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
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 Groundwater Storage Project**

**Statewide Concept**

- **DWR releases short term pulse flows (ecosystem pulses) from Oroville for ecosystem benefits in critical years**
  - (1 Pulse = 18,000 AF at 2,400 CFS)

- **1-for-1 exchange to make water available for ecosystem pulses**

**Project Storage Allocation**

- 100,000 AF
  - Ecosystem Benefit Pool: 25,000 AF
  - IRWD: 37,500 AF
  - Rosedale: 37,500 AF

**Prop 1 Funded Kern Fan Groundwater Storage Project Facilities**

- **Phase II**
  - 640 acres
  - 50,000 AF

- **Phase I**
  - 640 acres
  - 50,000 AF

- The Kern Fan project provides water for water supply, groundwater, emergency response, and ecosystem benefits

**Key Locations**

- **Lake Oroville**
- **Sacramento-San Joaquin Delta**
- **San Luis Reservoir**
- **California Aqueduct**
- **New Conveyance Canal**
- **Cross Valley Canal**
- **Goose Lake Slough**
- **Existing Rosedale Intake Canal**
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

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Spring-Run &amp; Winter-Run Chinook Salmon (millions)</th>
<th>Incidental Wetland Habitat (millions)</th>
<th>Total Ecosystem Benefits (millions)</th>
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</thead>
<tbody>
<tr>
<td>2030 w/Climate Change</td>
<td>$21.0</td>
<td>$39.8</td>
<td>$60.8</td>
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## Net Present Values of Other Benefits over 50 Years

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## Benefit Cost Ratios

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<th>5</th>
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<tbody>
<tr>
<td></td>
<td>NPV of Total Public Benefits (millions)</td>
<td>Funding Request from CWC (millions)</td>
<td>Public Benefit Ratio (2÷3)</td>
<td>NPV of Total Benefits (millions)</td>
<td>NPV of Total Project Costs (millions)</td>
<td>Benefit Cost Ratio (5÷6)</td>
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<tr>
<td>2030 w/Climate Change</td>
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<td>$85.7</td>
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<td>$177.8</td>
<td>$119.6</td>
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</tbody>
</table>
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

<table>
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<tr>
<th>Funding Entity</th>
<th>Percent Funding</th>
<th>Funding Cost Share (millions)</th>
<th>Public Benefits Ratio</th>
<th>WSIP Cost Share ≤ 50 %</th>
<th>Ecosystem Benefits at Least 50% of Funding Request</th>
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<tbody>
<tr>
<td>WSIP</td>
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<td>IRWD</td>
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<tr>
<td>Rosedale</td>
<td>25%</td>
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Contact Information

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