



DESALINATION IN CALIFORNIA:

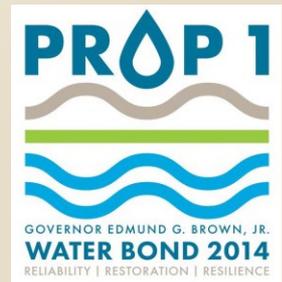
How We're Doing and Desalination Grant Program

Department of Water Resources

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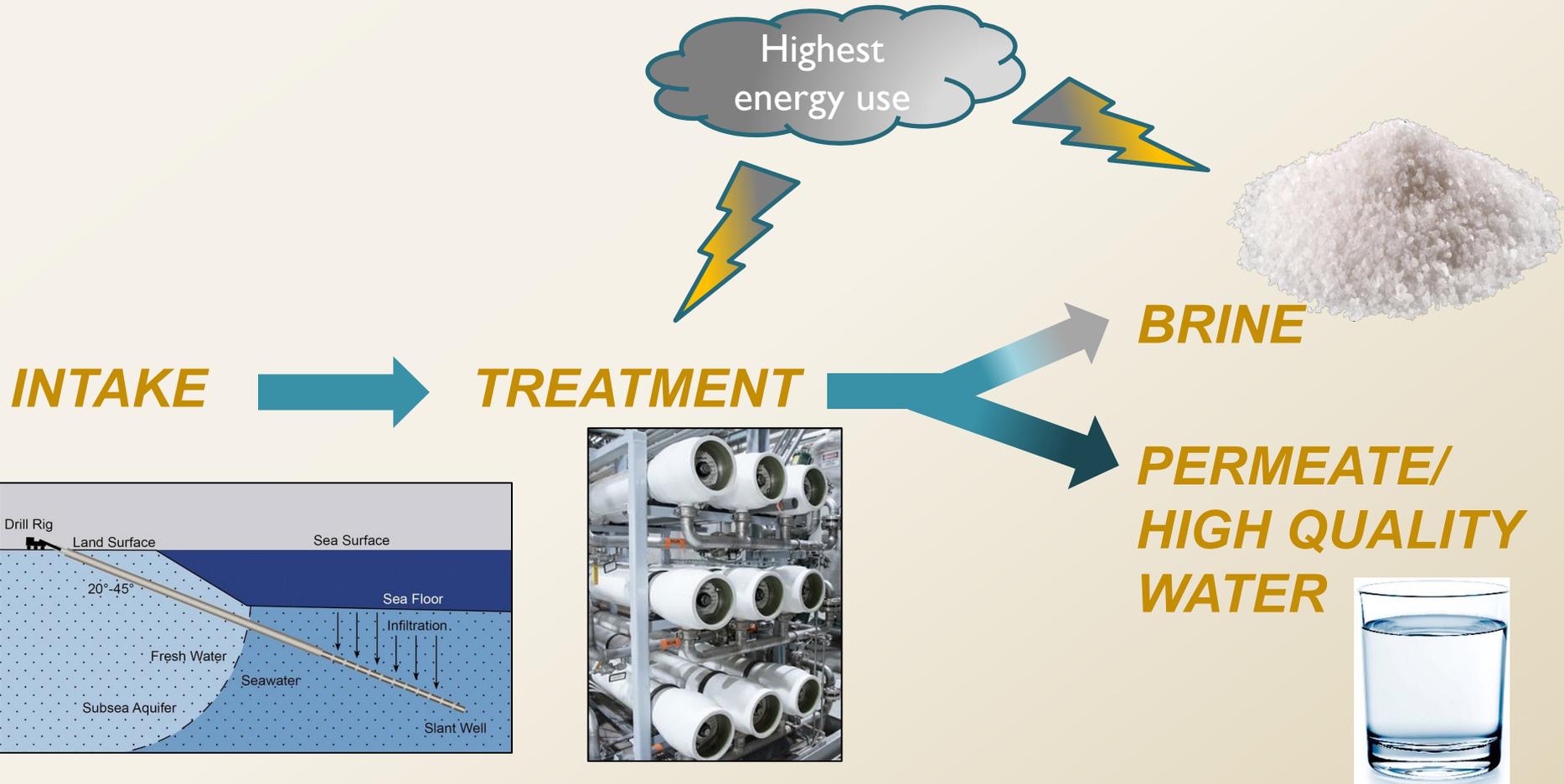
May 17, 2023



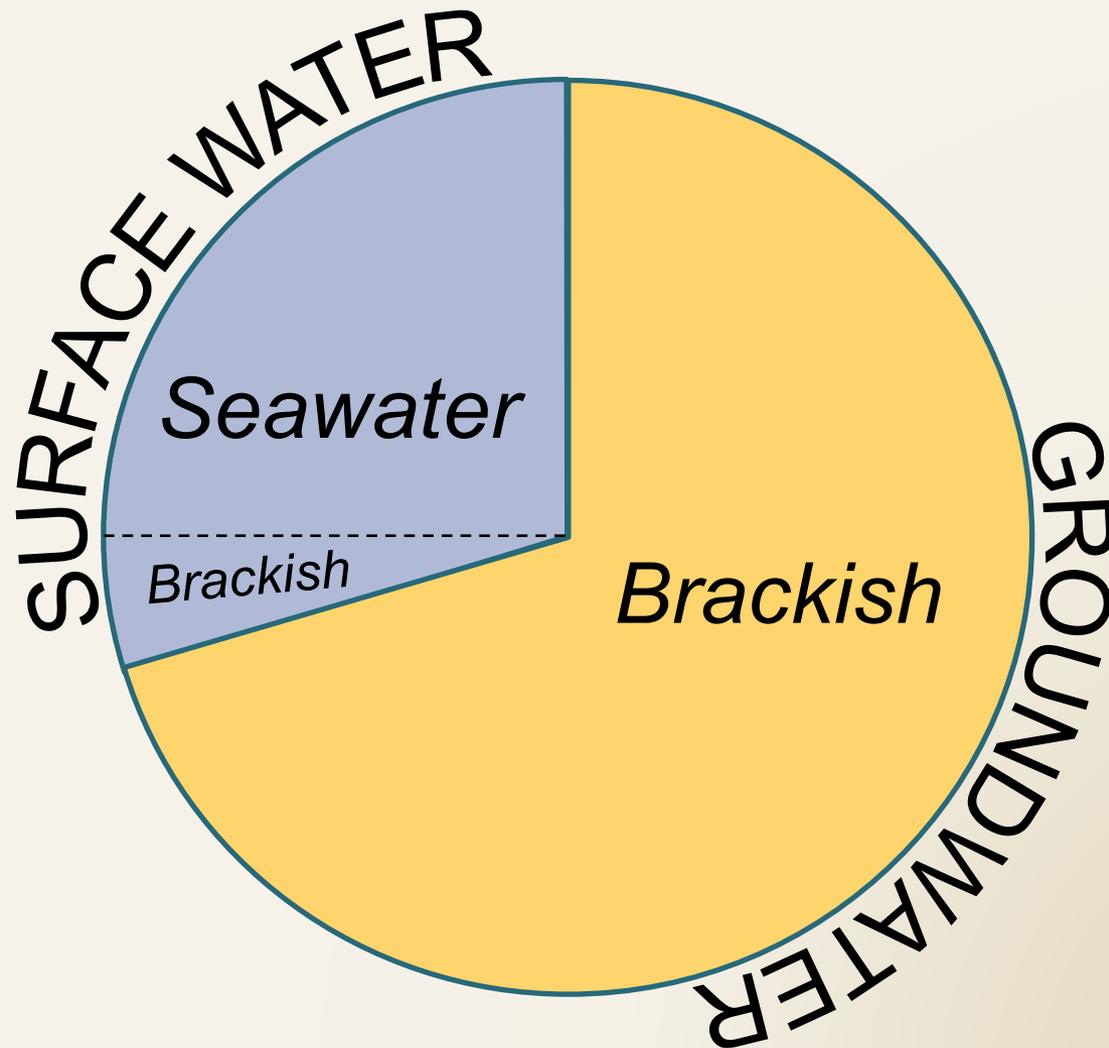
The background of the slide is a photograph of a desalination plant. It shows multiple rows of white, cylindrical reverse osmosis membrane modules. Each module has a blue circular opening at its end. The modules are arranged in a grid-like pattern, supported by a metal framework. In the foreground, there are some electrical control panels and pipes. The overall scene is industrial and brightly lit.

**In 2020
DESALINATION was effectively
implemented at 41 locations in
California to remove
naturally-occurring salts for
potable and industrial uses,
producing over 150,000 acre-feet
of water.**

Desalination Process Overview



More Groundwater in 2020 was Desalinated than Seawater





How Desalinated Water Supports California

- Applications are as diverse as California
 - Isolated locations without other supplies: CV Kane Rest Stop on I-15 & Death Valley NP
 - Component of urban diversified water supply portfolios: Eastern MWD and Santa Barbara
- As a portfolio component, desalinated water provides <10% to up to 25% for both groundwater and surface water supplies.

Most 2020 Sites are in SoCal



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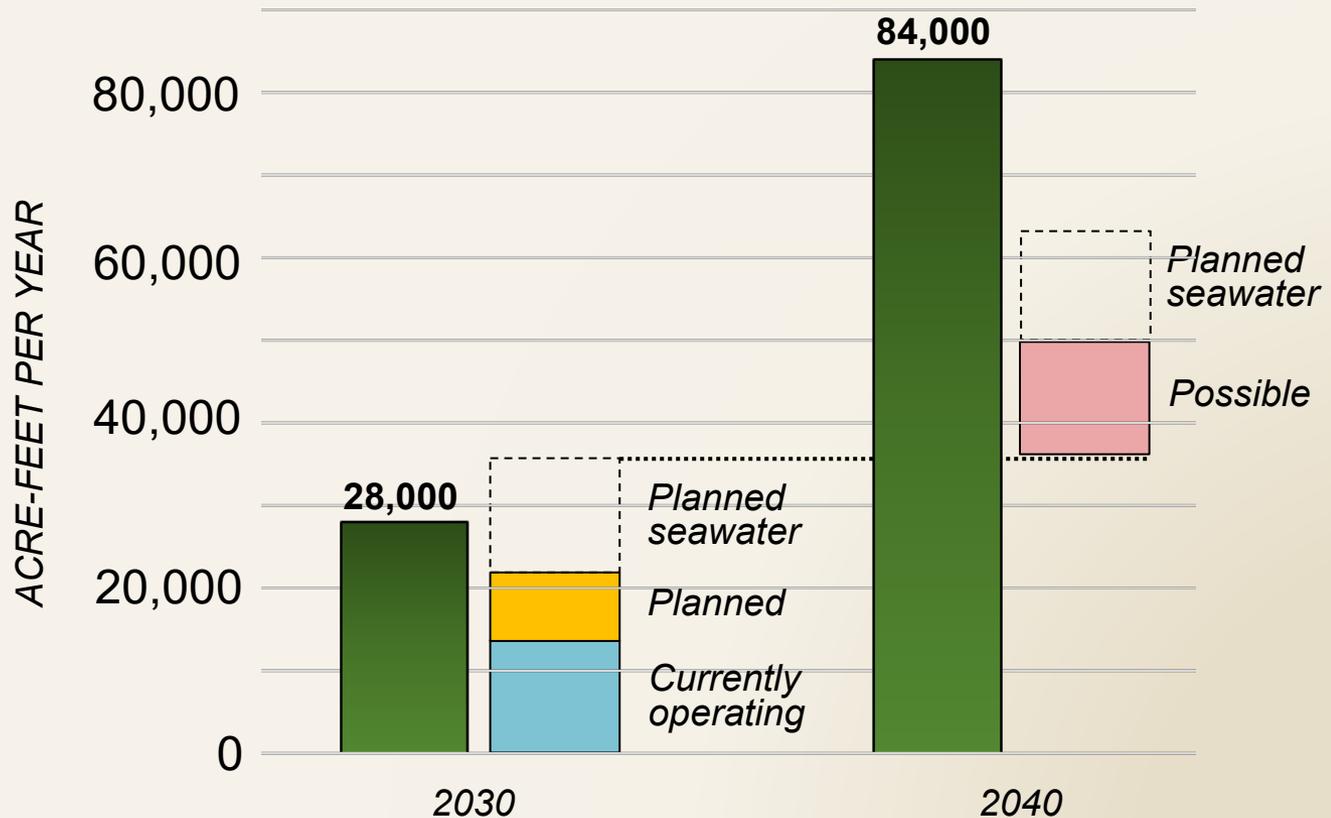


What Does the Future Look Like?

- Since 2020, 5 plants have come on-line or been restarted. 2 more will be online by 2025.
- The Water Supply Strategies identifies two goals for expanding brackish groundwater desalination production:
 - 2030: 28,000 acre-feet per year
 - 2040: 84,000 acre-feet per year

Where We Think We Will Be

Per UWMPs and direct conversations ...





What Does Future **Water Supply** Look Like?

- Desalination, in appropriate locations, enables water supply reliability and sustainability to address climate change and water challenges.
- Future water supply portfolios will include recycled water, desalination, stormwater, and gray water joining surface water and groundwater as sustainable California water supplies.



Program Funding Objectives

- Provide grants to local agencies for the planning, design, and construction of projects to desalinate naturally-occurring brackish and sea water.
- Facilitate the use of desalinated water to meet municipal water supply needs and increase water supply reliability.

Grant Funding Caps

Project Type	Cap per Project
Construction	Up to \$10M
Design Pilot	Up to \$1.5M
Research	Up to \$1M
Feasibility Study	Up to \$700K
Environmental Documentation	Up to \$500K



Funds Awarded to Date

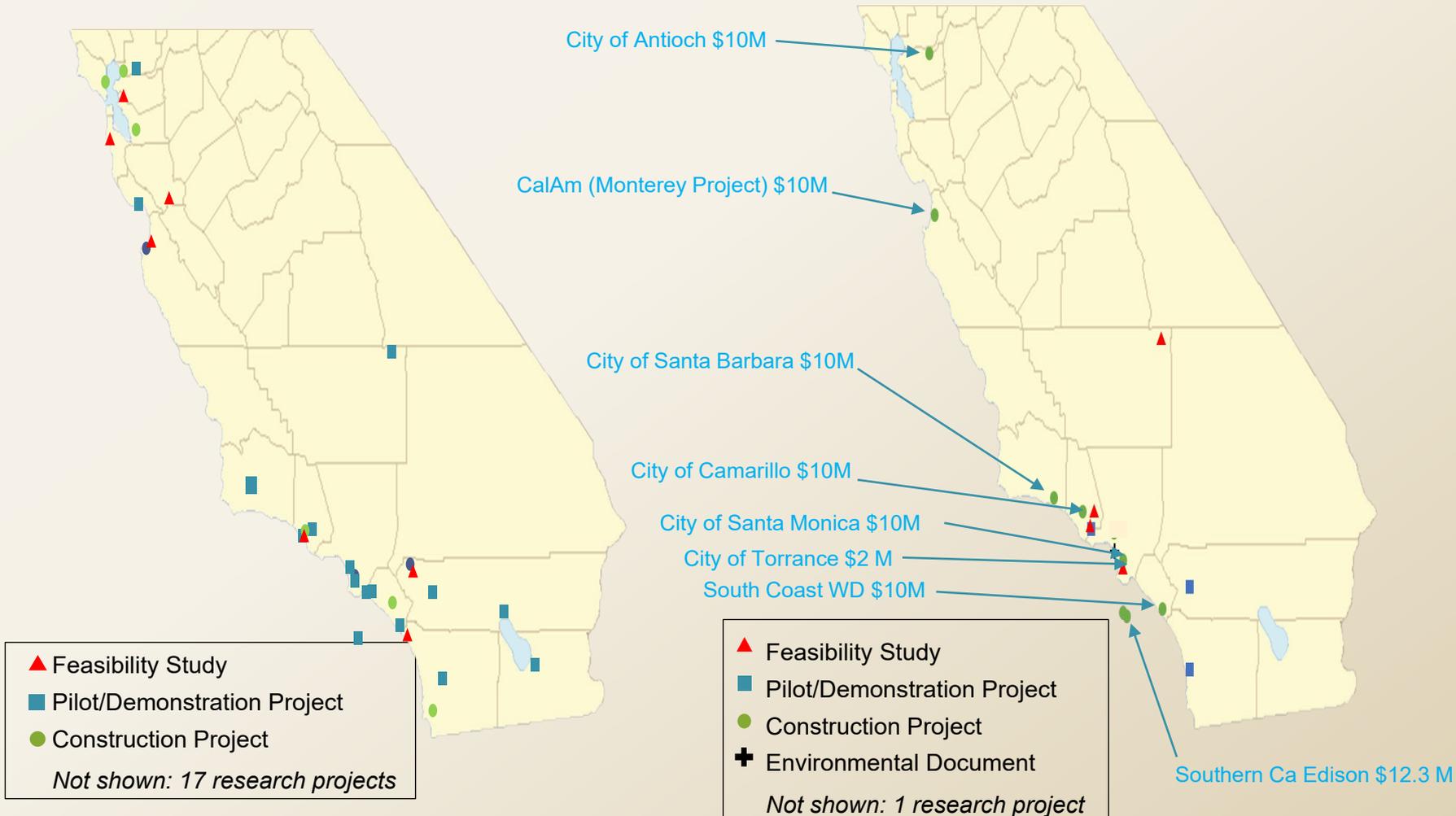
~ \$122 million in Proposition 50 and Proposition 1 grant funds have been awarded for:

- Construction projects (\$92M)
- Design pilots (\$18M)
- Research projects (\$8.4M)
- Feasibility studies (\$3.4M)
- Environmental documentation (\$500K)

Desal Program Funded Projects

Proposition 50 (2002)
\$40 million

Proposition 1 (2014)
\$82+ million





Desalination Research Collaboration with National Alliance for Water Innovation (NAWI)

- DWR provides \$16M to NAWI to leverage over \$110M in federal funds for research towards technological breakthroughs that:
 - Increase effectiveness and resolve implementation challenges of desalination.
 - Improve efficiency through the identification of new processes:
 - Reduce energy use
 - Improve brine management
 - Optimize operational efficiency
 - Support the successful implementation of projects funded by Prop 1.

Pilot Projects

- Pilot breakthrough technologies and systems for reliable and affordable freshwater supplies
- The selected pilot projects will process non-traditional source waters from a range of locations
- Project teams comprised of industry, academic, national laboratory, and other stakeholders
- Pilot systems will directly address the highest priority research needs and technical knowledge gaps





Desalination Water Supply Strategy

- Desalination is one of many water supply actions to secure the future of the State's water supply.
- Expand brackish groundwater desalination:
 - 2030: 28 TAF/Yr
 - 2040: 84 TAF/Yr
- Help streamline and expedite permitting of desalination projects.
 - State agencies to develop criteria for siting of desalination facilities along the coast and recommend new standards to facilitate approval.
 - Identify potential available mitigation sites to facilitate the expedited approval of desalination facilities.