

AGENDA
IRVINE RANCH WATER DISTRICT
SUPPLY RELIABILITY PROGRAMS COMMITTEE
THURSDAY, MARCH 21, 2019

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	_____	Christine Compton	_____
	Ray Bennett	_____	Paul Weghorst	_____
	Jo Ann Corey	_____	Dane Johnson	_____
	Fiona Sanchez	_____	_____	_____
	_____	_____	_____	_____

NOTICE

If you wish to address the Committee on any item, please file your name with the Committee. Forms are provided on the table outside of the Committee Room. Remarks are limited to three minutes per speaker on each subject.

COMMUNICATIONS

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

INFORMATION

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

Recommendation: Receive and file.

6. REVIEW OF CROSS VALLEY CANAL EXPANSION CAPACITY – JOHNSON / WELCH / SANCHEZ / WEGHORST

Recommendation: Receive and file.

OTHER BUSINESS

7. Directors' Comments
8. 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.

March 21, 2019

Prepared by: D. Johnson / K. Welch

Submitted by: F. Sanchez / P. Weghorst

Approved by: Paul A. Cook

BPW
FW

SUPPLY RELIABILITY PROGRAMS COMMITTEE

WATER BANKING PROJECT FACILITIES, CAPACITIES, OPERATIONS AND PROGRAMS

SUMMARY:

Staff has prepared information related to IRWD's water banking facilities, capacities, operations and exchange programs. The information is presented in a format that can be updated as necessary to reflect changes in IRWD's projects, programs and operations. At the Committee meeting, staff will review this information. Staff will also provide an update on ongoing efforts to secure water for recharge at IRWD's water banking projects as well as the expected near-term availability of State Water Project (SWP) Article 21 and high-flow Kern River water.

BACKGROUND:

To assist with the facilitation of Committee meeting discussions, staff has prepared reference materials in tabular, map and schematic formats that describe IRWD's water banking facilities, capacities, operations and exchange programs. The reference materials will be updated, as needed, to reflect changes to the projects, programs and operations. The following is an overview of the reference materials. At the Committee meeting, staff will provide an update on efforts to secure additional water for recharge at IRWD's water banking projects. Staff will also provide an update on the expected near-term availability of high-flow Kern River water.

Capacity and Operations Tables:

A table presenting storage, recharge and recovery capacities of existing and planned IRWD water banking projects, including capacities available to IRWD in the Kern Water Bank, is attached as Exhibit "A". Exhibits "B" and "C" provide an update on water banking recovery and recharge operations, as well as the balance of the water stored in the Kern Water Bank. Exhibit "B" provides before-loss estimates of water recharged at the water banking projects, and Exhibit "C" provides after-loss estimates of water recharged at the projects. Both Exhibits "B" and "C" include a column that provides totals for each water type and storage location. Exhibit "D" provides an overview of dedicated storage, recharge and recovery capacities at IRWD's Strand Ranch and Stockdale West projects.

Project Maps:

To support the tables provided as Exhibits "A", "B", "C" and "D", staff has prepared maps that depict project wells and pipelines, recharge basins and Cross Valley Canal (CVC) turnout locations, along with the most current recharge rates. These maps are provided as Exhibits "E", "F" and "G", respectively. The facilities shown on the maps are associated with the Strand Ranch, Stockdale West, Stockdale East and Rosedale-Rio Bravo Water Storage District Drought Relief Projects.

Program Agreement Diagrams:

Schematic diagrams have been prepared that depict the IRWD water banking and exchange programs with Rosedale-Rio Bravo Water Storage District, Buena Vista Water Storage District (BVWSD), Dudley Ridge Water District (DRWD) and Metropolitan Water District of Southern California. These diagrams are provided as Exhibits “H”, “I”, “J”, “K” and “L”, as described in the List of Exhibits.

Recharge Opportunities:

IRWD has been pursuing additional opportunities to secure water for recharge. At the Committee meeting, staff will provide an update on efforts to secure water from:

- Antelope Valley-East Kern Water Agency;
- Carpinteria Valley Water District;
- DRWD;
- Mojave Water District; and
- Other sources.

Availability of Water in 2019:

On February 12, 2019, the California Department of Water Resources (DWR) informed the SWP contractors of the availability of Article 21 water starting the week of February 18. As a result of continuing wet weather, Article 21 water was available through March 12.

BVWSD has informed IRWD that, depending upon weather, high-flow Kern River water may be available for delivery to the Strand Ranch in March 2019. Currently the CVC capacity is fully subscribed with KCWA members taking delivery of Article 21 water. BVWSD has indicated that it will notify IRWD of its request to recharge high-flow Kern River water as early as possible. Staff continues to work closely with Rosedale for use of CVC conveyance capacity, as well as exchange opportunities for delivering Kern River water to the Strand and Stockdale West projects. At the meeting, staff will provide an update related to the availability of water for recharge at IRWD projects.

SWP Carryover Spill and Article 21 Allocation Tables:

Staff has been in contact with the DWR’s Water Delivery Analysis office to obtain current information on the status of Article 21 allocations and SWP contractor Table A Carryover spill calculations. Information on the 2018 carryover balance and associated spills during the period February 27 through March 6, 2019, as well as the weekly Article 21 water available, requested and allocated for March 6 through March 12, 2019, is included as a series of tables in Exhibit “M.” Due to the constantly changing nature of the numbers represented in these tables, staff will provide updated information, if available, during the Committee meeting.

FISCAL IMPACTS:

None.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

RECOMMENDATION:

Receive and file.

LIST OF EXHIBITS:

- Exhibit “A” – Recharge, Storage and Recovery Capacities of Current and Anticipated Water Banking Projects
- Exhibit “B” – Water Banking Storage, Recharge and Recovery Operations before Losses
- Exhibit “C” – Water Banking Storage, Recharge and Recovery Operations after Losses
- Exhibit “D” – Dedicated Capacities of Current Water Banking Projects
- Exhibit “E” – Map of Water Banking Project Wells and Pipelines
- Exhibit “F” – Map of Water Banking Recharge Basins and Cross Valley Canal Turnout Facilities
- Exhibit “G” – Map of Water Banking Recharge Rates
- Exhibit “H” – Diagram of IRWD-Rosedale Water Banking and Exchange Program Agreements
- Exhibit “I” – Diagram of Long-Term Water Exchange Program with BVWSD and Diagram of One-Year Program to Augment Recharge Using Stockdale West Recharge Facilities with BVWSD
- Exhibit “J” – Diagram of Unbalanced Exchange Program Diagram with DRWD
- Exhibit “K” – Diagram of Coordinated Operating, Water Storage, Exchange and Delivery Agreement with Metropolitan Water District
- Exhibit “L” – Diagram of Template Wheeling Agreement with Metropolitan Water District
- Exhibit “M” – SWP Article 21 Allocation and Table A Carryover

Exhibit "A"

TABLE 1
Current and Anticipated Water Banking Project
Recharge, Storage and Recovery Capacities
 March 21, 2019

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	35.0	-	-
Stockdale West	Yes	3	-	26,000	27,100	-	11,250	-	15.0	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		10	5	126,000	44,600	19,000	28,750	7,500	70.0	50.0	10.0	0.0
Partner Capacities ⁴				38,000	22,300	9,500	10,850	0	35.5	25.0	-	-
IRWD Capacities				88,000	22,300	9,500	17,900	7,500	34.5	25.0	-	-
IRWD's recovery <i>during</i> 6 month partner recovery period (AF)									12,420	9,000	-	-
IRWD's recovery <i>after</i> 6 month partner recovery period (AF)									5,480	6,733	-	-
TOTALS (AF)									17,900	15,733	-	-
Number of months needed to recover IRWD's total AF after partners' recovery (Assumes IRWD has use of total recovery capacity after partners' recovery)									8.6	10.2	-	-
Strand Ranch monthly recharge amount assuming 0.3 ft/day average recharge rate (AF)											4,518	
Stockdale West monthly recharge amount assuming 0.3 ft/day average recharge rate (AF)											2,331	

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 and Stockdale West 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.

Exhibit "B"

TABLE 2
IRWD's Water Banking Storage, Recharge and Recovery Operations - BEFORE LOSSES
 March 21, 2019

TRANSACTIONS	WATER BANKING ENTITY					TOTAL BY WATER TYPE AND STORAGE LOCATION
	IRWD		BUENA VISTA (BVWSD)	CENTRAL COAST (CCWA)	DUDLEY RIDGE WATER DISTRICT (DRWD) ³	
	SWP ¹	NON-SWP ²	NON-SWP	SWP	SWP	
BEGINNING WATER IN STORAGE 2018 (AF)						
Total Kern Water Bank	-	4,656	-	-	-	4,656
Total MWD System ⁴	8,349	-	-	-	1,174	10,047
Total Kern County	3,257	17,704	6,869	289	2,388	30,507
TOTAL STORED WATER (1/1/2018)	11,606	22,360	6,869	289	3,562	44,686
MWD Water to Jackson Ranch ⁵	-	-	-	-	(295)	
(RECOVERY) AND RECHARGE IN 2018 (AF)						
Kern Water Bank Deliveries	-	-	-	-	-	-
2018 SWP Allocation (35%) ³	310	-	-	-	310	620
High Flow Kern River	-	-	(1,667)	-	-	(1,667)
TOTAL 2018 TRANSACTIONS	310	-	(1,667)	-	310	(1,047)
Total Kern Water Bank	-	4,656	-	-	-	4,656
Total MWD System	8,349	-	-	-	879	9,228
Total Kern County	3,567	17,704	5,202	289	2,698	29,460
TOTAL STORED WATER (1/1/2019)	11,916	22,360	5,202	289	3,577	43,344
(RECOVERY) AND RECHARGE IN 2019 (AF)						
Kern Water Bank Deliveries	-	-	-	-	-	-
2019 SWP Allocation (35%) ³	306	-	-	-	306	612
TOTAL ESTIMATED 2019 TRANSACTIONS	306	-	-	-	306	612
ESTIMATED WATER IN STORAGE 2019 (AF)						
Total Kern Water Bank	-	4,656	-	-	-	4,656
Total MWD System	8,349	-	-	-	879	9,228
Total Kern County	3,873	17,704	5,202	289	3,004	30,072
TOTAL ESTIMATED STORED WATER TO DATE	12,222	22,360	5,202	289	3,883	43,956

NOTES:

-MWD = Metropolitan Water District of Southern California.

¹ IRWD's SWP includes 437 AF from CVWD that stays in Kern County.

² IRWD's Non-SWP total includes 3,158 AF of Kern County Water Agency Article 21 Water.

³ DRWD water supply will be returned by MWD or IRWD's Strand Ranch to IRWD's Jackson Ranch. IRWD's 2013-2016 SWP allocation amounts are stored in the MWD system. IRWD's 2017 and 2018 SWP allocation water is stored in Kern County; assumes 2019 SWP water will be stored in Kern County.

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

⁵ Water returned to DRWD by MWD for use on IRWD's Jackson Ranch.

Exhibit "C"

TABLE 3
IRWD's Water Banking Storage, Recharge and Recovery Operations - AFTER LOSSES
 March 21, 2019

TRANSACTIONS	WATER BANKING ENTITY					TOTAL BY WATER TYPE AND STORAGE LOCATION
	IRWD		BUENA VISTA (BVWSD)	CENTRAL COAST (CCWA)	DUDLEY RIDGE WATER DISTRICT (DRWD) ³	
	SWP ¹	NON-SWP ²	NON-SWP	SWP	SWP	
BEGINNING WATER IN STORAGE 2018 (AF)						
Total Kern Water Bank	-	4,233	-	-	-	4,233
Total MWD System ⁴	7,393	-	-	-	1,174	9,091
Total Kern County	2,782	15,564	6,199	246	2,131	26,921
TOTAL STORED WATER (1/1/2018)	10,175	19,797	6,199	246	3,305	39,721
MWD Water to Jackson Ranch ⁵	-	-	-	-	(295)	(295)
(RECOVERY) AND RECHARGE IN 2018 (AF)						
Kern Water Bank Deliveries	-	-	-	-	-	-
2018 SWP Allocation (35%) ³	264	-	-	-	264	528
High Flow Kern River	-	-	(1,667)	-	-	(1,667)
TOTAL 2018 TRANSACTIONS	264	-	(1,667)	-	264	(1,139)
Total Kern Water Bank	-	4,233	-	-	-	4,233
Total MWD System	7,393	-	-	-	879	8,272
Total Kern County	3,046	15,564	(1,667)	246	2,395	19,584
TOTAL STORED WATER (1/1/2019)	10,439	19,797	4,532	246	3,274	38,288
(RECOVERY) AND RECHARGE IN 2019 (AF)						
Kern Water Bank Deliveries	-	-	-	-	-	-
2019 SWP Allocation (35%) ³	260	-	-	-	260	520
High Flow Kern River	-	-	-	-	-	-
TOTAL ESTIMATED 2019 TRANSACTIONS ⁶	260	-	-	-	260	520
ESTIMATED WATER IN STORAGE 2019 (AF)						
Total Kern Water Bank	-	4,233	-	-	-	4,233
Total MWD System	7,393	-	-	-	879	8,272
Total Kern County	3,306	15,564	4,532	246	2,655	26,303
TOTAL ESTIMATED STORED WATER TO DATE	10,699	19,797	4,532	246	3,534	38,808

NOTES:

-Water in storage has been adjusted to account for losses. IRWD's water stored in Kern County is adjusted 15% for losses (5% for out of county loss, 6% surface loss, and 4% reserve loss); Water stored for DRWD and BVWSD in Kern County is adjusted 10% (6% for surface loss and 4% for reserve loss); KWB losses are 10%; no losses for water directly delivered to MWD system.

-MWD = Metropolitan Water District of Southern California.

¹ IRWD's SWP includes 389 AF from CVWD that stays in Kern County.

² IRWD's Non-SWP total includes 2,842 AF of Kern County Water Agency Article 21 Water.

³ DRWD water supply will be returned by MWD or IRWD's Strand Ranch to IRWD's Jackson Ranch. IRWD's 2013-2016 SWP allocation amounts are stored in the MWD system. IRWD's 2017 and 2018 SWP allocation water is stored in Kern County; assumes 2019 SWP water will be stored in Kern County.

⁴ Beginning balance of water stored in MWD system includes (net of CVC losses): 3,920 AF of 2014 Exchange, 2,824 AF of 2014 borrowed SWP, 649 AF of IRWD's 2013-2016 SWP allocations through DRWD.

⁵ Water returned to DRWD by MWD for use on IRWD's Jackson Ranch.

⁶ 2019 transactions may be adjusted for conveyance losses in CVC.

Exhibit "D"

TABLE 4
IRWD Dedicated Water Banking Capacities for Existing and Proposed Exchange Programs
 March 21, 2019

STORAGE CAPACITY

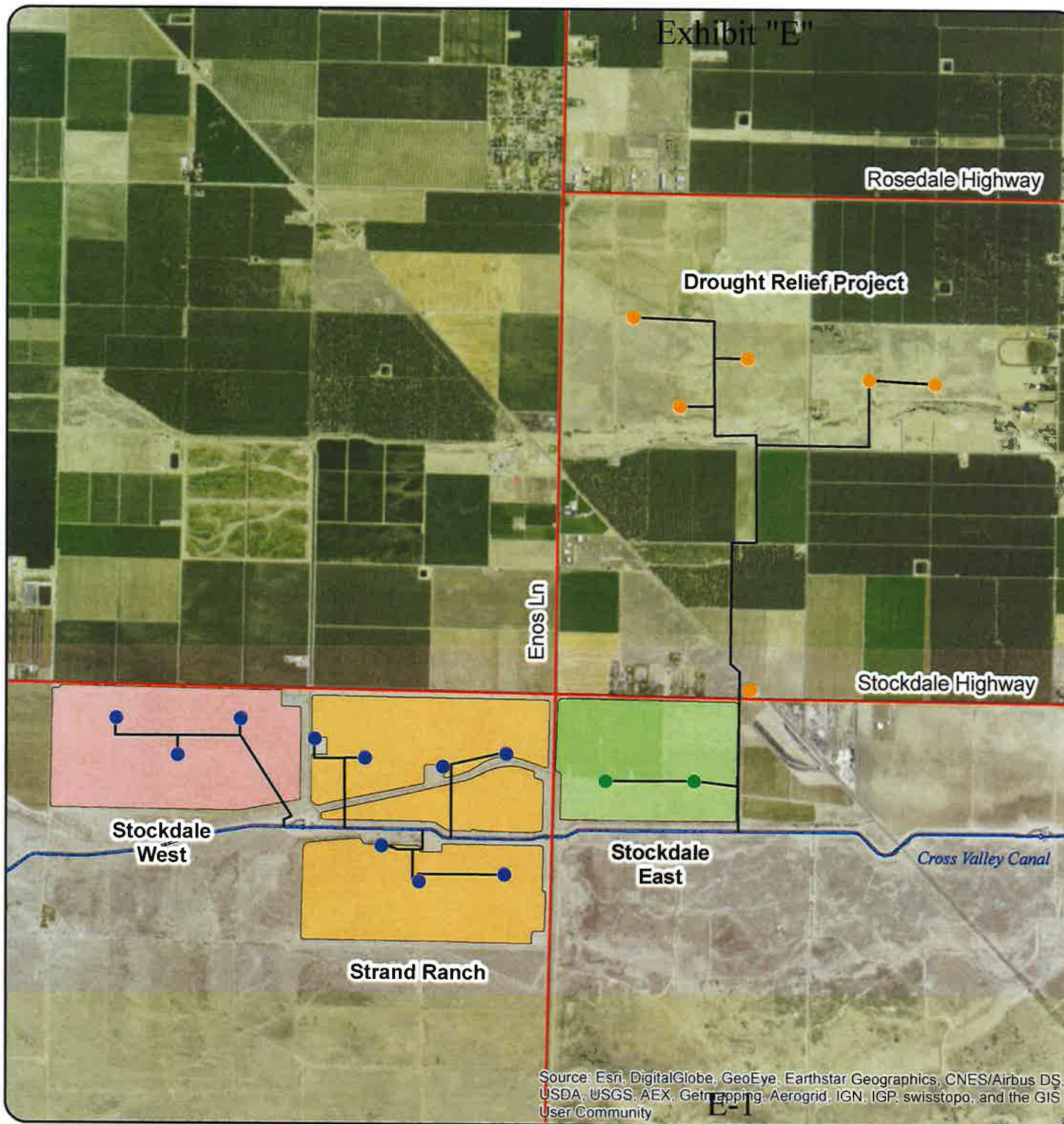
Program	Dedicated Storage Capacity Strand Ranch (AF)	Dedicated Storage Capacity Stockdale West (AF)	Dedicated Storage Capacity Leased Storage Account (AF)	Kern Water Bank Storage Capacity (AF)
Total Capacity	50,000	26,000	50,000	9,495
BVWSD	40,000	-	-	-
DRWD	10,000	-	-	-
AVEK	-	20,000	-	-
CVWD	-	5,000	-	-
Total Dedicated	50,000	25,000	-	-
Total Remaining	-	1,000	50,000	9,495

RECHARGE CAPACITY

Program	Dedicated Recharge Capacity Strand Ranch (AF)	Dedicated Recharge Capacity Stockdale West (AF)	Dedicated Recharge Capacity Leased Storage Account (AF)	Kern Water Bank Recharge Capacity (AF)
Total Capacity	17,500	27,100	-	3,200
BVWSD	17,500	-	-	-
DRWD	-	-	-	-
AVEK	-	20,000	-	-
CVWD	-	5,000	-	-
Total Dedicated	17,500	25,000	-	-
Total Remaining	-	2,100	-	3,200

RECOVERY CAPACITY

Program Partner	Dedicated Recovery Capacity Strand Ranch (AF)	Dedicated Recovery Capacity Stockdale West (AF)	Dedicated Recovery Capacity Leased Storage Account (AF)	Kern Water Bank Recovery Capacity (AF)
Total Capacity	17,500	11,250	-	6,330
BVWSD	6,667	-	-	-
DRWD	-	-	-	-
AVEK	-	3,333	-	-
CVWD	-	833	-	-
IRWD	10,833	7,084	-	6,330
Total Dedicated	17,500	11,250	-	6,330
Total Remaining	-	-	-	-



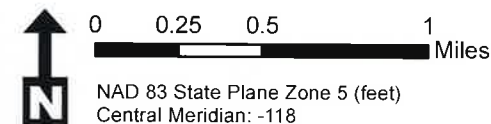
Irvine Ranch
WATER DISTRICT

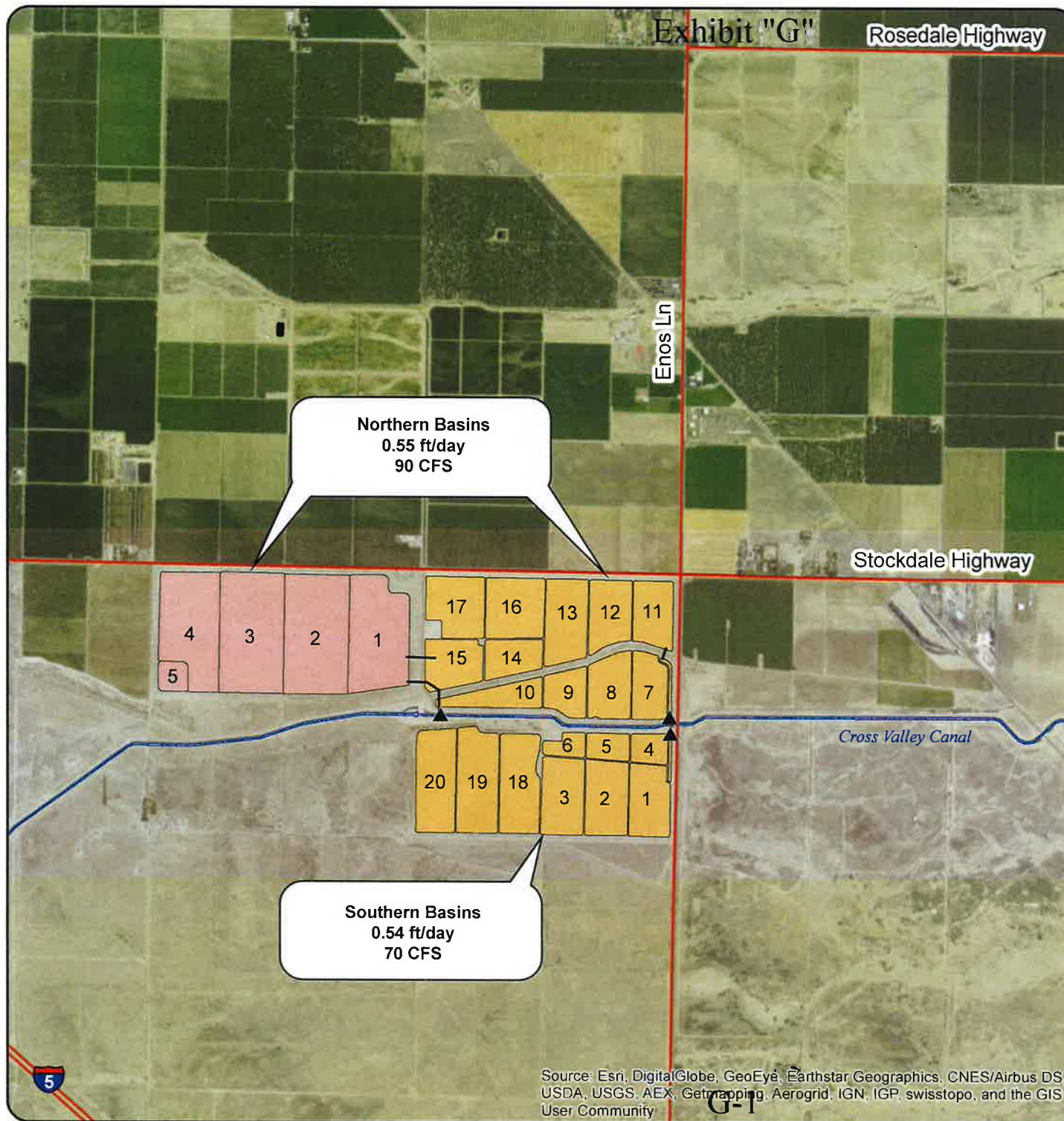
Location Map: IRWD Water Banking Projects Wells and Turnin Pipelines

MAP FEATURES

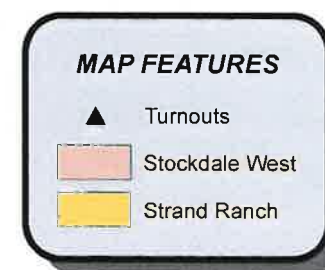
- Existing Extraction Well
- Planned Extraction Well
- Well Under Construction
- Well Discharge Pipelines
- Stockdale East
- Stockdale West
- Strand Ranch

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





Location Map: IRWD Water Banking Projects Recharge Rates



This figure shows the location of recharge basins and their associated recharge rates as of February 2019.

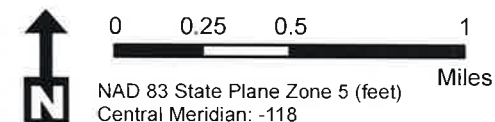


Exhibit "H"

IRWD-Rosedale Water Banking and Exchange Program Agreements

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

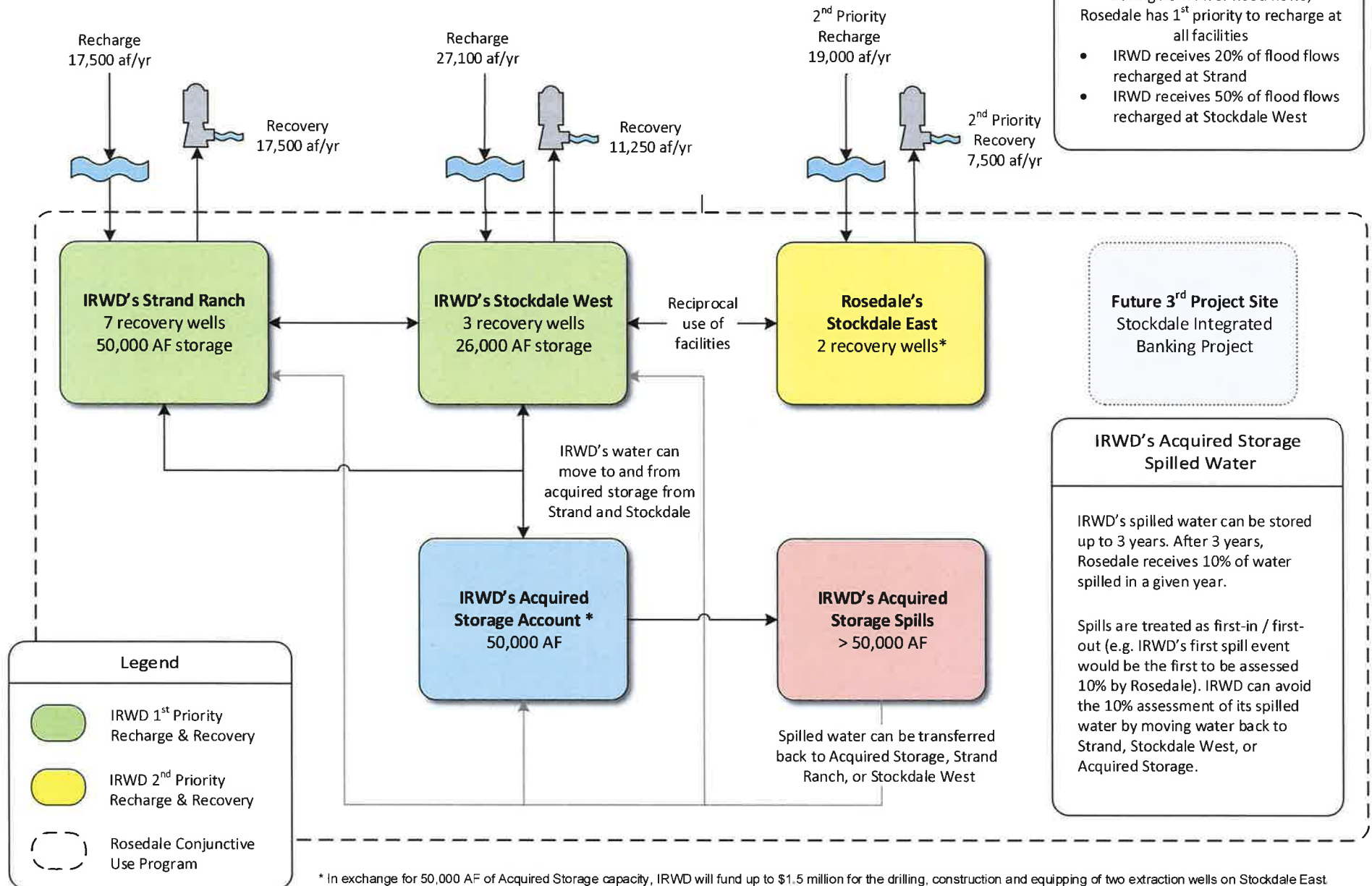
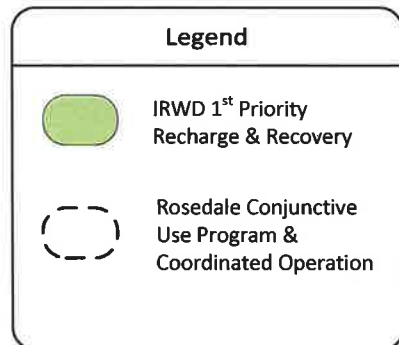
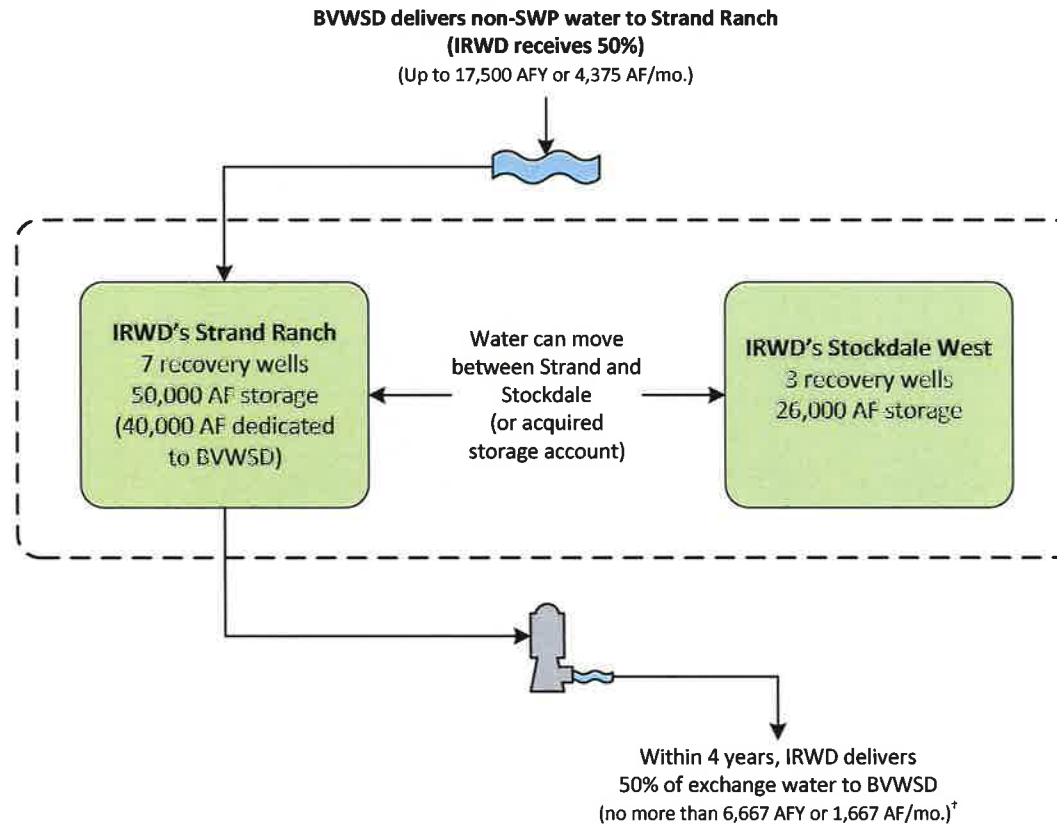


Exhibit "I"

Buena Vista Water Storage District Long Term Water Exchange Program

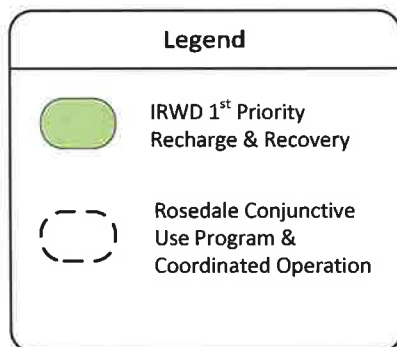
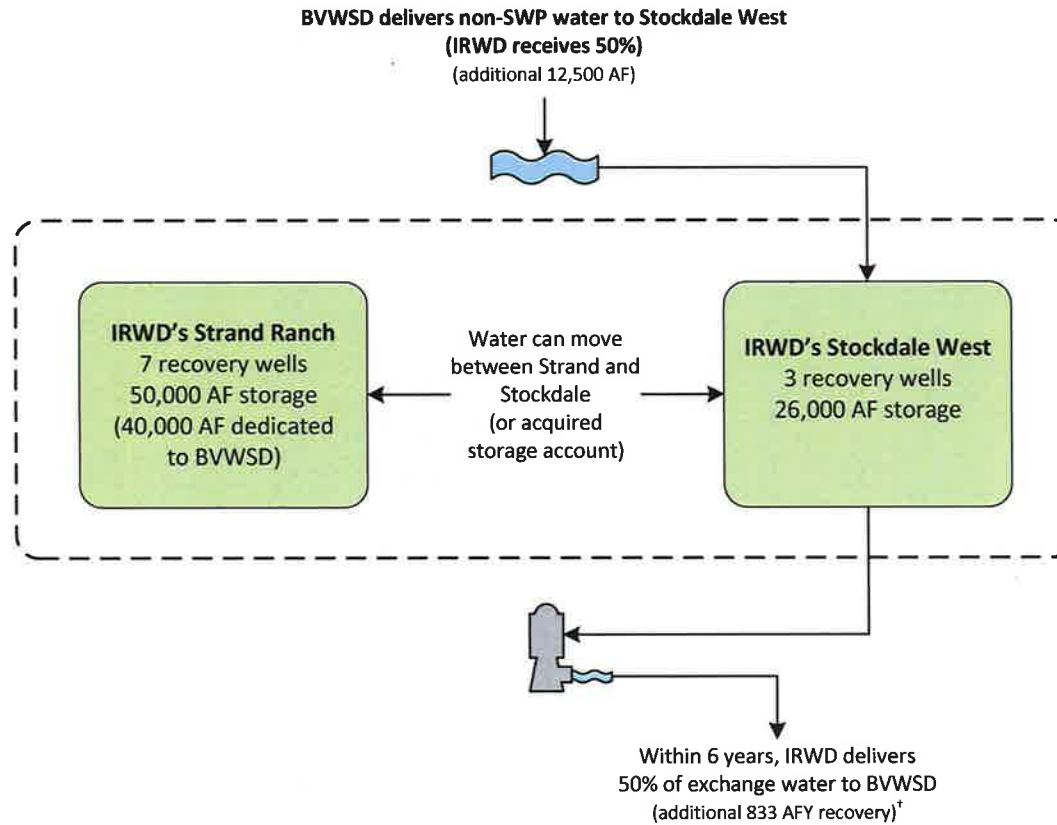
Effective 1/1/2011 through 1/12/2039



[†]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 3/30/2018



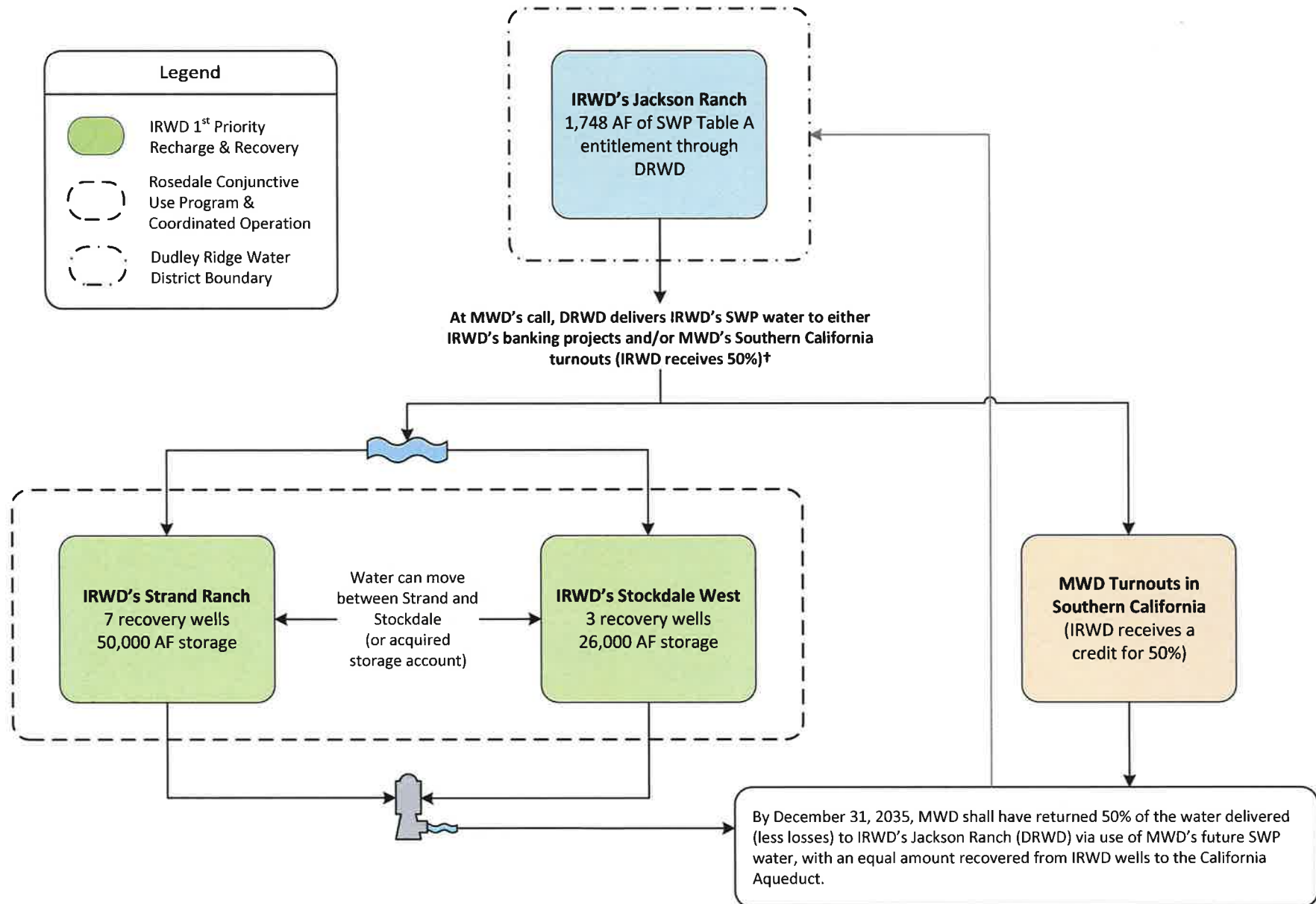
*IRWD shall remit one-half of the exchanged supply less one-half of reasonable losses back to BV no later than December 31st of the 6th year following the associated recharge event. IRWD pays for recovery of water returned to BV. Water to be remitted back to BV may remain in storage at Strand Ranch beyond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

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 "J"

Dudley Ridge Water District (DRWD) Unbalanced Exchange Program

Up to 12,240 AF delivered from 6/7/2018 through 12/31/2017



†Consistent with IRWD-MWD coordinated operating agreement.

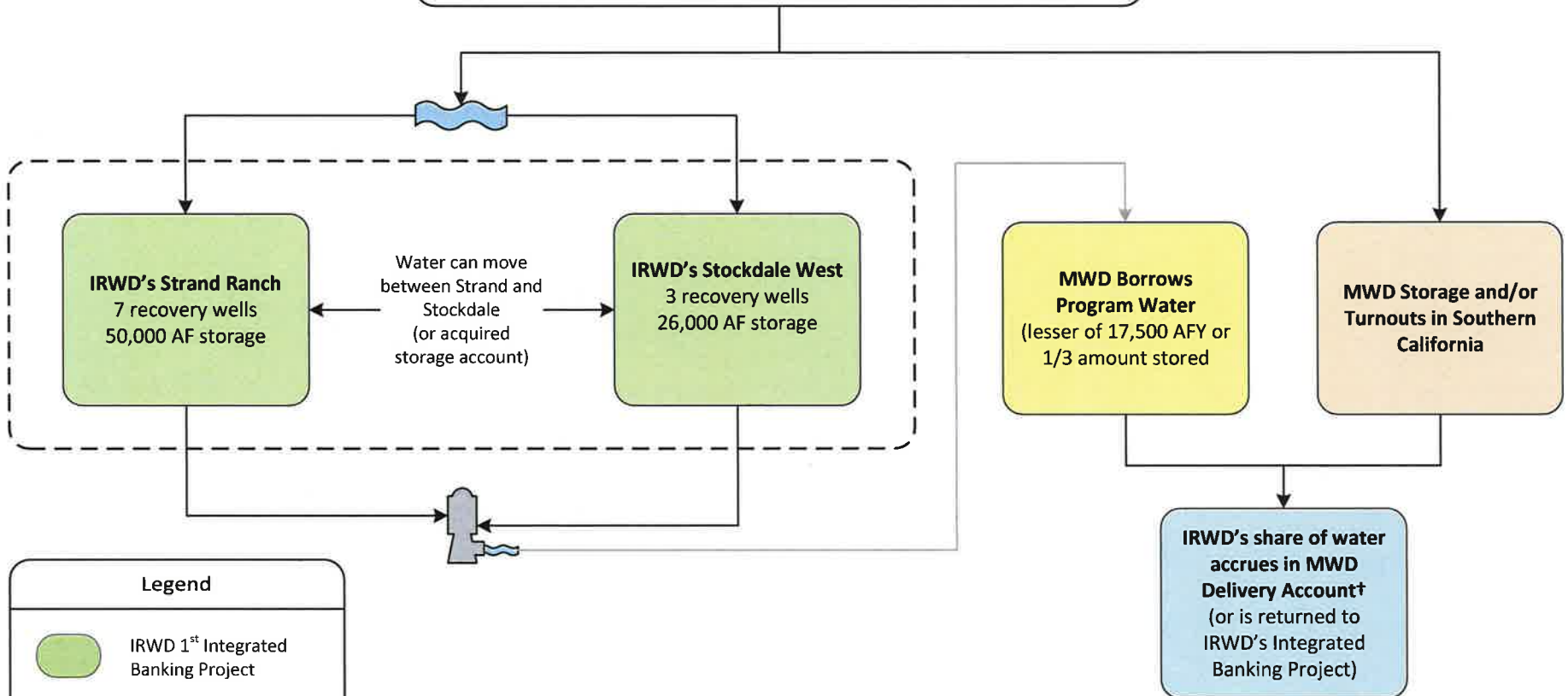
Exhibit "K"

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

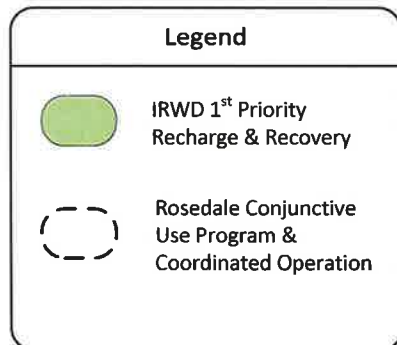
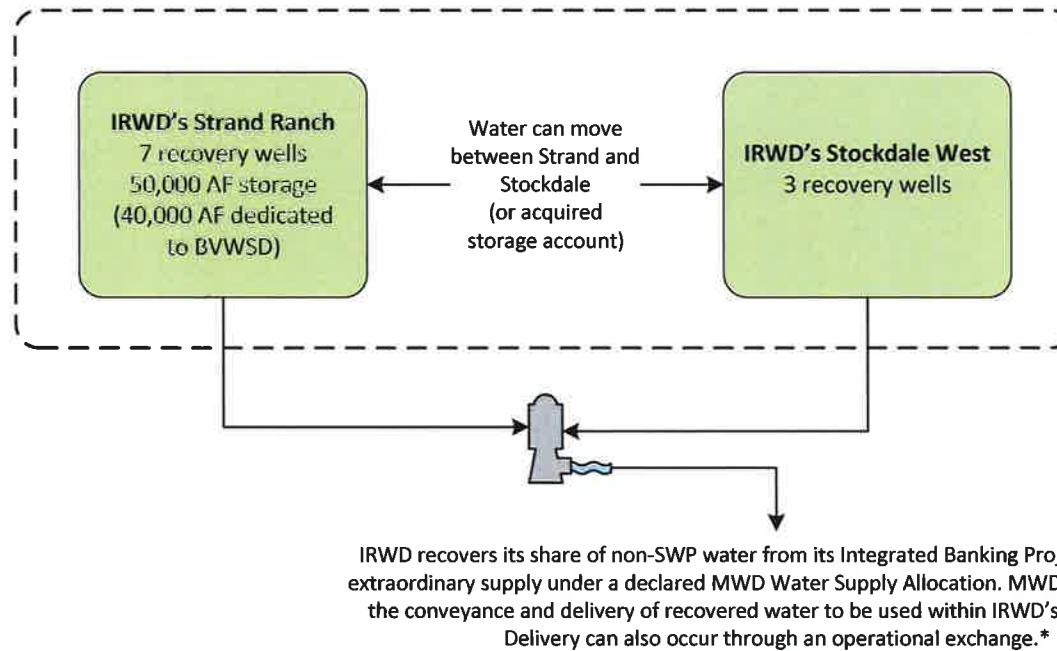
MWD has three options for the use and storage of Program Water:

- 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 "L"
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.

Exhibit "M"

STATE WATER PROJECT 2018 Carryover Balance (AF) February 27 - March 5, 2019

SWP Contractors	TABLE A	Beginning of the Week Balance	Scheduled CO Delivery During The Week	CO Spilled	End of the Week Balance
FEATHER RIVER					
COUNTY OF BUTTE	27,500	-	-	0	0
PLUMAS COUNTY FC&WCD	2,700	-	-	0	0
CITY OF YUBA CITY	9,600	4,090	-	(1,709)	2,381
Subtotal	39,800	4,090	-	(1,709)	2,381
NORTH BAY					
	0	-	-	-	-
NAPA COUNTY FC&WCD	29,025	8,929	20	(1,710)	7,199
SOLANO COUNTY WA	47,756	15,972	-	(4,127)	11,845
Subtotal	76,781	24,901	20	(5,837)	19,044
SOUTH BAY					
	-	-	-	-	-
ALAMEDA COUNTY FC&WCD-ZONE 7	80,619	5,499	250	0	5,249
ALAMEDA COUNTY WD	42,000	7,351	222	0	7,129
SANTA CLARA VALLEY WD	100,000	-	-	0	0
Subtotal	222,619	12,850	472	0	12,378
SAN JOAQUIN VALLEY					
	-	-	-	-	-
OAK FLAT WATER DISTRICT	5,700	1,365	25	0	1,340
COUNTY OF KINGS	9,305	2,292	-	0	2,292
DUDLEY RIDGE WATER DISTRICT	45,350	4,171	-	0	4,171
EMPIRE WEST SIDE ID	3,000	-	-	0	0
KERN COUNTY WA	982,730	104,863	3,550	0	101,313
TULARE LAKE BASIN WSD	87,471	11,630	-	0	11,630
Subtotal	1,133,556	124,321	3,575	0	120,746
CENTRAL COASTAL					
	-	-	-	-	-
SAN LUIS OBISPO COUNTY FC&WCD	25,000	10,652	26	(4,426)	6,200
SANTA BARBARA COUNTY FC&WCD	45,486	3,172	-	0	3,172
Subtotal	70,486	13,824	26	(4,426)	9,372
SOUTHERN CALIFORNIA					
	-	-	-	-	-
ANTELOPE VALLEY-EAST KERN WA	144,844	20,375	-	0	20,375
SANTA CLARITA VALLEY WATER AGENCY	95,200	36,035	285	(12,139)	23,611
COACHELLA VALLEY WD	138,350	-	-	0	0
CRESTLINE-LAKE ARROWHEAD WA	5,800	2,471	-	(1,032)	1,439
DESERT WATER AGENCY	55,750	-	-	0	0
LITTLEROCK CREEK ID	2,300	980	-	(410)	570
THE METROPOLITAN WATER DISTRICT OF	1,911,500	197,165	6,656	0	190,509
MOJAVE WATER AGENCY	85,800	36,556	168	(15,108)	21,280
PALMDALE WATER DISTRICT	21,300	4,388	81	0	4,307
SAN BERNARDINO VALLEY MWD	102,600	11,015	-	0	11,015
SAN GABRIEL VALLEY MWD	28,800	-	-	0	0
SAN GORGONIO PASS WA	17,300	4,452	450	0	4,002
VENTURA COUNTY WPD	20,000	1,102	-	0	1,102
Subtotal	2,629,544	314,539	7,640	(28,689)	278,210
TOTAL	4,172,786	494,525	11,733	(40,661)	442,131

STATE WATER PROJECT
Weekly Article 21 Demand & Allocation (AF)
March 6 - March 12, 2019

SWP CONTRACTORS	TABLE A	Weekly Amount Available	Weekly Amount Requested	Weekly Amount Allocated	Average Allocated Daily Rate (CFS)
FEATHER RIVER		90,247			
COUNTY OF BUTTE	27,500		-	-	-
PLUMAS COUNTY FC&WCD	2,700		-	-	-
CITY OF YUBA CITY	9,600		-	-	-
Subtotal	39,800		-	-	-
NORTH BAY					
NAPA COUNTY FC&WCD	29,025		-	-	-
SOLANO COUNTY WA	47,756		-	-	-
Subtotal	76,781		-	-	-
SOUTH BAY					
ALAMEDA COUNTY FC&WCD-ZONE 7	80,619		-	-	-
ALAMEDA COUNTY WD	42,000		-	-	-
SANTA CLARA VALLEY WD	100,000		1,000	1,000	72
Subtotal	222,619		1,000	1,000	72
SAN JOAQUIN VALLEY					
OAK FLAT WATER DISTRICT	5,700		-	-	-
COUNTY OF KINGS	9,305		170	170	12
DUDLEY RIDGE WATER DISTRICT	45,350		970	970	70
EMPIRE WEST SIDE ID	3,000		-	-	-
KERN COUNTY WA	98,2730		36,932	36,932	2,660
TULARE LAKE BASIN WSD	87,471		4,900	4,900	353
Subtotal	1,133,556		42,972	42,972	3,095
CENTRAL COASTAL					
SAN LUIS OBISPO COUNTY FC&WCD	25,000		-	-	-
SANTA BARBARA COUNTY FC&WCD	45,486		307	307	22
Subtotal	70,486		307	307	22
SOUTHERN CALIFORNIA					
ANTELOPE VALLEY-EAST KERN WA	144,844		2,454	2,454	177
SANTA CLARITA VALLEY WATER AGENCY	95,200		-	-	-
COACHELLA VALLEY WD	138,350		-	-	-
CRESTLINE-LAKE ARROWHEAD WA	5,800		-	-	-
DESERT WATER AGENCY	55,750		-	-	-
LITTLEROCK CREEK ID	2,300		-	-	-
THE METROPOLITAN WATER DISTRICT OF	1,911,500		13,826	13,826	1,464
MOJAVE WATER AGENCY	85,800		-	-	-
PALMDALE WATER DISTRICT	21,300		-	-	-
SAN BERNARDINO VALLEY MWD	102,600		1,154	349	25
SAN GABRIEL VALLEY MWD	28,800		770	98	7
SAN GORGONIO PASS WA	17,300		-	-	-
VENTURA COUNTY WPD	20,000		4,103	4,103	296
Subtotal	2,629,544		22,307	20,830	1,968
TOTAL	4,172,786		66,586	65,109	5,157

March 21, 2019

Prepared by: D. Johnson / K. Welch

Submitted by: F. Sanchez / P. Weghorst

Approved by: Paul A. Cook 

SUPPLY RELIABILITY PROGRAMS COMMITTEE

REVIEW OF CROSS VALLEY CANAL EXPANSION CAPACITY

SUMMARY:

Staff has prepared information related to the operations of the Cross Valley Canal (CVC), its expanded capacity, and the assignment of the rights of participants in the CVC during non-Article 21 and during Article 21 periods. At the Committee meeting, staff will review this information.

BACKGROUND:

In the 1970s, the Kern County Water Agency (KCWA) constructed the CVC to provide for the conveyance of water between the west (California Aqueduct) and east (Kern River; Friant-Kern Canal) sides of the southern San Joaquin Valley in Kern County. The canal bisects IRWD's Strand Ranch property and is used to convey water to and from the property for water banking purposes. Attached as Exhibit "A" is a map depicting the general location and layout of the CVC.

CVC Expansion:

Starting in 2005, KCWA began a CVC expansion project to increase conveyance capacity of the canal by 500 cubic feet per second (cfs) to accommodate additional flows off the State Water Project (SWP) when Article 21 water is available. In 2006, an agreement (the Operating Agreement) was executed among KCWA and the CVC participants for the operations of the existing CVC and its expanded capacity. Among other things, the Operating Agreement assigned the rights of participants in the expanded canal and the priority of use of capacity during Article 21 and during non-Article 21 periods. First priority rights of the expanded capacity was allocated as follows: 200 cfs to Kern Delta Water District, 100 cfs to Arvin-Edison Water Storage District, and 200 cfs to KCWA for the benefit of its member agencies. A copy of the agreement is provided as Exhibit "B".

IRWD's Participation in the CVC Expansion:

In November 2006, the IRWD Board authorized the purchase of 4.87 cfs of capacity in the CVC Expansion project for \$480,000. The purchase was executed through an agreement with Rosedale-Rio Bravo Water Storage District to secure firm capacity rights to complement the use of the Strand Ranch and other property for water banking purposes. This capacity was allocated to Rosedale by KCWA in the CVC expansion. The acquisition provides IRWD with first priority rights to use 4.87 cfs of expanded CVC capacity in accordance with the Operating Agreement, to which Rosedale is a signatory. Rosedale also provides IRWD with 79 cfs of CVC capacity on a second priority basis, and as described in the Operating Agreement, IRWD has access to Rosedale's third priority right to the use of unused capacity of the expanded canal.

Certain restrictions contained in the Operating Agreement prohibit the assignment of the use of the CVC to third parties and uses that would reduce KCWA's ability to convey, use and store Article 21

water. The priority of capacity use of the CVC during Article 21 and non-Article 21 periods is described below.

Capacity Use during Article 21 Periods:

Use of CVC Expansion capacity during Article 21 periods is defined by first, second, third and fourth priority rights of use. Kern Delta and KCWA each have a first priority right to use up to 40% of the total 500 cfs expansion capacity, with the remaining 20% of capacity reserved for Arvin-Edison. Arvin-Edison additionally has a first priority right to wheel Article 21 water associated with any State Water Project (SWP) Table A amount on behalf of a Basic Member Unit of KCWA for delivery within Arvin-Edison's district boundaries up to Arvin-Edison's full capacity. On a second priority basis, KCWA has a right to use all 500 cfs of capacity for delivery of Article 21 water. Third priority for remaining capacity is allocated 2/3 to Kern Delta and 1/3 to Arvin-Edison. Fourth priority for any remaining capacity is offered to Existing Canal Participants, including IRWD through Rosedale's participation. If the requests to use unused capacity exceed the amount of capacity available, capacity is allocated to those requesting its use in proportion to their Existing Canal capacity percentage within the respective reach where the unused capacity is available. The use of CVC Expansion capacity during Article 21 periods is summarized as part of the table in Exhibit "C," which describes the CVC Expansion usage rights, allocated capacity percentages and associated flow rates.

Capacity Use during Non-Article 21 Periods:

Similar to use of CVC Expansion capacity during Article 21 periods, use of capacity in periods when Article 21 water is not available is defined by four tiers of usage rights. KCWA and Kern Delta each have a first priority right to use 40% of the CVC Expansion capacity, with Arvin-Edison having a right for the remaining 20% of capacity. Arvin-Edison and Kern Delta share a 50/50 second priority right to use each other's capacity to the extent that there is unused capacity. To the extent that there is even further capacity available, Kern Delta, KCWA, and Arvin-Edison share the capacity on the same 40/40/20 basis as the first priority rights of use. Finally, any remaining unused capacity in the CVC Expansion is offered to Existing Canal participants on a fourth priority basis. Similar to during Article 21 periods, if the requests to use unused capacity exceed the amount of capacity available, capacity is allocated to those requesting its use in proportion to their Existing Canal capacity percentage within the respective reach where the unused capacity is available. To date, there has been sufficient unused capacity in the CVC to accommodate IRWD's use during non-Article 21 periods. The use of CVC Expansion capacity during non-Article 21 periods is summarized as part of Exhibit "C."

Implications for IRWD:

For IRWD to receive deliveries of Article 21 water or other wet season supplies at its Strand Ranch and Stockdale West recharge facilities, all of the first priority rights through third priority rights of CVC Expansion use must be already exercised for IRWD to have access to additional CVC capacity. In 2017, unused capacity was available which allowed IRWD to store 3,488 acre-feet of Article 21 water received through the Dudley Ridge Water District.

FISCAL IMPACTS:

None.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

RECOMMENDATION:

Receive and file.

LIST OF EXHIBITS:

- Exhibit "A" – CVC Map
- Exhibit "B" – CVC Operating Agreement
- Exhibit "C" – CVC Expansion Capacities Table

Exhibit "A"

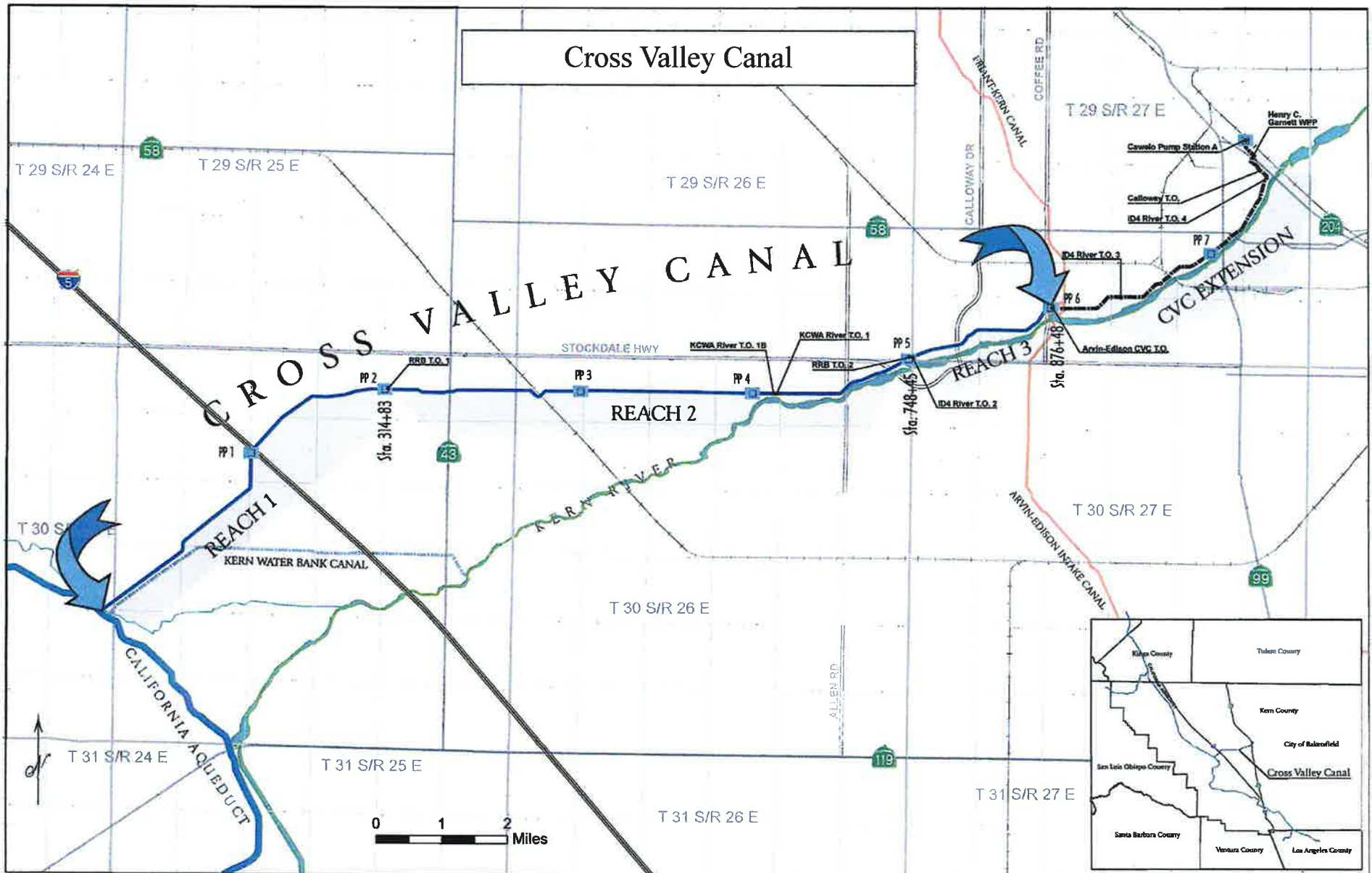


Exhibit "B"

CONTRACT AMONG KERN COUNTY WATER AGENCY AND VARIOUS PARTIES FOR THE OPERATION OF THE CROSS VALLEY CANAL, EXTENSION AND INTERTIE

This contract ("Contract") is made this _____ day of _____, 2006, among the Kern County Water Agency for itself ("Agency") and on behalf of its Improvement District No. 4 ("ID4"), Cawelo Water District ("Cawelo"), Rosedale-Rio Bravo Water Storage District ("Rosedale"), Rag Gulch Water District ("Rag Gulch"), Kern-Tulare Water District ("Kern-Tulare"), Arvin-Edison Water Storage District ("Arvin-Edison"), Kern Delta Water District ("Kern Delta") and a group of entities in Fresno and Tulare counties consisting of Fresno County, Tulare County, Hills Valley Irrigation District, Tri-Valley Water District, Pixley Irrigation District and Lower Tule River Irrigation District, (which group is hereinafter collectively referred to as the "Fresno-Tulare Group"), each entity individually sometimes referred to herein as a "Party" or "Participant" and collectively as the "Parties" or "Participants."

WITNESSETH

WHEREAS, in the 1970s the Agency and the Existing Canal Participants entered into the Existing Canal Contracts for the construction and operation of the Existing Canal and Extension, which contracts are on file at the Agency; and

WHEREAS, the Agency has constructed and is operating the Existing Canal and Extension in accordance with the Existing Canal Contracts as amended by the

“Memorandum of Understanding Regarding the Early Implementation of the Cross Valley Canal Expansion Principles of Agreement,” as last amended June 21, 2004; and

WHEREAS, the Parties have this date entered into a Contract to expand the capacity of the Existing Canal by an estimated 500 cubic feet per second (“cfs”), and desire by this Contract to enhance the value of the Cross Valley Canal for all of the Participants, to improve administration of the Cross Valley Canal, to provide for allocation of costs and revenues, and to improve water management in Kern County and the Southern San Joaquin Valley; and

WHEREAS, the Agency enters into this Contract and entered into the Existing Canal Contracts for and on behalf of itself and ID4;

NOW THEREFORE, IT IS HEREBY MUTUALLY AGREED by the Parties hereto as follows:

ARTICLE 1. DEFINITIONS. When used in this Contract the following terms shall have the meanings hereinafter set forth:

(a) “Agency Act” shall mean the Kern County Water Agency Act, being Chapter 1003 of the 1961 Statutes of the State of California, as amended.

(b) “Article 21 Water” shall mean State Water Project water made available to State Water Project contractors by DWR pursuant to Article 21 of the Master Contract, or any similar supply provided by DWR as a result of an amendment of the Master Contract.

(c) “Basic Member Unit” shall mean a district which has entered into a long-term contract with the Agency entitling it to receive a certain Table A Amount annually available under the Master Contract. For purposes of this Contract, ID4 shall be considered a Basic Member Unit.

- (d) "Contract" shall mean this Contract among the Agency and the Parties.
- (e) "Cross Valley Canal Advisory Committee" or "CVCAC" shall mean the committee established pursuant to Article 21 of this Contract.
- (f) "DWR" shall mean the Department of Water Resources of the State of California.
- (g) "Existing Canal Capacity Percentage" shall mean the respective percentages of the Existing Canal's forward flow capacity within the respective reach for each of the Existing Canal Participants identified in Columns 3, 5 and 7 on the attached Exhibit B.
- (h) "Existing Canal Contracts" shall mean the contracts described in the attached Exhibit C among the Agency and the Existing Canal Participants for the construction and operation of the Existing Canal.
- (i) "Existing Canal Participants" shall mean all of the Parties to this Contract other than Kern Delta and the Agency, acting on its own behalf.
- (j) "Existing Canal" shall mean the concrete lined canal approximately 17 miles in length, extending from the California Aqueduct near Tupman easterly to the Arvin-Edison Canal, as shown on the attached Exhibit A, together with the turnout from the California Aqueduct, Pumping Plant Nos. 1 through 6, rights of way, easements, road crossings, fences, appurtenances and other facilities necessary for its maintenance and operation, with the estimated capacity of each reach in existence on December 31, 2003 as stated in the attached Exhibit B (which are such estimated capacities prior to completing raising the concrete lining in Pool 1).

(k) “Extension” shall mean the unlined canal beginning at the eastern terminus of the Existing Canal and extending approximately 4.5 miles to a point near the Henry C. Garnett Water Purification Plant, as shown on the attached Exhibit A, together with pumping plants, rights of way, road crossings, fences and appurtenances.

(l) “Extension Participants” shall mean those Participants with capacity in the Extension identified in Columns 8 and 9 on the attached Exhibit B.

(m) “Integrated Canal” shall mean the Existing Canal as expanded by the addition of the New Canal, Pumping Plant No. 6B and the Intertie.

(n) “Integrated Canal Capacity Percentage” shall mean the percentage of the Integrated Canal’s forward flow capacity for all three reaches for each Participant identified in Column 8 on the attached Exhibit D.

(o) “Intertie” shall mean the facilities which connect Pumping Plant No. 6B to the Friant-Kern Canal consisting of (1) a bidirectional pipeline with a capacity of approximately 500 cfs from the north side of the control structure to the Friant-Kern Canal; and (2) a turn-in structure from such discharge pipeline into the Friant-Kern Canal.

(p) “Intertie Capacity Percentage” shall mean the percentage of the Intertie’s forward flow capacity for each Participant identified in Column 12 on the attached Exhibit D.

(q) “Losses” shall mean the quantities of water lost by evaporation, seepage, leakage or other causes in the operation of the Integrated Canal or the Extension.

(r) “Master Contract” shall mean that contract between the Agency and the State of California entitled “Water Supply Contract Between the State of California

Department of Water Resources and the Kern County Water Agency” dated November 15, 1963, as amended to date, and any revisions or amendments hereafter made.

(s) “New Canal Capacity Percentage” shall mean the percentage of the New Canal’s forward flow capacity for all three reaches for each of the New Canal Participants identified on the attached Exhibit F.

(t) “New Canal Participants” shall mean the Agency, Arvin-Edison and Kern Delta. It is recognized that Arvin-Edison is both a New Canal and an Existing Canal Participant and those rights will be administered independently.

(u) “New Canal” shall mean that portion of the Integrated Canal associated with the approximately 500 cfs capacity to be added to the Existing Canal pursuant to the Contract Among Kern County Water Agency and Various Parties for the Construction of the Expansion of the Cross Valley Canal.

(v) “Operating Costs” shall mean all necessary costs incurred by the Agency, including establishing reasonable reserve funds, other than Pumping Costs, for the operation, maintenance, repair, replacement and administration of the Integrated Canal and Extension.

(w) “Participants” shall mean all of the Parties to this Contract.

(x) “Proposition 13” shall mean the Safe Drinking Water, Clean Water, Watershed Protection and Flood Protection Act set forth in California Water Code sections 79000, *et seq.*

(y) “Pumping Costs” shall mean all necessary demand and energy costs incurred by the Agency associated with electric power provided to the pumping plants in the Integrated Canal and Extension.

(z) "Pumping Plant No. 6B" shall mean the following facilities: (1) a concrete-lined canal with a capacity of about 500 cfs along the northerly side of Pumping Plant No. 6 from the forebay of Pumping Plant No. 6 to a pump station, (2) a pump station with a capacity of about 500 cfs to lift water to a control structure, (3) four penstocks having an aggregate capacity of about 500 cfs from the pump station to a control structure near the Arvin-Edison Intake Canal, (4) a control structure, (5) a turn-in structure with a capacity of about 500 cfs from the south side of the control structure to the Arvin-Edison Intake Canal, (6) a gravity pipeline with a capacity of about 500 cfs from the control structure around the pump station to the concrete-lined canal and (7) a stub connection from the control structure for a future 500 cfs bidirectional pipeline intertie with the Friant-Kern Canal.

(aa) "State Water Project" shall mean the California State Water Resources Development System, operated and maintained by DWR.

(bb) "Water Supply Contract" shall mean any contract heretofore or hereafter entered into between the Agency and any Participant for a water supply from the State Water Project and any revisions or amendments heretofore or hereafter made thereto.

(cc) "Year" shall mean the 12-month period from January 1 through December 31, both dates inclusive.

ARTICLE 2. EFFECTIVE DATE/TERM. This Contract shall become effective upon substantial completion of the New Canal and Pumping Plant No. 6B and shall remain in effect unless and until terminated by operation of law or by the unanimous consent of all of the Parties, provided that, if not sooner terminated, this Contract shall terminate upon expiration of service under the Master Contract, including

continued service pursuant to Article 4 thereof or as otherwise provided. "Substantial completion" shall be determined by the Agency after conferring with the CVCAC.

ARTICLE 3. RELATIONSHIP TO EXISTING CANAL CONTRACTS. This Contract shall supersede (a) the "Cross Valley Canal Expansion Amended Principles of Agreement", as last amended July 29, 2005, (b) the "Memorandum of Understanding Regarding the Early Implementation of the Cross Valley Canal Expansion Principles of Agreement," as last amended June 21, 2004 and (c) the Existing Canal Contracts.

ARTICLE 4. EXISTING CANAL AND EXTENSION. As shown on Exhibit A, the Existing Canal and Extension as originally designed and constructed pursuant to the Existing Canal Contracts consists of the following:

(a) Reach 1 begins with a turnout on the California Aqueduct near Tupman and extends northeasterly for approximately 5 miles to and including the Rosedale West turnout constructed near the NW $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 2, T30S, R25E.

(b) Reach 2 begins at the terminus of Reach 1 and extends easterly approximately 9 miles to and including the Rosedale East turnout constructed near the crossing of Jerry Slough in Section 36, T29S, R26E.

(c) Reach 3 begins at the terminus of Reach 2 and extends easterly approximately 2 $\frac{3}{4}$ miles to and including the terminus of the Existing Canal located near the southern terminus of the Friant-Kern Canal.

(d) The Extension begins at the terminus of Reach 3 and extends easterly approximately 4 $\frac{1}{2}$ miles

ARTICLE 5. USE OF CAPACITY IN THE EXISTING CANAL.

(a) Each Existing Canal Participant shall have the unrestricted right to utilize its own designated capacity in the Existing Canal on a first priority basis for itself or its assigns, subject to the priorities and limitations specified herein.

(b) To the extent there is at any time unused capacity available in the Existing Canal, it shall be allocated among the Existing Canal Participants on a second priority basis. If the requests to use such unused capacity exceed the amount available, the unused capacity shall be allocated among those requesting it in proportion to their respective Existing Canal Capacity Percentage within the respective reach where the unused capacity is available.

(c) Any remaining unused capacity shall be offered to the New Canal Participants on a third priority basis. If the requests to use such unused capacity exceed the amount available, the unused capacity shall be allocated among those requesting it in proportion to their respective New Canal Capacity Percentage within the respective reach where the unused capacity is available.

ARTICLE 6. USE OF CAPACITY IN THE EXTENSION.

(a) Each Participant with capacity in the Extension shall have the unrestricted right to utilize its own designated capacity in the Extension on a first priority basis for itself or its assigns, subject to the priorities and limitations specified herein.

(b) To the extent there is at any time unused capacity available in the Extension, it shall be allocated among the Extension Participants on a second priority basis.

ARTICLE 7. USE OF CAPACITY IN THE NEW CANAL.

(a) Each New Canal Participant shall have an unrestricted right to use its New Canal capacity on a first priority basis for itself or its assigns, subject to the priorities and limitations specified herein.

(1) Capacity Use During Article 21 Periods: Kern Delta shall have a first priority right to use up to 40% of the New Canal capacity for delivery of Article 21 Water. If Arvin-Edison acquires a long-term State Water Project water supply, Arvin-Edison shall have a first priority right to use up to 20% of the New Canal capacity for delivery of its share of Article 21 Water. Arvin-Edison shall also have a first priority right to wheel Article 21 Water associated with any State Water Project Table A amount on behalf of a Basic Member Unit for delivery within Arvin-Edison's district boundaries up to Arvin-Edison's full capacity. The Agency shall have a first priority right to use the remaining 40% of the New Canal capacity for the delivery of Article 21 Water. The Agency shall also have a second priority right to use all of the New Canal capacity for delivery of Article 21 Water, less Kern Delta's, Arvin-Edison's and the Agency's use specified above. In order for the Agency to exercise this priority to use Kern Delta's and Arvin-Edison's New Canal capacity, the Agency's 40% of New Canal capacity must first be utilized by the Agency for local water management purposes. Third priority for any remaining capacity shall be allocated 2/3 to Kern Delta and 1/3 to Arvin-Edison. Fourth priority for any remaining capacity shall be offered to the Existing

Canal Participants. If the requests to use this unused capacity exceed the amount available, it shall be allocated to those requesting its use in proportion to their Existing Canal Capacity Percentage within the respective reach where the unused capacity is available.

(2) Capacity Use During Non-Article 21 Periods: During those periods when Article 21 Water is not available, the Agency and Kern Delta shall each have a first priority right to use 40% of the New Canal capacity and Arvin-Edison shall have a first priority right to use 20% of the New Canal capacity. Arvin-Edison and Kern Delta shall have a second priority right to use each other's capacity to the extent there is unused capacity. To the extent that there is further unused capacity available in the New Canal, the other New Canal Participants may use it on a third priority basis. If the requests to use this unused capacity exceed the amount available, it shall be allocated to those requesting its use in proportion to their New Canal Capacity Percentage within the respective reach where the unused capacity is available. Any remaining unused capacity in the New Canal shall be offered to the Existing Canal Participants on a fourth priority basis. If the requests to use this unused capacity exceed the amount available, it shall be allocated to those requesting its use in proportion to their Existing Canal Capacity Percentage within the respective reach where the unused capacity is available.

ARTICLE 8. USE OF CAPACITY IN PUMPING PLANT NOS. 6 AND 6B.

(a) Each Participant shall have an unrestricted right to use its capacity in Pumping Plant Nos. 6 and 6B on a first priority basis for itself or its assigns, subject to the priorities and limitations provided in this Contract.

(b) The capacity in Pumping Plant No. 6B shall be allocated 40% to Kern Delta, 20% to Arvin-Edison, and 40% among the Participants on the basis of their Intertie Capacity Percentages. Arvin-Edison and Kern Delta shall have a second priority right to use each other's capacity to the extent there is unused capacity. To the extent that there is further unused capacity available in Pumping Plant No. 6B, the other Participants shall have a pro rata third right to the use of any unused capacity of Arvin-Edison or Kern Delta, or both, in Pumping Plant No. 6B on the basis of Intertie Capacity Percentages. Since each pump in Pumping Plant No. 6B has a fixed capacity, each Participant shall order the delivery of water through Pumping Plant No. 6B to match available pump combinations.

(c) Pumping Plant Nos. 6 and 6B shall be operated conjunctively to maximize water deliveries; provided, however, that the capacity rights of any Participant in Pumping Plant No. 6, or Pumping Plant No. 6b, or both, shall not be adversely affected. If capacity is available in Pumping Plant No. 6, the Agency may elect to deliver all or a portion of the water to be delivered to any Participant through Pumping Plant No. 6 instead of through Pumping Plant No. 6B. If the Agency makes such election, the Agency shall charge such Participant for the cost of power to deliver that portion of such water within the capacity rights of such Participant in Pumping Plant No. 6B as if such water had been pumped through Pumping Plant No. 6B and shall charge any Participant

using the Intertie for the cost of power to deliver a like amount of its water as if such water had been delivered through Pumping Plant No. 6.

ARTICLE 9. USE OF CAPACITY IN THE INTERTIE.

(a) Each Participant shall have the unrestricted right to use its capacity in the Intertie on a first priority basis for itself or its assigns, subject to the priorities and limitations provided in this Contract.

(b) Capacity in the Intertie shall be allocated to the Participants in proportion to their Intertie Capacity Percentages. To the extent there is unused capacity in the Intertie, any requesting Participant may use such capacity on a second priority basis. If the requests to use such capacity exceed the amount available, it shall be allocated to those requesting its use in proportion to their Intertie Capacity Percentages. Any remaining unused capacity shall be made available to non-Participants on a third priority basis, subject to all necessary approvals.

(c) Use of the Intertie for delivery of water from the Cross Valley Canal to the Friant-Kern Canal may result in adverse water quality impacts to Arvin-Edison. Due consideration for such impacts shall be negotiated between those Participants desiring to introduce water into the Friant-Kern Canal and Arvin-Edison; provided, however, no such consideration shall be due with respect to any water provided under existing contracts and renewals thereof between Rag Gulch, Kern-Tulare and the Fresno-Tulare Group and United States providing for deliveries from the California Delta or Rag Gulch or Kern-Tulare supplies delivered pursuant to Federal approval.

ARTICLE 10. USE OF CAPACITY IN THE INTEGRATED CANAL AND
EXTENSION BY THE PARTICIPANTS.

(a) Each Participant's instantaneous forward flow capacity in each reach of the Integrated Canal and the Extension and the annual and monthly quantities of water which each Participant may have delivered through each reach and the Extension without having to pay any excess wheeling charge described in Article 14, shall be as set forth in the attached Exhibit E. The reverse flow capacity in each reach of the Integrated Canal, which may vary from time to time depending on operational conditions, shall be allocated to the Participants on the same basis as forward flow. The Cross Valley Canal shall be operated in a manner such that the flow direction in any reach will be determined by the greater input source (i.e., upstream or downstream pumping plants). Operations of the Cross Valley Canal for reverse flow shall not diminish the ability to make forward flow deliveries.

(b) Decisions regarding non-Participant's use of the Integrated Canal and the Extension, including rates and use priorities, shall be made by the Agency only after consultation with the CVCAC.

ARTICLE 11. ALLOCATION OF OPERATING COSTS.

(a) For the purpose of operation, maintenance, repair and replacement, the Existing Canal and New Canal shall be combined into the Integrated Canal. All Operating Costs, subject to reduction by any revenues resulting from the use of the Integrated Canal by third parties, shall be calculated and allocated among the New Canal and Existing Canal Participants proportional to each Participant's Integrated Canal Capacity Percentage. The Agency and Kern Delta shall become "Participants" in the

Cross Valley Canal and shall assume their proportional share of all liabilities and obligations for the Operating Costs of the Integrated Canal with no distinction between existing and new facilities.

(b) The Agency shall prepare an annual budget for Operating Costs of the Integrated Canal for the forthcoming year and submit it to the CVCAC for its review on or before each July 1. After considering the advice and comments of the CVCAC, the Agency's Board of Directors shall adopt the annual budget prior to September 30 of each year. The estimated Operating Costs of the Integrated Canal set forth in the adopted budget shall be allocated to each Participant on the basis of Integrated Canal Capacity Percentages.

(c) The Agency shall prepare an annual budget for Operating Costs of the Extension for the forthcoming year and submit it to the Cawelo and ID4 representatives on the CVCAC for their review on or before each July 1. After considering the advice and comments of the Cawelo and ID4 representatives on the CVCAC, the Agency's Board of Directors shall adopt the Extension annual budget prior to the beginning of each year. The estimated Operating Costs of the Extension, subject to reduction by any revenues resulting from the use of the Extension by third parties, shall be allocated 50.66% to Cawelo, and 49.34% to the Agency, on behalf of ID4.

ARTICLE 12. PAYMENT OF OPERATING COSTS.

(a) Operating Costs. Each Participant shall pay the percent of the Operating Costs of the Integrated Canal and of the Extension allocated to it in accordance with Article 11.

(b) Time and Payment for Operating Costs. Each year, on or before a date to be fixed and established by the Agency, which date shall be no later than September 30, the Agency shall notify each Participant in writing of the estimated amount of Operating Costs it must pay for the next succeeding year. Each Participant shall pay one-fourth of such costs on or before each of the following dates of that year, January 1, April 1, July 1 and October 1.

(c) Recalculation and Adjustment of Operating Costs. At the end of each year the Operating Costs for that year for all Participants shall be recalculated by substituting as soon as possible the actual Operating Costs incurred by the Agency. Any adjustments in a Participant's payments required to reflect this recalculation shall be made in each Participant's next quarterly payment due after the recalculation.

ARTICLE 13. PAYMENT OF PUMPING COSTS.

(a) Pumping Costs. Pumping Costs shall consist of two components: (1) minimum demand charges and (2) energy costs. Minimum demand charges shall be those costs incurred by the Agency which are a function of the connected load (horsepower) at each pumping plant on the Integrated Canal and Extension which do not vary with the amount of water pumped through the respective pumping plants. Energy costs include all the other costs incurred by the Agency in connection with pumping water, including all costs which do vary with the amount of water pumped.

(b) Minimum Demand Charges. The minimum demand charges incurred for each pumping plant shall be allocated among the Participants in the same manner as Operating Costs are allocated in Article 11.

(c) Time and Payment of Minimum Demand Charges. On or before September 30 of each year the Agency shall notify each Participant in writing of the estimated amount of minimum demand charges it must pay for the next succeeding year. Each Participant shall pay one-fourth of such costs on or before each of the following dates of that year: January 1, April 1, July 1 and October 1.

(d) Energy Costs. The sum of the monthly energy costs charged to Participants and all others served by the Integrated Canal and Extension shall be the amount necessary to compensate the Agency for the energy costs incurred during the preceding month for the delivery of all water through the respective pumping plants on the Integrated Canal and Extension. All such costs shall be allocated among the Participants and third parties in proportion to the amount of all water delivered from or through the pumping plants to each during that month. As soon as possible after the close of each month, the Agency shall send each Participant and/or third party a statement of its energy costs for the preceding month and each shall pay such statement within thirty days of receipt.

(e) Pumping Cost Fund. All minimum demand charges and energy cost payments received from Participants, including any penalties for late payments, shall be placed in a pumping cost fund to be used solely to pay Pumping Costs incurred by the Agency. If the payment of the minimum demand charges and energy costs by Participants, as provided for in subdivisions (c) and (d) above, do not provide sufficient balances in the pumping cost fund to enable the Agency to pay Pumping Costs in a timely manner, the Agency may add surcharges to any minimum demand charge or energy cost bill submitted to Participants. The amount of such surcharges shall be sufficient to

enable the Agency to maintain a positive balance in the pumping cost fund. Such surcharges shall be considered advances from Participants and the amount of such surcharges shall be allocated among Participants as follows: surcharges to meet minimum demand charges shall be allocated in the same manner as Operating Costs are allocated in Article 11; surcharges to meet energy cost bills shall be allocated in proportion to the amounts of water delivered through the respective pumping plants for the period in which the surcharges apply.

(f) Annual Reports. The Agency shall provide Participants with annual reports on the status of the pumping cost fund.

(g) Recalculation and Adjustment of Pumping Costs. As soon as possible after the end of each year, the minimum demand charges and energy costs for each pumping plant on the Integrated Canal and Extension shall be recalculated by using the actual costs incurred by the Agency and the actual quantities of water delivered through each pumping plant. Any adjustments in a Participant's payments required to reflect this recalculation or to refund any advances made to the pumping cost fund pursuant to subdivision (e) above that are no longer needed by the Agency shall be made in the Participant's quarterly minimum demand charge payment or first monthly energy charge payment, whichever is appropriate, due after the recalculation.

ARTICLE 14. EXCESS WHEELING CHARGE.

Each Participant shall be entitled to deliver a monthly and annual acre-foot quantity calculated from its instantaneous flow capacity in each reach of the Integrated Canal and the Extension, without any assessment of excess wheeling charges. Any water wheeled through a reach or the Extension in excess of a Participant's monthly or annual

quantity shall be subject to an excess wheeling charge of one dollar per acre-foot for each reach of the Integrated Canal and the Extension through which the water is wheeled, provided, however, that an excess wheeling charge shall not be assessed twice if both the monthly and annual quantities are exceeded. The rate of the excess wheeling charge may be modified by the Agency's Board of Directors after due consideration of any recommendation by the CVCAC. This delivery charge for all excess water delivered shall be paid within forty-five days after receipt of a statement from the Agency for such charge. Any revenue resulting from excess wheeling charges for the use of Reaches 1 through 3 shall be allocated to the Integrated Canal Participants in proportion to their Integrated Canal Capacity Percentages. Any revenue resulting from excess wheeling charges originating in the Extension shall be allocated to the Extension Participants in proportion to their respective capacity percentages within the Extension.

ARTICLE 15. DELIVERY STRUCTURES, MEASURING DEVICES, COSTS
THEREOF AND MEASUREMENT OF LOSSES.

(a) Delivery Structures and Measuring Devices. Delivery structures with measuring devices and equipment satisfactory and acceptable to the Agency and the Participant using a turnout shall be installed by the Agency, or by a Participant subject to the Agency's approval, on the Integrated Canal or Extension at the locations designated by the Participant. The Agency shall be responsible for the measuring of all water delivered to a Participant and shall keep or cause to be kept accurate records thereof. The Agency shall operate and maintain such measuring devices and equipment and examine, test and service it regularly to ensure its accuracy. A Participant may inspect such measuring devices and the measurements and records taken therefrom at any time.

(b) Capital and Operating Costs of Delivery Structures and Measuring Devices. Each Participant shall pay all the capital costs of delivery structures and measuring devices on the Integrated Canal or Extension constructed for the purpose of delivering water to it, and shall deposit with the Agency quarterly on or before each January 1, April 1, July 1 and October 1 the amount of money estimated by the Agency to be sufficient to cover the costs the Agency will incur during the quarter beginning on each of those dates for the construction of any such delivery structure and measuring device. The Agency shall refund any unused portion of such money deposited with it upon completion of the construction of the delivery structure and measuring device.

(c) Measurement and Allocation of Losses. The Agency shall determine the losses in each reach of the Integrated Canal and shall allocate these losses monthly among the Participants and any third parties in that reach in proportion to their deliveries of water through the reach during that month. Each Participant's losses shall then be allocated to it through a reduction in the amount of water delivered from or through the respective reach; provided, that the Agency shall make every effort to obtain additional State Water Project water or other water, if so requested by a Participant, to compensate for the loss of water. The cost of any such water obtained shall be charged to the requesting Participant. Losses that occur in the Extension from Cawelo delivering its State Water Project Table A Water shall be assigned to ID4. Losses in the Extension resulting from deliveries by Cawelo on behalf of others shall be prorated between ID4 and Cawelo in proportion to their deliveries through the Extension in each month.

ARTICLE 16. DELIVERY SCHEDULES.

Consistent with applicable requirements of contracts (including the Master Contract), the Agency, after conferring with the CVCAC, shall establish the procedure for determining schedules for delivery of water through the Integrated Canal and Extension.

ARTICLE 17. CURTAILMENT OF DELIVERY FOR CAPITAL IMPROVEMENTS AND MAINTENANCE PURPOSES.

The Agency may temporarily discontinue or reduce the delivery of water to the Participants for the purposes of (a) necessary investigation, inspection, maintenance, repair, replacement or capital improvements of any of the Integrated Canal and Extension facilities necessary for the delivery of water to the Participants, (b) because of outages in, or reductions in capability of, such facilities beyond the Agency's control or (c) an emergency affecting the Integrated Canal and Extension facilities. The Agency shall notify the Participants as far in advance as possible of any such discontinuance or reduction, except in cases of emergency, in which case notice need not be given. In the event of such discontinuance or reduction, the Agency shall, upon resumption of service, deliver, as nearly as may be feasible and to the extent water is furnished to it, the quantity of water which would have been delivered to each Participant in the absence of such discontinuance or reduction.

When and if there is a diminishment in the capacity of any reach of the Integrated Canal for any cause, the capacity available in that reach during such times shall be allocated among the Participants in proportion to their capacity percentage for that reach. When and if there is a diminishment in the capacity of the Extension for any cause, the

capacity available during such times shall be allocated to the Extension Participants in proportion to their respective capacity percentages within the Extension.

ARTICLE 18. RESPONSIBILITIES FOR DELIVERY AND DISTRIBUTION
OF WATER.

Neither the Agency nor its officers, agents or employees shall be liable for (a) the control, carriage, handling, use, disposal or distribution of water delivered to or for a Participant, other than ID4, pursuant to this Contract after such water has passed the requested turnout or (b) the claim of damages of any nature whatsoever, including but not limited to property damage, personal injury or death, arising out of or connected with the control, carriage, handling, use, disposal or distribution of such water beyond said turnout. The Participants shall indemnify and hold harmless the Agency and its officers, agents and employees from any such damages or claims of damages.

Neither a Participant nor its officers, agents, or employees shall be liable for (a) the control, carriage, handling, use, disposal, distribution or shortage of water supplied by the Agency to others from or through any facilities constructed or operated pursuant to this Contract or (b) the claim of damages of any nature whatsoever, including but not limited to property damage, personal injury, or death, arising out of or connected with the control, carriage, handling, use, disposal, distribution or shortage of such water. The Agency shall indemnify and hold harmless each Participant and its officers, agents, and employees from any such damages or claims of damage.

ARTICLE 19. NONRESPONSIBILITY FOR QUALITY OF WATER.

The Agency assumes no responsibility with respect to the quality of the water to be delivered pursuant to this Contract and the Agency does not warrant the quality of any such water.

ARTICLE 20. THIRD PARTY USE.

Third party charges shall be applied to those entities that wish to wheel water through the Integrated Canal, the Extension, or both, that have not entered into an agreement with a Participant to wheel water under a Participant's rights to capacity. Revenue generated from these types of third party charges shall be distributed among the Integrated Canal Participants in proportion to their Integrated Canal Capacity Percentage, excluding the Extension. Revenue generated in the Extension from these types of third party charges shall be distributed among the Extension Participants in proportion to their percentage of capacity within the Extension. Decisions regarding this type of third party use, including rates and use priorities, shall be made by the Agency only after consultation with the CVCAC.

ARTICLE 21. CROSS VALLEY CANAL ADVISORY COMMITTEE.

The Cross Valley Canal Advisory Committee shall consist of nine members, with one member appointed by each of the following: Arvin-Edison, Cawelo, Fresno-Tulare Group, Kern-Tulare, Rag Gulch, Rosedale-Rio Bravo, Kern Delta, Agency, and ID4. Each member of the Committee shall serve at the pleasure of the Participant responsible for his or her appointment. Participants may appoint alternates who may serve in the absence of their respective committee members. Voting rights of the Participants shall be in proportion to their respective Integrated Canal Capacity Percentages when making

recommendations to the Agency Board of Directors on issues regarding the Integrated Canal. Voting rights of the Participants shall be in proportion to their respective percentage of total capacity within the Extension when making recommendations to the Agency Board of Directors on issues regarding the Extension. The ID4 representative shall be a member of the Urban Bakersfield Advisory Committee selected by the Urban Bakersfield Advisory Committee members. The Agency's representative on the Committee shall be selected by the Agency's Board of Directors after due consideration of recommendations from the Agency's Member Units.

The CVCAC shall be charged with the responsibility of making recommendations to the Agency on such things as plans and specifications for project facilities, construction and operating budgets, operating criteria and use of the project facilities by nonparticipants. To the extent reasonably possible the CVCAC shall be informed of the details of such matters in a timely manner and, except in emergencies, the Agency shall seek and consider the advice of the CVCAC on all such matters. Final decisions concerning the Integrated Canal and Extension shall be made by the Agency, consistent with the terms of this Contract.

ARTICLE 22. TURNOUTS.

Any Participant in the Integrated Canal or Extension shall have the right to construct turnouts from any reach in which they have allocated capacity, subject to appropriate review by the CVCAC and approval by the Agency's Board of Directors. Any costs associated with the construction of any such turnouts shall be paid by the requesting Participant.

ARTICLE 23. DEFAULT.

Each Participant shall cause to be levied and collected all necessary taxes, assessments and charges and shall use all its authority and resources to meet its obligations hereunder, to make in full all payments to be made pursuant to this Contract on or before the date such payments become due and to meet its other obligations under this Contract. In the event of any default by a Participant in the payment of any money required to be paid to the Agency hereunder, the Agency in its discretion may suspend delivery of water during the period when the Participant is delinquent in its payment for or obligations due to the Agency under the terms of this Contract; provided, that during any such period of delinquency or suspension the Participant shall remain obligated to make all payments required under this Contract.

ARTICLE 24. OBLIGATION OF PARTICIPANTS TO MAKE PAYMENTS.

(a) Character of Obligation. The obligations of a Participant arising out of or pursuant or incidental to this Contract or the Water Supply Contract including, without limiting the generality of the foregoing, the obligations of a Participant to pay to the Agency the sums becoming due the Agency for services hereunder, shall constitute a general obligation of the Participant and the Participant shall use all the powers and resources available to it under the law to collect the funds necessary for and to pay its obligations to the Agency under this Contract. A Participant as a whole is obligated to pay to the Agency the payments becoming due under this Contract, notwithstanding any individual default by its water users, constituents or others in the payment to the Participant of assessments, tolls or other charges levied by the Participant.

(b) Refusal of Water Does Not Affect Obligation. A Participant's failure or refusal to accept the rights and benefits to which it is entitled under this Contract shall in no way relieve the Participant of its obligation to make payments to the Agency as provided for herein.

ARTICLE 25. PENALTY FOR LATE PAYMENT.

Upon each charge to be paid by the Participants to the Agency pursuant to this Contract which shall remain unpaid after the same shall have become due and payable, interest shall accrue at the rate of one-half (1/2) of one (1) percent per month of the amount of such delinquent payment from and after the date when the same becomes due until paid, and the Participants shall pay such interest. To the extent possible the Agency shall endeavor to submit statements to the Participants of all payments due under this Contract thirty (30) days in advance of the due date.

ARTICLE 26. REMEDIES NOT EXCLUSIVE.

The use by any Party of any remedy specified herein for the enforcement of this Contract is not exclusive and shall not deprive the Party using such remedy of, or limit the application of, any other remedy provided by law.

ARTICLE 27. AMENDMENTS.

This Contract may be amended at any time by mutual agreement of all of the Parties, except insofar as any proposed amendment is in any way contrary to applicable law or inconsistent with the provisions of the Master Contract. The Agency shall make available to the Participants at all times during the normal hours of business at the Agency offices for inspection copies of all contracts now or hereafter executed by the Agency with the Participants and of any amendments thereof.

ARTICLE 28. OPINIONS AND DETERMINATIONS.

Where the terms of this Contract provide for action to be based upon opinion, judgment, approval, review or determination of any Party hereto, such terms are not intended to be and shall never be construed as permitting such opinion, judgment, approval, review or determination to be arbitrary, capricious or unreasonable.

ARTICLE 29. WAIVER OF RIGHTS.

Any waiver at any time by any Party of its rights with respect to a default or any other matter arising in connection with this Contract shall not be deemed to be a waiver with respect to any other default or matter.

ARTICLE 30. NOTICES.

All notices that are required either expressly or by implication to be given by any Party to any other Party under this Contract shall be signed for the Agency and for the Participant by such officers as they may, from time to time, authorize in writing to so act. All such notices shall be deemed to have been given and delivered if delivered personally or if enclosed in a properly addressed envelope and deposited in a United States Post Office for delivery by registered or certified mail. Unless and until formally notified otherwise, all notices shall be addressed to the parties at their addresses as shown on Exhibit G.

ARTICLE 31. ASSIGNMENTS.

The provisions of this Contract shall apply to and bind the successors and assigns of the respective parties, but no permanent assignment or transfer of this Contract, or any part hereof or interest herein, shall be valid unless and until approved by the Agency. The Agency shall not approve any such permanent assignment or transfer, unless and

until the proposed permanent assignment or transfer has been offered in writing to all Participants; provided, however, a change in a Participant's boundaries by inclusion or exclusion of lands, consolidation, merger or otherwise shall not require such first right of refusal. A failure to respond to the offer within 45 days following notice thereof shall be deemed a refusal of such offer. The offer of any such permanent assignment or transfer shall be on the same basis to all Participants and if more than one Participant desires to accept the offer, the contract or portion thereof to be assigned shall be prorated among them in proportion to the flow capacities provided for each of them in the facilities involved in the assignment or transfer. The Participants hereby consent to the Agency's permanent assignment of any portion of the Agency's rights and obligations under this Contract to the Agency's Basic Member Units. A Participant may temporarily assign its capacity in the Integrated Canal or Extension without approval by the Agency; however, temporary assignment of capacity by a Participant shall not relieve the Participant of the obligation to pay all costs associated with the conveyance of water in such capacity.

ARTICLE 32. INSPECTION OF BOOKS AND RECORDS.

The proper officers or agents of a Participant shall have full and free access at all reasonable times to the account books and official records of the Agency insofar as the same pertain to the matters and things provided for in this Contract, with the right at any time during office hours to make copies thereof, and the proper representatives of the Agency shall have similar rights in respect to the account books and records of a Participant.

ARTICLE 33. COUNTERPARTS.

This Contract may be executed in counterparts. Immediately upon execution by a Participant, the Contract shall become effective on the effective date of this Contract as to that Participant and all Participants who have likewise executed this Contract. Each executed counterpart shall be deemed an original, all of which together shall constitute a single executed agreement.

ARTICLE 34. INTEGRATION.

This Contract contains the entire agreement among the Participants with respect to the subject of this Contract, namely the operation of the Integrated Canal and Extension, and supersedes any other agreement, whether written or oral, by and among the Participants on such subject. Any prior representation, promise, or the like that is not contained in this Contract shall be of no force or effect. No Participant, by execution of this Contract, relinquishes any other right, title or interest that it may have.

IN WITNESS WHEREOF, each Participant has caused this Agreement to be executed as of the date first written above.

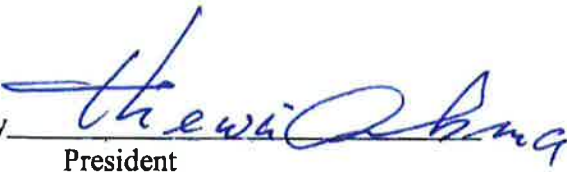
KERN COUNTY WATER AGENCY

By _____
President

KERN-TULARE WATER
DISTRICT

By 
President

PIXLEY IRRIGATION DISTRICT

By 
President

RAG GULCH WATER DISTRICT

By 
President

CAWELO WATER DISTRICT

By 
President

ARVIN-EDISON WATER
STORAGE DISTRICT

By 
President

KERN DELTA WATER DISTRICT

By 
President

FRESNO COUNTY

By _____
President

TULARE COUNTY

By _____
President

HILLS VALLEY IRRIGATION DISTRICT

By _____
President

TRI-VALLEY WATER DISTRICT

By _____
President

ROSEDALE-RIO BRAVO WATER
STORAGE DISTRICT

By 
President

LOWER TULE RIVER IRRIGATION DISTRICT

By 
President

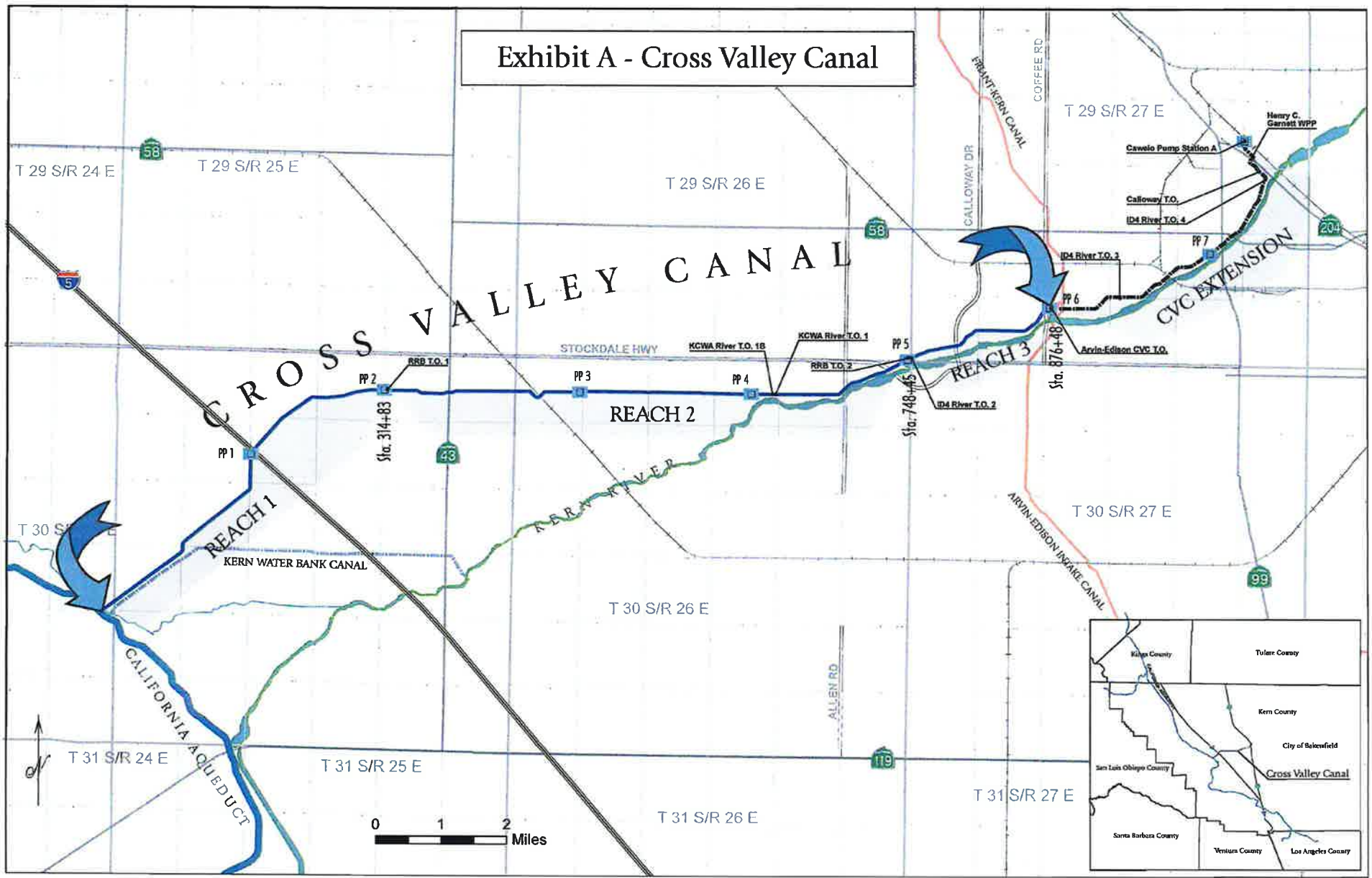


EXHIBIT B
KERN COUNTY WATER AGENCY
CROSS VALLEY CANAL
DESIGNATED (CFS) & PERCENTAGE (%) OF CAPACITY AT DECEMBER 31, 2003¹

PARTICIPANT CAPACITY IN CUBIC FEET per SECOND (CFS)								
C.V.C. PARTICIPANTS	REACH No. 1		REACH No. 2		REACH No. 3		EXTENSION	
	CFS	%	CFS	%	CFS	%	CFS	%
FRESNO-TULARE GROUP								
Lower-Tule River I.D.	109.10	11.83%	103.99	12.34%	109.47	13.48%	0.00	0.00%
Pixley I.D.	109.10	11.83%	103.99	12.34%	109.47	13.48%	0.00	0.00%
County of Tulare	10.52	1.14%	10.03	1.19%	10.56	1.30%	0.00	0.00%
County of Fresno	10.52	1.14%	10.03	1.19%	10.56	1.30%	0.00	0.00%
Hills Valley I.D.	7.52	0.82%	7.16	0.85%	7.54	0.93%	0.00	0.00%
Tri-Valley W.D.	3.44	0.37%	3.28	0.39%	3.46	0.43%	0.00	0.00%
* Sub-Total "CFS"	250.20	27.14%	238.48	28.29%	251.06	30.92%	0.00	0.00%
ARVIN-EDISON W.S.D.	12.87	1.40%	12.26	1.45%	12.91	1.59%	0.00	0.00%
RAG-GULCH W.D.	50.11	5.43%	47.76	5.67%	50.28	6.19%	0.00	0.00%
KERN-TULARE W.D.	142.81	15.49%	136.12	16.15%	143.29	17.65%	0.00	0.00%
CAWELO W.D.	169.12	18.34%	161.20	19.12%	169.69	20.90%	165.00	50.66%
IMPROVEMENT DISTR.No.4	176.63	19.16%	168.36	19.97%	177.23	21.83%	141.00	49.34%
ROSEDALE-RIO BRAVO WSD	120.26	13.04%	78.81	9.35%	7.54	0.93%	0.00	0.00%
TOTAL "CFS"	922.00	100.00%	843.00	100.00%	812.00	100.00%	306.00	100.00%

¹ The Early Implementation MOU, which incorporates the CVC Expansion Principles of Agreement, became effective January 1, 2004.

**EXHIBIT C
KERN COUNTY WATER AGENCY
CROSS VALLEY CANAL
EXISTING CANAL CONTRACTS**

Arvin-Edison Water Storage District

- 04-04-74: Contract Between Kern County Water Agency and Arvin-Edison Water Storage District for the Construction and Operation of a Cross Valley Canal and Extension
- 06-13-74: Contract Between Kern County Water Agency and Arvin-Edison Water Storage District for the Installation of Cross Valley Canal Pumping Units
- 05-24-79: Amendment No. 1 to the Contract Between Kern County Water Agency and Arvin-Edison Water Storage District Providing for the Construction and Operation of a Cross Valley Canal and Extension
- 12-23-86: Amendment No. 2 to the Contract Between Kern County Water Agency and Arvin-Edison Water Storage District Providing for the Construction and Operation of a Cross Valley Canal and Extension

Cawelo Water District

- 09-28-72: Contract Between Kern County Water Agency and Cawelo Water District for the Construction and Operation of a Cross Valley Canal and Extension
- 08-28-73: Amendment No. 1 to the Contract Between Kern County Water Agency and Cawelo Water District Providing for the Construction and Operation of a Cross Valley Canal and Extension
- 04-04-74: Amendment No. 2 to the Contract Between Kern County Water Agency and Cawelo Water District Providing for the Construction and Operation of a Cross Valley Canal and Extension
- 05-16-79: Amendment No. 3 to the Contract Between Kern County Water Agency and Cawelo Water District, Providing for the Construction and Operation of a Cross Valley Canal and Extension
- 12-02-86: Amendment No. 4 to the Contract Between Kern County Water Agency and Cawelo Water District Providing for the Construction and Operation of a Cross Valley Canal and Extension

County of Fresno

- 06-16-76: Agreement Between Kern County Water Agency, Arvin-Edison Water Storage District and County of Fresno Relating to Assignment of Rights and Obligations Under Cross Valley Canal Contract
- 03-06-79: Amendment No. 1 to Agreement Between the Kern County Water Agency, Arvin-Edison Water Storage District, and County of Fresno Relating to Assignment of Rights and Obligations Under Cross Valley Canal Contract
- 12-02-86: Amendment No. 2 to the Contract Between Kern County Water Agency and Arvin-Edison Water Storage District Providing for the Construction and Operation of a Cross Valley Canal and Extension AND to the Agreement Between Kern County Water Agency, Arvin-Edison Water Storage District and County of Fresno Relating to Assignment of Rights and Obligations Under Cross Valley Canal Contract

County of Tulare

- 05-04-76: Agreement Between Kern County Water Agency, Arvin-Edison Water Storage District, and County of Tulare Relating to Assignment of Rights and Obligations Under Cross Valley Canal Contract
- 02-20-79: Amendment No. 1 to Agreement Between the Kern County Water Agency, Arvin-Edison Water Storage District and County of Tulare Relating to Assignment of Rights and Obligations Under Cross Valley Canal Contract
- 12-02-86: Amendment No. 2 to the Contract Between Kern County Water Agency and Arvin-Edison Water Storage District Providing for the Construction and Operation of a Cross Valley Canal and Extension AND to the Agreement Between Kern County Water Agency, Arvin-Edison Water Storage District and County of Tulare Relating to Assignment of Rights and Obligations Under Cross Valley Canal

Hills Valley Irrigation District

- 08-08-78: Agreement Between Kern County Water Agency, Arvin-Edison Water Storage District, and Hills Valley Irrigation District Relating to Assignment of Rights and Obligations Under Cross Valley Canal Contract
- 05-24-79: Amendment No. 1 to Agreement Between the Kern County Water Agency, Arvin-Edison Water Storage District, and Hills Valley Irrigation District, Relating to Assignment of Rights and Obligations Under Cross Valley Canal Contract

Kern-Tulare Water Storage District

- 04-04-74: Contract Between Kern County Water Agency and Kern-Tulare Water District for the Construction and Operation of a Cross Valley Canal and Extension
- 05-24-79: Amendment No. 1 to the Contract Between Kern County Water Agency and Kern-Tulare Water District Providing for the Construction and Operation of a Cross Valley Canal and Extension
- 12-02-86: Amendment No. 3 to the Contract Between Kern County Water Agency and Kern-Tulare Water District Providing for the Construction and Operation of a Cross Valley Canal and Extension

Lower-Tule River Irrigation District

- 04-22-76: Agreement Between Kern County Water Agency, Arvin-Edison Water Storage District and Lower Tule River Irrigation District Relating to Assignment of Rights and Obligations Under Cross Valley Canal Contract
- 05-24-79: Amendment No. 1 to Agreement Between the Kern County Water Agency, Arvin-Edison Water Storage District, and Lower Tule River Irrigation District, Relating to Assignment of Rights and Obligations Under Cross Valley Canal Contract
- 12-02-85: Amendment No. 2 to the Contract between Kern County Water Agency and Arvin-Edison Water Storage District Providing for the Construction and Operation of a Cross Valley Canal Extension AND to the Agreement Between Kern County Water Agency, Arvin-Edison Water Storage District and Lower Tule River Irrigation District Relating to Assignment of Rights and Obligations Under Cross Valley Canal Contract

Pixley Irrigation District

- 04-22-76: Agreement Between Kern County Water Agency, Arvin-Edison Water Storage District and Pixley Irrigation District Relating to Assignment of Rights and Obligations Under Cross Valley Canal Contract
- 12-02-85: Amendment No. 2 to the Contract Between Kern County Water Agency and Arvin-Edison Water Storage District Providing for the Construction and Operation of a Cross Valley Canal and Extension AND to the Agreement between Kern County Water Agency, Arvin-Edison Water Storage District and Pixley Irrigation District Relating to Assignment of Rights and Obligations Under Cross Valley Canal Contract

Rag Gulch Water District

- 09-13-73: Contract between Kern County Water Agency and Rag Gulch Water District for the Construction and Operation of a Cross Valley Canal and Extension
- 04-04-74: Amendment No. 1 to the Contract Between Kern County Water Agency and Rag Gulch Water District Providing for the Construction and Operation of a Cross Valley Canal and Extension
- 12-02-86: Amendment No. 3 to the Contract Between Kern County Water Agency and Rag Gulch Water District Providing for the Construction and Operation of a Cross Valley Canal and Extension

Rosedale-Rio Bravo Water Storage District

- 08-28-73: Contract between Kern County Water Agency and Rosedale-Rio Bravo Water Storage District for the Construction and Operating of a Cross Valley Canal
- 04-04-74: Amendment No. 1 to the Contract Between Kern County Water Agency and Rosedale-Rio Bravo Water Storage District Providing for the Construction and Operation of a Cross Valley Canal and Extension
- 03-13-79: Amendment No. 2 to the Contract Between Kern County Water Agency and Rosedale-Rio Bravo Water Storage District Providing for the Construction and Operation of a Cross Valley Canal and Extension
- 12-02-86: Amendment No. 3 to the Contract Between Kern County Water Agency and Rosedale-Rio Bravo Water Storage District Providing for the Construction and Operation of a Cross Valley Canal and Extension

Tri-Valley Water District

- 06-22-78: Agreement Between Kern County Water Agency, Arvin-Edison Water Storage District, and Tri-Valley Water District Relating to Assignment of Rights and Obligations Under Cross Valley Canal Contract
- 05-24-79: Amendment No. 1 To Agreement Between the Kern County Water Agency, Arvin-Edison Water Storage District, and Tri-Valley Water District, Relating to Assignment of Rights and Obligations Under Cross Valley Canal Contract
- 12-02-85: Amendment No. 2 to the Contract Between Kern County Water Agency and Arvin-Edison Water Storage District Providing for the Construction and Operation of a Cross Valley Canal and Extension AND to the Agreement Between Kern County Water Agency, Arvin-Edison Water Storage District and Tri-Valley Water District Relating to Assignment of Rights and Obligations Under Cross Valley Canal Contract

EXHIBIT D
KERN COUNTY WATER AGENCY
CROSS VALLEY CANAL
INTEGRATED CANAL AND INTERTIE CAPACITIES AND PERCENTAGES

REACH CAPACITIES & "INTEGRATED CANAL CAPACITIES" IN CUBIC FEET PER SECOND (CFS)										INTERTIE CAPACITIES (CFS)	
C.V.C. PARTICIPANTS	REACH No. 1		REACH No. 2		REACH No. 3		Integrated CVC Capacity Percentages	EXTENSION		CFS	REACH No. 3 %
	CFS	%	CFS	%	CFS	%		CFS	%		
FRESNO-TULARE GROUP											
Lower-Tule River I.D.	109.10	7.67%	103.99	7.74%	109.47	8.34%	7.91%	0.00	0.00%	41.72	8.34%
Pixley I.D.	109.10	7.67%	103.99	7.74%	109.47	8.34%	7.91%	0.00	0.00%	41.72	8.34%
County of Tulare	10.52	0.74%	10.03	0.75%	10.56	0.80%	0.76%	0.00	0.00%	4.02	0.80%
County of Fresno	10.52	0.74%	10.03	0.75%	10.56	0.80%	0.76%	0.00	0.00%	4.02	0.80%
Hills Valley I.D.	7.52	0.53%	7.16	0.53%	7.54	0.57%	0.55%	0.00	0.00%	2.87	0.57%
Tri-Valley W.D.	3.44	0.24%	3.28	0.24%	3.46	0.26%	0.25%	0.00	0.00%	1.32	0.26%
* Sub-Total "CFS"	250.20	17.59%	238.48	17.76%	251.06	19.14%	18.14%	0.00	0.00%	95.68	19.14%
ARVIN-EDISON W.S.D.	12.87	0.91%	12.26	0.91%	12.91	0.98%	0.93%	0.00	0.00%	4.92	0.98%
RAG-GULCH W.D.	50.11	3.52%	47.76	3.56%	50.28	3.83%	3.63%	0.00	0.00%	19.16	3.83%
KERN-TULARE W.D.	142.81	10.04%	136.12	10.14%	143.29	10.92%	10.36%	0.00	0.00%	54.61	10.92%
CAWELO W.D.	169.12	11.89%	161.20	12.00%	169.69	12.93%	12.26%	165.00	50.66%	64.67	12.93%
IMPROVEMENT DISTR.No.4	176.63	12.42%	168.36	12.54%	177.23	13.51%	12.81%	141.00	49.34%	67.54	13.51%
ROSEDALE-RIO BRAVO WSD	120.26	8.46%	78.81	5.87%	7.54	0.57%	5.07%	0.00	0.00%	2.87	0.57%
KCWA	200.00	14.06%	200.00	14.89%	200.00	15.24%	14.72%	0.00	0.00%	76.22	15.24%
KERN DELTA	200.00	14.06%	200.00	14.89%	200.00	15.24%	14.72%	0.00	0.00%	76.22	15.24%
ARVIN-EDISON W.S.D.	100.00	7.03%	100.00	7.45%	100.00	7.62%	7.36%	0.00	0.00%	38.11	7.62%
TOTAL "CFS"	1,422.00	100.00%	1,343.00	100.00%	1,312.00	100.00%	100.00%	306.00	100.00%	500.00	100.00%

EXHIBIT E

KERN COUNTY WATER AGENCY CROSS VALLEY CANAL INTEGRATED CANAL - ANNUAL AND MONTHLY QUANTITIES

Participant	Reach 1			Reach 2			Reach 3			Extension		
	cfs	af/mo [1]	af/yr	cfs	af/mo [1]	af/yr	cfs	af/mo [1]	af/yr	cfs	af/mo [1]	af/yr
Lower-Tule River ID	109.10	7,899	78,986	103.99	7,529	75,286	109.47	7,925	79,254	0.00	0	0
Pixley ID	109.10	7,899	78,986	103.99	7,529	75,286	109.47	7,925	79,254	0.00	0	0
Tulare County	10.52	762	7,616	10.03	726	7,261	10.56	765	7,645	0.00	0	0
Fresno County	10.52	762	7,616	10.03	726	7,261	10.56	765	7,645	0.00	0	0
Hills Valley ID	7.52	544	5,444	7.16	518	5,184	7.54	546	5,459	0.00	0	0
Tri-Valley WD	3.44	249	2,490	3.28	237	2,375	3.46	250	2,505	0.00	0	0
Subtotal Fresno-Tulare Group	250.20	18,114	181,139	238.48	17,265	172,654	251.06	18,176	181,762	0.00	0	0
Arvin-Edison WSD	112.87	8,172	81,715	112.26	8,127	81,274	112.91	8,174	81,744	0.00	0	0
Rag Gulch WD	50.11	3,628	36,279	47.76	3,458	34,577	50.28	3,640	36,402	0.00	0	0
Kern-Tulare WD	142.81	10,339	103,391	136.12	9,855	98,548	143.29	10,374	103,739	0.00	0	0
Cawelo WD	169.12	12,244	122,439	161.20	11,671	116,705	169.69	12,285	122,852	165.00	11,946	119,456
Improvement District No. 4	176.63	12,788	127,876	168.36	12,189	121,892	177.23	12,831	128,311	141.00	10,208	102,081
Rosedale-Rio Bravo WSD	120.26	8,707	87,066	78.81	5,706	57,060	7.54	546	5,459	0.00	0	0
KCWA	200.00	14,480	144,796	200.00	14,480	144,796	200.00	14,480	144,796	0.00	0	0
Kern Delta WD	200.00	14,480	144,796	200.00	14,480	144,796	200.00	14,480	144,796	0.00	0	0
Total all Participants	1,422.00	102,950	1,029,496	1,343.00	97,230	972,300	1,312.00	94,986	949,858	306.00	22,154	221,537

[1] The calculated monthly quantity includes a 20% peaking factor.

EXHIBIT F
KERN COUNTY WATER AGENCY
CROSS VALLEY CANAL
NEW CANAL CAPACITIES AND PERCENTAGES

NEW CANAL PARTICIPANT CAPACITY IN CUBIC FEET per SECOND (CFS)						
C.V.C. PARTICIPANTS	REACH No. 1		REACH No. 2		REACH No. 3	
	CFS	%	CFS	%	CFS	%
KCWA	200.00	40.00%	200.00	40.00%	200.00	40.00%
KERN DELTA	200.00	40.00%	200.00	40.00%	200.00	40.00%
ARVIN-EDISON W.S.D.	100.00	20.00%	100.00	20.00%	100.00	20.00%
TOTAL "CFS"	500.00	100.00%	500.00	100.00%	500.00	100.00%

EXHIBIT G

**KERN COUNTY WATER AGENCY
CROSS VALLEY CANAL
CONTACT NAMES AND ADDRESSES**

KERN COUNTY WATER AGENCY

Mr. James Beck
3200 Rio Mirada Drive
Bakersfield, CA 93308

CAWELO WATER DISTRICT

Mr. David Ansolabehere
17207 Industrial Farm Road
Bakersfield, CA 93308

**ROSEDALE-RIO BRAVO
WATER STORAGE DISTRICT**

Mr. Hal Crossley
849 Allen Road
Bakersfield, CA 93302

RAG GULCH WATER DISTRICT

Mr. Steven Dalke
5001 California Avenue, Suite 202
Bakersfield, CA 93309

KERN-TULARE WATER DISTRICT

Mr. Steven Dalke
5001 California Avenue, Suite 202
Bakersfield, CA 93309

ARVIN-EDISON WATER STORAGE DISTRICT

Mr. Steven Collup
20401 Bear Mountain Boulevard
Arvin, CA 93203

KERN DELTA WATER DISTRICT

Mr. Mark Mulkay
501 Taft Highway
Bakersfield, CA 93307

FRESNO COUNTY

Mr. Phil Desatoff
2220 Tulare St. 6th Floor
Fresno, CA 93721

TULARE COUNTY

Mr. Dennis Keller
P.O. Box 911
Visalia, CA 93279

HILLS VALLEY IRRIGATION DISTRICT

Mr. Dennis Keller
P.O. Box 911
Visalia, CA 93279

TRI-VALLEY WATER DISTRICT

Mr. Richard Cosgrove
15142 East Goodfellow
Sanger, CA 93657

PIXLEY IRRIGATION DISTRICT

Mr. Dan Vink
357 East Olive Avenue
Tipton, CA 93257

LOWER TULE RIVER IRRIGATION DISTRICT

Mr. Dan Vink
357 E. Olive Avenue
Tipton, CA 93272

Exhibit "C"

CVC Expansion Capacities Based on 2006 Contract for Operation of the CVC

March 21, 2019

Capacities During Article 21 Periods

Agency	First Priority Capacity	First Priority Capacity CFS	Second Priority Capacity	Second Priority Capacity CFS	Third Priority Capacity	Third Priority Capacity CFS	Fourth Priority Capacity ¹	Fourth Priority Capacity CFS
Kern County Water Agency	40%	200	100%	500	0%	0	0%	0
Kern Delta Water District	40%	200	0%	0	66%	333	0%	0
Arvin-Edison WSD	20%	100	0%	0	33%	167	1%	7
Fresno-Tulare Group	0%	0	0%	0	0%	0	27%	135
Rag-Gulch Water District	0%	0	0%	0	0%	0	5%	27
Kern-Tulare Water District	0%	0	0%	0	0%	0	16%	79
Cawelo Water District	0%	0	0%	0	0%	0	18%	91
Improvement District No.4	0%	0	0%	0	0%	0	20%	96
Rosedale-Rio Bravo WSD	0%	0	0%	0	0%	0	13%	65

¹If requests to use unused capacity exceed the amount available, remaining capacity is allocated to those requesting CVC expansion use in proportion to their Existing Canal Capacity Percentage within the respective reach where the unused capacity is available.

Capacities During Non-Article 21 Periods

Agency	First Priority Capacity	First Priority Capacity CFS	Second Priority Capacity	Second Priority Capacity CFS	Third Priority Capacity	Third Priority Capacity CFS	Fourth Priority Capacity ²	Fourth Priority Capacity CFS
Kern County Water Agency	40%	200	0%	0	40%	200	0%	0
Kern Delta Water District	40%	200	50%	250	40%	200	0%	0
Arvin-Edison WSD	20%	100	50%	250	20%	100	1%	7
Fresno-Tulare Group	0%	0	0%	0	0%	0	27%	135
Rag-Gulch Water District	0%	0	0%	0	0%	0	5%	27
Kern-Tulare Water District	0%	0	0%	0	0%	0	16%	79
Cawelo Water District	0%	0	0%	0	0%	0	18%	91
Improvement District No.4	0%	0	0%	0	0%	0	20%	96
Rosedale-Rio Bravo WSD	0%	0	0%	0	0%	0	13%	65

²If the requests to use unused capacity exceed the amount available, remaining capacity is allocated to those requesting CVC expansion use in proportion to their Existing Canal Capacity Percentage within the respective reach where the unused capacity is available.