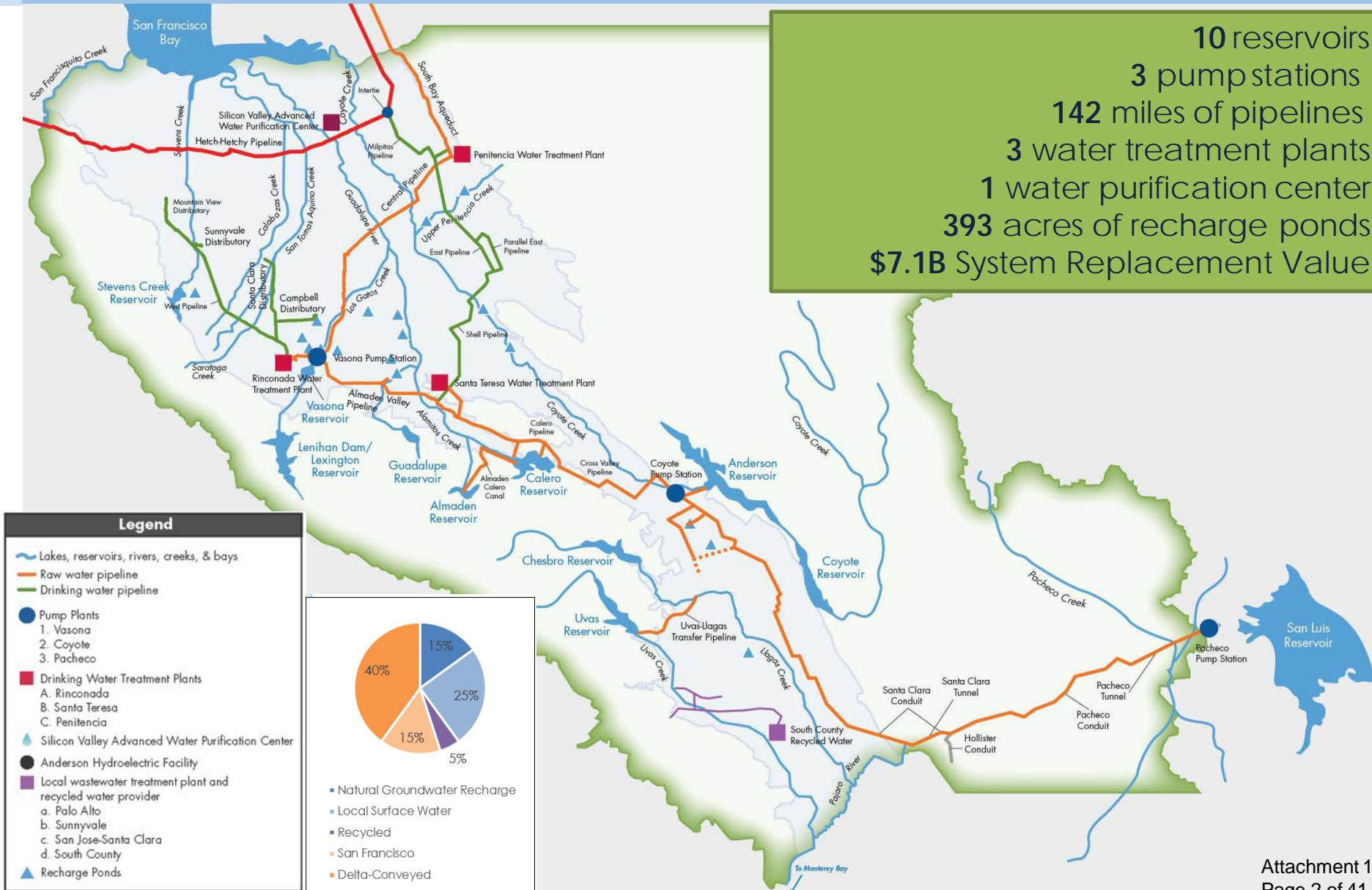


# Overview of the District's Water Infrastructure, Capital Improvement Program, Flood Protection Projects, and Current/Future Water Supply Planning

Special Meeting with City of Santa Clara – September 5, 2018

# A comprehensive, flexible water system

**10** reservoirs  
**3** pump stations  
**142** miles of pipelines  
**3** water treatment plants  
**1** water purification center  
**393** acres of recharge ponds  
**\$7.1B** System Replacement Value

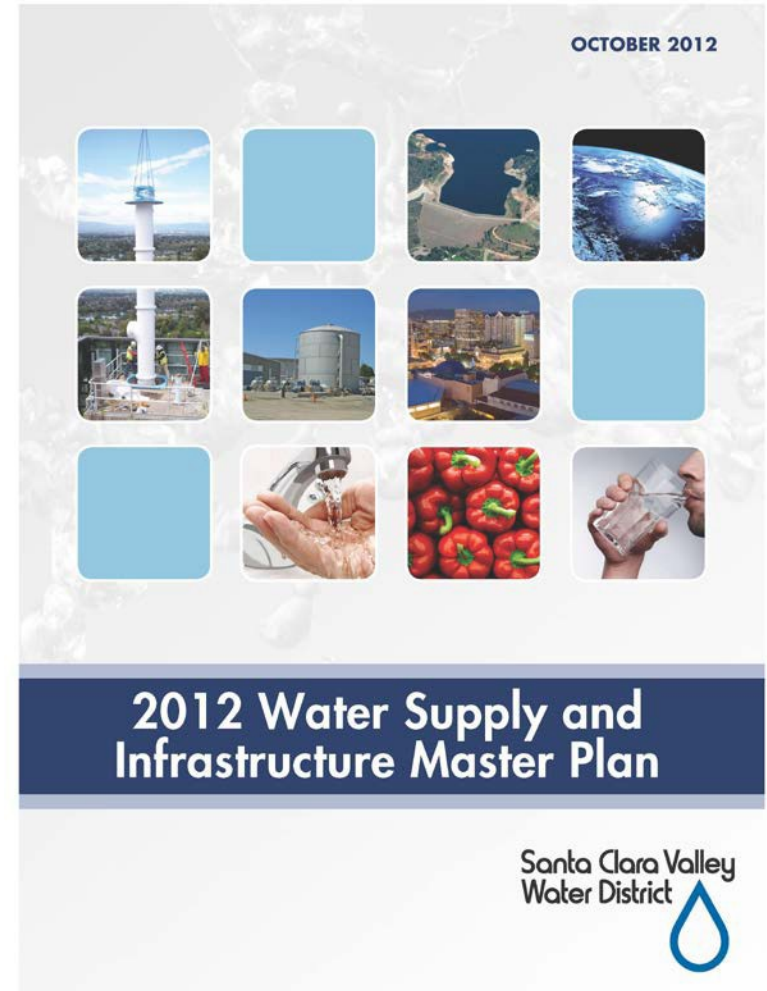


# Water Supply

# 2012 Master Plan “Ensure Sustainability” Strategy

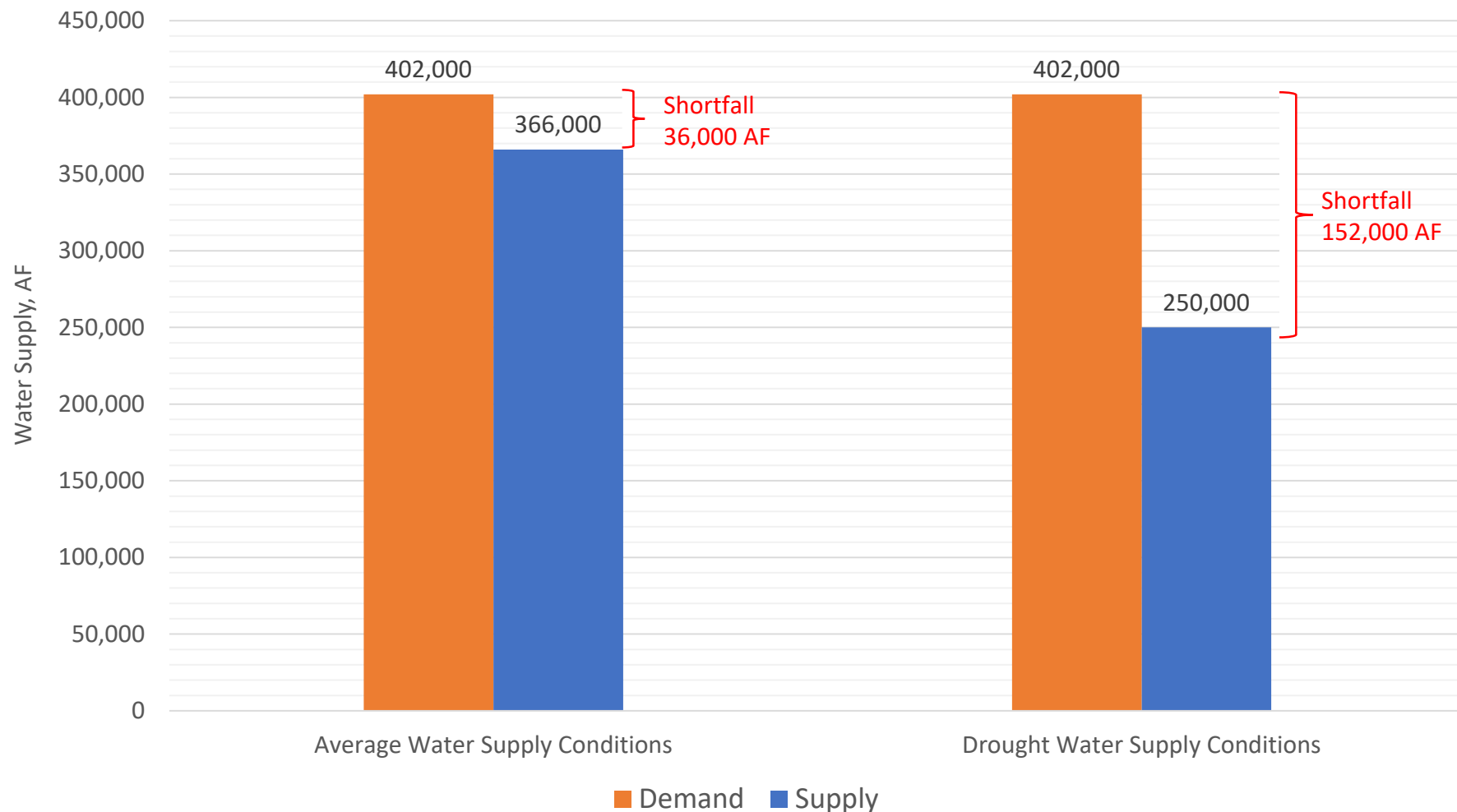
Level of service goal – Meet 90% of demands in droughts

- ▶ Secure existing system
  - ▶ Dam retrofits, asset management, pipeline repair, maintain imports
- ▶ Optimize existing system
  - ▶ New recharge, new pipelines
- ▶ Expand conservation and reuse
  - ▶ Graywater, potable reuse



# Water Supply Master Plan Update

## Analysis shows declining reliability in year 2040



# Evaluated about 40 projects for filling gaps

- ▶ Conservation and demand management
- ▶ Stormwater capture and reuse
- ▶ Onsite reuse
- ▶ Potable reuse
- ▶ Recycled water
- ▶ Groundwater recharge ponds
- ▶ Raw water pipelines
- ▶ Ag land fallowing
- ▶ Storage, inside and outside county
- ▶ Desalination
- ▶ Dry year options/transfers
- ▶ Water contract purchase
- ▶ California WaterFix

# “No Regrets” package is cost-effective and broadly supported

- ▶ Advanced Metering Infrastructure
- ▶ Gray Water Program Expansion
- ▶ Leak Repair Incentive
- ▶ New Development Model Ordinance
- ▶ Stormwater Capture and Reuse
  - ▶ Ag Land Recharge
  - ▶ Rain Barrel Rebate
  - ▶ Rain Garden Rebate
  - ▶ San Jose Recharge
  - ▶ Saratoga Recharge

Total District Cost	\$100 million
Additional Water Conservation Savings	10,000 AF
Additional Water Supply Yield	1,000 AF
Unit Cost	\$400/AF

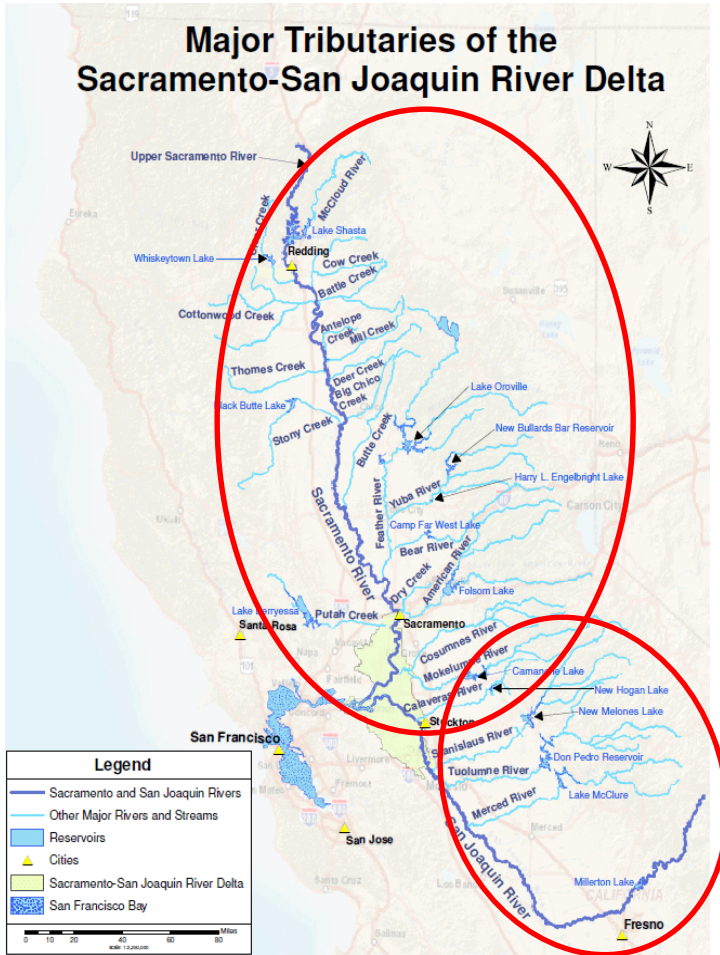
# Next Steps

- Water Supply Master Plan Board update – September 2018
- Draft Water Supply Master Plan Report – Winter 2018
- Final Water Supply Master Plan Report – Spring/Summer 2019
- Annual Supply and Demand Review
- Annual Water Supply Master Plan Investment Strategy Review



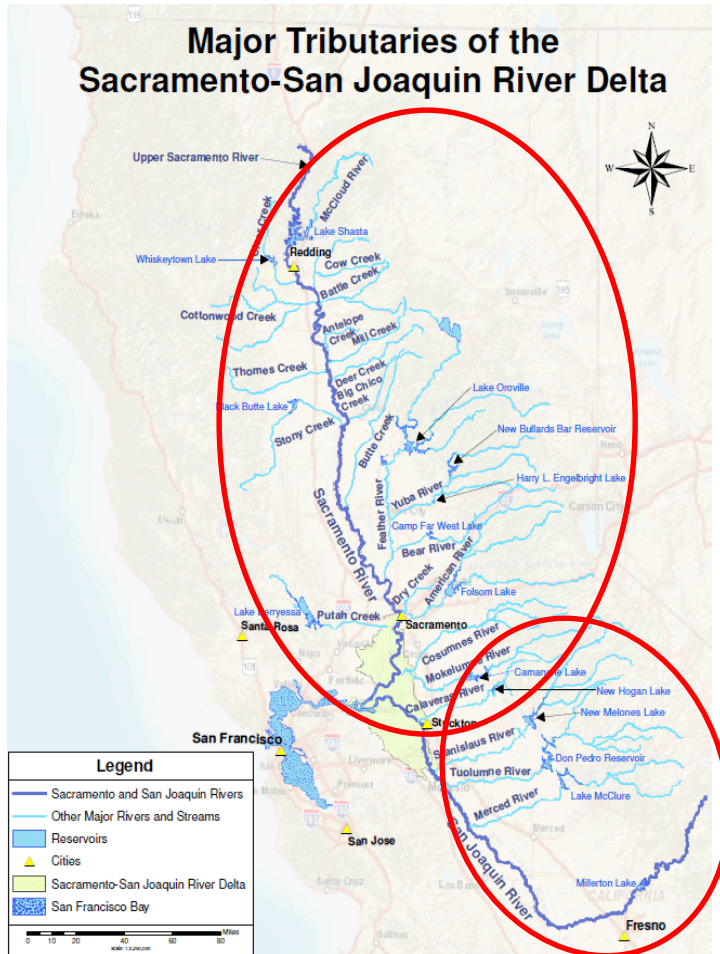
# Bay Delta Water Quality Control Plan

# Update is occurring in phases



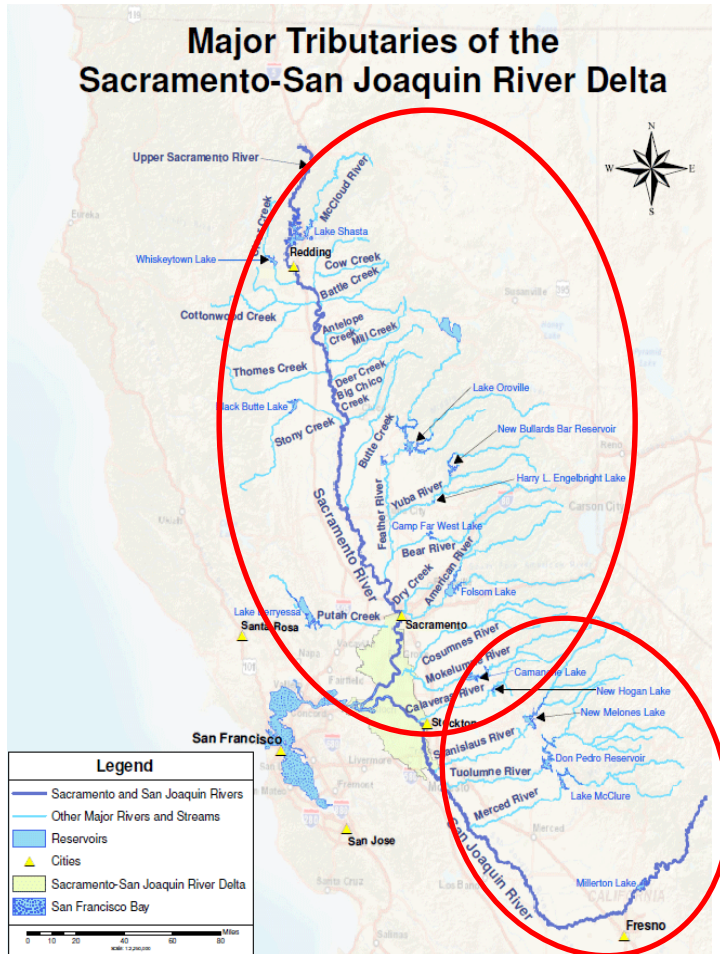
- Phase 1 – San Joaquin River and tributary flows and southern Delta salinity – started in 2008
- Phase 2 – Sacramento River and tributary flows, Delta outflow and interior flows, gate operations, and cold water habitat – started in 2012
- Phase 3 – Implementation – not started

# State Water Board Assessment



- Phase 1
  - Average System-Wide Reduction: 293,000 AF
  - Dry and Year Reductions: 624,000-673,000 AF
- Phase 2
  - Average System-Wide Reduction: 2,000,000 AF

# Santa Clara County Impacts

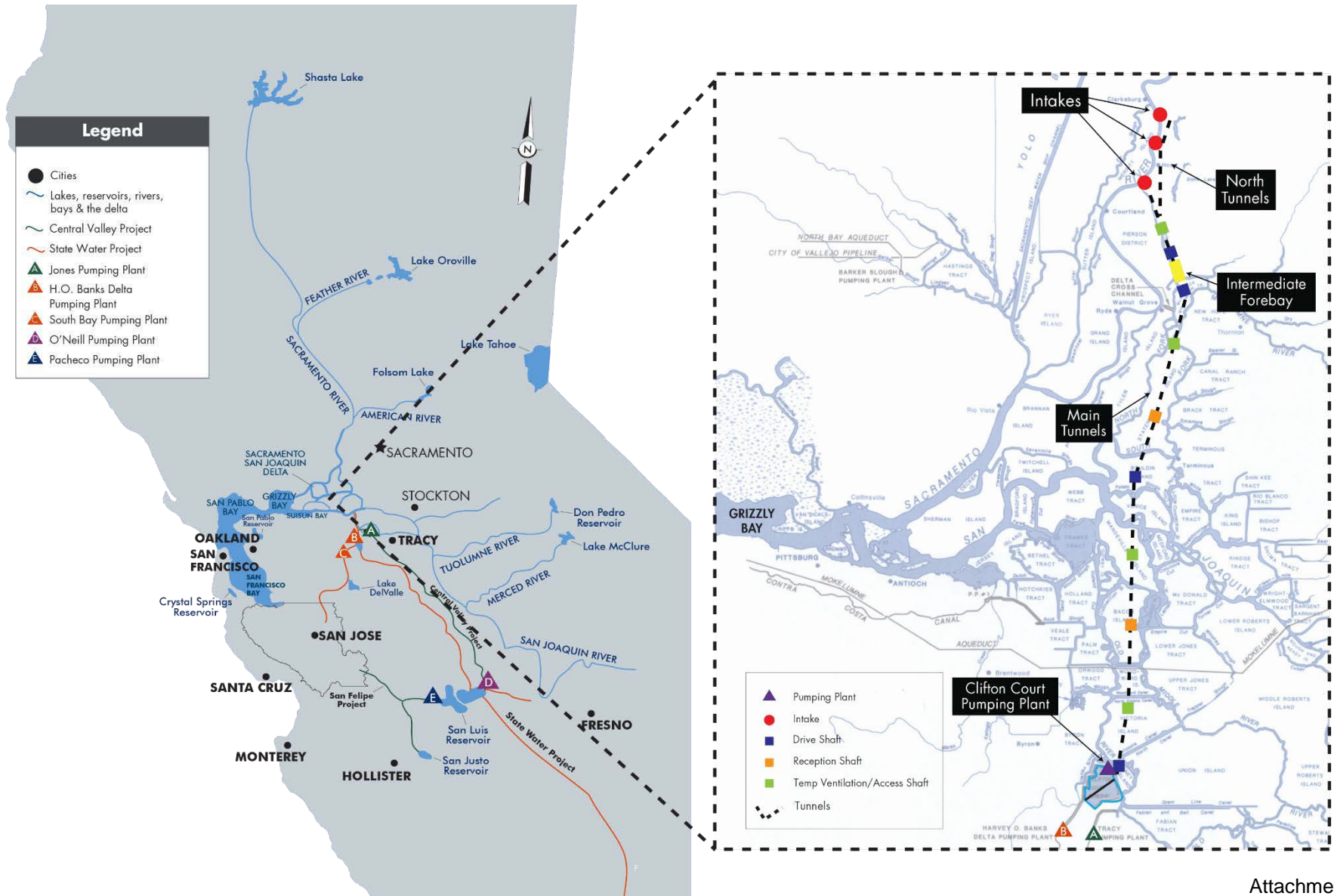


- Phase 1
  - 4 to 15 percent increase in frequency of shortages
  - 5 to 19 percent increase in magnitude of shortages
  - Reduced availability of supplemental transfer supplies
- Phase 2
  - Unknown, but likely significant

# California WaterFix



# Project Overview - California WaterFix





## Benefits to Santa Clara County



Produces the most water for lowest cost



Keeps our water clean, safe, and reliable



Provides resiliency for future conditions

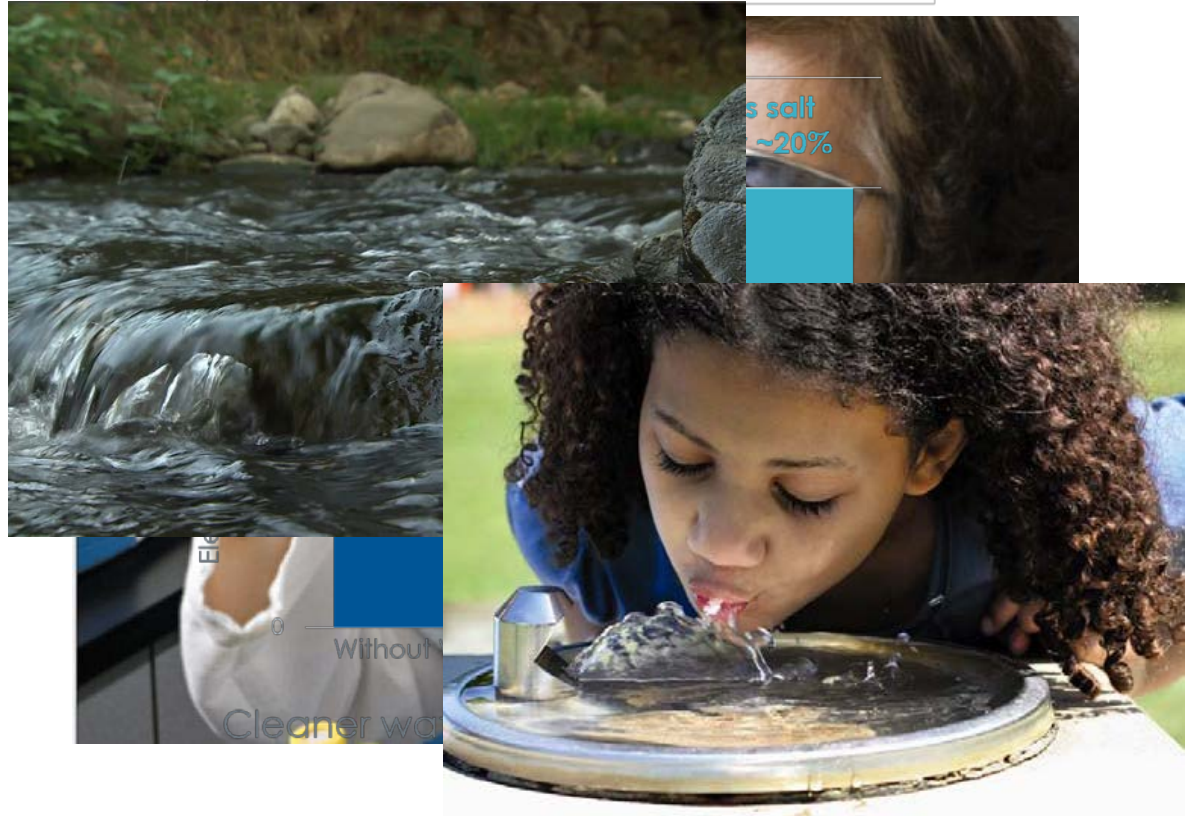


Improves environment for fish



SCVWD has prominent leadership role in WaterFix governance to ensure benefits are achieved

### Reliable Water





## Benefits to Santa Clara County



Produces the most  
water for lowest cost



Keeps our water clean, safe,  
and reliable



Provides **resiliency**  
for future  
conditions



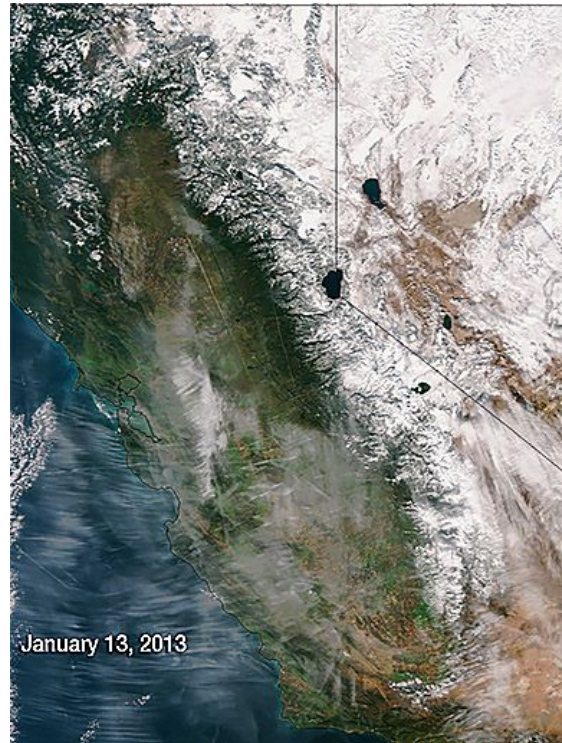
Improves environment  
for fish



SCVWD has prominent  
leadership role in WaterFix  
governance to ensure benefits  
are achieved



*Resiliency to climate change*





## Benefits to Santa Clara County



Produces the most water for lowest cost



Keeps our water clean, safe, and reliable



Provides resiliency for future conditions

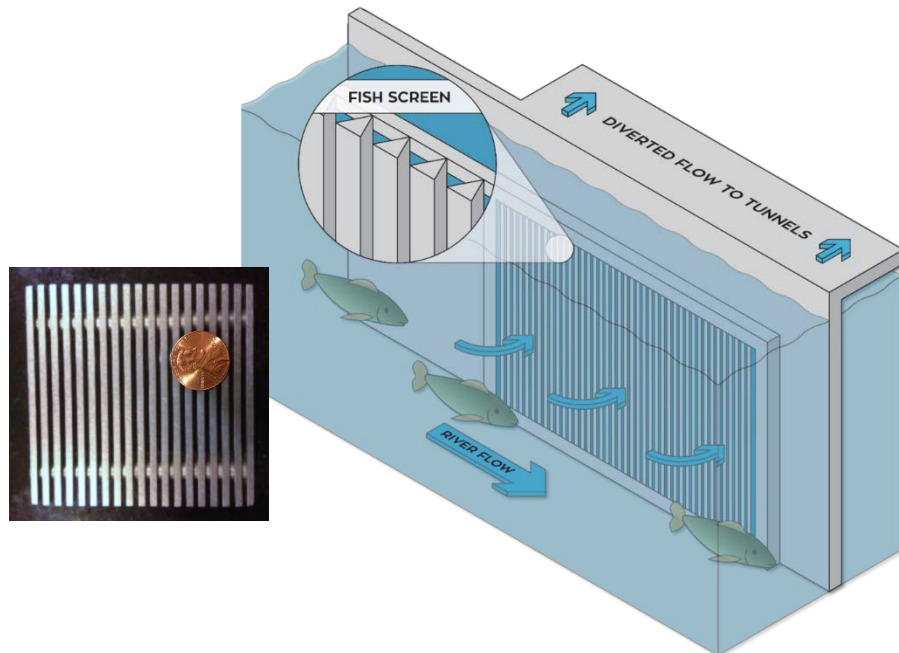


**Improves environment for fish**



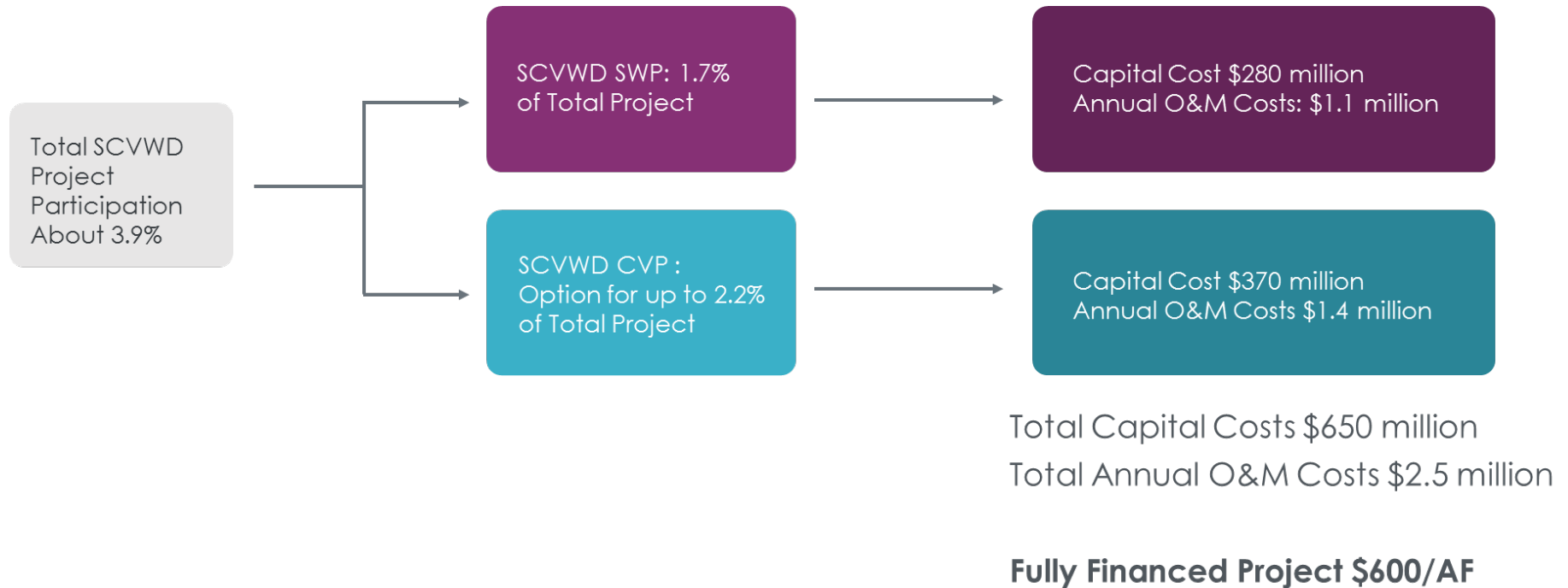
SCVWD has prominent leadership role in WaterFix governance to ensure benefits are achieved

## Improved conditions for fish means fewer restrictions on Santa Clara County's water supply



New state-of-the-art fish screens will lessen impacts on fish

# WaterFix – Cost to Santa Clara County



# Average monthly household cost of WaterFix (FY33)



# Recycled Water Master Planning and Future Water Partnerships

# Countywide Water Reuse Master Plan

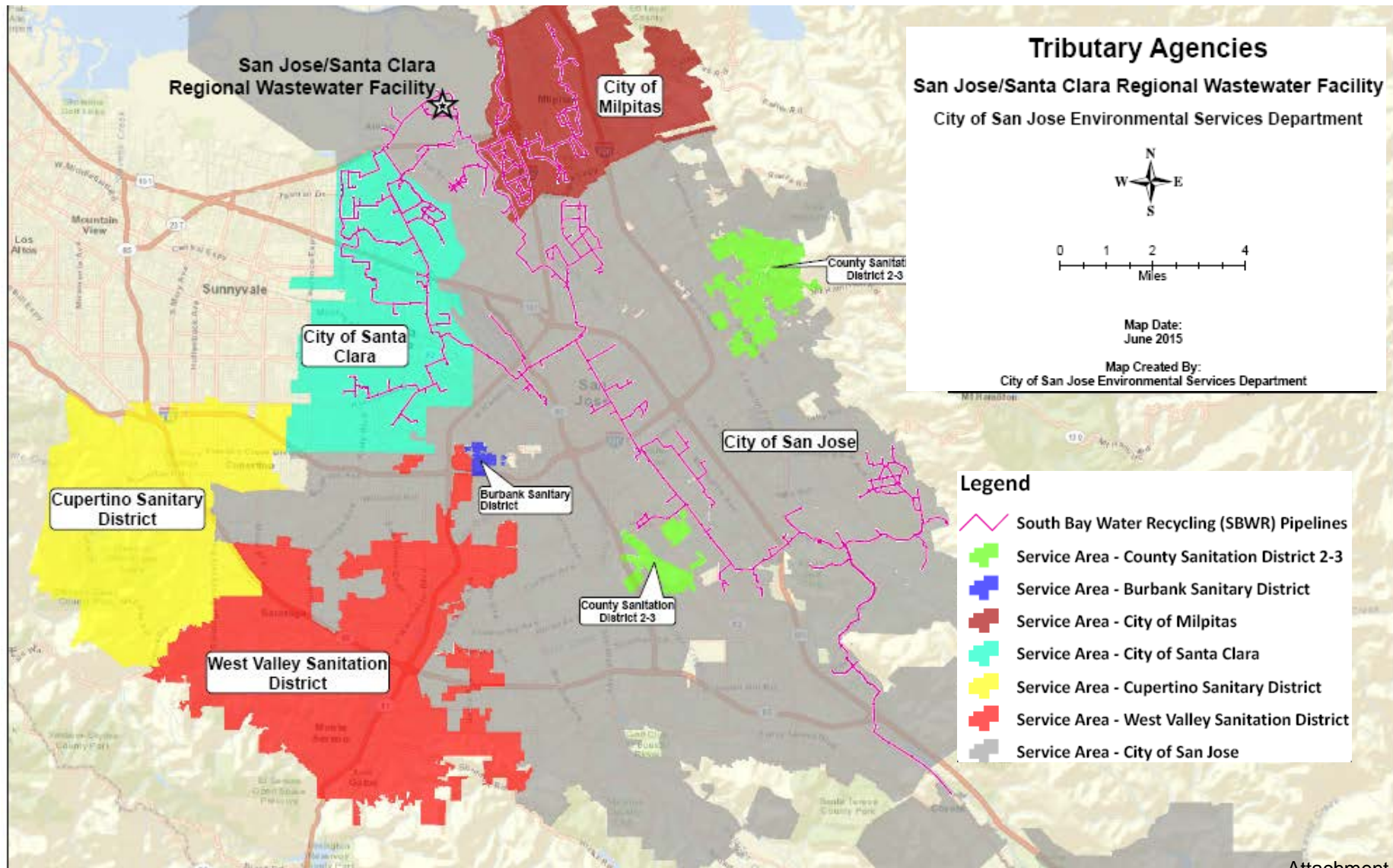
## Objectives

- Identify sources and amounts of water available for reuse
- Determine NPR & PR split
- Evaluate governance roles & responsibilities, provide recommendations
- Evaluate potential regional integration
- Conduct stakeholder engagement

NPR = Non-Potable Reuse

PR = Potable Reuse

# Map of SBWR Recycled Water Service Area



# Master Plan Framework

Governance

Regional Planning  
& Integration

Water Treatment &  
Contributing Sewersheds

Economics  
& Funding

Stakeholder  
Engagement

Water Quality  
& Quantity

Infrastructure,  
Assets, & Land

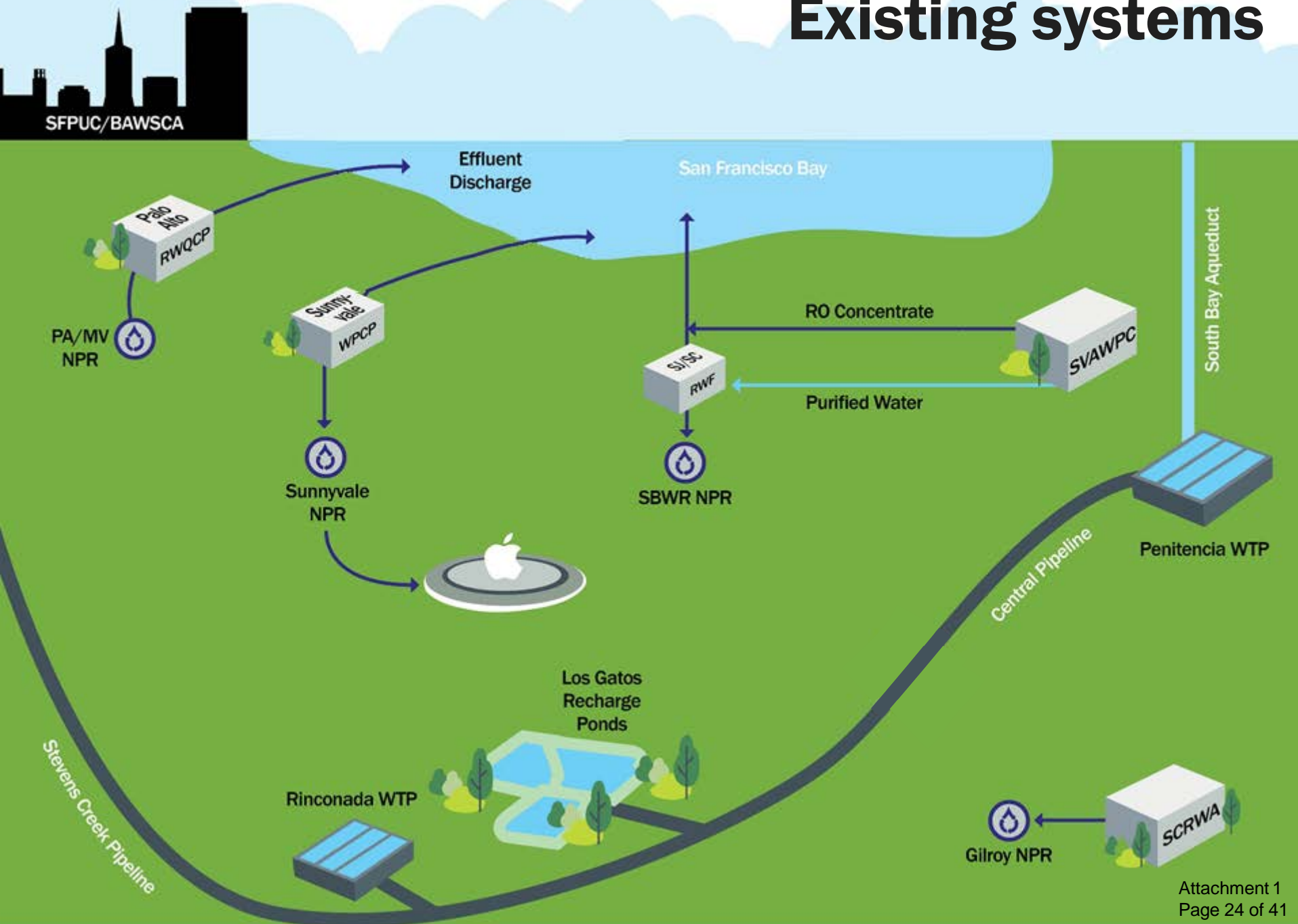
Environmental,  
Permitting, Regulations, &  
RO Conc. Mgmt.

Public Perception

Schedule & Coordination with other  
Planning Efforts



# Existing systems





# Countywide Water Reuse Master Plan Stakeholder Engagement

## Executive Leadership Group

- Provide strategic input
- City Managers and Utility Execs from Partner Agencies

## Project Partner Group

- Support and inform project decisions
- SBWR
- PA / MV
- Sunnyvale
- SCRWA

## One-on-One Meetings

- Meet Partner Agency Executives prior to group meetings
- Build trust and buy-in

## Stakeholder Task Force

- Engage outside groups
- Solicit feedback and discuss alternatives

Including  
City of Santa Clara

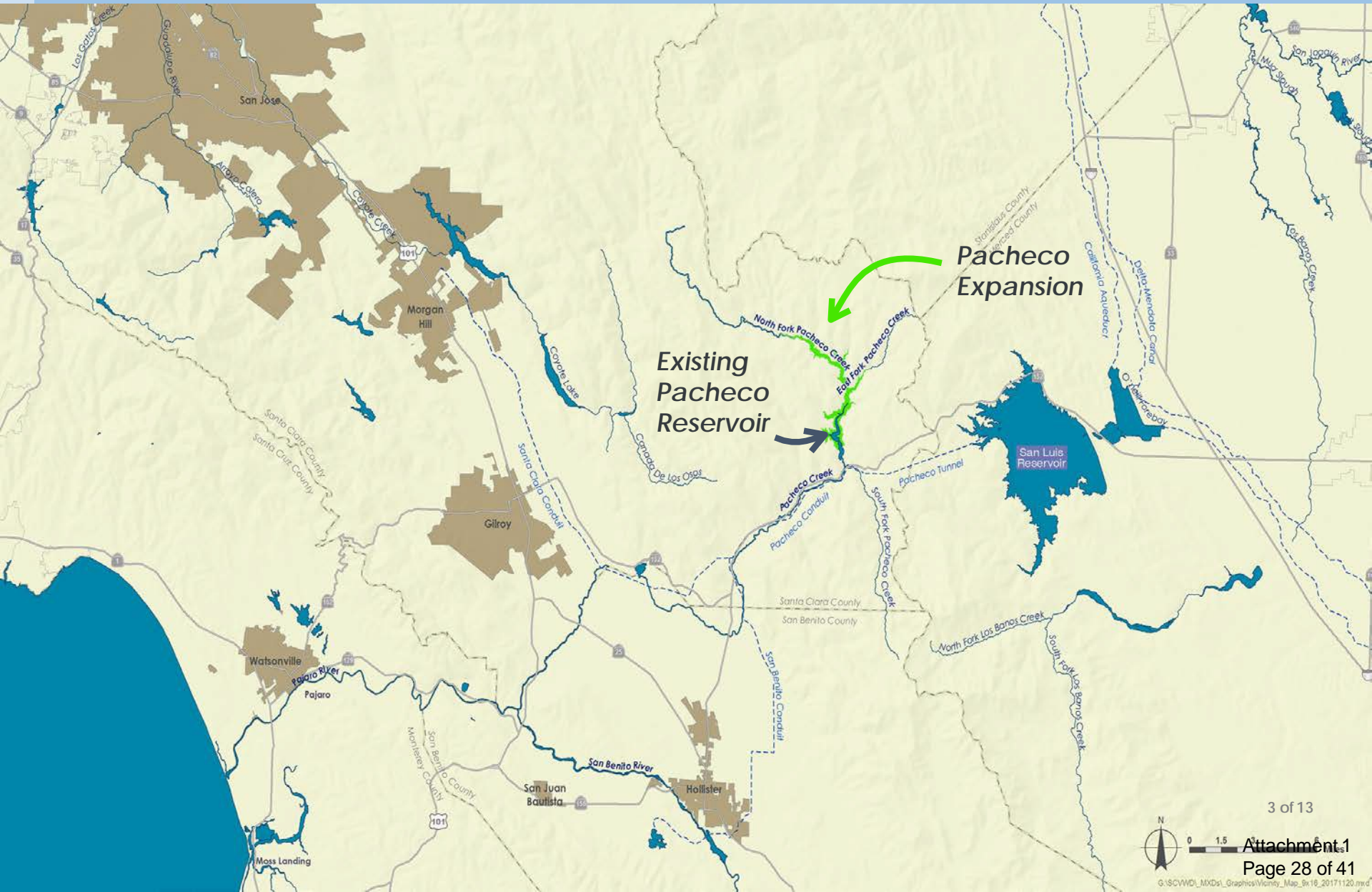
# Countywide Water Reuse Master Plan Next Steps



- **Upcoming Stakeholder TF workshops**
  - Winter 2018
  - Spring 2019
  - Summer 2019
- **Continue work product development**
  - Conceptual alternatives

# Pacheco Reservoir Expansion Project

# Pacheco Reservoir Expansion Project Location





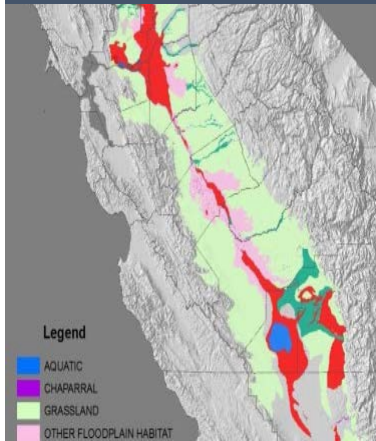
# The Pacheco Reservoir Expansion Will Address Five Big Challenges

## Restore Federally Threatened Fish



**90%** population decline in Pajaro watershed from 1960s to 1990s

## Improve the Delta



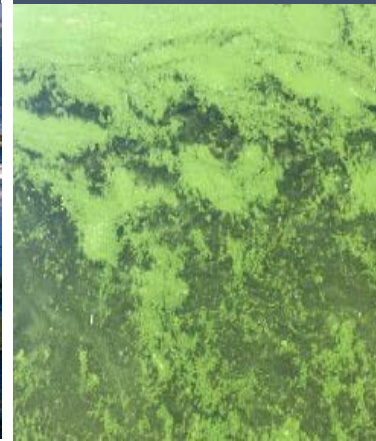
**90%** of Delta watershed wetlands have disappeared

## Improve Resiliency and Emergency Water Supply



**66%** chance of Delta earthquake in next 50 years;  
**45%** of water supply imported from Delta

## Eliminate Water Quality Issues in San Luis Reservoir



Water quality issues during summer months in **57%** of years

## Reduce Flooding to Disadvantaged Communities



Extensive flooding even for frequent/small events;  
**20-year** flood in 2017 (pictured)

# Anderson Dam Project Update

# Key Water Supply Projects



**Dam Seismic Retrofits/Improvements  
(\$780 Million)**



**RWTP Reliability Improvements  
(\$290 Million)**



**Expedited Purified  
Water Program  
(\$1 Billion via P3  
Delivery Method)**



# Anderson Dam Project Update

## Anderson Dam Existing Configuration

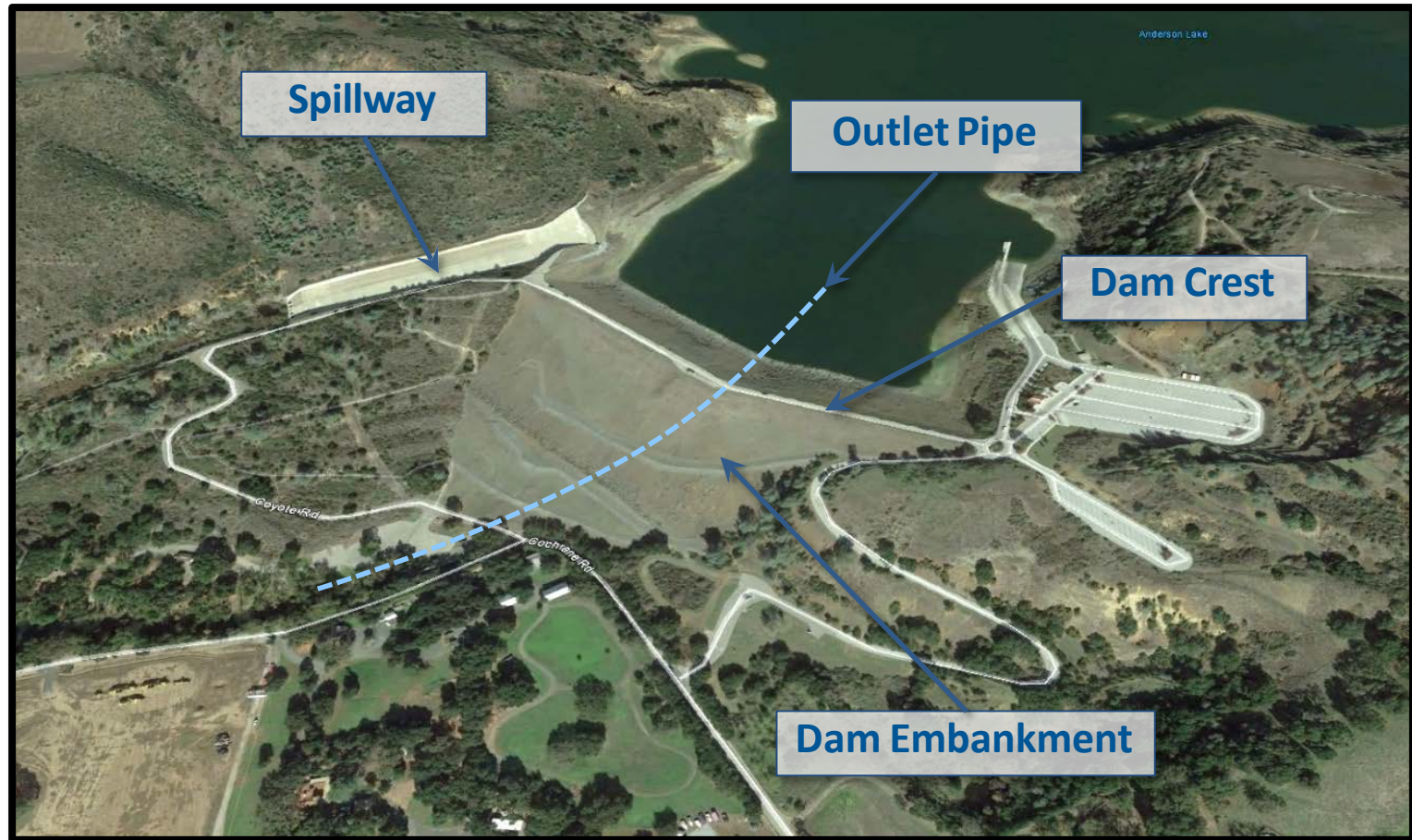


Image Source: Google Earth

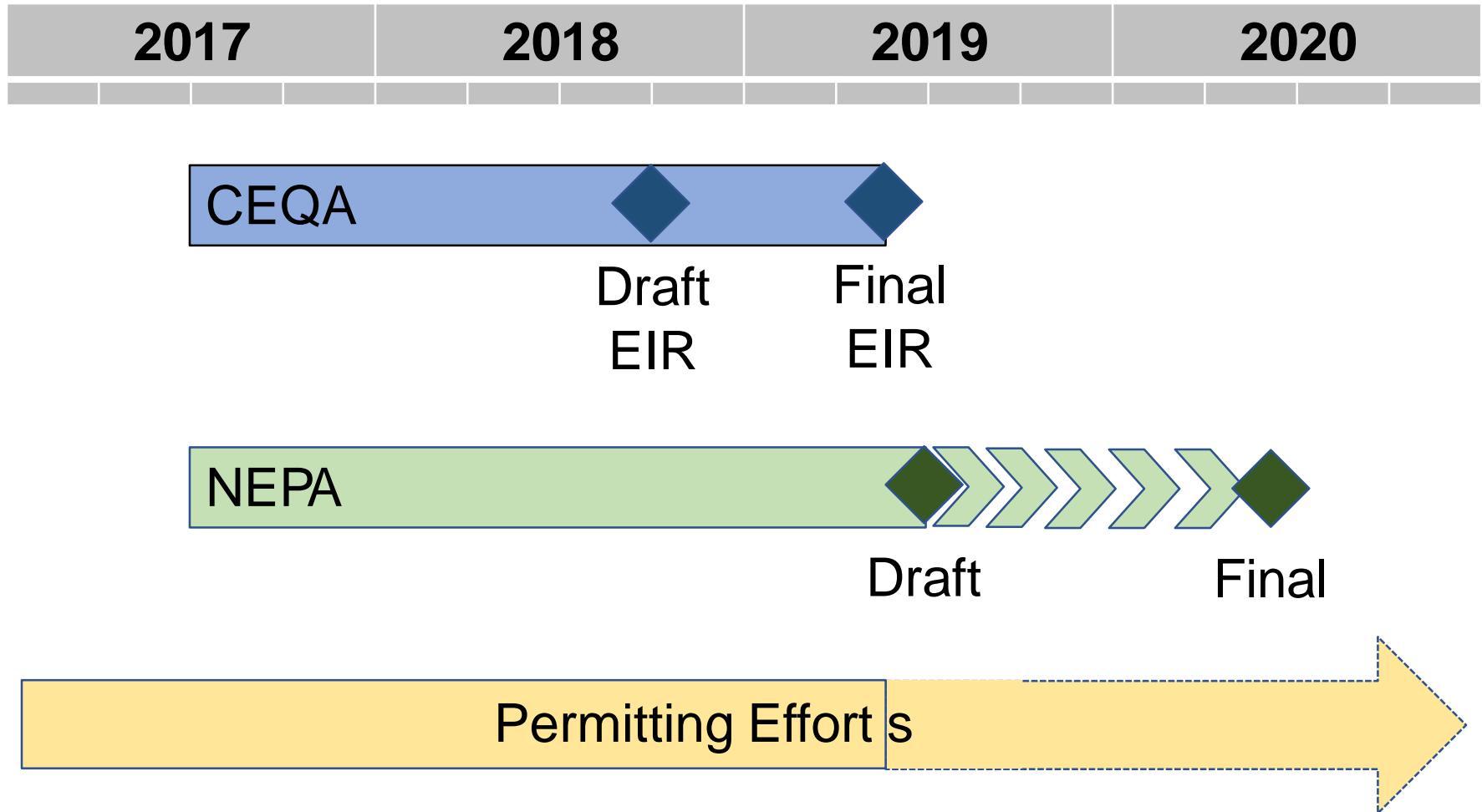


# Anderson Dam Project Update

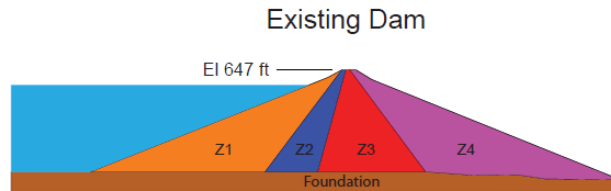
## Anderson Dam – Current Project Efforts

- 60% Design completed; under review
- Geotechnical investigations for spillway replacement
- Preparation of environmental and permit documents
- Full court press on permitting process.

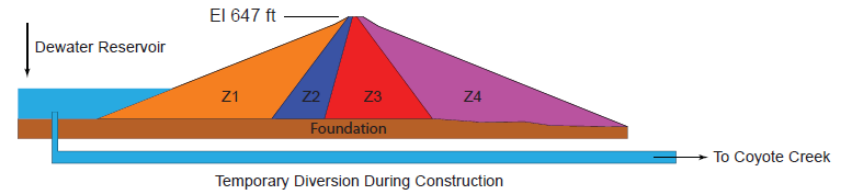
# CEQA/NEPA/Permitting Timeline Overview



# Anderson Dam Embankment Retrofit Sequence



Year 1 and 2  
Construction of Diversion Tunnel and Dewatering



Year 3: April - October

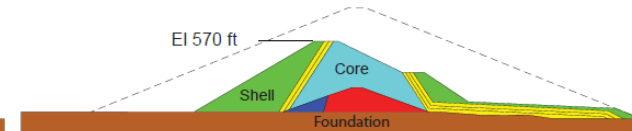
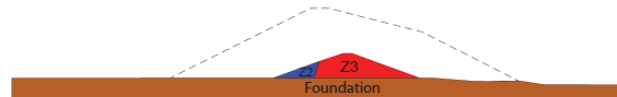
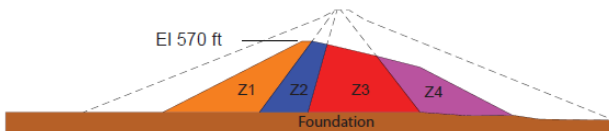
Stage 1 Excavation

Year 4: April - June

Stage 2 Excavation

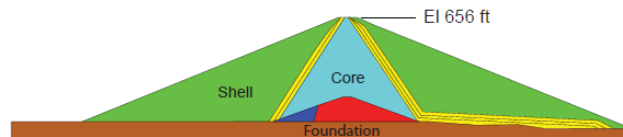
Year 4: July - October

Stage 2 Fill

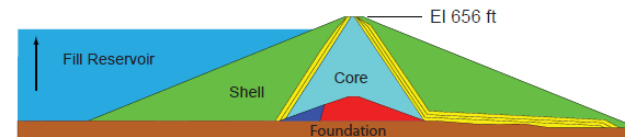


Year 5: April - October

Stage 3 Fill



Final Configuration



# How Water Supply Services Are Funded

# Why do well owners pay SCVWD to pump water from the ground?

## Construction at Anderson Reservoir, 1951



**\$550M Seismic Retrofit under way at Anderson**

- ▶ Local rainfall cannot sustain Santa Clara County water needs
- ▶ Planning in early 1900's called for construction of reservoirs to capture rainwater to percolate into the ground
- ▶ Groundwater Production Charge is a reimbursement mechanism
  - ▶ pays for efforts to protect and augment water supply

# Many activities ensure safe, reliable groundwater supplies

- Plan & construct improvements to infrastructure
- Purchase imported water
- Operate & maintain local reservoirs
- Operate & maintain raw & recycled water pipelines
- Monitor & protect groundwater from pollutants

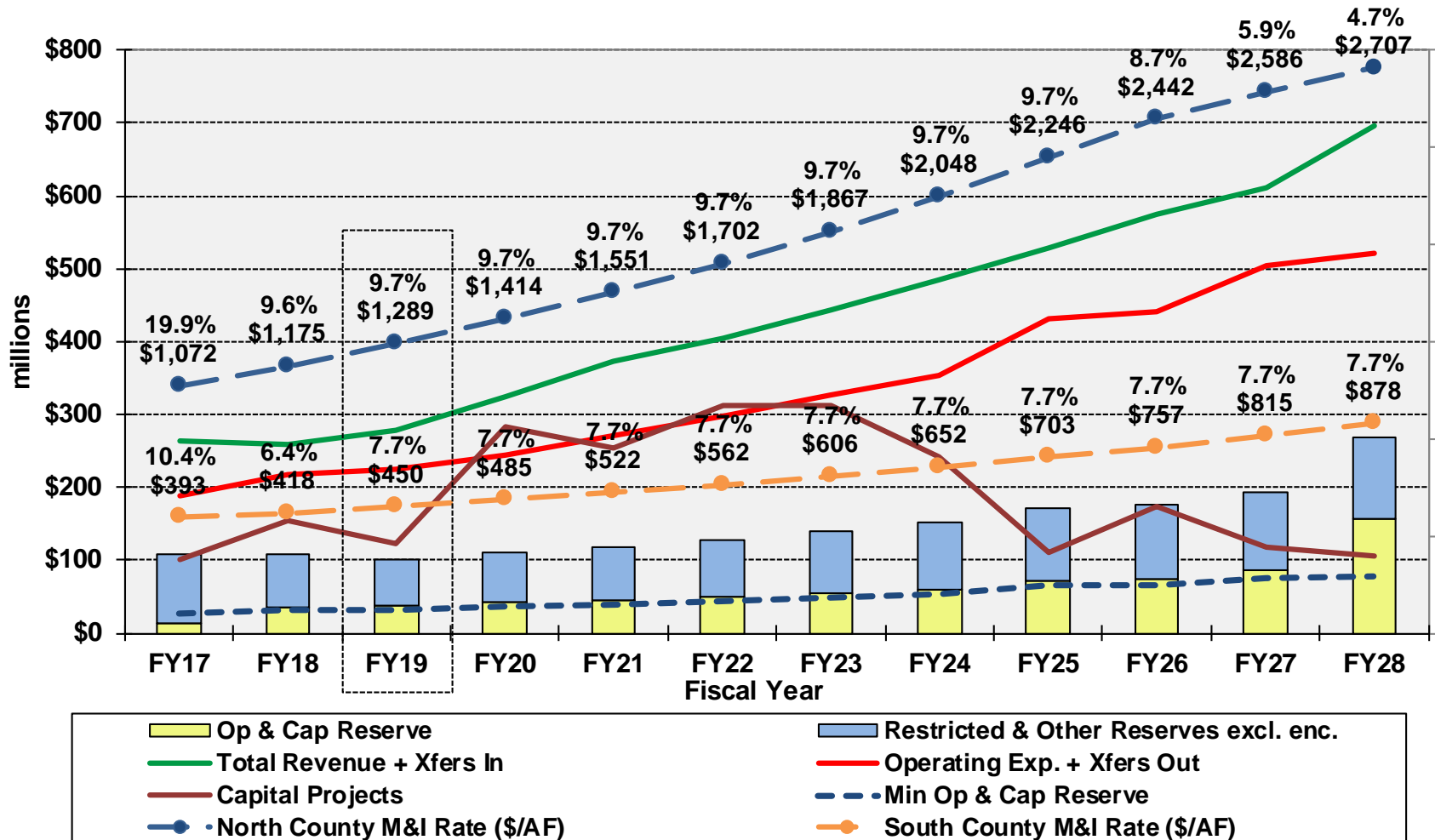


Beginning 10-Year Pipeline Rehabilitation (\$125M)

# Groundwater Production Charge Projection

(\$ in millions)

## Water Utility Enterprise Fund



# FY 2018-2019 Schedule

Jan 9	Board Meeting: Preliminary Groundwater Charge Analysis
Jan 17	Water Retailers Meeting: Preliminary Groundwater Charge Analysis
Jan 24	Water Commission Meeting: Prelim Groundwater Charge Analysis
Feb 13	Board Meeting: Review draft CIP & Budget development update
Feb 23	Mail notice of public hearing and file PAWS report
Mar 21	Water Retailers Meeting: FY 19 Groundwater Charge Recommendation
Apr 2	Ag Water Advisory Committee
Apr 3	Landscape Committee Meeting
Apr 10	Open Public Hearing
Apr 11	Water Commission Meeting
Apr 12	Continue Public Hearing in South County
Apr 24	Conclude Public Hearing
Apr 25-27	Board Meeting: Budget work study session
May 8	Adopt budget & groundwater production and other water charges



# Summary

- **Groundwater Production Charge projection driven by infrastructure repair & replacement, and water supply reliability investments**
- **FY 19 Groundwater Production Charge increase equates to an increase of \$3.92 per month in North County to average household**

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