

What are California's Major Sources of Water?

- Snow
- Groundwater
- Rain

Aquifer
Bedrock

How do we Store and Move Water?

1,300 Reservoirs in CA

1,400 Dams in CA

Thousands of miles of canals, aqueducts, and pipes.

What is Groundwater Banking

- ponding basins allow water to percolate into the aquifer.
- “banking” it for later.

Sandy soil
(serves as an ideal medium for water storage)

Ground water reservoir
(water percolates rapidly through sand, filling voids between particles where it's held in suspension)
Defined storage capacity: 1.65 million acre feet

Deep underlying layer of Corcoran clay
(holds sand particles and water in place)

When water is needed, it can easily be recovered using high flow wells

“Take” Capacity: guaranteed 290,000 AF/YR max. 423,000 AF/YR

“Put” Capacity: guaranteed 140,500 AF/YR max. 400,000 AF/YR

Central Valley Project 1930's -1970's

Goals-

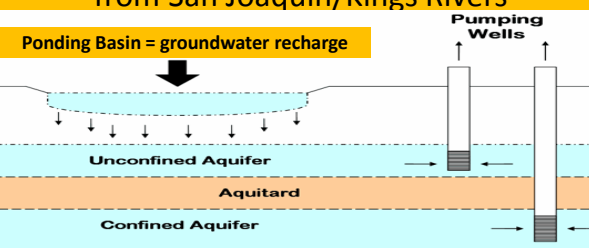
1. bring irrigation water to the Central Valley
2. Flood control

The California State Water Project – 1960's

- To distribute and store water to Northern California, the San Francisco Bay Area, the San Joaquin Valley, the Central Coast, and Southern California.
- Of the contracted water supply, 70 percent goes to urban users and 30 percent goes to agricultural users.
- The Project makes deliveries to two-thirds of California's population.

80% Groundwater and 20% Surface Water from San Joaquin/Kings Rivers

Ponding Basin = groundwater recharge



The diagram shows a cross-section of the ground with three layers: an unconfined aquifer (top, light blue), an aquitard (middle, brown), and a confined aquifer (bottom, light blue). A ponding basin on the surface is shown with arrows indicating water seeping into the unconfined aquifer. Two pumping wells are shown on the right, with arrows indicating water being pumped up from the unconfined and confined aquifers.


Unconfined Aquifer

Aquitard

Confined Aquifer

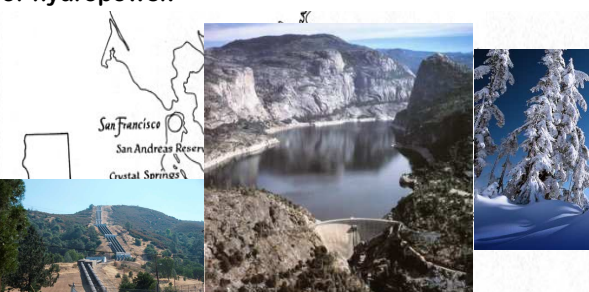
Pumping Wells

Surface Water Treatment Plant – By Clovis North High School



A photograph showing several large, rectangular concrete basins in a treatment plant, with railings in the foreground.

Hetch Hetchy Dam (1934) delivers 80% of urban water for the San Francisco bay area.
The Hetch Hetchy system consists of 11 reservoirs, that generates over 2 billion kilowatt hours per year of hydropower.

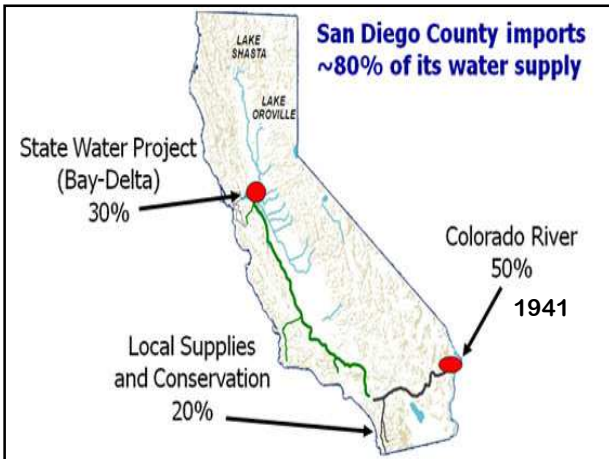


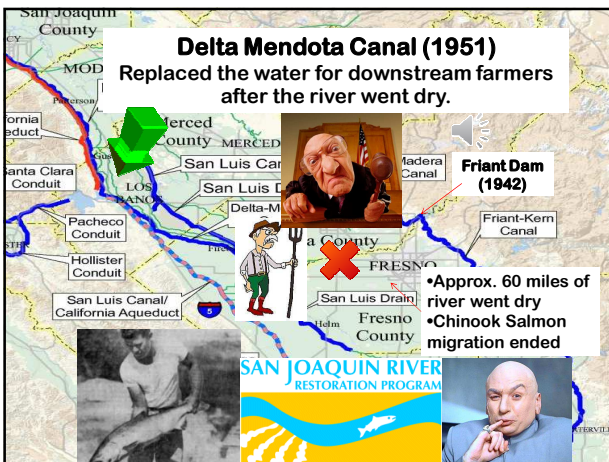
The block contains a map of California highlighting the San Francisco Bay Area and the Hetch Hetchy system. It also includes three photographs: a view of a dam, a view of a reservoir, and a view of a snowy mountain peak.

Los Angeles Water Supply
LA Aqueduct 1913

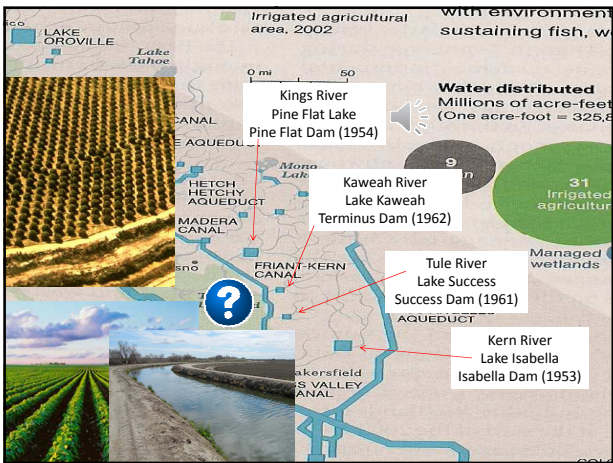


The map shows the state of California with various water sources and aqueducts labeled. Key locations include Lake Oroville, Sacramento, Sacramento Bay Delta, California Aqueduct, Mono Lake (Saline), Los Angeles Aqueduct, Hoover Dam, Los Angeles, Local Groundwater, Colorado River Aqueduct, and Colorado River.

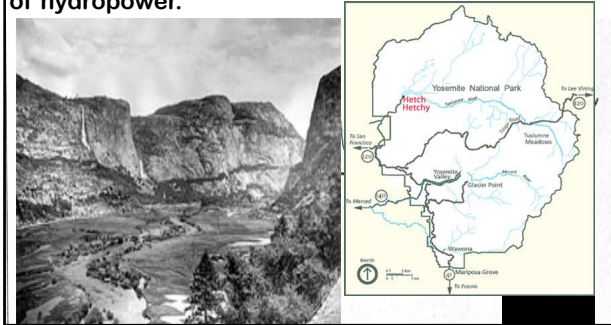


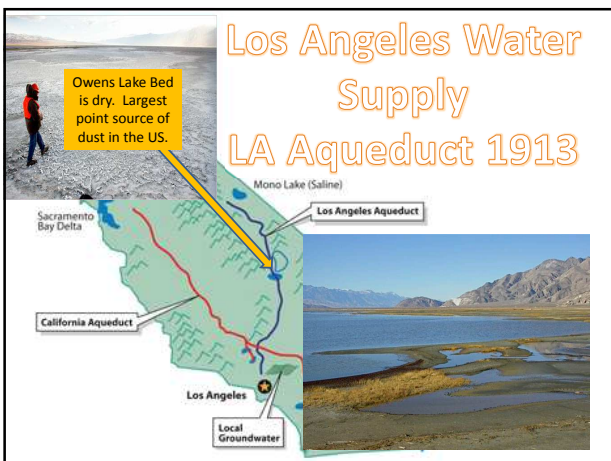






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Identify From These Notes
Label them as Environmental, Economic, or Political.

Costs of Water Diversions	Benefits of Water Diversions
<ul style="list-style-type: none">• Dried up rivers/lakes :<ul style="list-style-type: none">– Air pollution (dust-PM 10)– Ended Salmon migration• Cost of construction, etc.• Aesthetic Beauty Loss• Habitat Loss due to-<ul style="list-style-type: none">– Flooding from dams/reservoirs– Construction of aqueducts, canals, dams.• Loss of Tourism.• Water Wars – Farmers /Enviros / Native Americans• Cost of Electricity for Pumping	<ul style="list-style-type: none">• Provides water to farms• Provide drinking water to urban such as Los Angeles• Hydroelectric Power• Recreational Activities (reservoirs)• Creates Jobs• Flood Control
