

Overview of IRWD Water Banking Projects

Orange County Water District
Water Issues Committee

October 10, 2018



Presentation Agenda

1. IRWD's Water Banking Projects
2. Banked Water for Orange County
 - Drought Reliability Pilot Program with MWDOC
 - Next Steps
3. Kern Fan Groundwater Storage Project



IRWD Water Banking Projects



IRWD Water Banking Projects Objective

Water Banking Objective:
Capture and store water available in wet years for use in droughts and periods of supply interruptions
✓ **Extraordinary Supply**

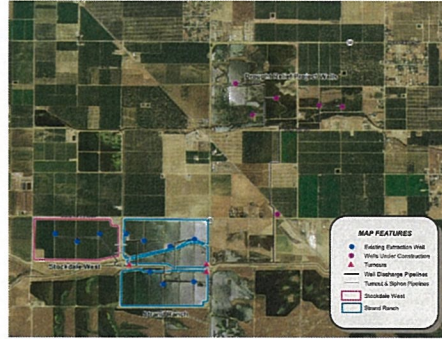


How our banked water is conveyed
Water recovered from the IRWD Strand Ranch Water Banking Project is delivered to IRWD's service area via the Cross Valley Canal, the California Aqueduct and MWD facilities.

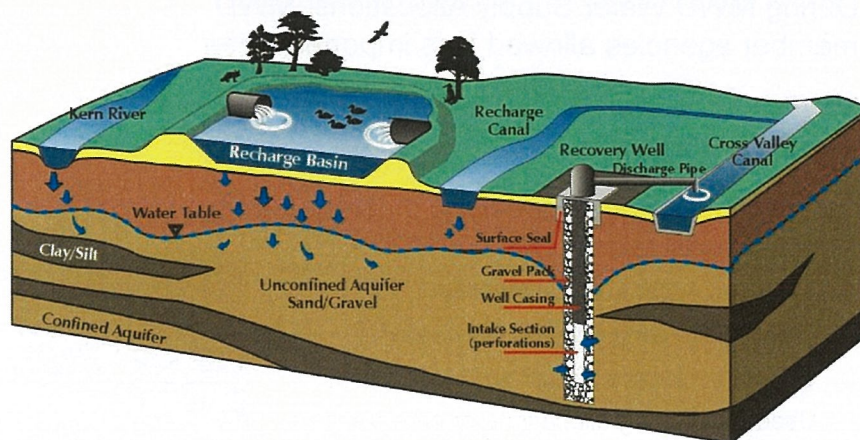
IRWD Water Banking Projects

Banking Components and Facilities:

- ✓ Aquifer
(126,000 AF of storage)
- ✓ Land: 761 acres for recharge
(45,000 AFY)
- ✓ Water Supply
(Unbalanced exchanges, etc.)
- ✓ Recovery: 13 wells
(70 cfs; 29,000 AFY)
- ✓ Conveyance: three turnouts
(access to the California Aqueduct and Cross Valley Canal)

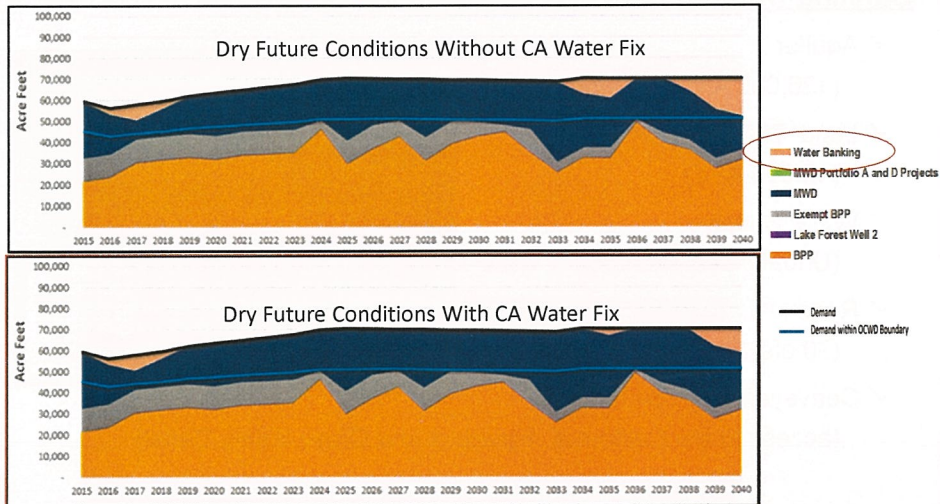


Water Banking – How Does It Work?



Measuring Reliability Benefits from Water Banking

From IRWD's 2016 Water Reliability Study:



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What is Extraordinary Supply?

- During MWD Water Supply Allocations, MWD member agencies allowed less imported water
- MWDOC accordingly reduces imported supplies to its member agencies
- **Extraordinary Supply** provides protection from MWD penalty rates
 - Improves water supply reliability
 - Demand hardening increases need
 - Cannot be a base loaded supply
 - Used only during allocations or emergencies
 - Can be moved between qualified storage programs
 - Valuable source of supply when MWD allocates water



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Sources of Water

Water from the State Water Project (SWP):

- Unbalanced Exchange Programs for Table A Water:
 - Carpinteria Valley Water District
 - Antelope Valley East Kern Water Agency
 - IRWD's Jackson Ranch in Dudley Ridge Water District
 - Others



Water from Non-SWP Supplies:

- Kern River Flood Flows via Rosedale; IRWD retains up to 50%
- Kern River Pre-1914 High-Flow Water via BVWSD; IRWD retains 50%
- Other Wet-Year Exportable Supplies, as available



Conveyance: IRWD / MWD / MWDOC Agreements

The *Coordinated Operating and Exchange Agreement (2011)*:

- Allows IRWD to secure SWP water to store in IRWD the water banks or in Southern California;
- MWD can borrow SWP supplies from IRWD; and
- Water qualifies as Extraordinary Supply¹.



The *Template Wheeling Agreement*:

- Allows access to MWD facilities to transport non-SWP water;
- Must be executed for each transaction;
- Water qualifies water as Extraordinary Supply¹.
 - 1,000 AF used by IRWD in 2015 during State restrictions



^{1/} Water can be delivered into Irvine Lake or other qualified storage program in Orange County in any year and still be designated Extraordinary Supply.

Water Stored in IRWD Water Banks

Supplies in Storage as of September 2018:

Owner	Approximate Water in Storage (AF)
IRWD	30,760
IRWD Partners	8,350
TOTAL	39,110

Banked Water for Orange County



Proposed Drought Reliability Pilot Program

Purpose: Provide retail agencies with Extraordinary Supply when MWD declares a Water Supply Allocation or during emergency conditions.

Benefits: Increased water supply reliability.

Roles: IRWD manages facilities and provides banked water and MWDOC administers pilot program with its member agencies.

Term: Seven years

Water: 5,000 AF

Reservations: MWDOC pays \$25/AF each year for right to call on water (no opt out).

Calls: MWDOC pays for facilities use, pumping, and water cost:
\$533 per AF if called in Year 7

MWDOC to charge member agencies based on cost of service study

Pilot Program: Reservation Charge

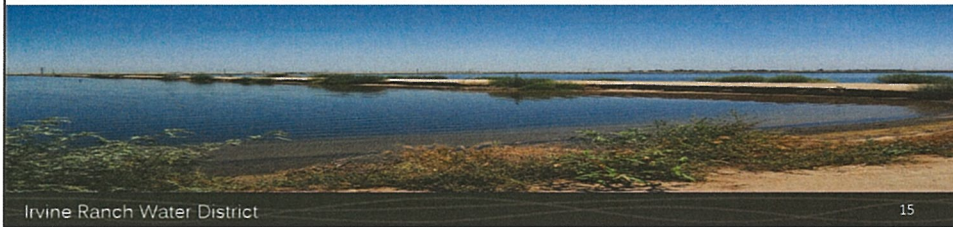
The cost of IRWD's lost opportunity associated with reserving 5,000 AF of storage in the 7-year Pilot Program.

- Lost opportunity = 2,500 AF on a 2-for-1 Exchange basis
- Using normal year values of water in Kern County



Cost of Calling on Water From Pilot Program in Year 7

Reservation Charges (7 yrs at \$25/yr)	\$ 176 / AF
Capital Facility Use Fee (includes land):	\$ 260 / AF
Groundwater Recovery Cost:	\$ 123 / AF
Cost of Water:	\$ 150 / AF
Sub-total:	\$ 533 / AF
<u>MWDOC Tier-1 Treated Rate</u>	<u>\$1,243 / AF</u>
Total:	\$1,952 / AF

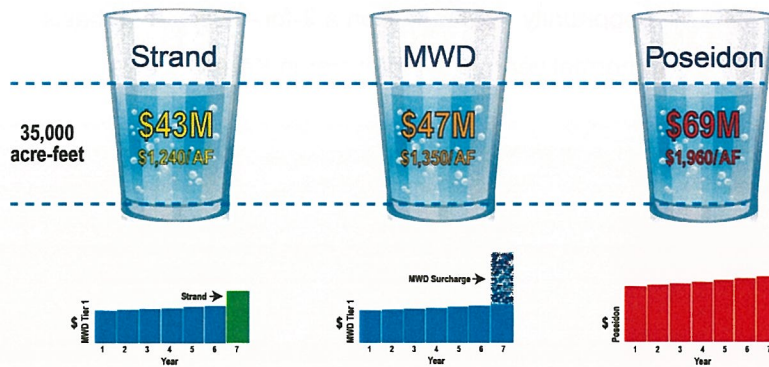


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Comparison to Other Alternatives

Three Water Supply Reliability Alternatives Seven-Year Cost Comparison

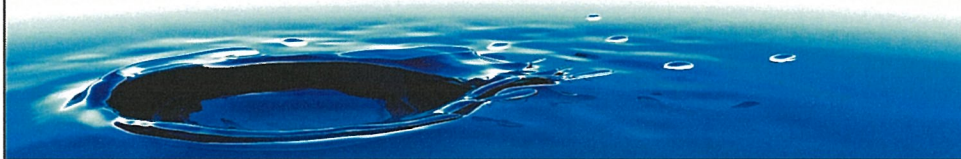


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Proposed Next Steps for Pilot Program

1. MWDOC to conduct program cost of service study
2. Obtain approvals from IRWD and MWDOC Boards



Kern Fan Groundwater Storage Project

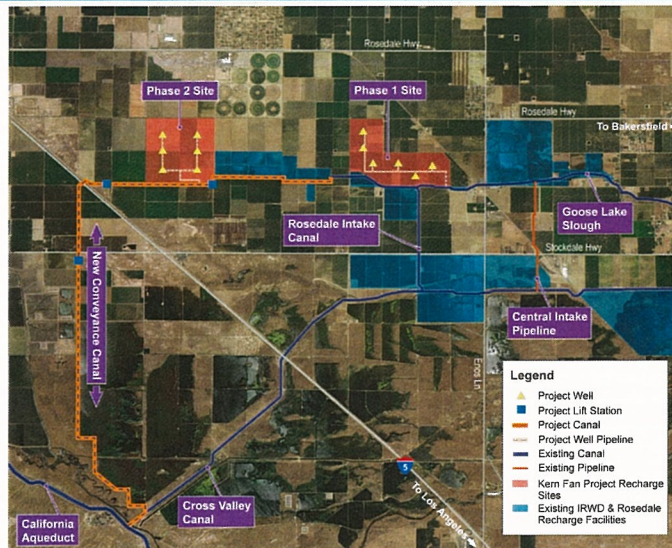


Kern Fan Project Highlights

- Groundwater storage project to be implemented jointly by IRWD and Rosedale-Rio Bravo Water Storage District
- Prop 1 funding: \$67.5 million grant from the Water Storage Investment Program
- Significant water supply and environmental benefits:
 - Up to 100,000 AF of annual recharge capacity.
 - Up to 50,000 AF of annual recovery capacity.
 - Up to 100,000 AF of storage capacity.
 - Benefits shared with State for ecosystem purposes.
- Online as early as 2023.
- Water supply: SWP unallocated Article 21 water



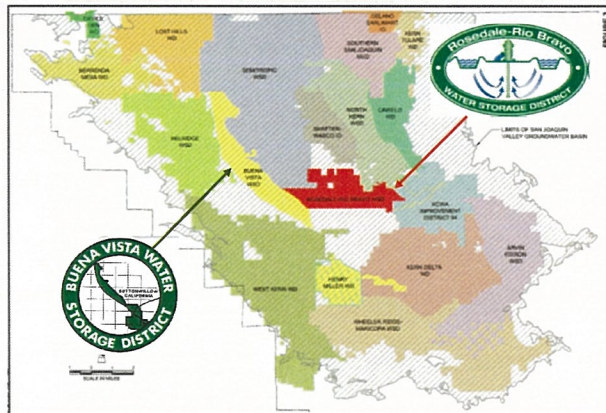
Proposed Kern Fan Project (Preliminary Locations)



Next Steps

- Form a Joint Powers Authority
- Secure land and right of way
- Environmental compliance
- Agreements with State Agencies
- Design and Construction
- Pursue partnerships
- Fill the Kern Fan Project

Long-Term Partnerships Make it Work



Dudley Ridge Water District

Kern Water Bank Authority



California WATER COMMISSION

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