



# Water Storage and Conveyance 101



Zone 7 Board Meeting  
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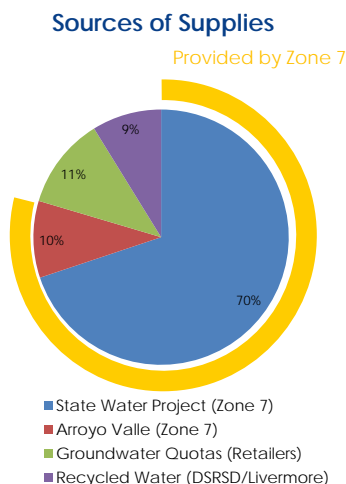
## Outline

1. Tri-Valley's Water Supplies
2. The State Water Project System
3. Conveyance of Imported Water
4. Zone 7's Storage System

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## Tri-Valley Water Supplies

- Most of the region's water supply served by Zone 7 and the retailers is imported, not local
- Currently, about 70% of the supply comes from the State Water Project (SWP) via the Delta
- Recycled water for irrigation supplies about 10%
- Zone 7 stores excess imported surface water in the local groundwater basin, remote groundwater banks in Kern County, and in San Luis Reservoir
- Zone 7 provides about 80% of the supplies served to the region



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## State Water Project (SWP) System




- SWP System
  - Delivers the year's "Table A" allocation
  - Other SWP water
  - Other water, when capacity is available
- 29 SWP Contractors:
  - 23 Mostly Urban
  - 6 Mostly Agricultural
- Water Supply Contracts
  - 4,200,000 AF in Table A amounts
  - Zone 7: 2% of the SWP

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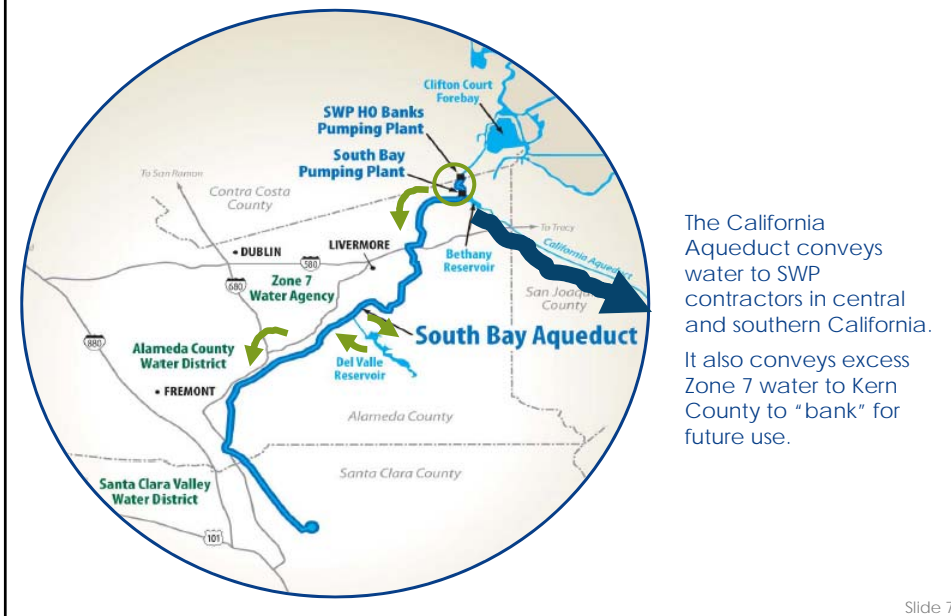
## Conveyance of Imported Water

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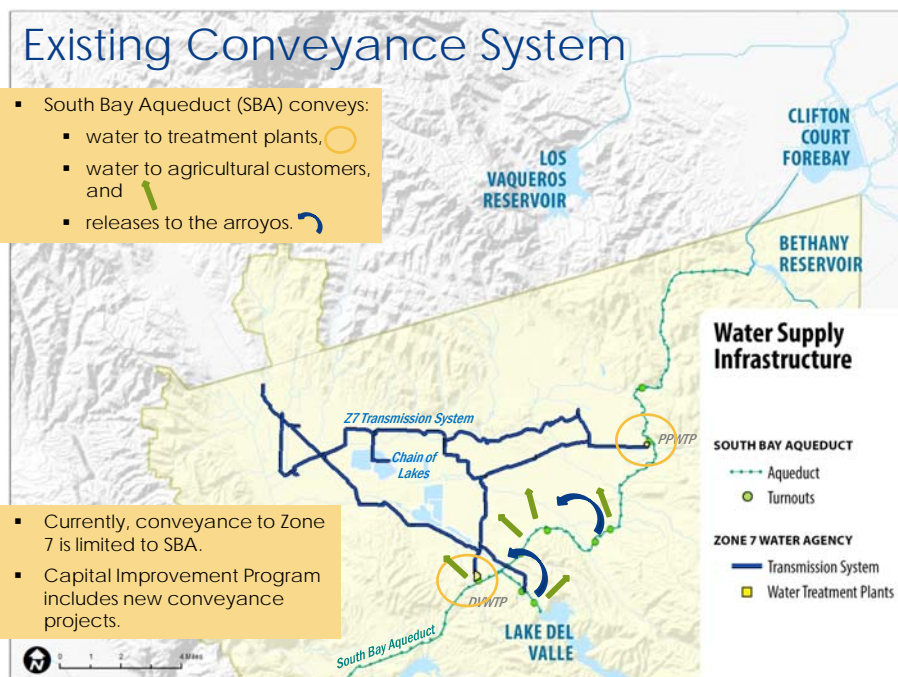
## Conveyance of Imported Water

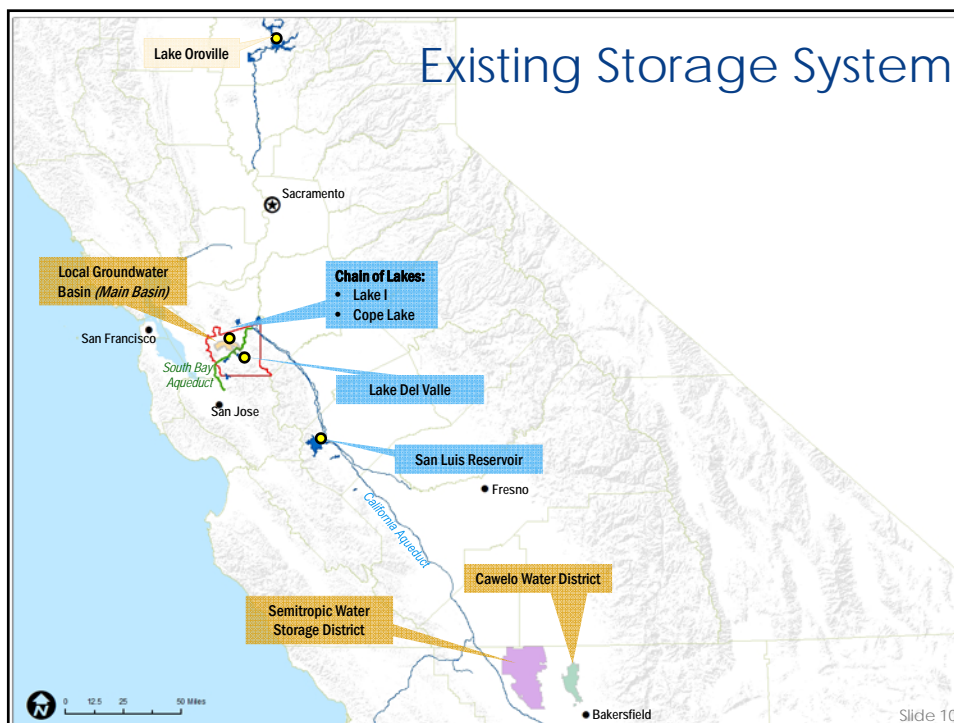
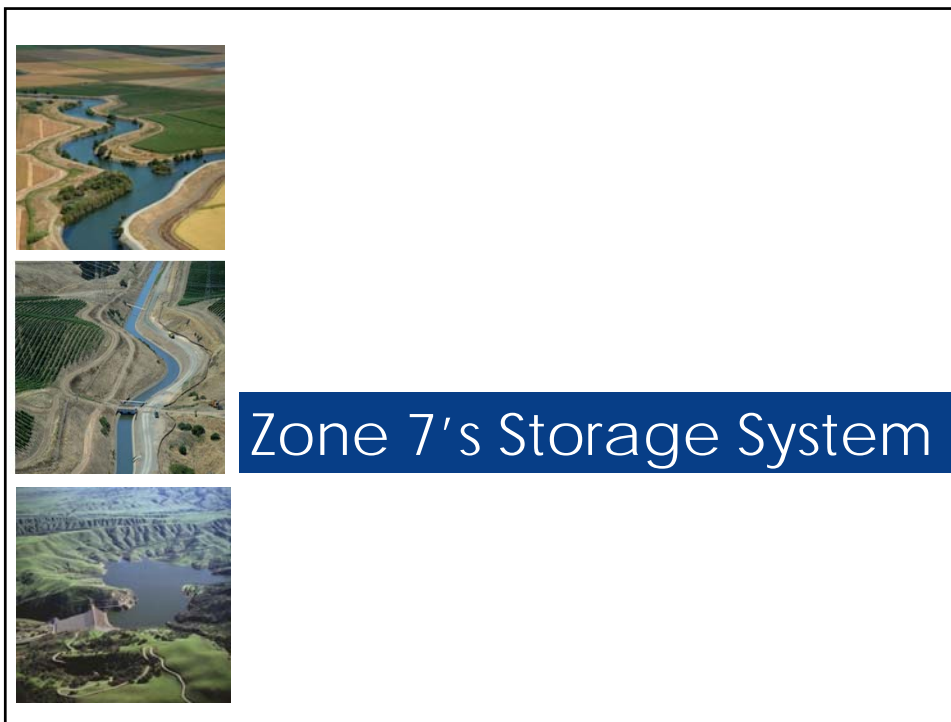


## Existing Conveyance System

- South Bay Aqueduct (SBA) conveys:
  - water to treatment plants, ○
  - water to agricultural customers, and ↘
  - releases to the arroyos. ↻

- Currently, conveyance to Zone 7 is limited to SBA.
- Capital Improvement Program includes new conveyance projects.





## Zone 7's Storage System

### Above-ground: surface water reservoirs



**OWNED BY DWR:**  
San Luis Reservoir    Lake Del Valle

**OWNED BY ZONE 7:**  
Lake I    Cope Lake

Storage	Zone 7's Operational Storage (acre-feet)	Current Storage Amount (acre-feet)
San Luis Reservoir	10,000-15,000	10,000
Lake Del Valle	7,500	8,500
Lake I	10,800 (26,800 total)	20,500
Cope Lake	4,500	4,400

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## How do the reservoirs get filled?

### Above-ground: surface water reservoirs



**San Luis Reservoir:**

- water pumped from the Delta, into the California Aqueduct, and diverted to San Luis Reservoir
- water stored via paper exchange



**Lake I:**

- Fills with groundwater and rainwater
- Mine water recaptured in Cope Lake then conveyed to Lake I



**Lake Del Valle:**

- Arroyo Valle flows directly into Lake Del Valle, collecting water from upstream watershed
- DWR pumps Delta water into the lake



**Cope Lake:**

- Vulcan mine water pumped into Cope Lake
- Fills with rainwater

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## Groundwater Banks

### *What is the purpose of groundwater banking?*

- Groundwater banking is part of normal operations, providing a buffer against variable supply conditions.
- The amount of water provided by the SWP each year currently averages 50% .
- In years when we have extra water (usually wetter conditions), we bank the extra water.
- In years when we do not have enough incoming supplies (drier conditions), we withdraw water from the banks.

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## Groundwater Banks

### *How do the banks get filled?*

Zone 7's surface water is conveyed via the California Aqueduct south to Kern County...

- **"In-lieu exchange"**: farmers then use our surface water and leave groundwater in the aquifer to add to our bank account, and/or
- **Surface recharge**: surface water is placed in spreading ponds or recharge basins, goes into the aquifer, and is deposited to our account



Credit: Kern County Water Agency

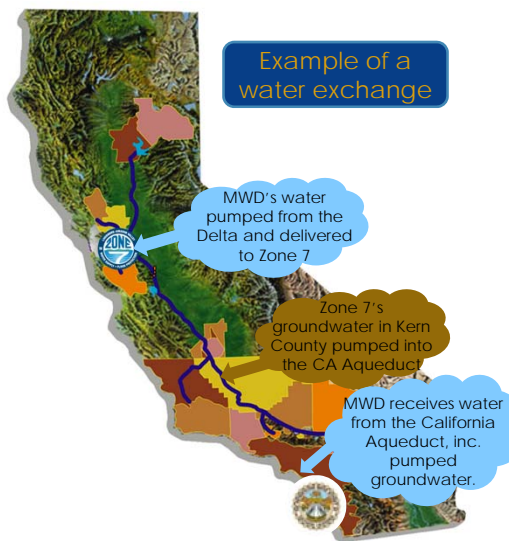
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## Groundwater Banks

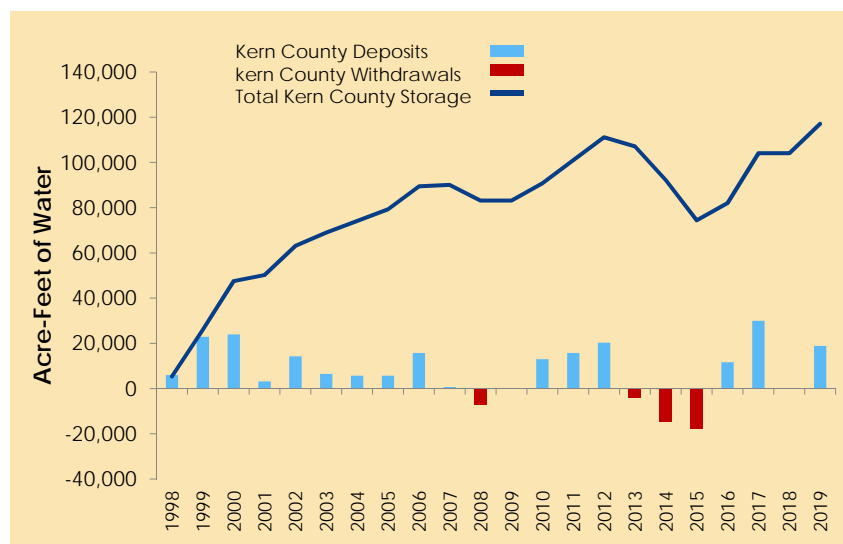
*How do we withdraw our water from the banks?*

- We do not pump water from south to north.
- Water withdrawal from banking programs is done through "exchanges".
- A similar approach is used for San Luis Reservoir
  - *We intercept water in the Delta then DWR reduces our balance of water in San Luis Reservoir.*



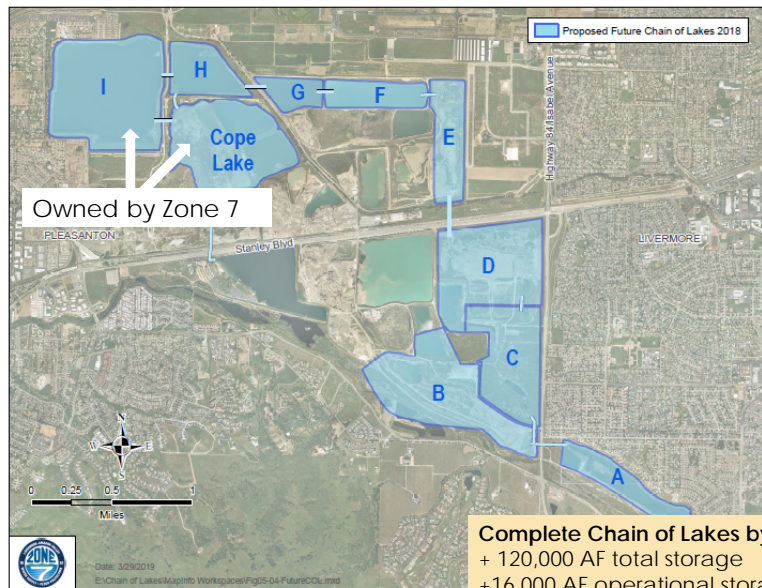
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## Kern County Groundwater Banks



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# Chain of Lakes



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QUESTIONS?

The complex block features a dark blue background with the word "QUESTIONS?" in white, bold, sans-serif font. On the left side, there are three vertically stacked aerial photographs. The top photo shows a winding canal or river through a green landscape. The middle photo shows a large dam structure with water behind it. The bottom photo shows a wide reservoir or lake with a dam in the distance.