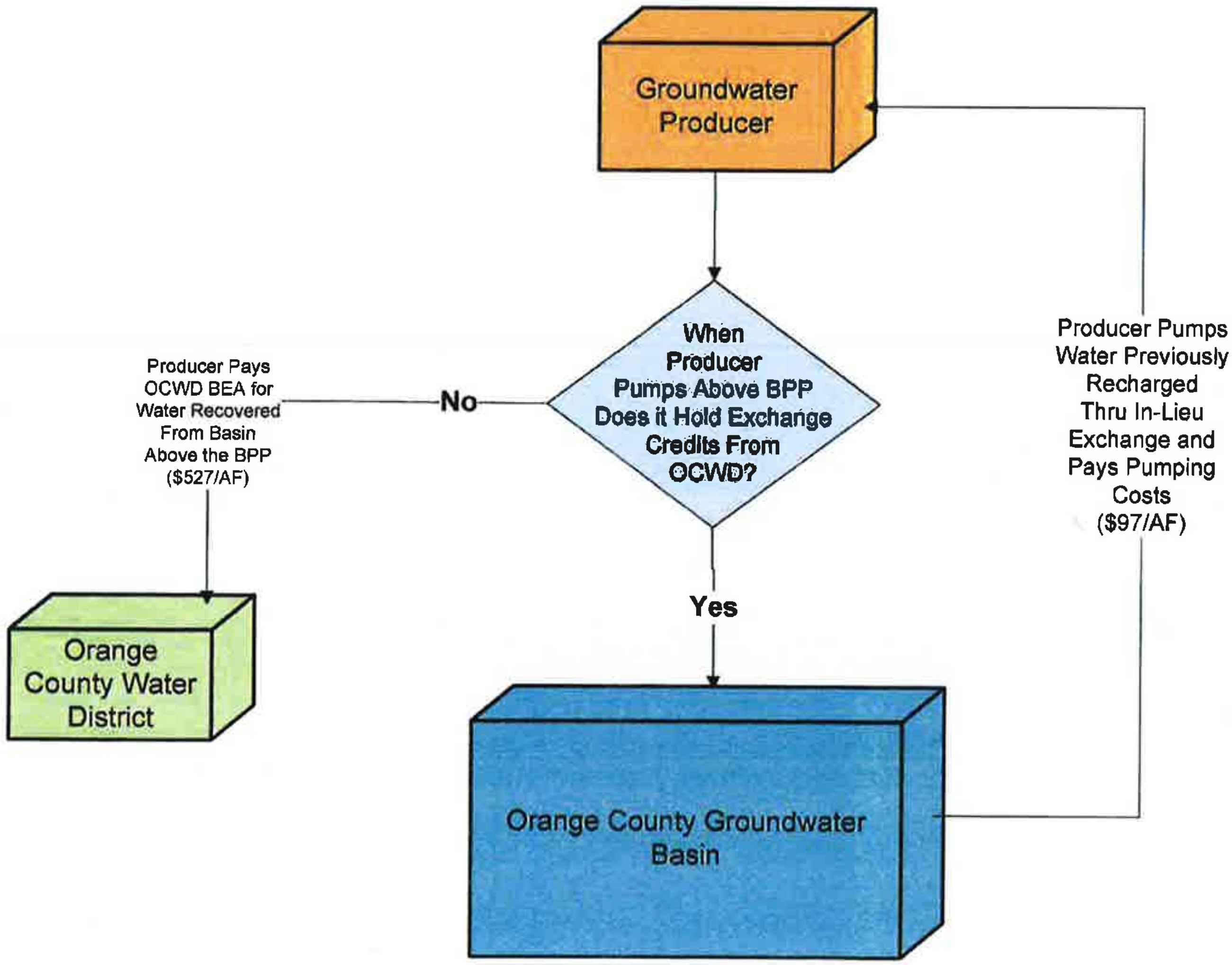


EXHIBIT "B"

Example of Recovery of Water Recharged Through In-Lieu Exchange

- Costs of Recovery -



August 18, 2016
Prepared by: K. Welch
Submitted by: F. Sanchez/P. Weghorst
Approved by: Paul Cook

SUPPLY RELIABILITY PROGRAMS COMMITTEE

TERMS TO ACQUIRE CAPACITY RIGHTS IN
CROSS VALLEY CANAL RETURN PIPELINE

SUMMARY:

The Rosedale-Rio Bravo Water Storage District and IRWD are jointly developing the Stockdale Integrated Water Banking Project. The project includes construction of water banking recovery facilities on IRWD's Stockdale West property including a connection to Rosedale's Cross Valley Canal (CVC) Return Pipeline. Rosedale has concurred with IRWD pursuing capacity ownership in the pipeline in-lieu of paying use charges. Staff recommends that the Board approve the proposed terms to acquire capacity rights in Rosedale's CVC Return Pipeline in the amount of $201,000 and authorize staff to work with Rosedale to develop and execute an agreement to purchase the in accordance with these terms.

BACKGROUND:

In 2010, IRWD purchased the Stockdale West property, located west of the Strand Ranch, for the purpose of expanding IRWD's water banking capacities. In 2015, Rosedale certified and IRWD approved the Stockdale Integrated Banking Project Final Environmental Impact Report (EIR). The EIR provides for IRWD's Stockdale West and Rosedale's Stockdale East properties to be developed 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 Rosedale's Conjunctive Use Program and will provide dry year water supply reliability for IRWD's customers.

Conveying Water to CVC:

In 2015, IRWD began the design of the Stockdale West Recovery Facilities. During the design process, it was determined that the preferred alternative for conveying water from the Stockdale West wells to the CVC was to connect to Rosedale's existing CVC Return Pipeline which has excess capacity. The CVC Return Pipeline is a 48-inch reinforced concrete pipe which Rosedale constructed to convey water to the CVC from its Enns wellfield and its proposed West Drought Relief Project wellfield. The capacity of the pipeline is 80 cubic feet per second (cfs) and is sufficiently sized to include the three additional Stockdale West wells. The final design of the Stockdale West Turn-in Facility is shown in Exhibit "A".

Prior to construction of the CVC Return Pipeline, Rosedale offered IRWD the opportunity to pay for capacity in the facility for conveying water to the CVC from the Stockdale West wells. At that time, IRWD was considering utilizing Rosedale's adjacent Intake Channel for conveying water to the CVC. Subsequent hydraulic analysis showed that this alternative was constraining, and that tying into Rosedale's CVC Return Pipeline provided the most operational flexibility and effective cost.

Construction Schedule:

In March 2016, the Board authorized a construction contract with W. M. Lyles Company to construct the recovery facilities on Stockdale West including:

- Drilling and equipping of three wells;
- Constructing pipelines from the wells;
- Constructing a turn-out structure from the CVC; and
- Connecting the pipelines from the wells to Rosedale's CVC Return Pipeline.

Construction of the facilities began in April 2016. Construction of the connection to the CVC Return Pipeline is scheduled to begin in early September 2016.

Required License Agreement:

A license agreement for IRWD to connect into and use Rosedale's Return Pipeline is required. As consideration for the use of the CVC Return Pipeline, Rosedale proposed a *Use of Facility Fee* of $8.93 per acre-feet (AF) for water that is delivered from IRWD's Stockdale West project to and through the CVC Return Pipeline. In lieu of an ongoing per AF use fee, staff has proposed that IRWD acquire capacity rights for its proportionate use of the CVC Return Pipeline. Rosedale has concurred with the approach.

In order to avoid a delay in construction, Rosedale has agreed to proceed with a license agreement for connection to and use of the Return Pipeline without an associated *Use of Facility Fee*. A separate agreement will be developed and executed for IRWD to acquire capacity rights in the facility through payment of a proportional share of Rosedale's costs of the CVC Return Pipeline. The license agreement is subject to IRWD and Rosedale entering into a separate agreement for IRWD's payment for reserved capacity.

Cost of Capacity:

Rosedale's stated engineering and construction costs associated with the CVC Return Pipeline was approximately $603,000. With IRWD's three Stockdale West wells connected to the CVC Return Pipeline, there will be a total of nine wells discharging to the CVC through the facility. Staff proposes that IRWD acquire rights to one-third of the 80 cfs capacity (27 cfs) for one-third of Rosedale's capital costs, or $201,000.

For comparison purposes, staff asked engineers at Dee Jaspar & Associates to provide a cost estimate to construct a stand-alone turn-in facility dedicated to IRWD's three Stockdale West wells. The stand-alone turn-in facility was estimated to cost between $180,000 and $350,000 depending on the design. Constructing a stand-alone turn-in would cause significant delay in construction of the project. Staff believes that the $201,000 cost for 27 cfs capacity in the CVC Return Pipeline is reasonable and that the capacity purchase should be pursued.

Terms to Acquire Capacity Rights:

Staff has prepared draft terms to acquire capacity rights in Rosedale's CVC Return Pipeline as shown in Exhibit "B". The terms include IRWD receiving first priority rights to use of 27 cfs in the CVC Return Pipeline for its conveyance of water from Stockdale West recovery wells. These draft terms have been reviewed with Rosedale staff. Staff recommends that the Committee approve the draft terms and authorize staff to work with Rosedale and respective legal counsels to prepare an agreement to facilitate the capacity purchase.

FISCAL IMPACTS:

Project 3766 which includes the construction of the Stockdale West Recovery Facilities is included in the FY 2016-17 Capital Budget. Sufficient funds exist to acquire capacity rights in Rosedale's Return Pipeline in the amount of $201,000.

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 CA 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.

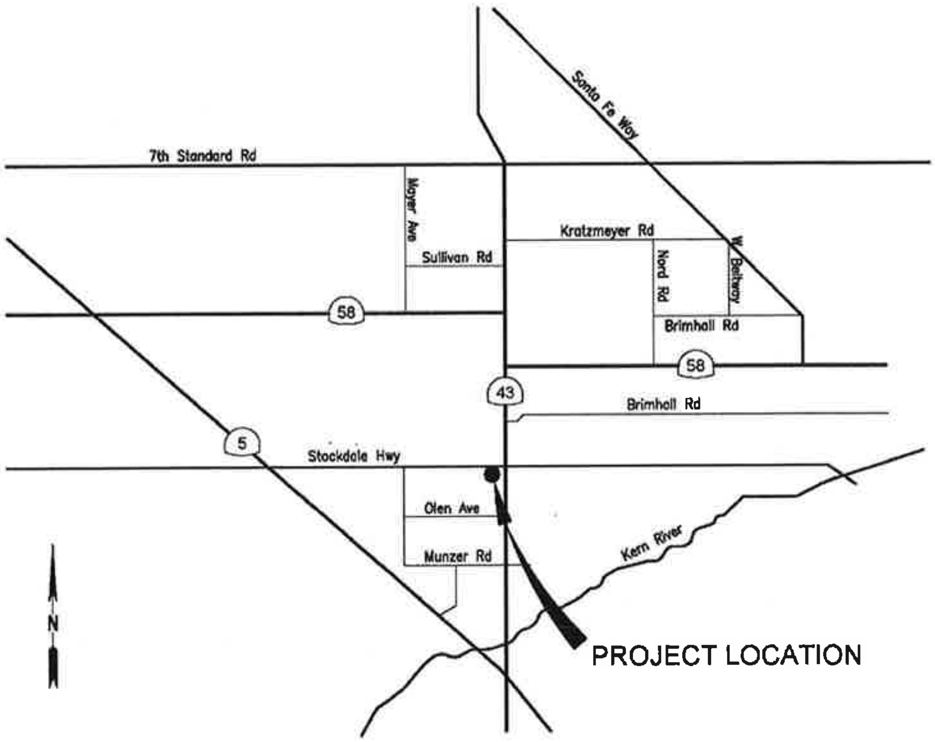
RECOMMENDATION:

That the Board approve the proposed terms to acquire capacity rights in Rosedale-Rio Bravo Storage District's Cross Valley Canal Return Pipeline in the amount of $201,000 and authorize staff to work with Rosedale to develop and execute an agreement to purchase the in accordance with these terms.

LIST OF EXHIBITS:

Exhibit "A" – Stockdale West Turn-in Final Design
Exhibit "B" – Proposed Terms to Acquire Capacity Rights in Rosedale's Cross Valley Canal Facility

Exhibit "A"



VICINITY MAP
NTS

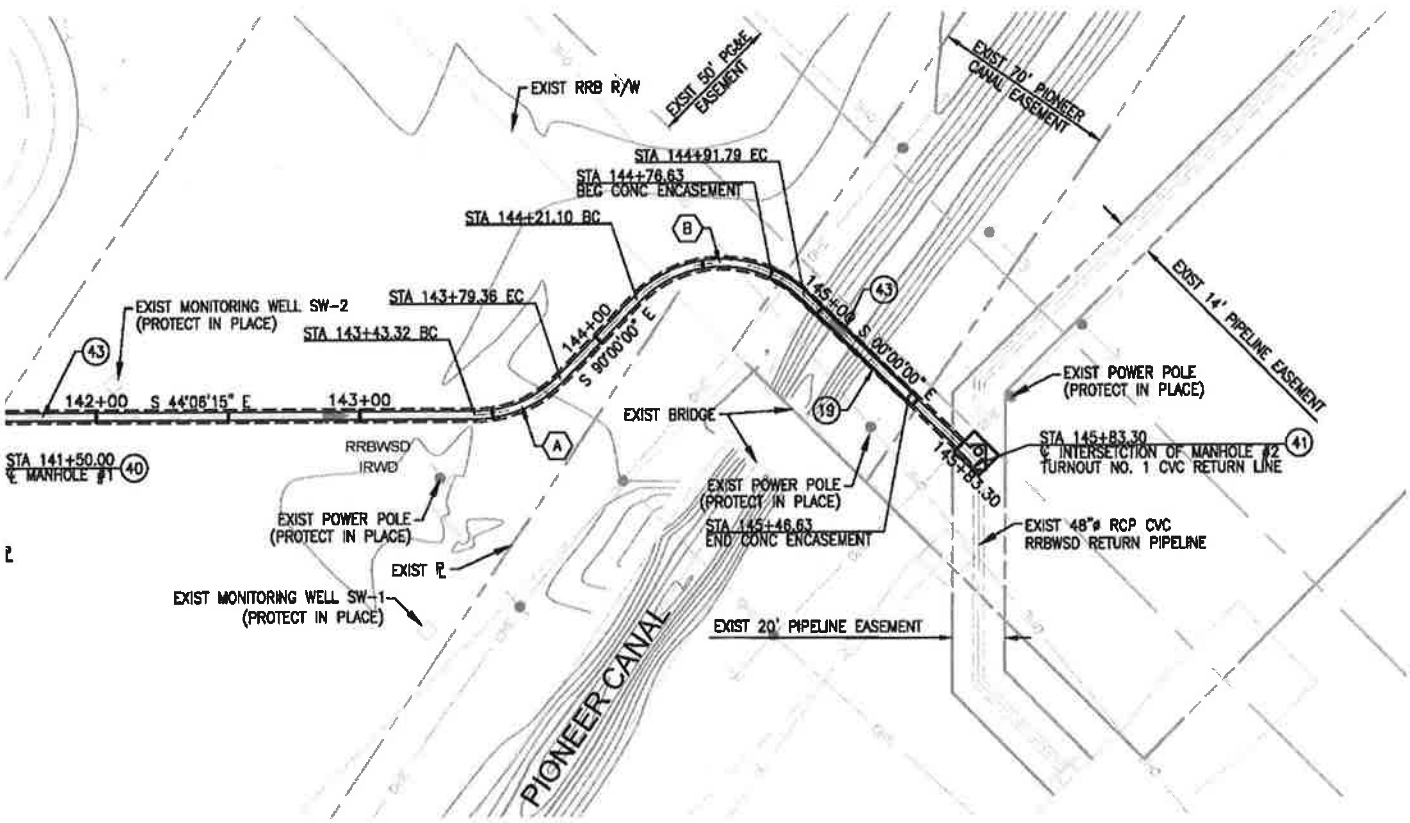


EXHIBIT "B"

Draft
Terms for Agreement Between
Irvine Ranch Water District and
Rosedale-Rio Bravo Water Storage Water District for
Capacity Purchase in CVC Return Pipeline Facility
August 15, 2015

Description:	Irvine Ranch Water District (IRWD) and Rosedale-Rio Bravo Water Storage Water District (Rosedale) seek to enter into an agreement to provide for the payment by IRWD of a proportional share of Rosedale's capital cost of design and construction of its Cross Valley Canal Return Pipeline Facility (Return Pipeline) attributable to the capacity in the Return Pipeline that will be allocated to IRWD for use with IRWD's wells on its Stockdale West property.
Term:	The term of the agreement shall run concurrently with the term of the agreement between IRWD and Rosedale titled – *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),* and any mutually agreeable extensions, with an effective date of February 4, 2016 (Water Banking Agreement).
Agreement for Capacity Purchase:	IRWD's payment for a proportionate share of Rosedale's capital costs of the Return Pipeline and its first priority rights to use in the Return Pipeline will be established by separate capacity purchase agreement, amendment to the Water Banking Agreement or other form to be determined by IRWD and Rosedale
Payment:	As payment for a proportional share of Rosedale's capital cost of the Return Pipeline, IRWD shall pay to Rosedale one-third of Rosedale's capital cost in the amount $201,000.
Priority and Rights of Use:	As consideration for payment of a proportional share of the Return Pipeline, IRWD shall receive first priority to the use of one-third of the Return Pipeline capacity or 27 cfs for IRWD's use in conveying water from IRWD's Stockdale West return facilities.