

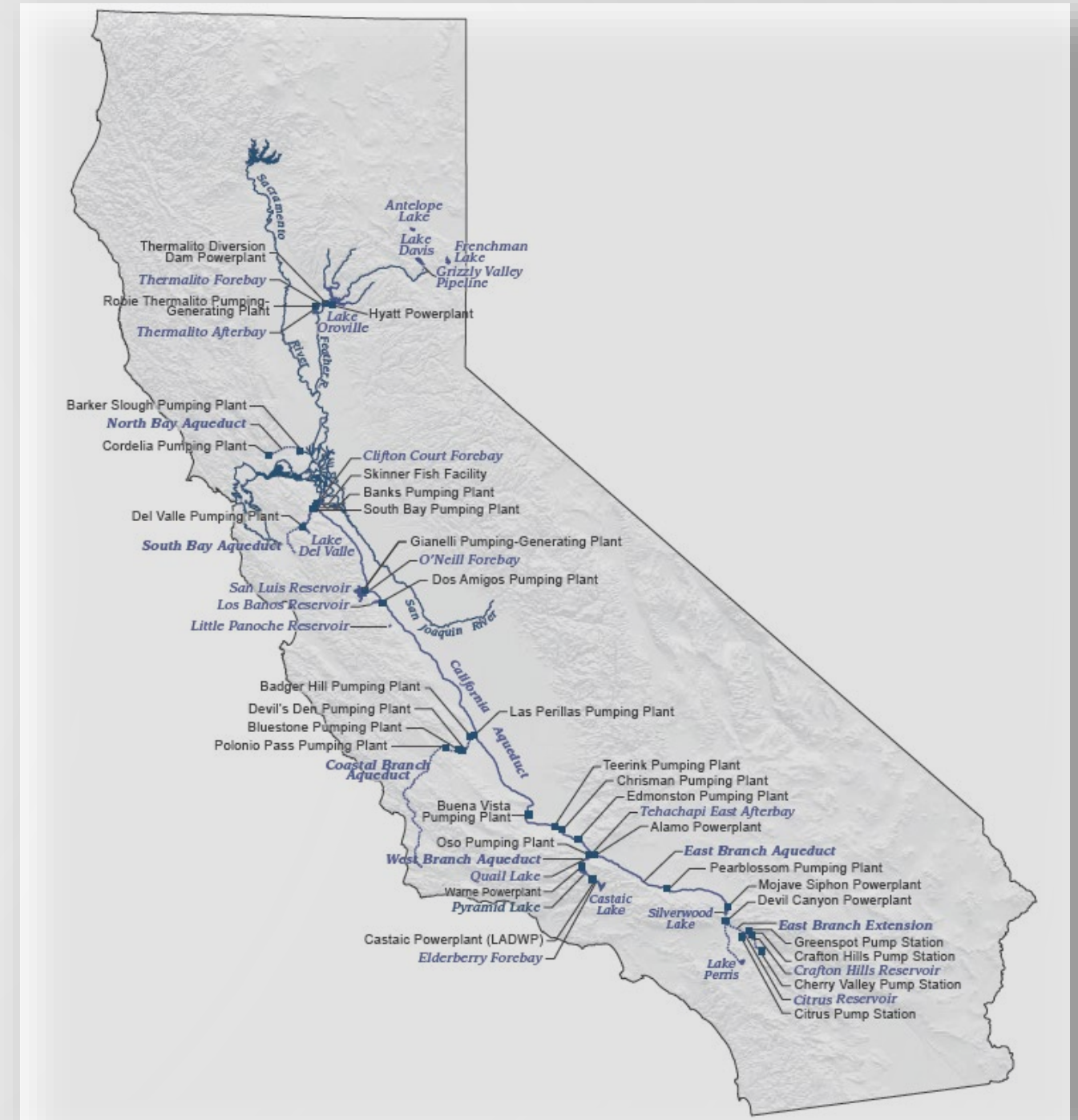
# State Water Project

## Energy Roadmap



# Agenda

- SWP Energy Roadmap (2021) Overview
- Energy Roadmap Development
- Core Values & Overarching Water and Power Strategies
- Opportunities & Challenges
- Recommendations for State & Federal Funding



# SWP Energy Roadmap (2021) Overview

## **Energy Roadmap Mission Statement:**

The SWP aims to ensure water supply reliability and affordable energy rates, respond to market evolution, and make prudent investments to achieve California's clean energy goals.

Section 1: Introduction & Background

Section 2: Executive Summary

Section 3: State Water Project (SWP) Purpose

## **Section 4: Energy Roadmap Development**

Section 5: Department of Water Resources (DWR) & State Water Contractors (SWC) Collaboration

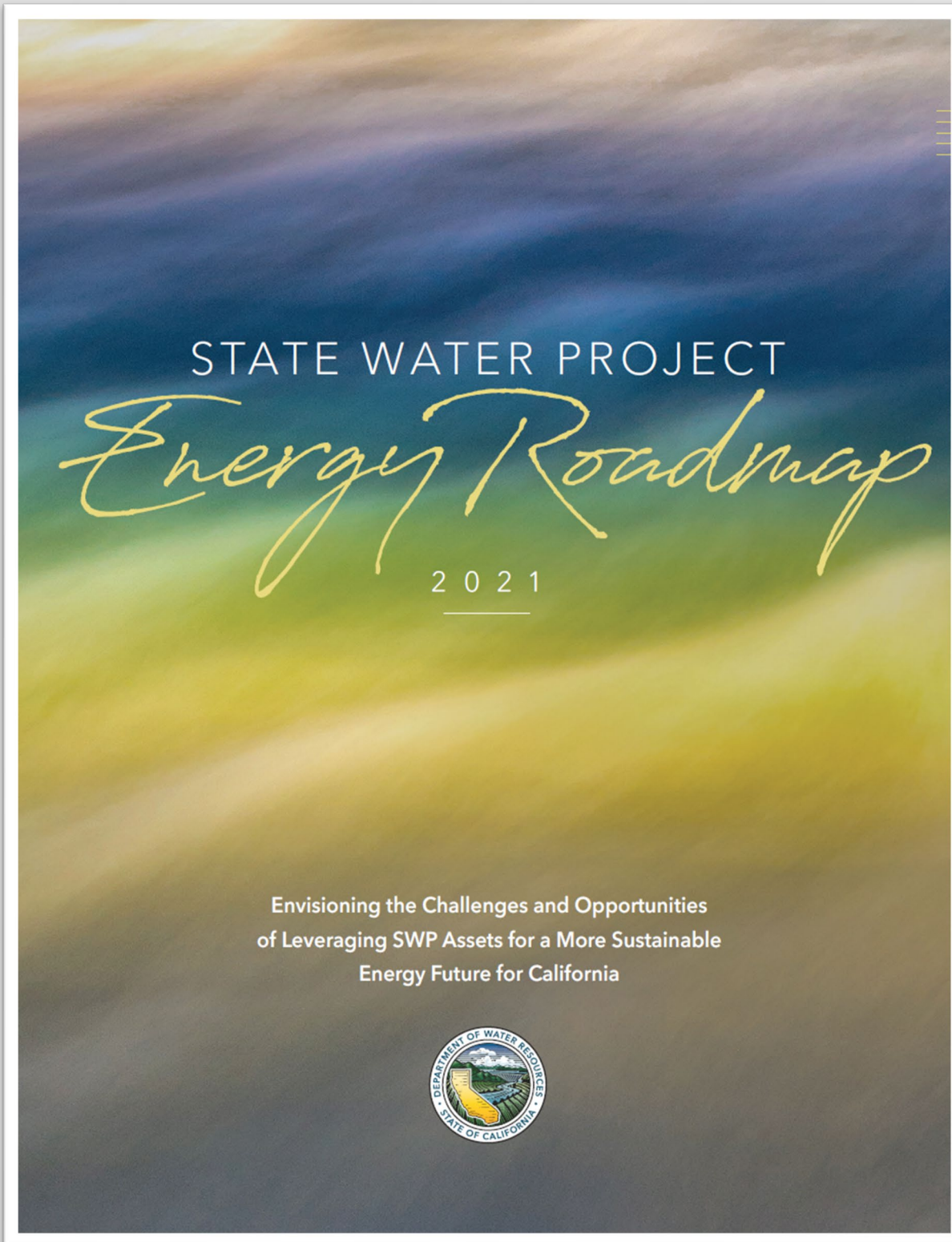
Section 6: Core Values & Overarching Water and Power Strategies

## **Section 7: Alignment and Prioritization of SWP & SWC Goals**

## **Section 8: Opportunities & Challenges**

Section 9: Recommendations for State & Federal Funding

<https://water.ca.gov/Programs/State-Water-Project/Clean-Energy>



# Energy Roadmap Development

The following factors drive the need for an Energy Roadmap:

- 1. Variability of SWP pumping load:** because pump load is based on hydrology, SWP's load demand can have large variations from year to year, making long term hedging strategies challenging
- 2. Changing resource mix:** As California's grid transitions to a cleaner yet more variable and energy limited resource fleet, it will require new market products...which could increase SWP operations costs, however it can also create opportunities to collect more revenues by offering more flexible operations from both its pumping and generating fleet, while meeting its core responsibility of delivering water.
- 3. GHG reduction mandates:** requires re-examination of SWP investments such as Lodi Energy Center (LEC) to meet Senate Bill (SB) 100's [now SB 1020] 100% renewable and zero-carbon resource goals.



# Energy Roadmap Development

The following factors drive the need for an Energy Roadmap (continued):

4. **Wildfire mitigation:** if wildfires become more frequent and intense, this could impact SWP operations and may require new options for power resiliency...such as a microgrid feature Solar and energy storage to mitigate against Public Safety Power Shutoffs
5. **Need for Flexible resources need:** As more and more renewable energy resources are added to the grid, the need for more flexibility increases. SWP will need to adapt its operations to add more flexibility to the system. This is why the SWP's Flexible Resources was initiated.
6. **Bring Focus on core issues:** as California's resource mix continues to change, opportunities or additional roles and responsibilities may arise for DWR, however it's important to articulate the guidelines that future investments do not distract or takeaway from DWR and the SWP's core mission.



# SWP Opportunities

## Short-Term (1-3 Years)

- Advocate for the SWP in California Independent System Operator (CAISO) Stakeholder processes
- Monitor market trends and adjust SWP operations and procurement strategies
- Continue work on the Flexible Resources Study: Phase 2
- Participate in Transmission rate case filings with the Federal Energy Regulatory Commission.

## Mid-Term (3-7 Years)

- Work with CAISO to enable the SWP to be able to offer more grid reliability services
- Investigate solar and battery storage integration at SWP pumping plants
- Mitigate subsidence with physical improvements to increase operational flexibility.
- Coordinate with the SWC on demand side flexibility.

## Long-Term (+7 Years)

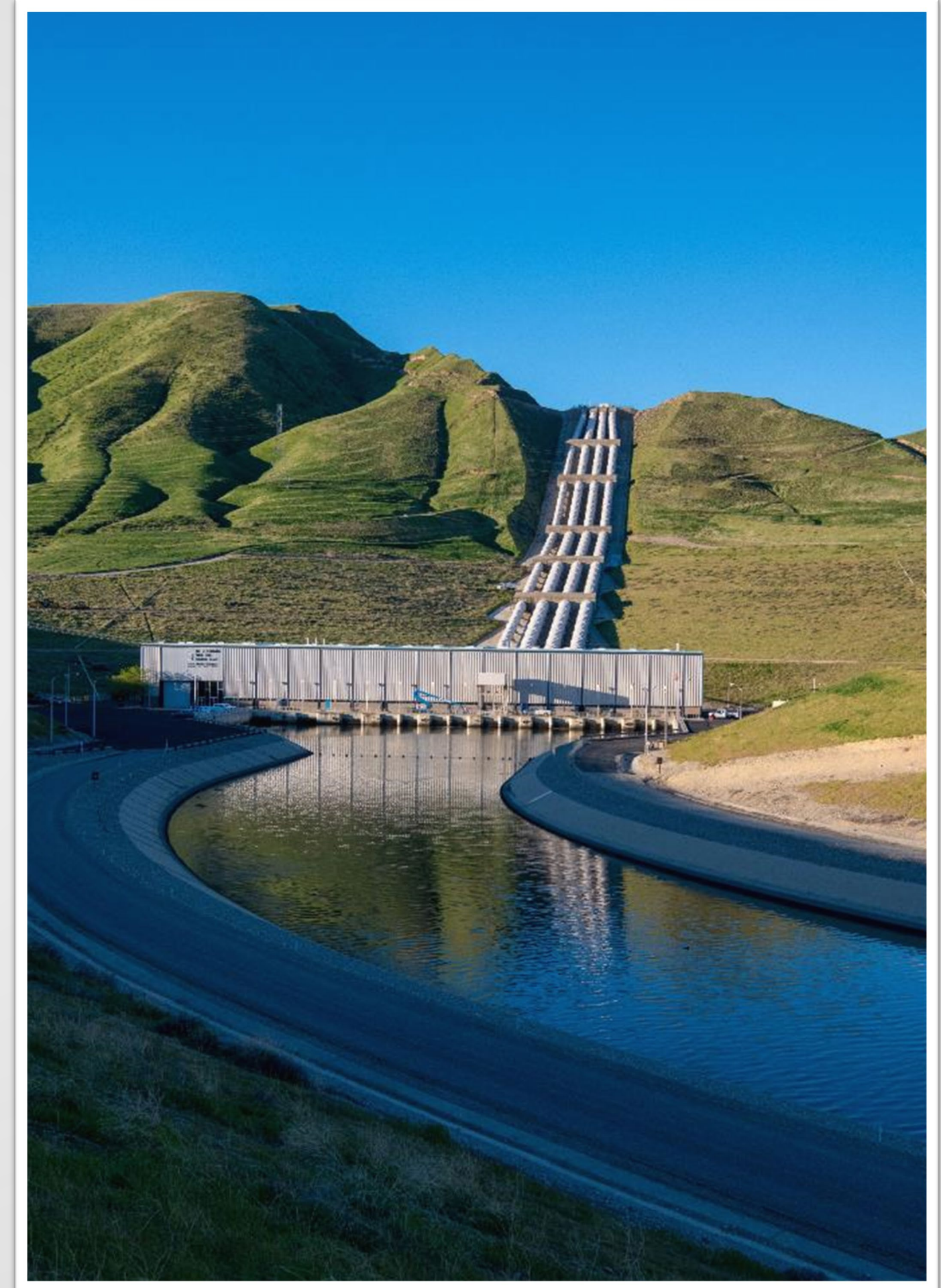
- Develop plans to achieve zero emissions power portfolio by 2035\*
- Plan on when to divest from the Lodi Energy Center\*
- Seek to neutralize cost with supply and demand side flexibilities
- Inform energy policy and initiative to achieve resilient and efficient power market design

\* Currently underway due to SB 1020



# SWP Challenges

- Power market evolution
- Transmission Access Charge escalation
- Changing Regulatory policies and mandates
- CAISO market design changes
- SWP aging infrastructure and inherent constraints
- Subsidence of California Aqueduct
- Climate change impacts
- Competing SWP priorities
- Financial impacts to the SWC
- Water demand inflexibility



# Interim Action Plan (2021-2025)

- Continue planning work for a Phase 2 of the flexible resources assessment tracks and additional new tracks, advancing them toward implementation
- Continue to align SWP load and generation with CAISO's grid needs
- Monitor power market dynamics and evolution of resource mix, initiate and influence needed market design changes, and assess their impacts on SWP
- Continue outreach to CAISO and other state agencies highlighting the SWP's plans for supporting the grid, and the need for partnerships and outside funding
- Collaborate with CAISO to enable the SWP to offer real time load bidding and frequency regulation
- Partner with SWC to investigate and deploy demand side flexibility.
- Continue adding renewables to SWP power portfolio
- Continue to maintain active participation in (Participating Transmission Owners) PTOs transmission rate case filings at FERC, and advocate for more control over escalating TAC cost.





# Recommendations for State & Federal Funding

Most of the State Water Project's funding comes from three major areas: water supply, power sales, and federal and state reimbursements through long-term water supply contracts with 29 local water agencies

Because the SWP's primary purpose is to delivery water. Proposed changes to SWP's operations or physical setups — in order to provide more flexible services to the grid — shall not increase costs of delivering water to the SWC .

If proposed improvements does go beyond the purpose of the SWP, then additional funding sources would be needed.



Thank You

Questions?

