

Overview of Application for Water Storage Investment Program Funding: Kern Fan Groundwater Storage Project

Submitted to California Water Commission by
Irvine Ranch Water District and
Rosedale-Rio Bravo Water Storage District
on
August 14, 2017



Project Overview

The Kern Fan Groundwater Storage Project *A new groundwater banking project.*

Owners: IRWD and Rosedale-Rio Bravo Water Storage District

Project Elements:

- Storage Capacity = 100,000 AF
- Recharge Capacity = 100,000 AF
- Recovery Capacity = 50,000 AFY
- Added Conveyance = up to 500 cfs

Project Cost: \$171.3 million

Project Schedule: Online by 2025

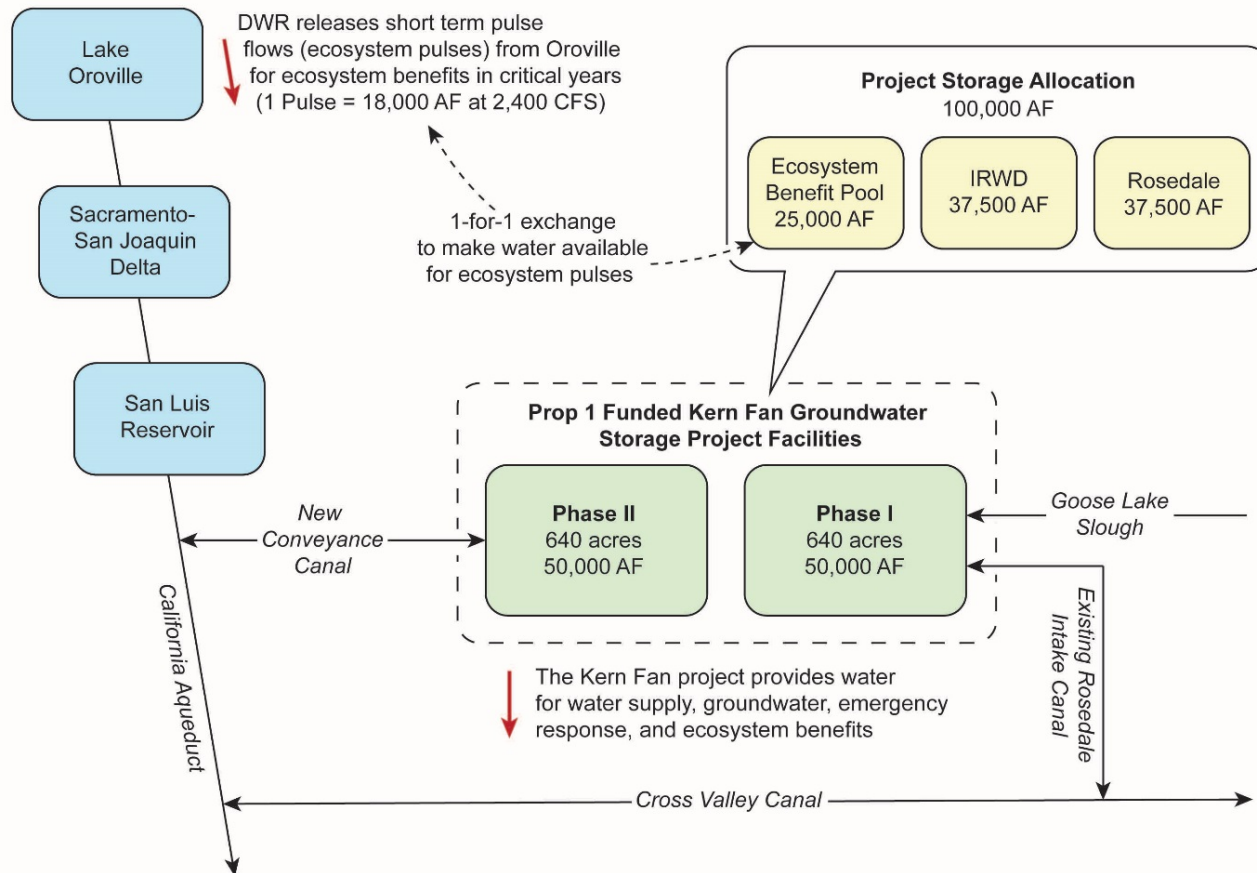
Other Entities Involved

Coordination with:

- State Project Contractors
 - IRWD, as a Dudley Ridge Water District landowner.
 - Rosedale, as a Kern County Water Agency sub-unit.
- Department of Water Resources
 - Initial impressions:
 - Considers project as “beneficial”.
 - Contractual issues need to be addressed.

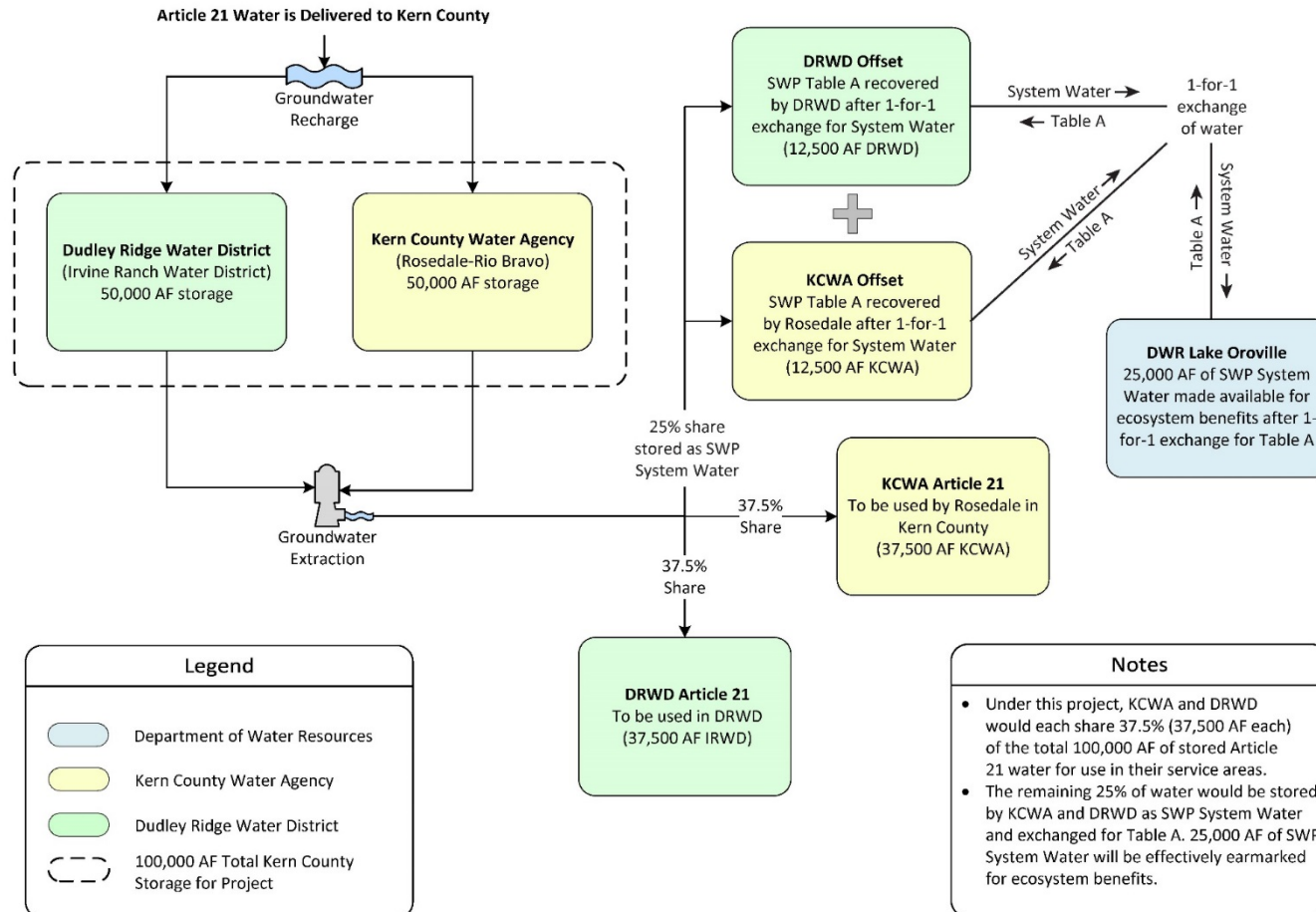
Kern Fan Banking Project – Statewide Concept

Kern Fan Groundwater Storage Project Statewide Concept



Kern Fan Banking Project - Conceptual Operations

Kern Fan Groundwater Storage Project Unallocated Article 21 Water



Benefits Stated in Project Application

Non-Public Water Supply Benefits:

- Increases water supply reliability for IRWD and Rosedale customers
 - Capture flows otherwise lost to ocean
 - Use captured water during dry periods
- Improves groundwater levels (SGMA compliance)

Public Ecosystem Benefits:

- Pulse flows to improve habitat for spring and winter chinook salmon runs
- Intermittent wetland habitat for water fowl and migrating birds

Other Public Benefits:

- Provides water supply to IRWD and Rosedale for emergency response during:
 - Extended droughts
 - Delta levee failure events

Net Present Values of Ecosystem Benefits over 50 Years

Scenario	Spring-Run & Winter-Run Chinook Salmon (millions)	Incidental Wetland Habitat (millions)	Total Ecosystem Benefits (millions)
2030 w/Climate Change	\$21.0	\$39.8	\$60.8

Net Present Values of Other Benefits over 50 Years

Scenario	Non-Public Benefit: Water Supply (millions)	Non-Public Benefit: Improved Groundwater Levels (millions)	Public Benefit: Emergency Response - Extended Drought (millions)	Public Benefit: Emergency Response - Delta Failure (millions)	Total Other Benefits (millions)
2030 w/Climate Change	\$47.7	\$4.3	\$5.1	\$59.9	\$117.0

Benefit Cost Ratios

1	2	3	4	5	6	7
Scenario	NPV of Total Public Benefits (millions)	Funding Request from CWC (millions)	Public Benefit Ratio (2÷3)	NPV of Total Benefits (millions)	NPV of Total Project Costs (millions)	Benefit Cost Ratio (5÷6)
2030 w/Climate Change	\$125.7	\$85.7	1.47	\$177.8	\$119.6	1.49

Proposed Project Cost Allocations

- Estimated total project cost = \$171.3 million
- Funding cost share assuming:
 - NPV of Ecosystem Benefits = \$60.8 million
 - NPV Other Public Benefits = \$64.9 million
 - WSIP Funding Request = \$85.6 million

Funding Entity	Percent Funding	Funding Cost Share (millions)	Public Benefits Ratio	WSIP Cost Share ≤ 50 %	Ecosystem Benefits at Least 50% of Funding Request
WSIP	50%	\$85.6	1.47	Yes	Yes
IRWD	25%	\$42.8			
Rosedale	25%	\$42.8			

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