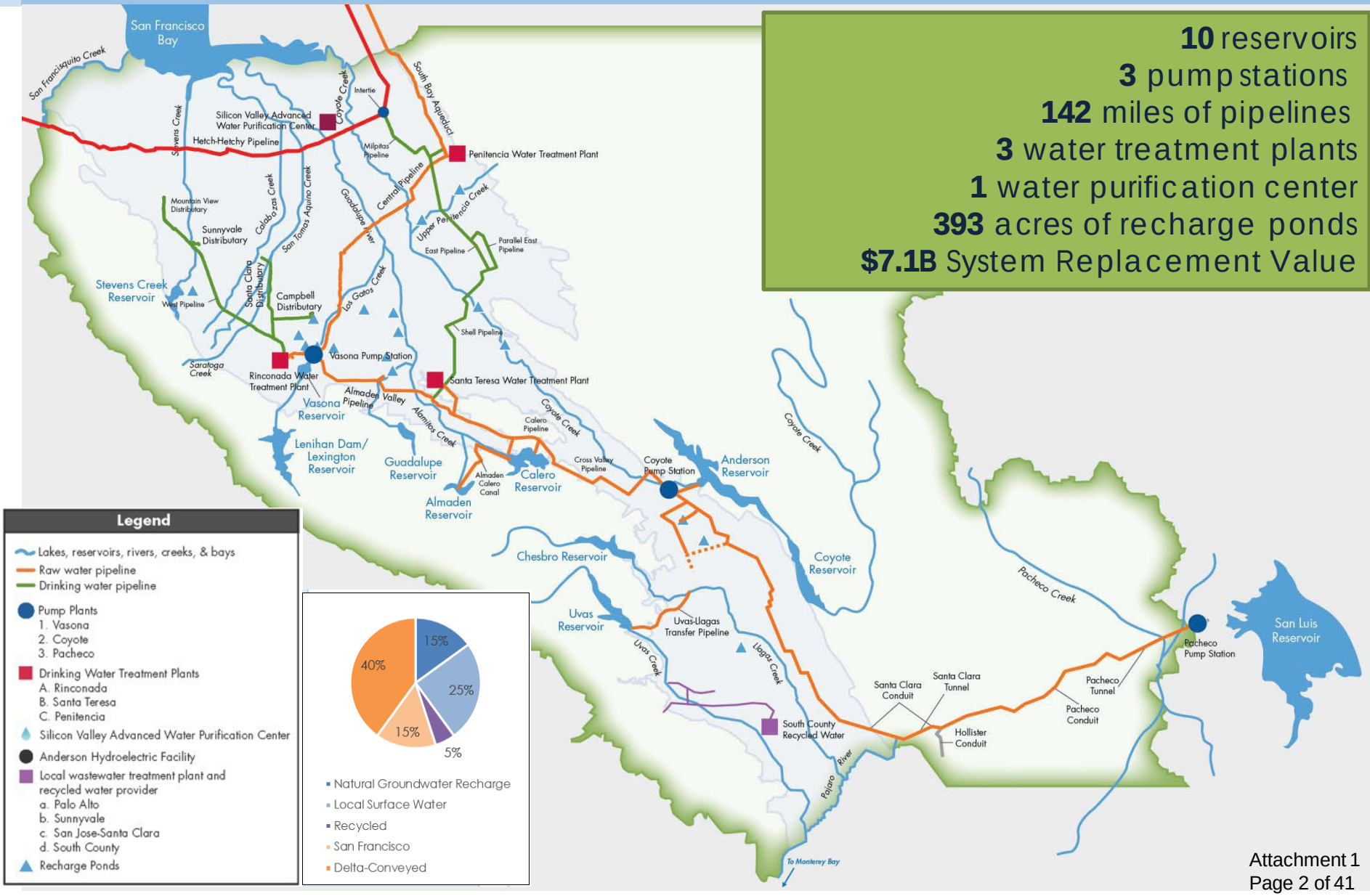
Overview of the District's Water Infrastructure, Capital Improvement Program, Flood Protection Projects, and Current/Future Water Supply Planning

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

Santa Clara Valley Water District

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



Legend

- Lakes, reservoirs, rivers, creeks, & bays
- Raw water pipeline
- Drinking water pipeline
- Pump Plants
  1. Vasona
  2. Coyote
  3. Pacheco
- Drinking Water Treatment Plants
  A. Rinconada
  B. Santa Teresa
  C. Penitencia
- Silicon Valley Advanced Water Purification Center
- Anderson Hydroelectric Facility
- Local wastewater treatment plant and recycled water provider
  a. Palo Alto
  b. Sunnyvale
  c. San Jose-Santa Clara
  d. South County
- Recharge Ponds

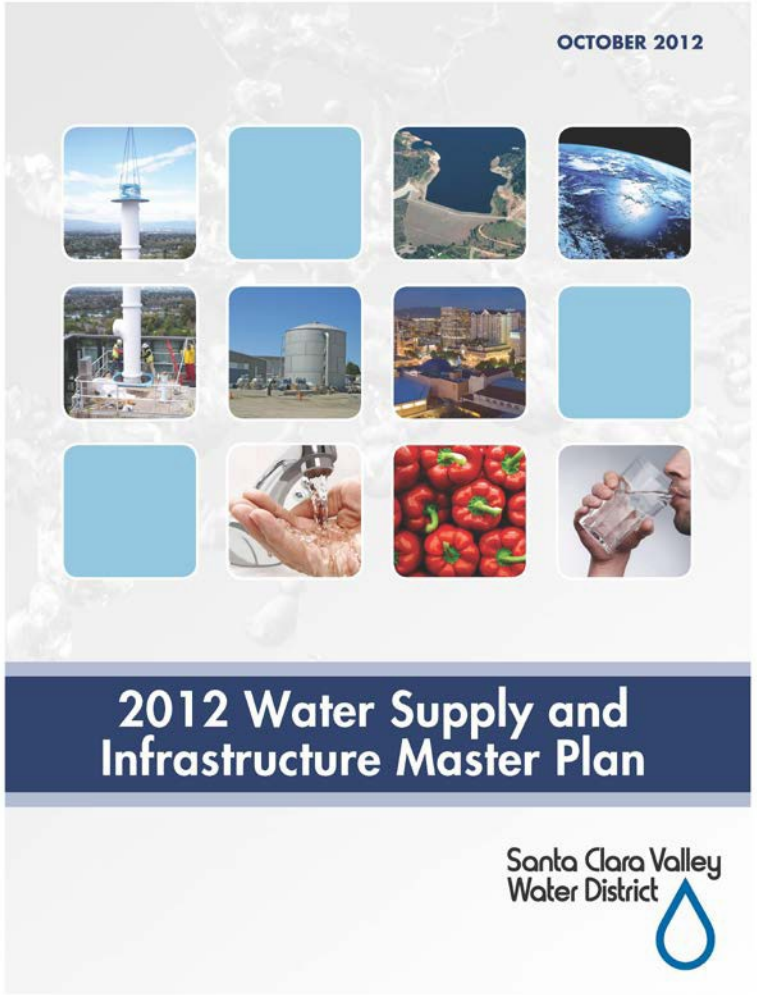
Water Supply

Santa Clara Valley Water District

2012 Master Plan "Ensure Sustainability" Strategy

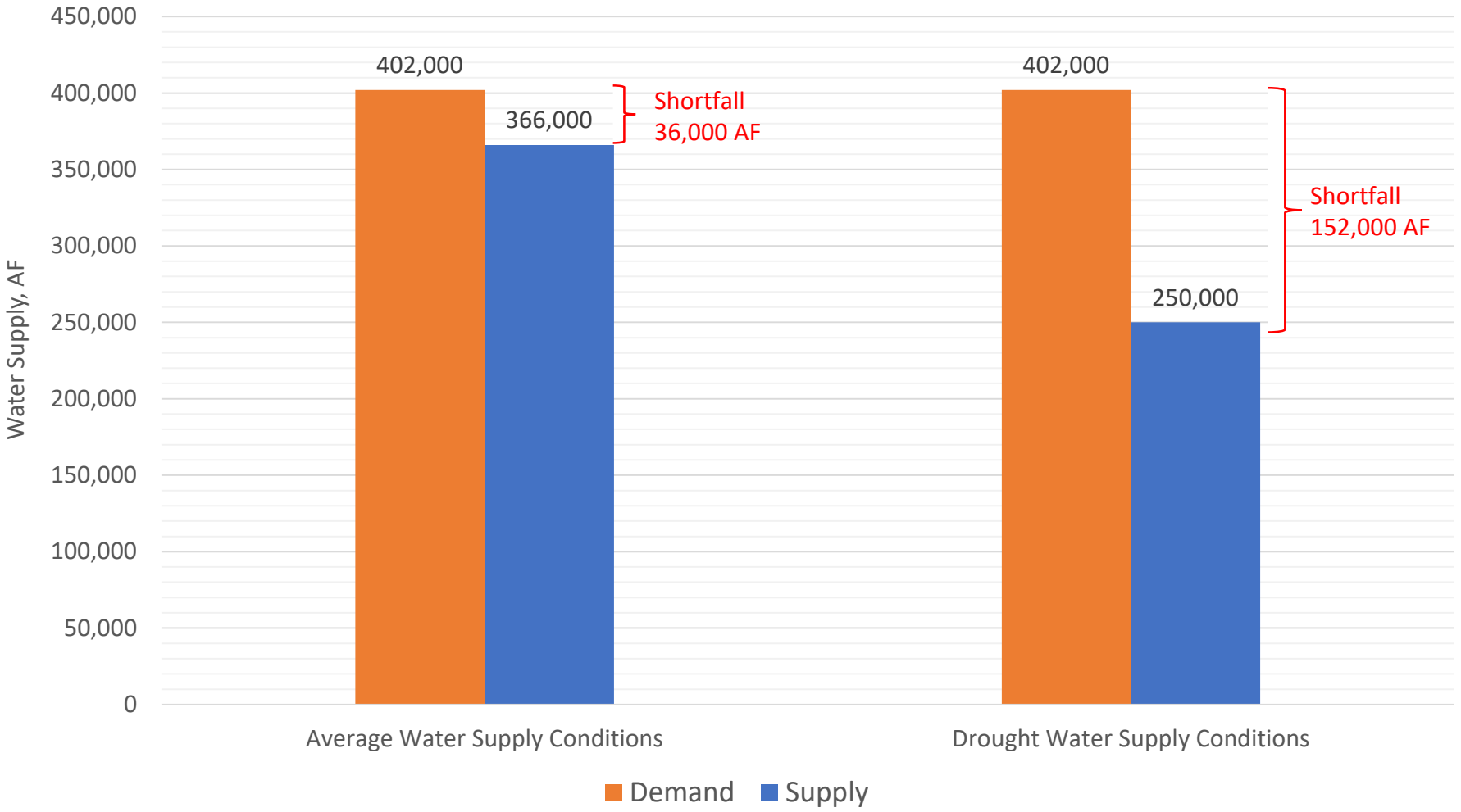
Level of service goal – Meet 90% of demands in droughts

- 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

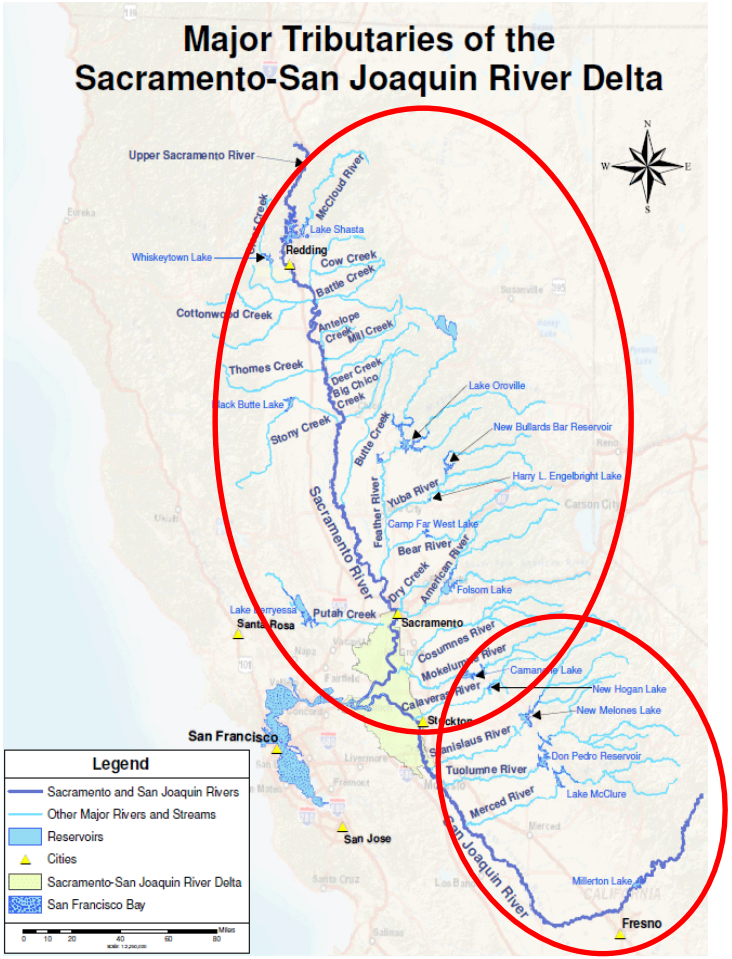
Next Steps

- 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

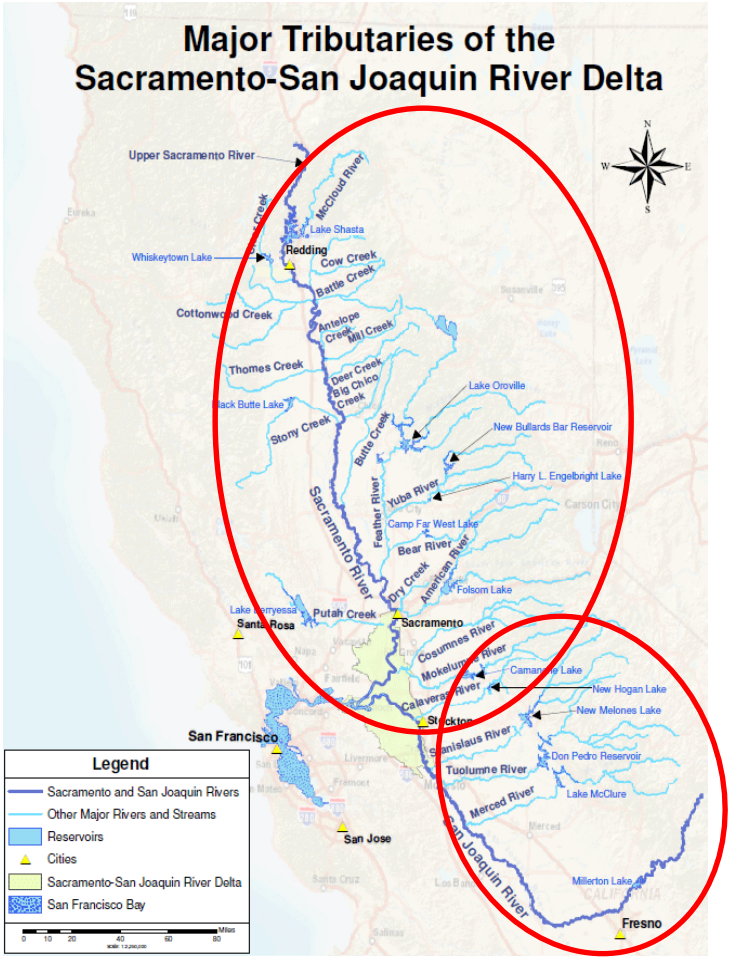
Santa Clara Valley Water District

Update is occurring in phases



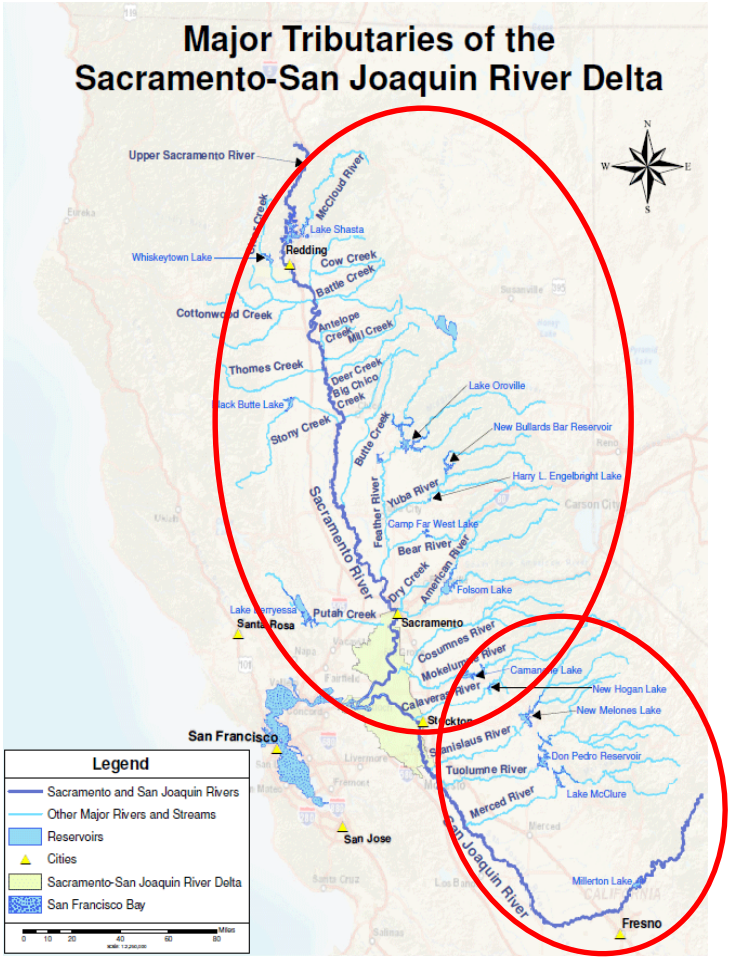
- Phase 1 – San Joaquin River and tributary flows and southern Delta salinity – started in 2008
- Phase 2 – Sacramento River and tributary flows, Delta outflow and interior flows, gate operations, and cold water habitat – started in 2012
- Phase 3 – Implementation – not started

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

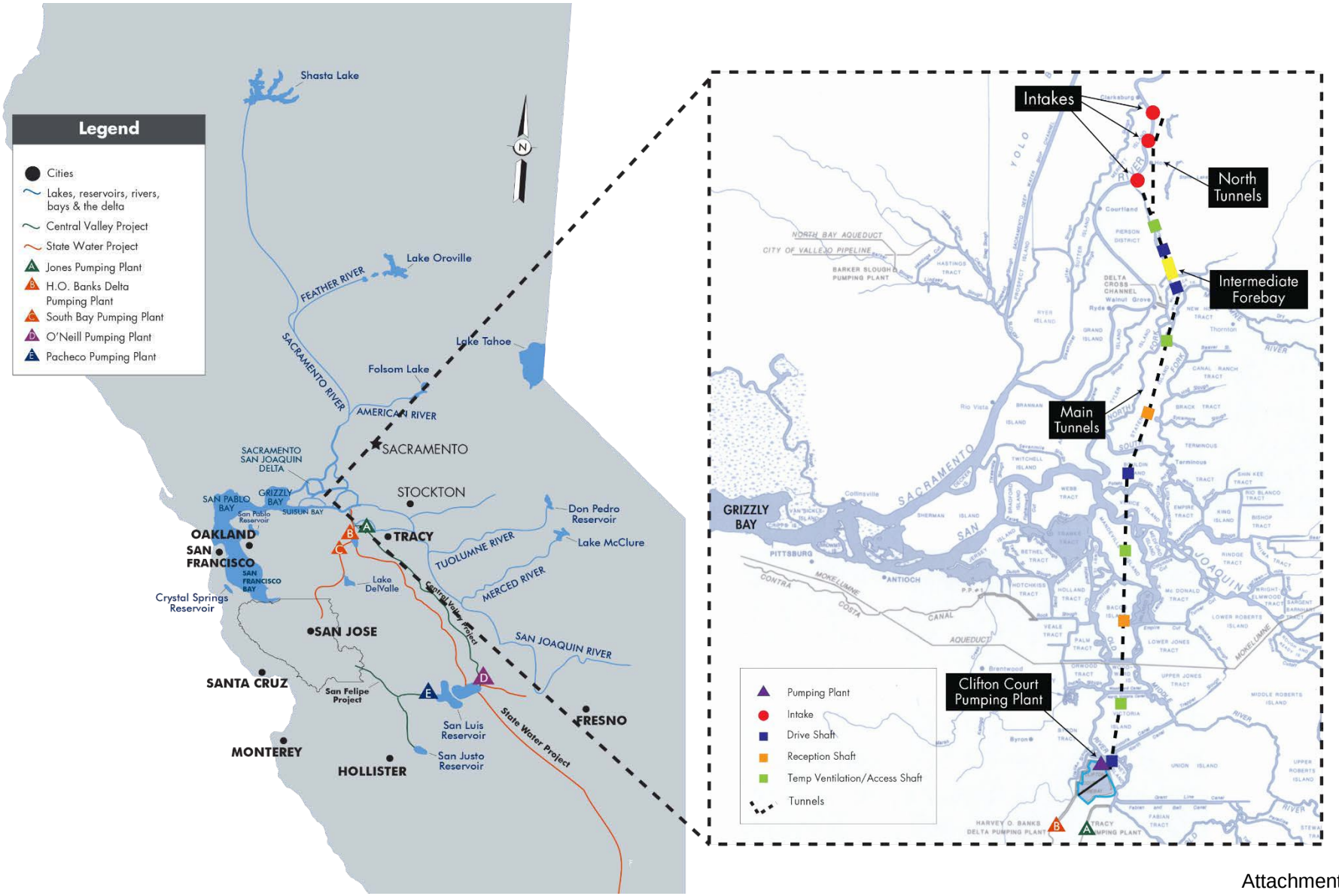


- Phase 1
  - 4 to 15 percent increase in frequency of shortages
  - 5 to 19 percent increase in magnitude of shortages
  - Reduced availability of supplemental transfer supplies
- Phase 2
  - Unknown, but likely significant

California WaterFix

Santa Clara Valley Water District

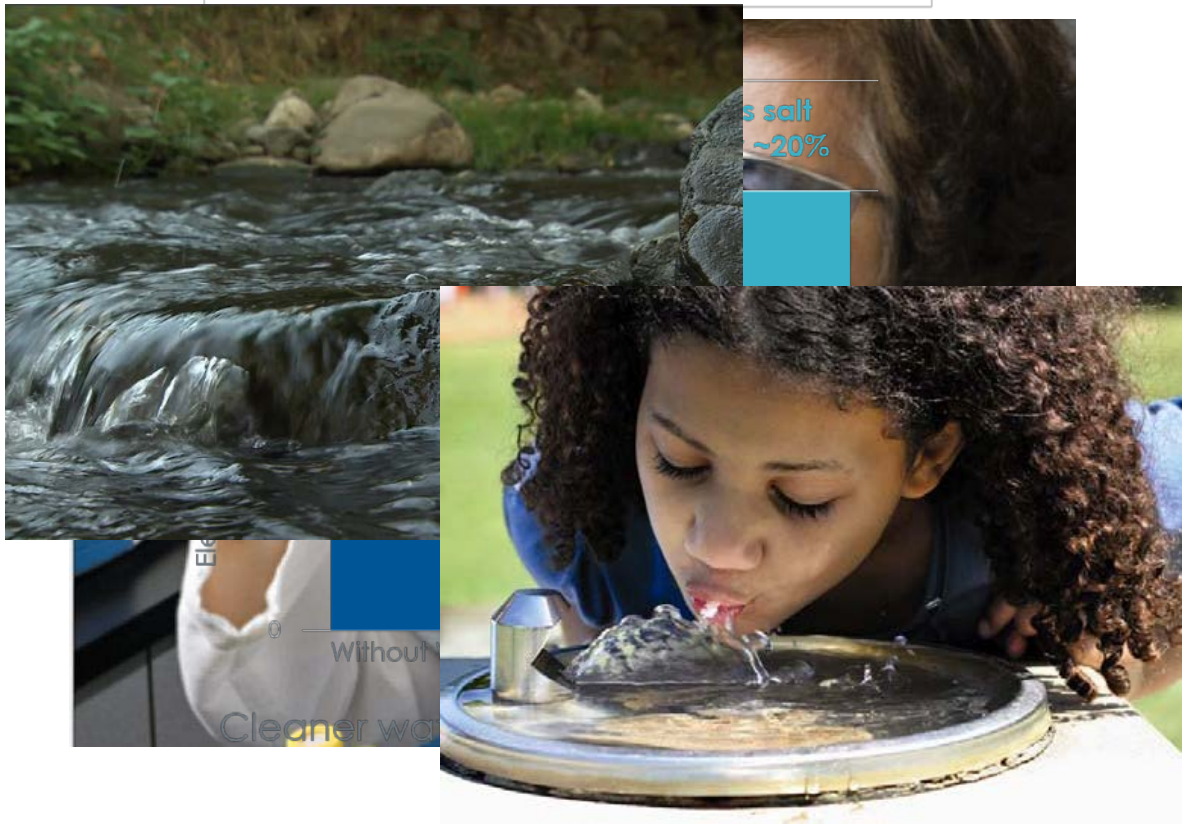
Project Overview - California WaterFix



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



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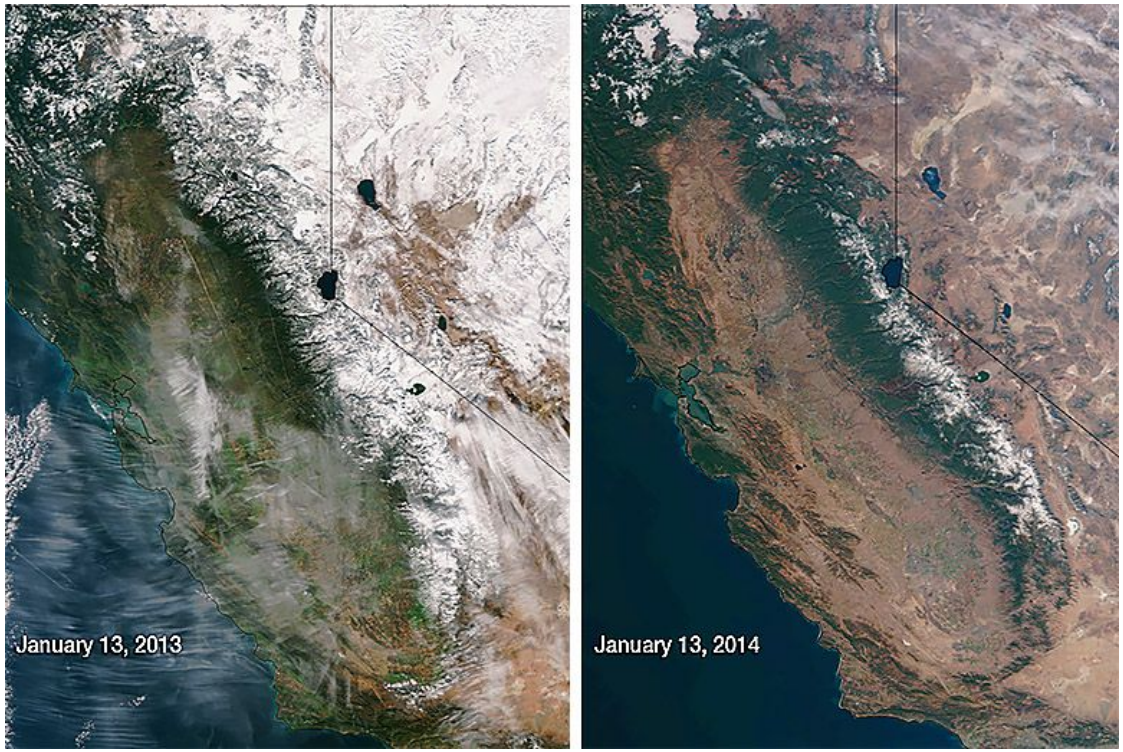
Resiliency to climate change



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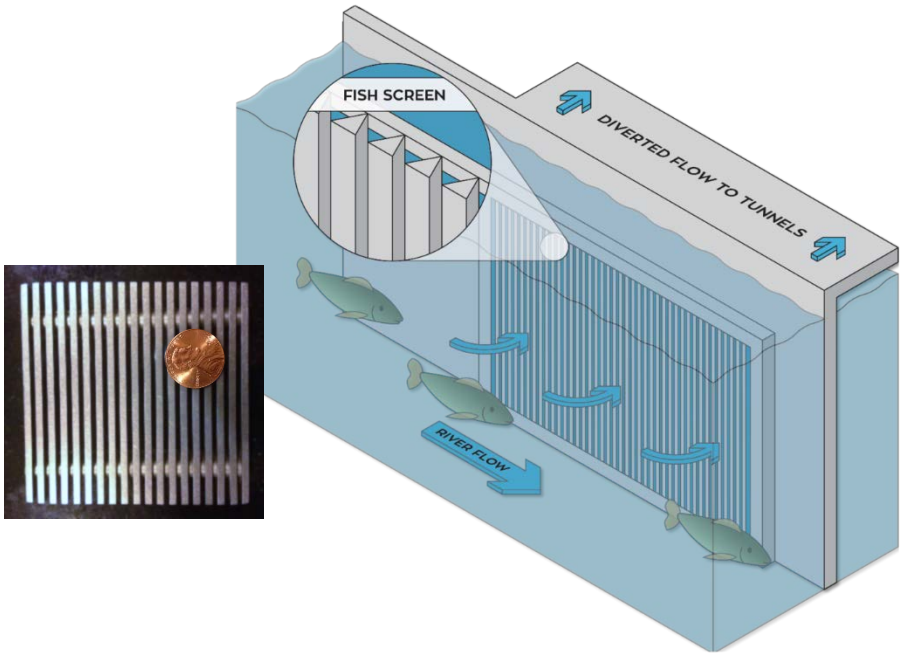
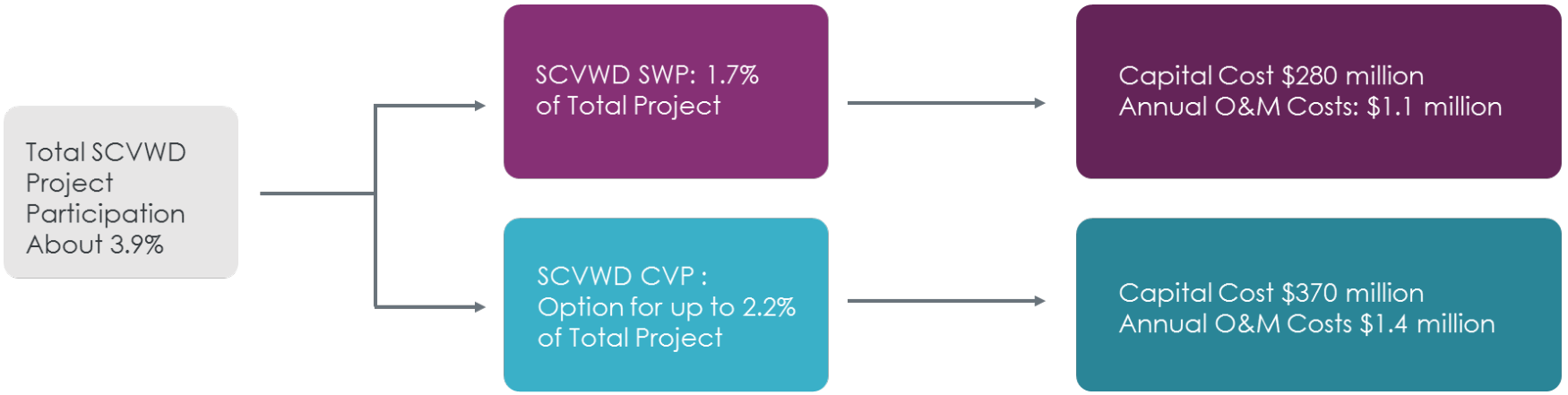
Improved conditions for fish means fewer restrictions on Santa Clara County's water supply



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

WaterFix – Cost to Santa Clara County

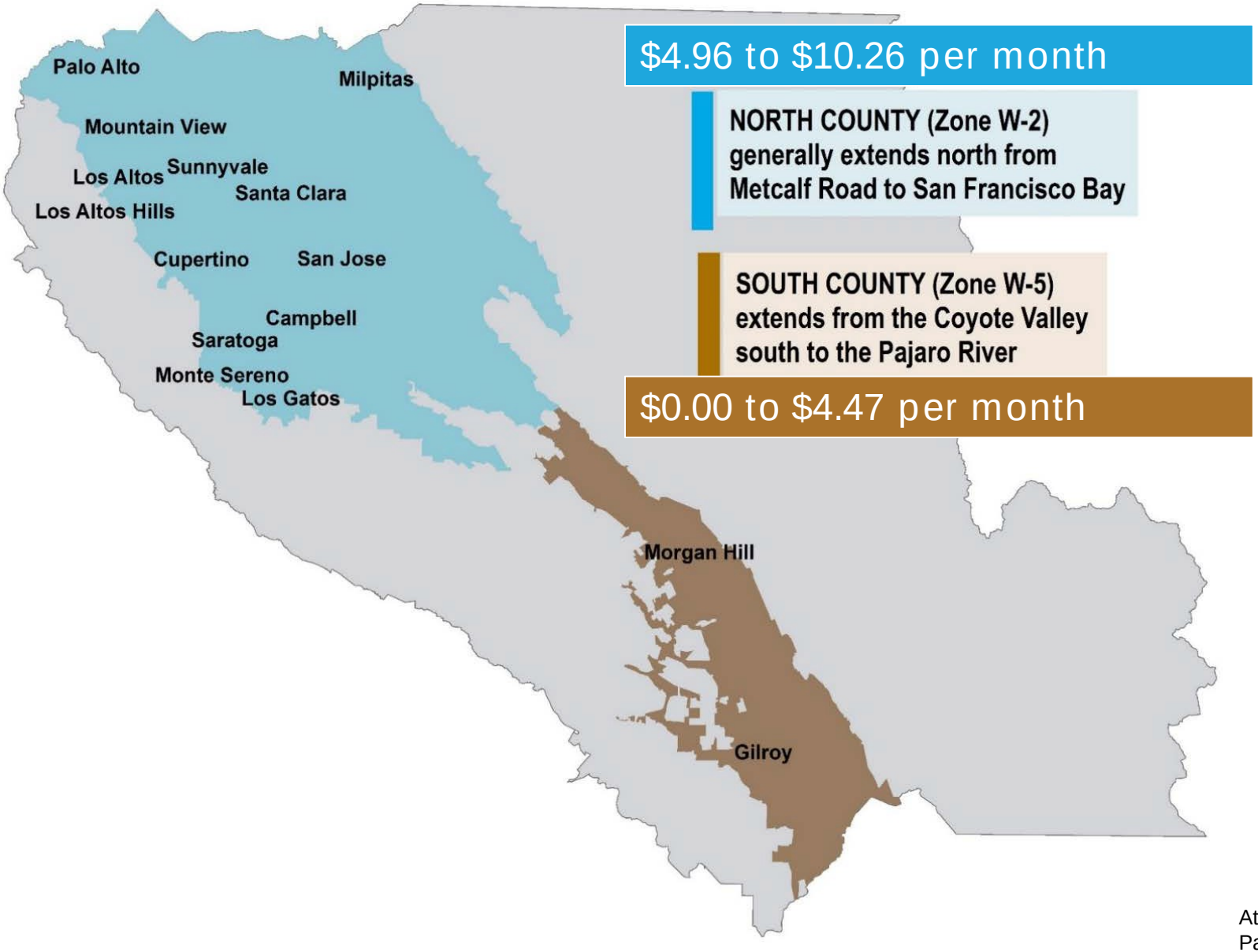


Total Capital Costs $650 million

Total Annual O&M Costs $2.5 million

Fully Financed Project $600/AF

Average monthly household cost of WaterFix (FY33)



Recycled Water Master Planning and Future Water Partnerships

Santa Clara Valley Water District

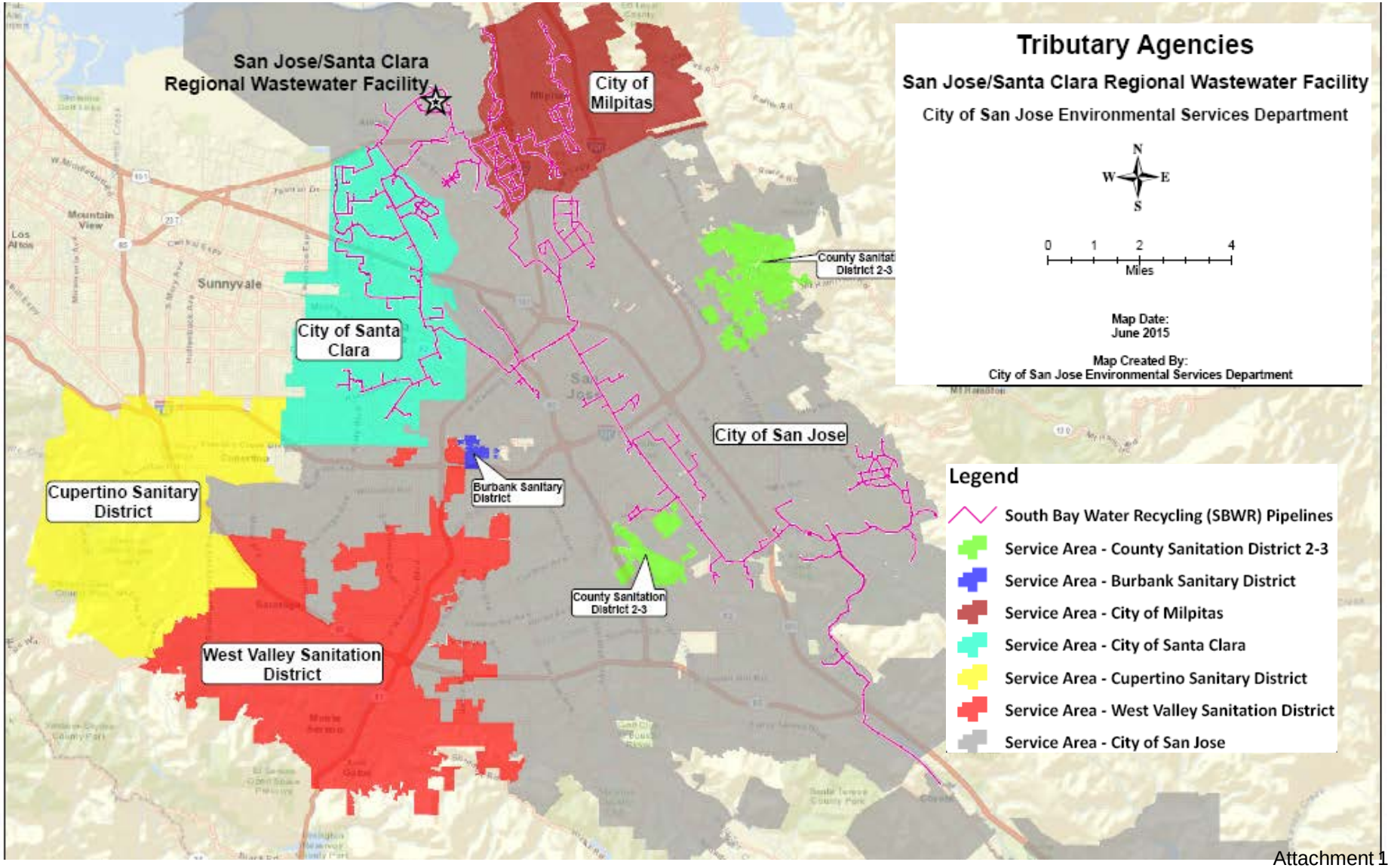
Countywide Water Reuse Master Plan

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

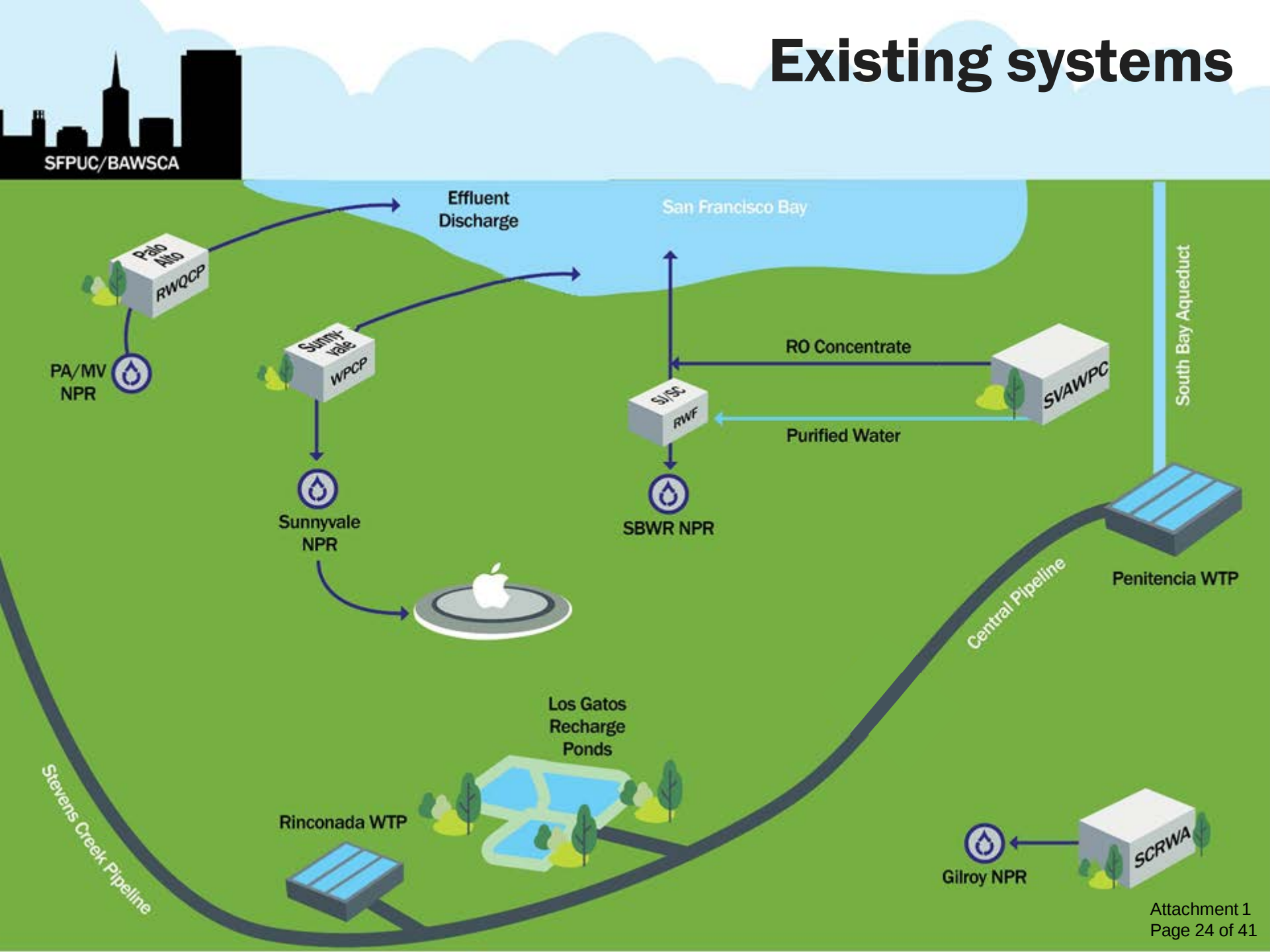
Map of SBWR Recycled Water Service Area



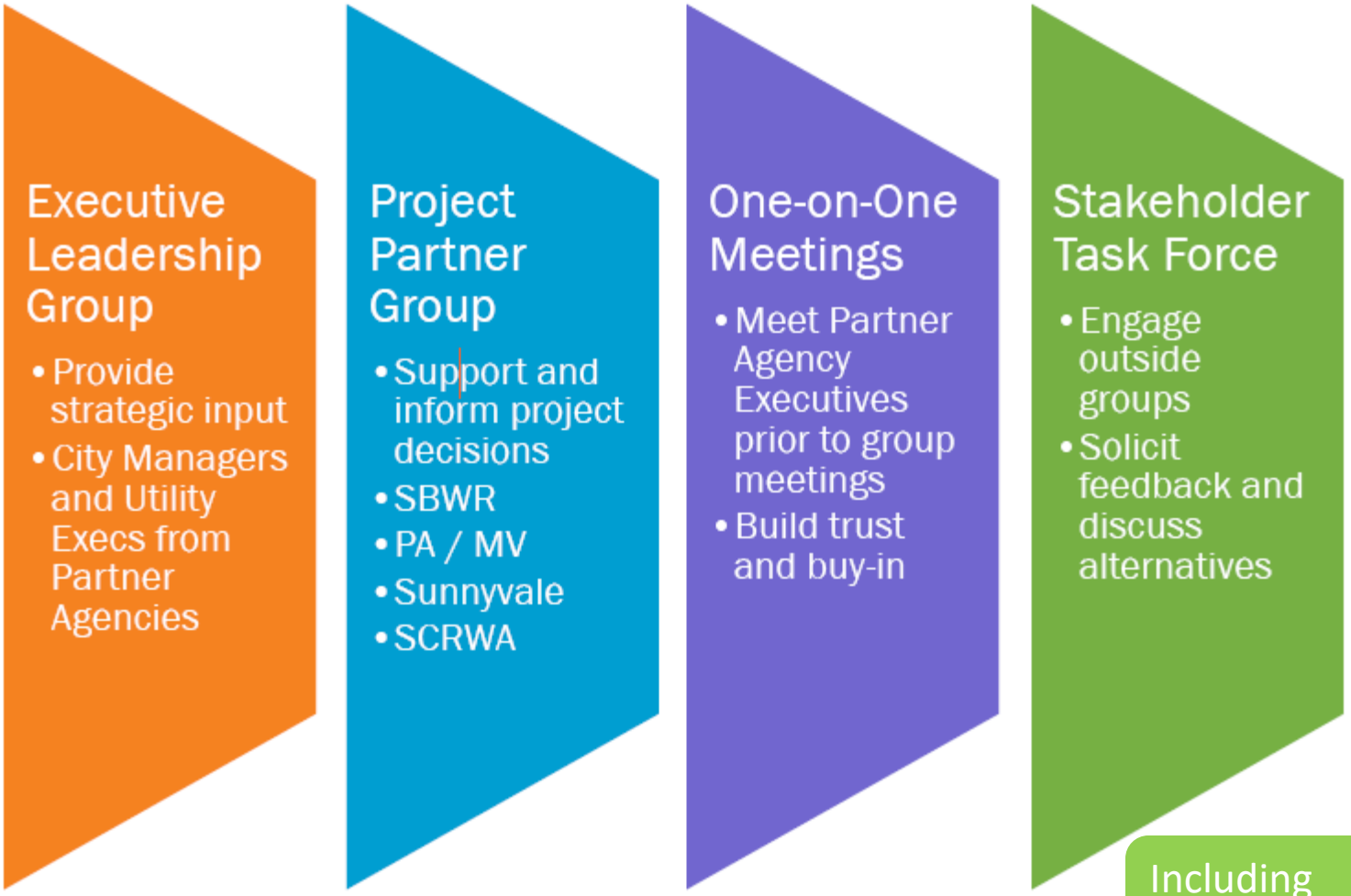
Master Plan Framework

- 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



Including
City of Santa Clara

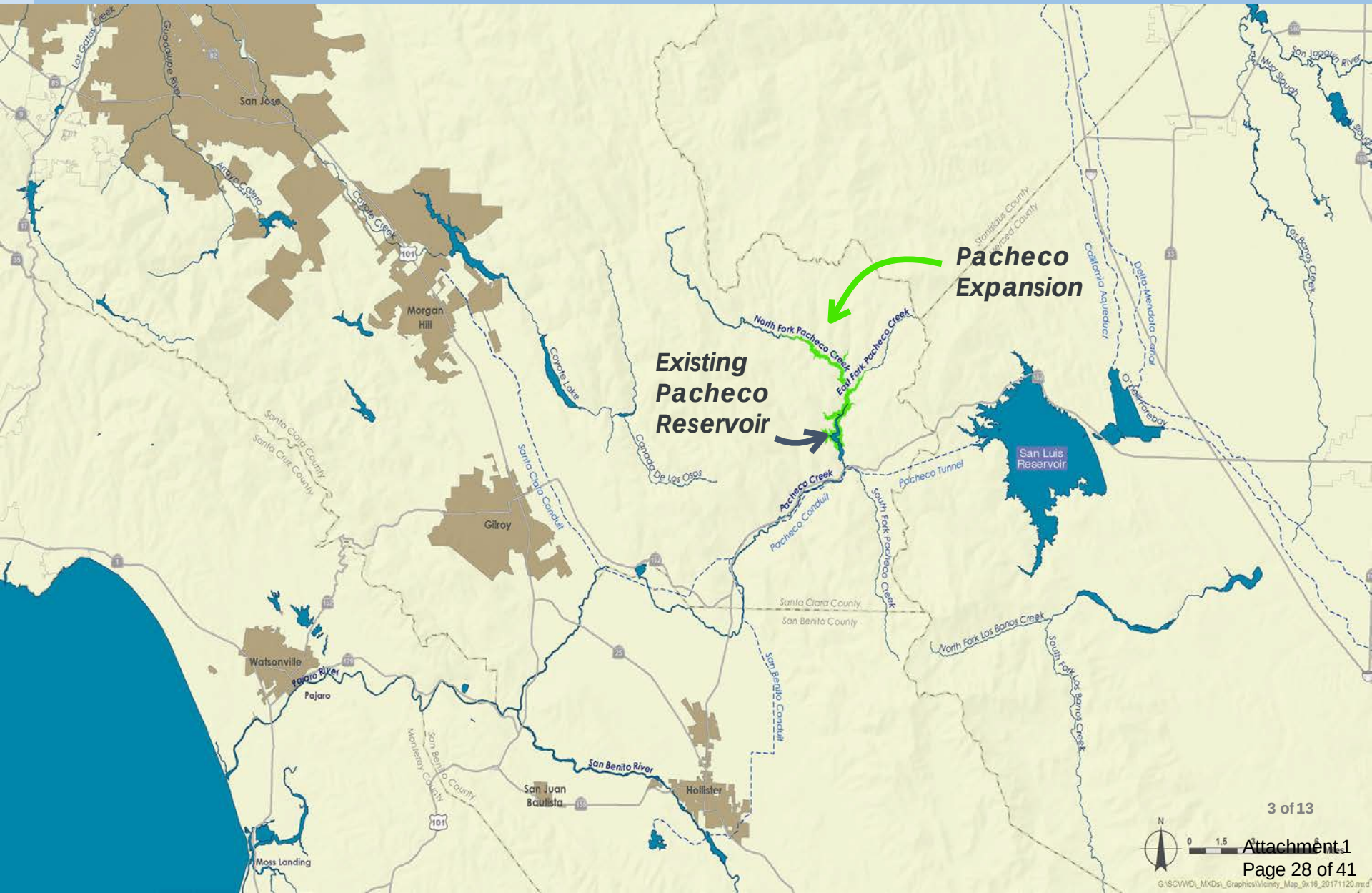
Countywide Water Reuse Master Plan Next Steps

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

Pacheco Reservoir Expansion Project

Santa Clara Valley Water District

Pacheco Reservoir Expansion Project Location

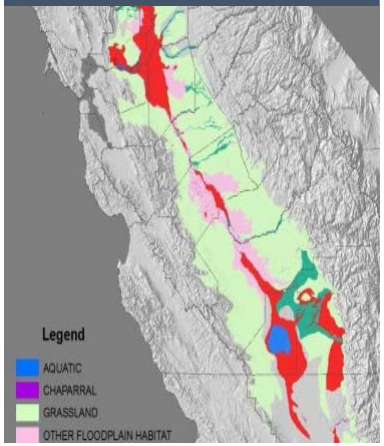


The Pacheco Reservoir Expansion Will Address Five Big Challenges

Restore Federally Threatened Fish

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

Improve the Delta

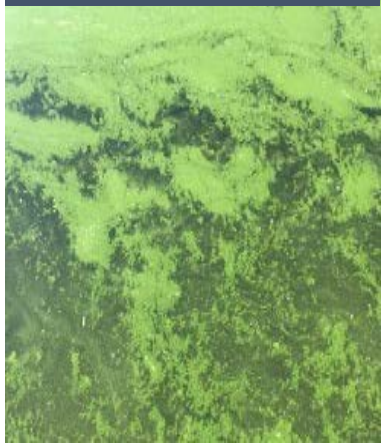


90% of Delta watershed wetlands have disappeared

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

Santa Clara Valley Water District

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

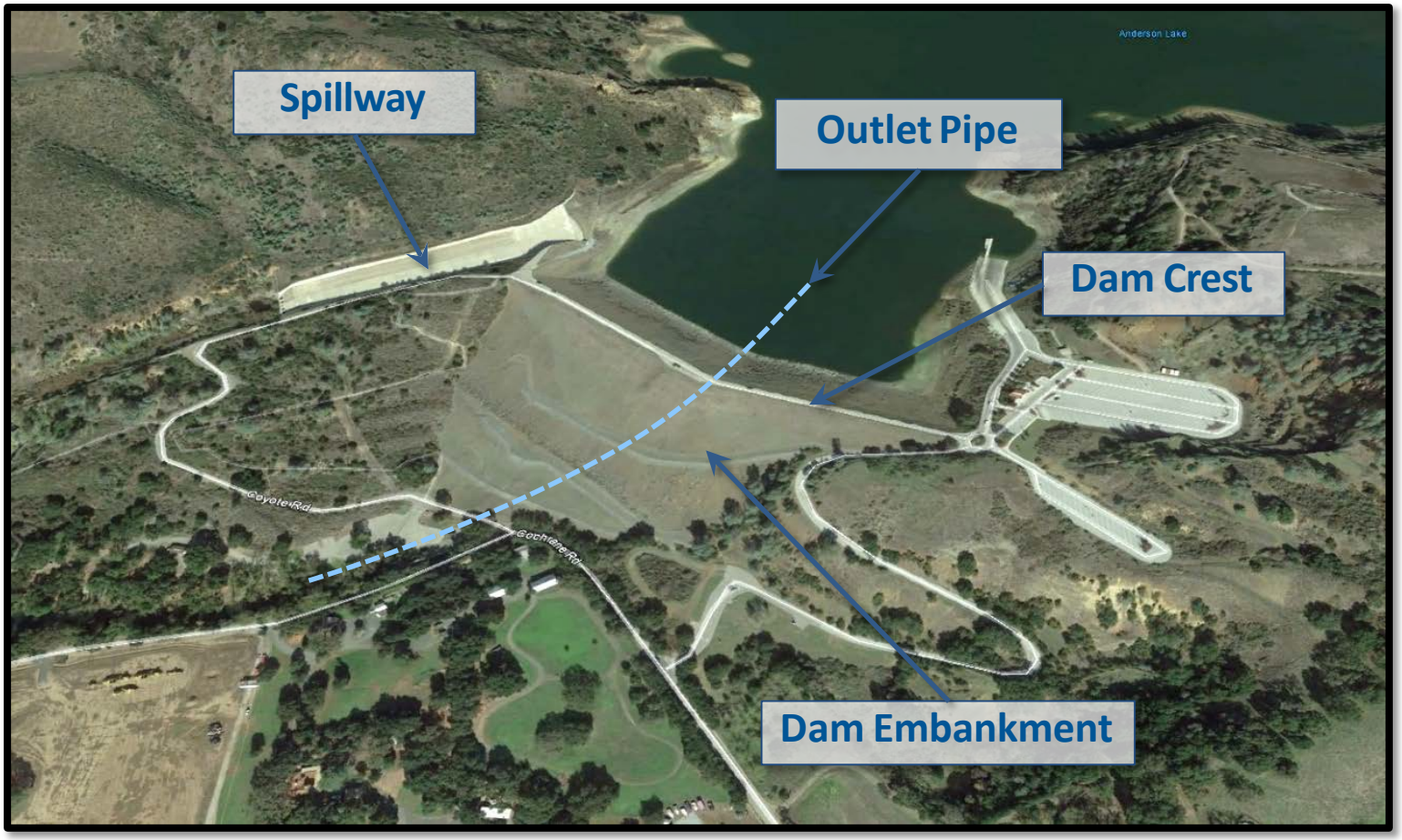


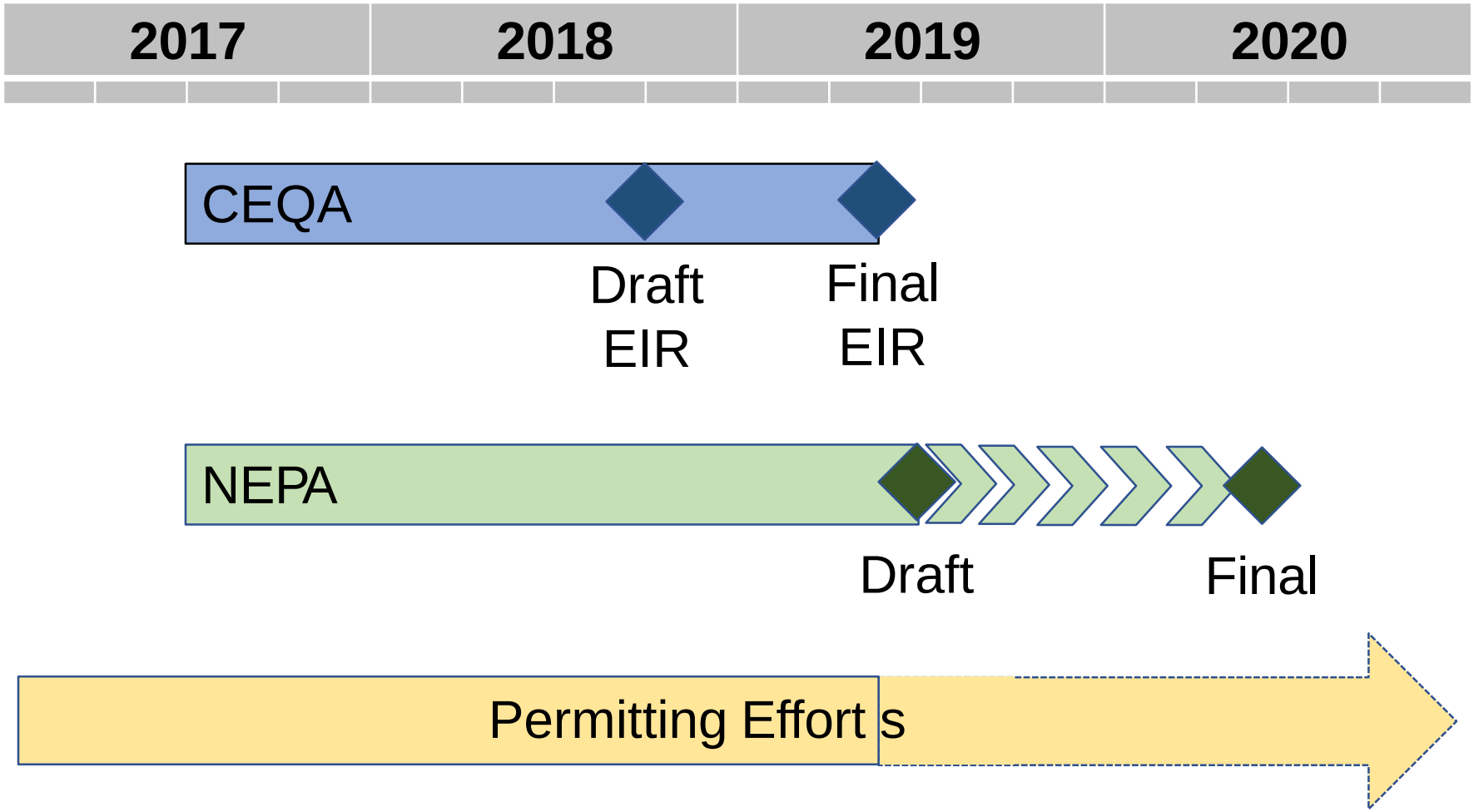
Image Source: Google Earth

Anderson Dam Project Update

Anderson Dam – Current Project Efforts

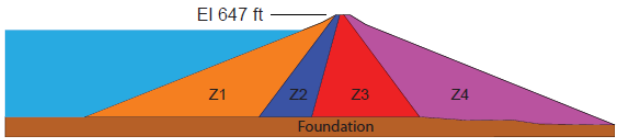
- 60% Design completed; under review
- Geotechnical investigations for spillway replacement
- Preparation of environmental and permit documents
- Full court press on permitting process.

CEQA/NEPA/Permitting Timeline Overview



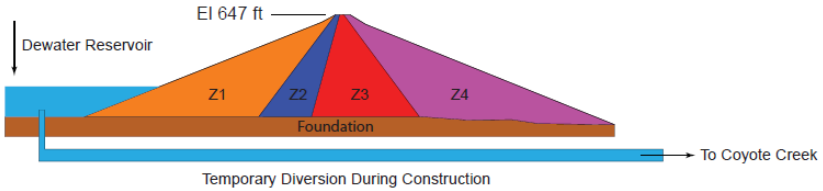
Anderson Dam Embankment Retrofit Sequence

Existing Dam



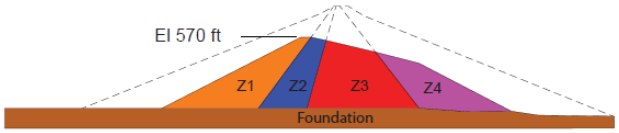
Year 1 and 2

Construction of Diversion Tunnel and Dewatering



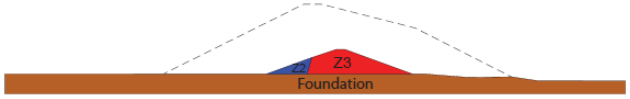
Year 3: April - October

Stage 1 Excavation



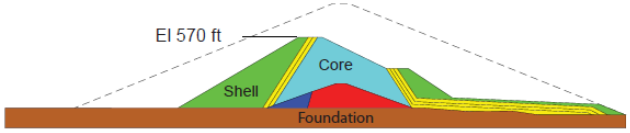
Year 4: April - June

Stage 2 Excavation



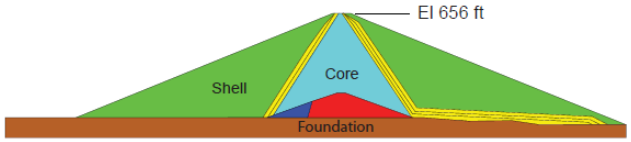
Year 4: July - October

Stage 2 Fill

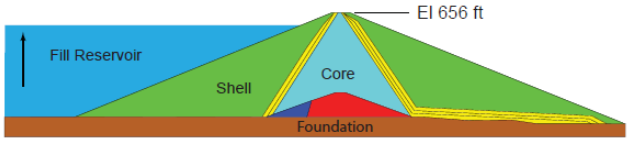


Year 5: April - October

Stage 3 Fill



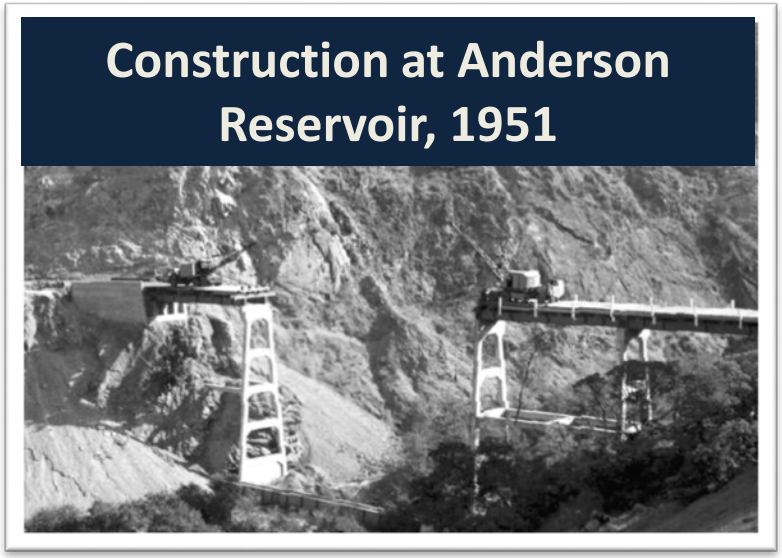
Final Configuration



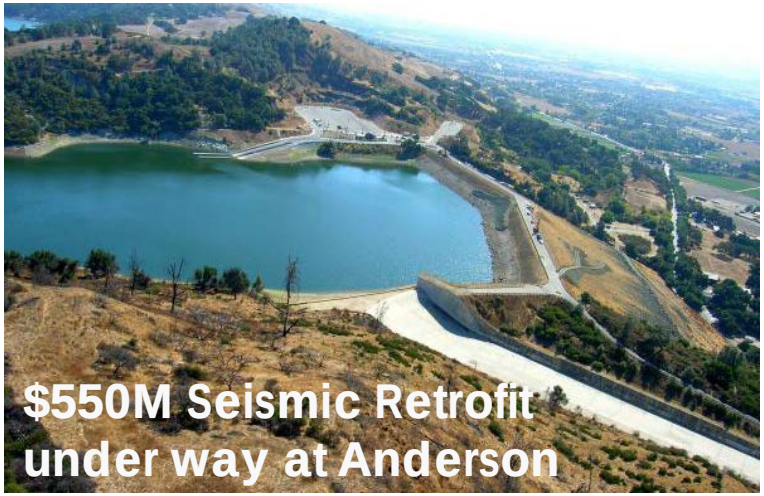
How Water Supply Services Are Funded

Santa Clara Valley Water District

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



- **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**

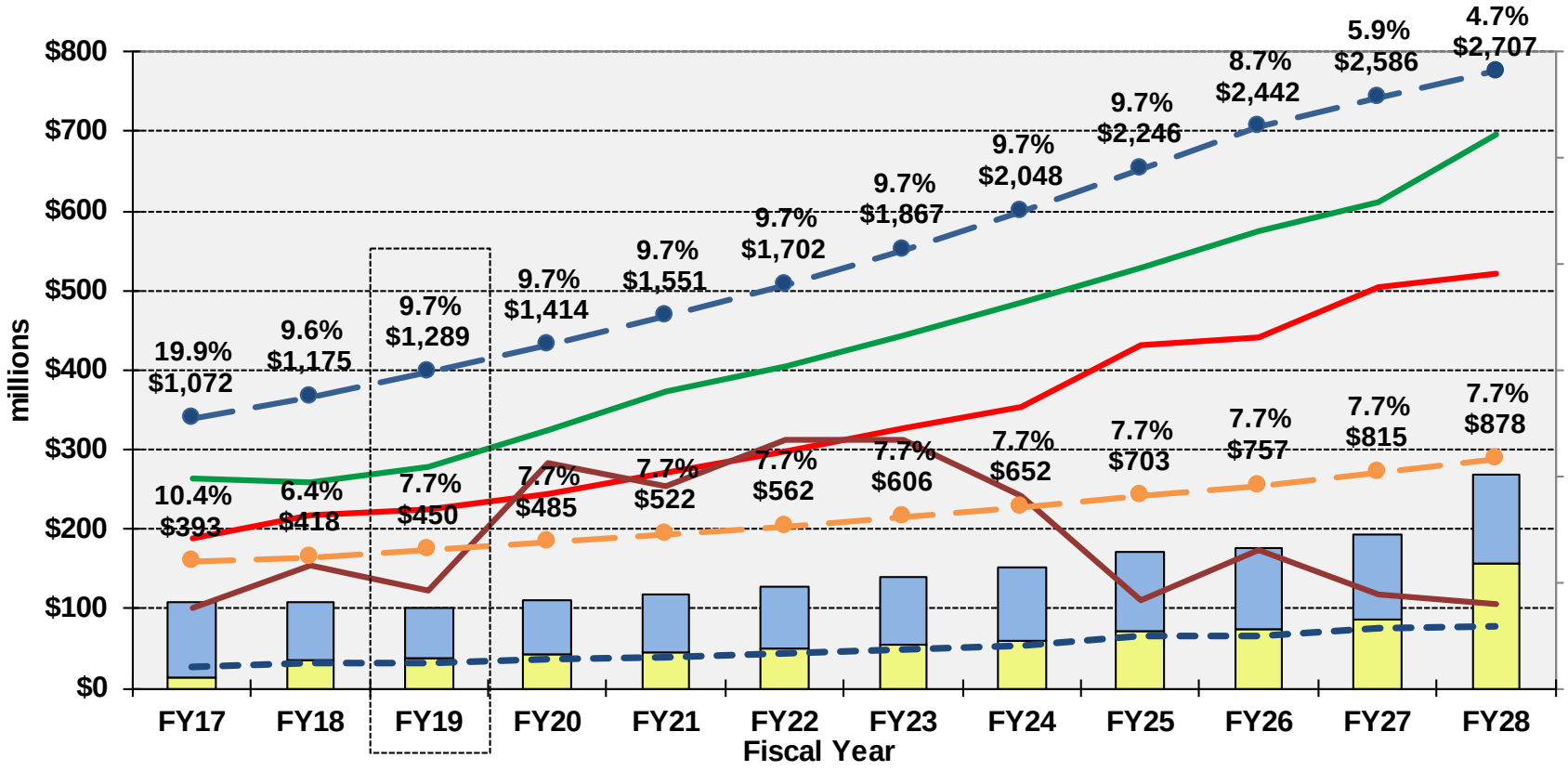
Many activities ensure safe, reliable groundwater supplies

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

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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