

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

Special Meeting with City of Gilroy and City of Morgan Hill – August 21, 2018

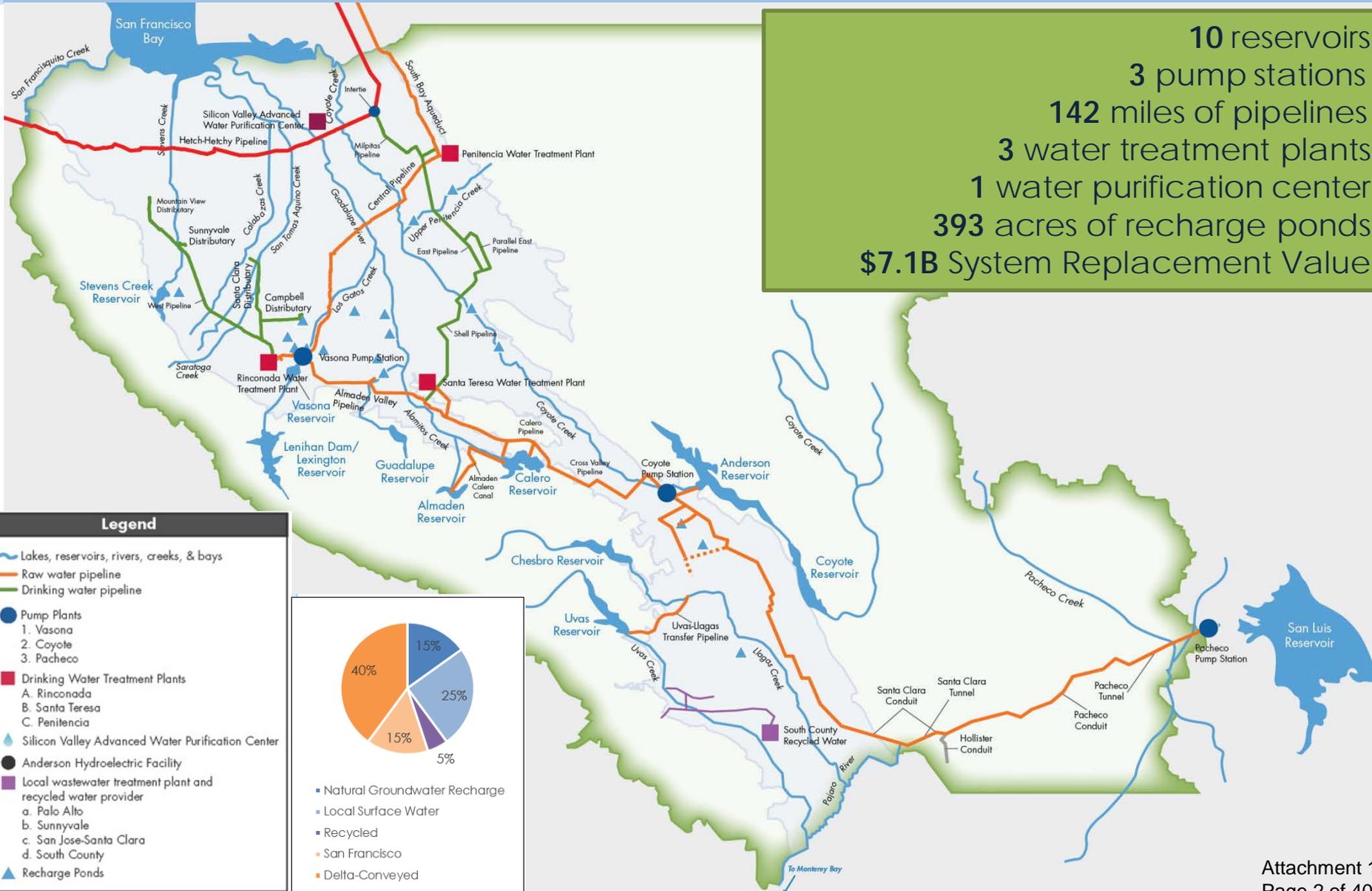
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Attachment 1  
Page 1 of 40

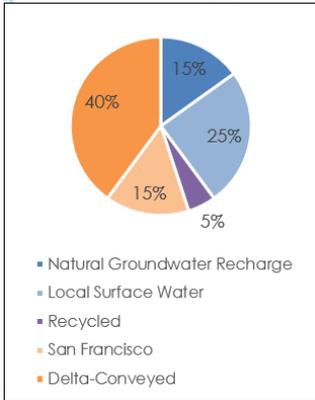
# A comprehensive, flexible water system

**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
  - Vasona
  - Coyote
  - Pacheco
- Drinking Water Treatment Plants
  - Rinconada
  - Santa Teresa
  - Penitencia
- Silicon Valley Advanced Water Purification Center
- Anderson Hydroelectric Facility
- Local wastewater treatment plant and recycled water provider
  - Palo Alto
  - Sunnyvale
  - San Jose-Santa Clara
  - South County
- Recharge Ponds



# Water Supply Update

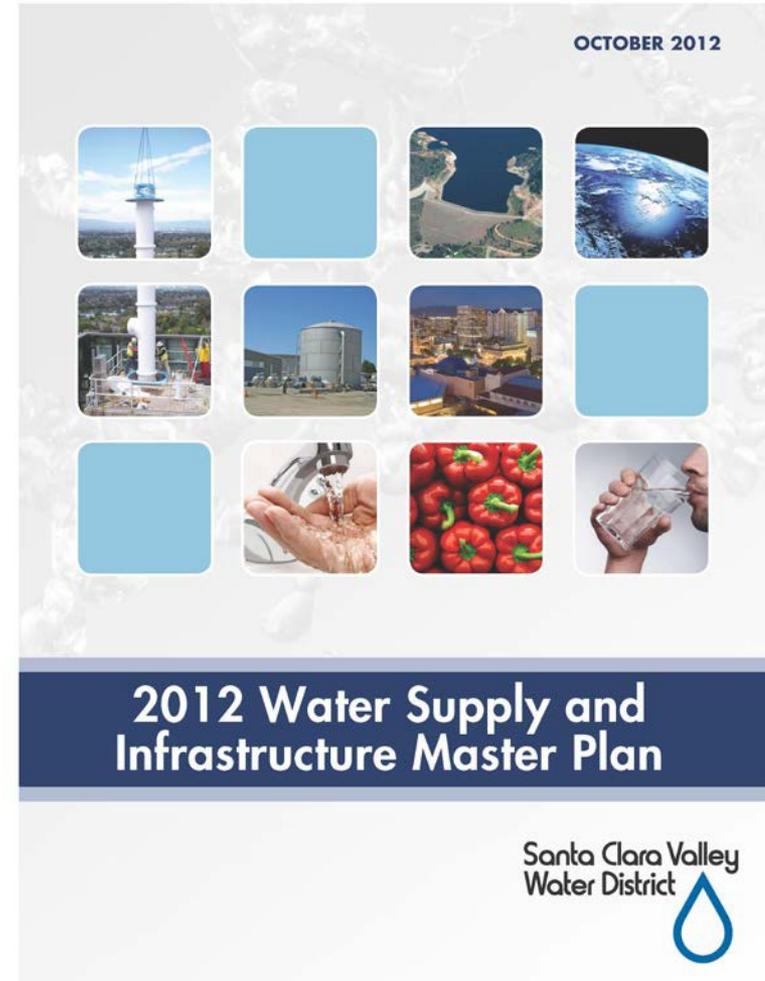
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# 2012 Master Plan “Ensure Sustainability” Strategy

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

### Average Water Supply Conditions

	2020	2040
Demands (AF)	360,000	402,000
Average Annual Supply (AF)	374,000	366,000
Shortfall (AF)	0	36,000

### Drought Water Supply Conditions

	2020	2040
Demands (AF)	360,000	402,000
Minimum Drought Supply (AF)	255,000	250,000
Maximum Shortfall (AF)	105,000 (29%)	152,000 (38%)

# 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

# Multiple decision points, including

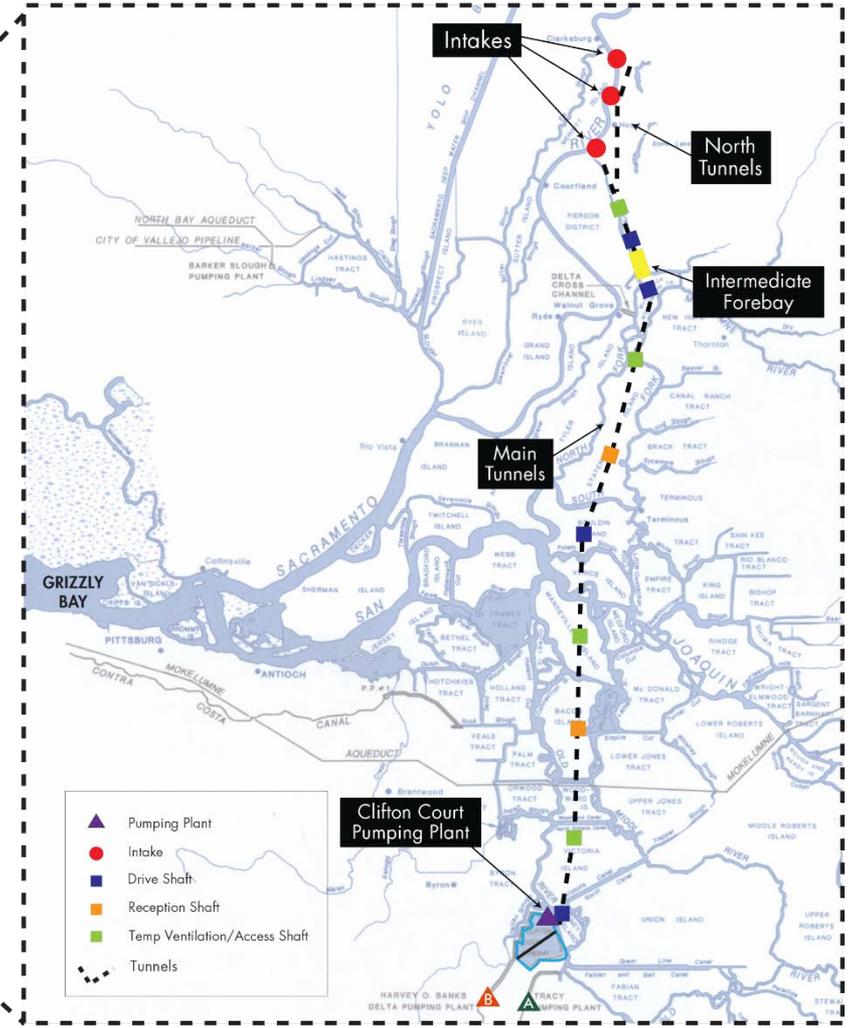
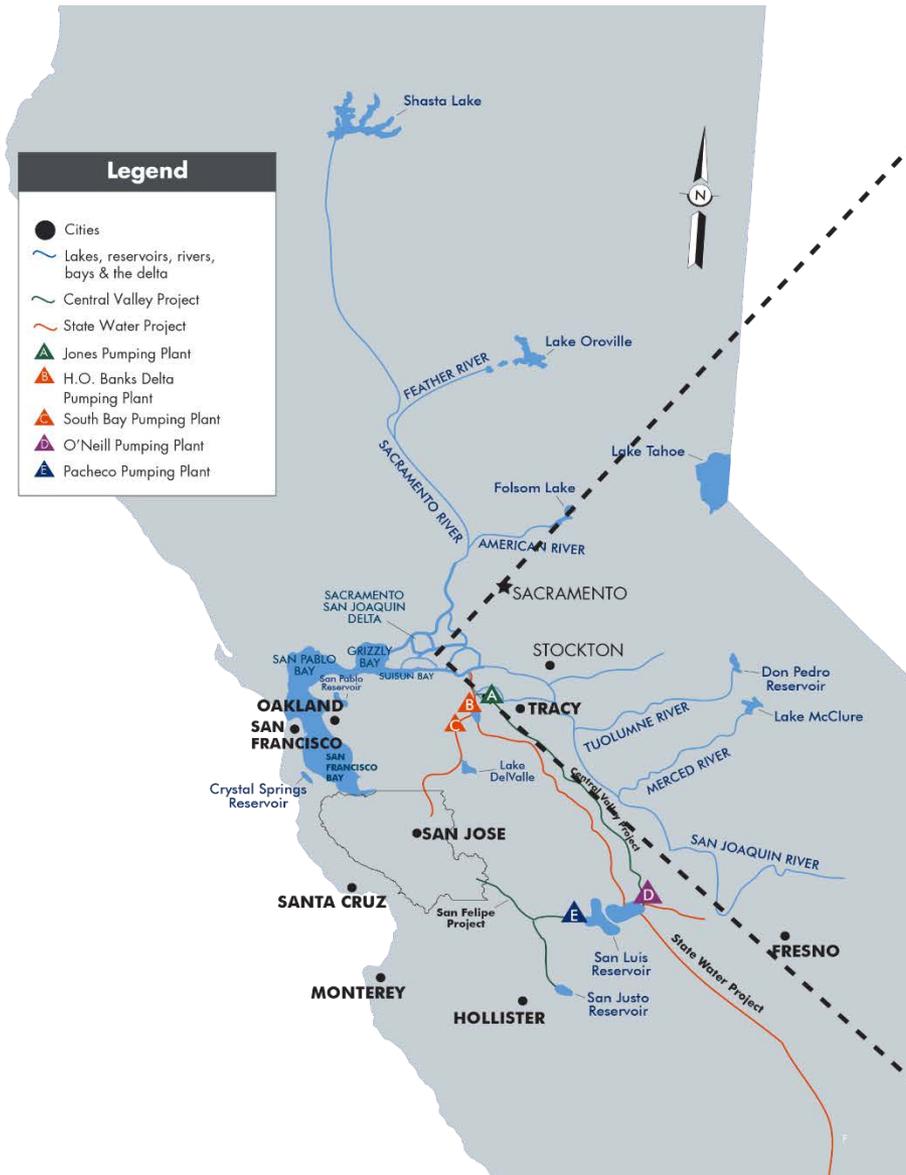
- Prop 1 storage funding – Summer 2018
- California WaterFix permits – Winter 2018
- Select P3 entity for potable reuse – 2019
- Annual supply & demand review – each Summer
- Annual CIP, budget, and water charge process begins – each Fall
- Finalize update to Water Supply Master Plan – late 2018

# California WaterFix

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# Project Overview - California WaterFix



# WaterFix – Benefits to Santa Clara County

## Benefits to Santa Clara County



Produces the most water for lowest cost



Keeps our water clean, safe, and reliable



Provides resiliency for future conditions

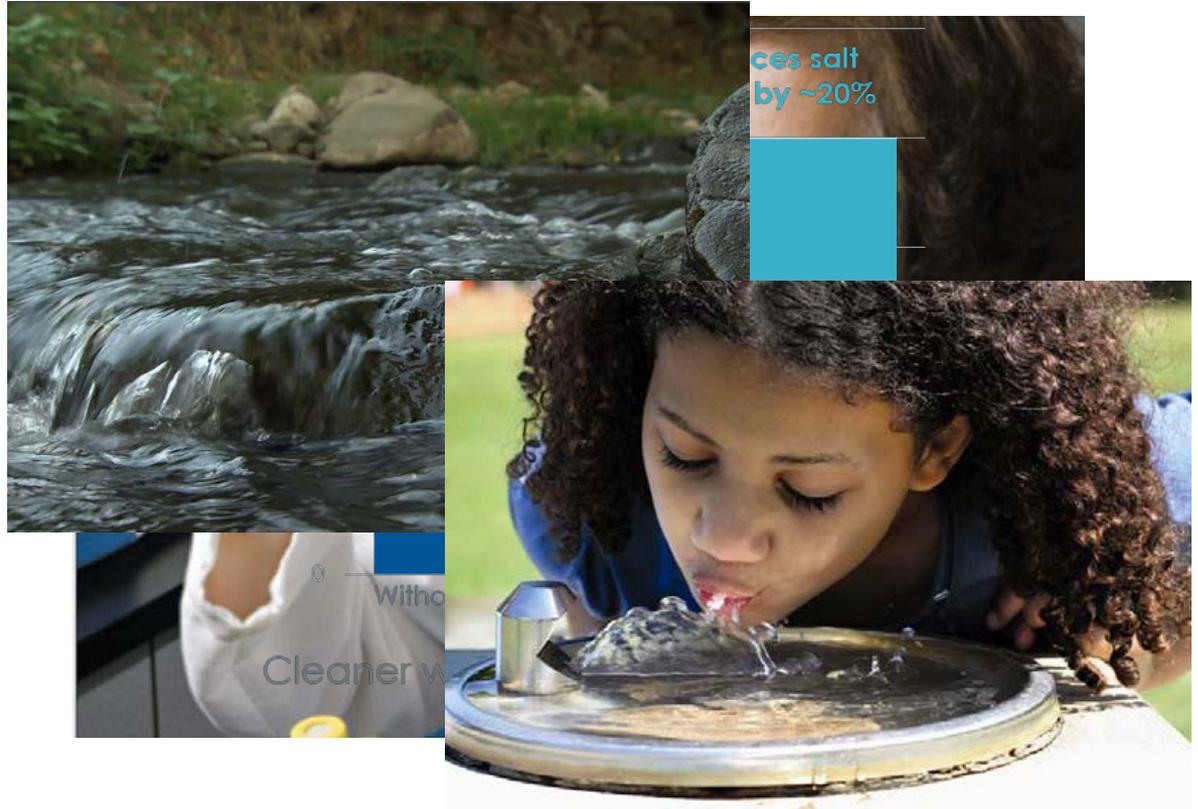


Improves environment for fish



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

Reliable Water



# WaterFix – Benefits to Santa Clara County

## 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**

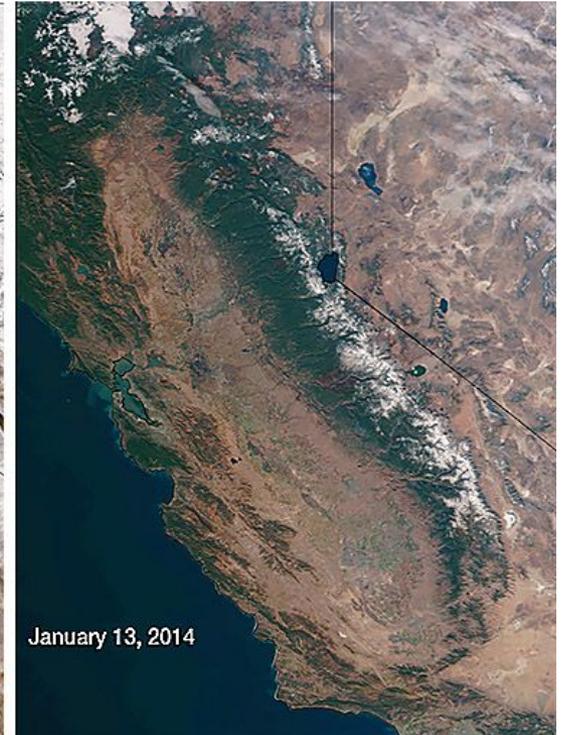


SCVWD has **prominent leadership role** in WaterFix governance to ensure benefits are achieved

## *Resiliency to climate change*



January 13, 2013



January 13, 2014

# WaterFix – Benefits to Santa Clara County

## Benefits to Santa Clara County



Produces the most water for lowest cost



Keeps our water clean, safe, and reliable



Provides resiliency for future conditions

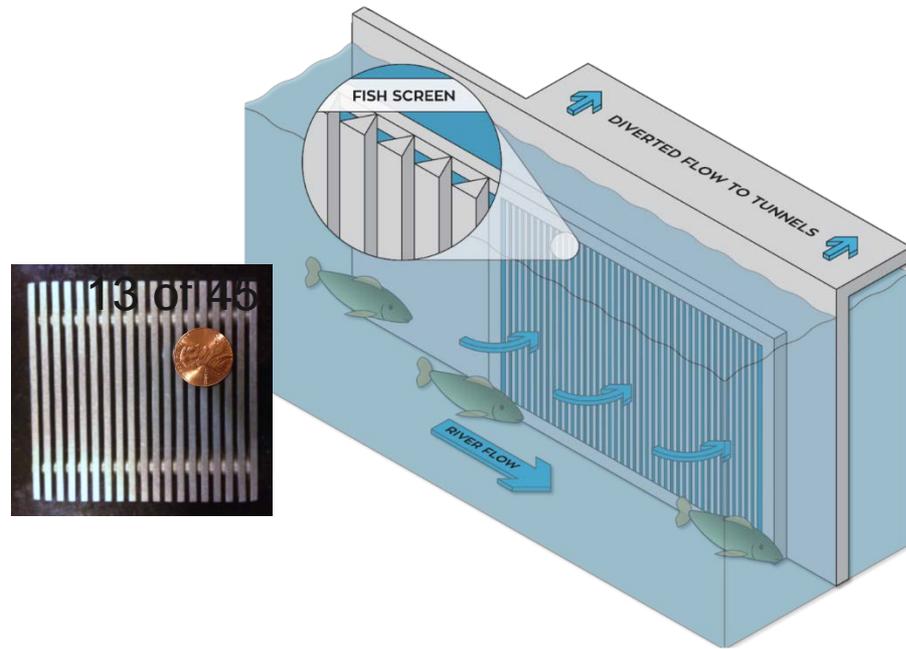


Improves environment for fish



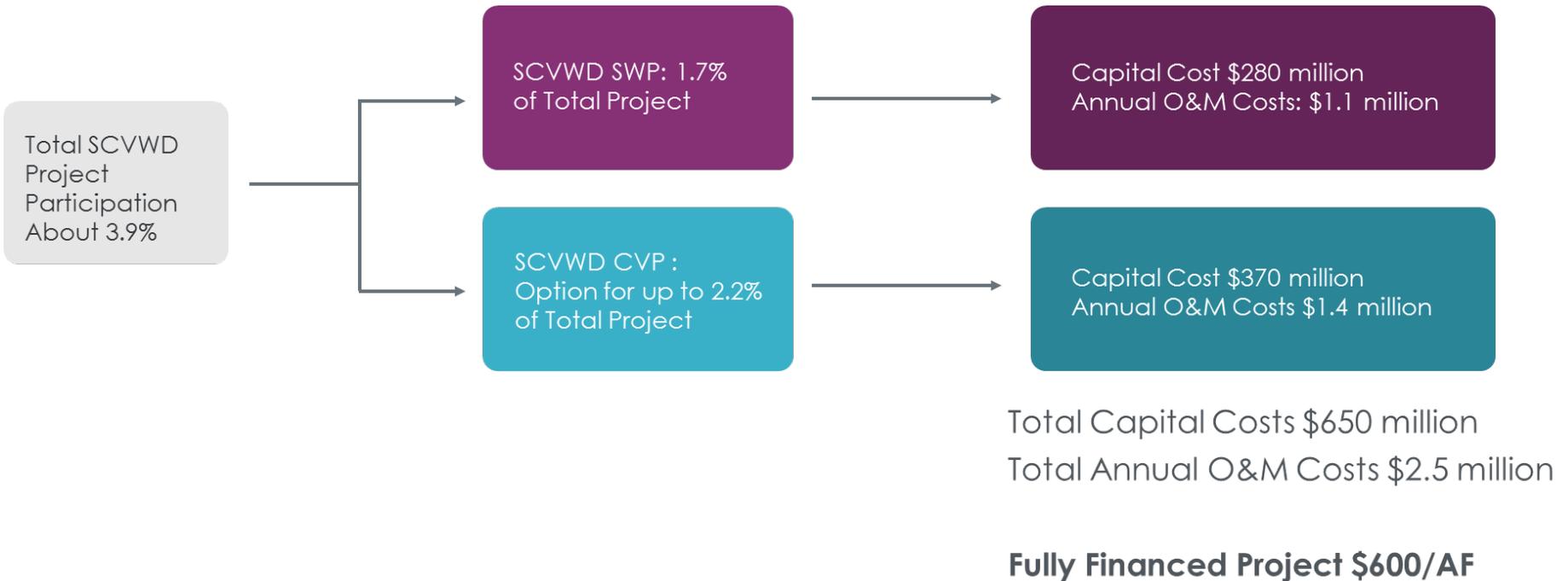
SCVWD has prominent leadership role in WaterFix governance to ensure benefits are achieved

## 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)

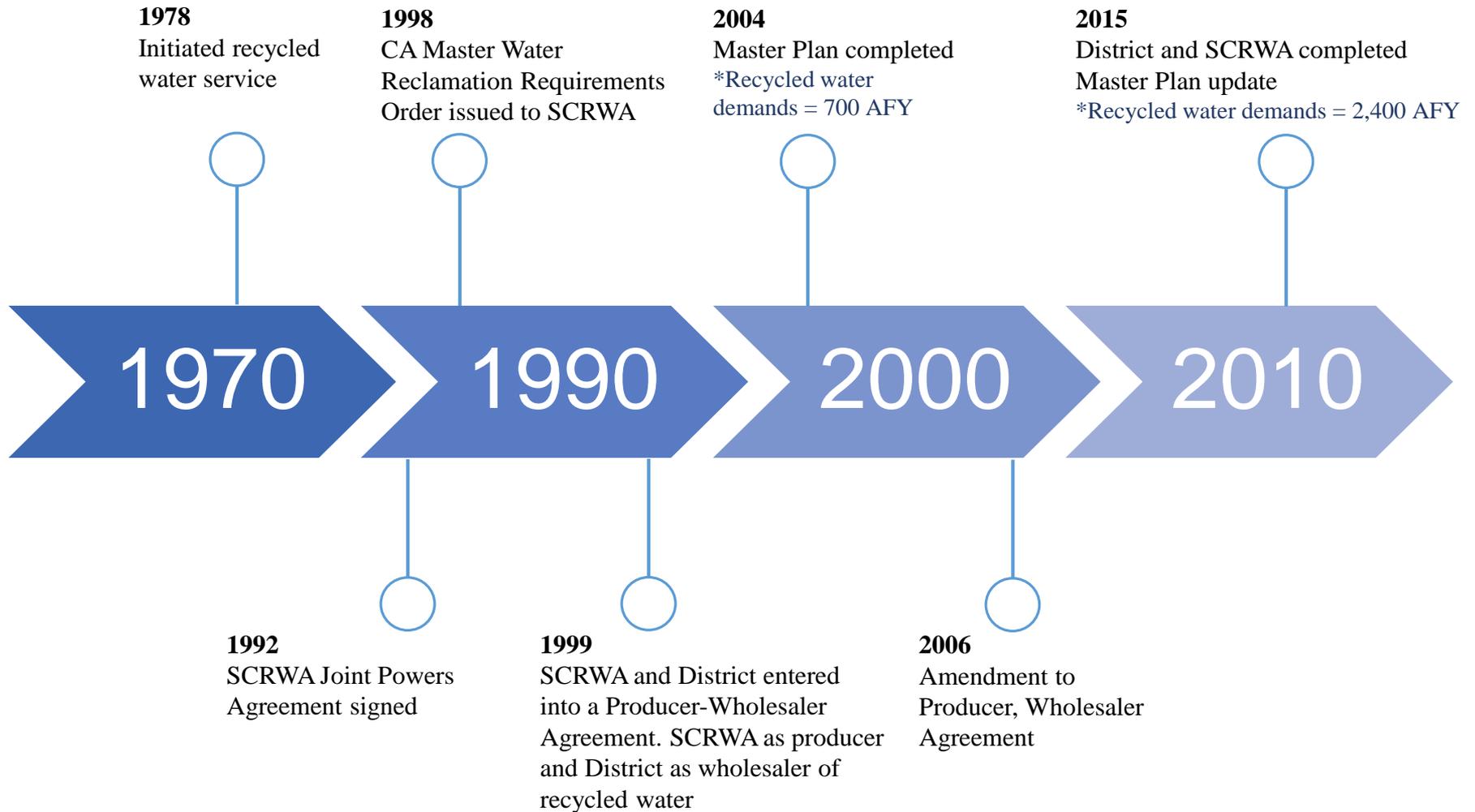


# South County Recycled Water Master Plan and Future Water Partnerships

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# History



SCWRA = South County Regional Wastewater Authority  
District = Santa Clara Valley Water District  
Master Plan = South County Recycled Water Master Plan

# Accomplishments Since Partnership Agreements (1999)

## Collaborative Planning

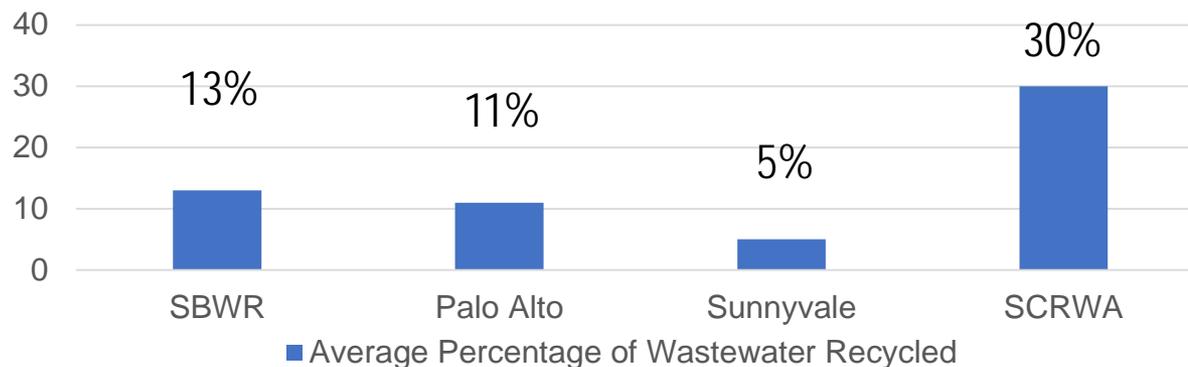
- ✓ Master Plan, adopted 2004, updated 2015
- ✓ Programmatic EIR Report, adopted 2011

## Distribution System

- ✓ 3.2 mile recycled water pipeline extension
- ✓ Retrofit 1.4 miles of existing recycled water pipelines
- ✓ 1,700 acre-foot average increase in annual recycled water demands

## Wastewater Treatment Plant

- ✓ 6 million gallon per day increase in tertiary treatment capacity
- ✓ 3 million gallon reservoir and booster station
- ✓ 3 million gallon per day pump station
- ✓ 2.3 mile emergency discharge/recycled water pipeline extension



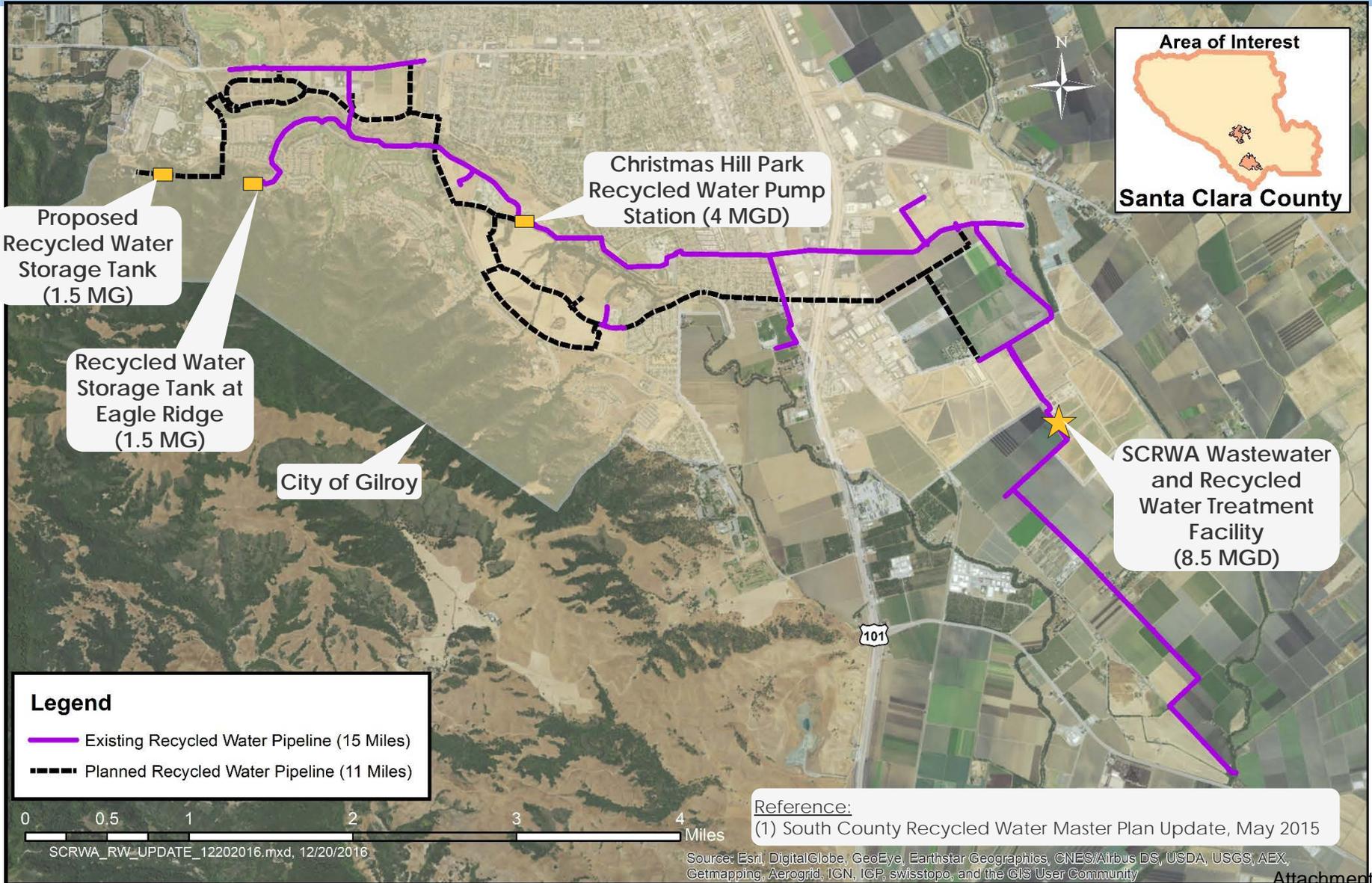
# 2015 Master Plan CIP Recommendation

Segments	Capital Improvement Projects (2015 Master Plan update)	Cost Estimate
Immediate -Term	<ul style="list-style-type: none"> <li>• <b>Distribution:</b> 26,600 foot pipeline extension</li> <li>• <b>Wastewater Treatment Plant (WWTP):</b> UV Treatment, pump station upgrade</li> </ul>	<p><b>\$ 14.3 Million</b></p> <p><u>WWTP</u> <b>\$ 4.5 Million</b></p>
Short- Term	<ul style="list-style-type: none"> <li>• <b>Distribution:</b> 21,860 foot pipeline extension</li> <li>• <b>WWTP:</b> Chlorine contact basin upgrade, pump station upgrades, meter conversion (Gilroy/District), 6 mgd reservoir expansion (District)</li> </ul>	<p><b>\$ 10.0 Million</b></p> <p><u>WWTP</u> <b>\$ 8.4 Million</b></p>
Long-Term	<ul style="list-style-type: none"> <li>• <b>Distribution:</b> 7,010 foot pipeline extension, 1.5 mgd storage tank, and booster pump station</li> <li>• <b>WWTP:</b> 2.5 mgd secondary treatment expansion (SCRWA) and recycled water fill station (commercial / residential) (City of Gilroy/District)</li> </ul>	<p><b>\$ 10.0 Million</b></p> <p><u>WWTP</u> <b>\$ 50.9 Million</b></p>
	<b>Total Cost Estimate</b>	<b>\$ 98.1 Million</b>

mgd = million gallons per day

**Cost per Additional Acre-foot = \$2,901**

# Map – South County Recycled Water System

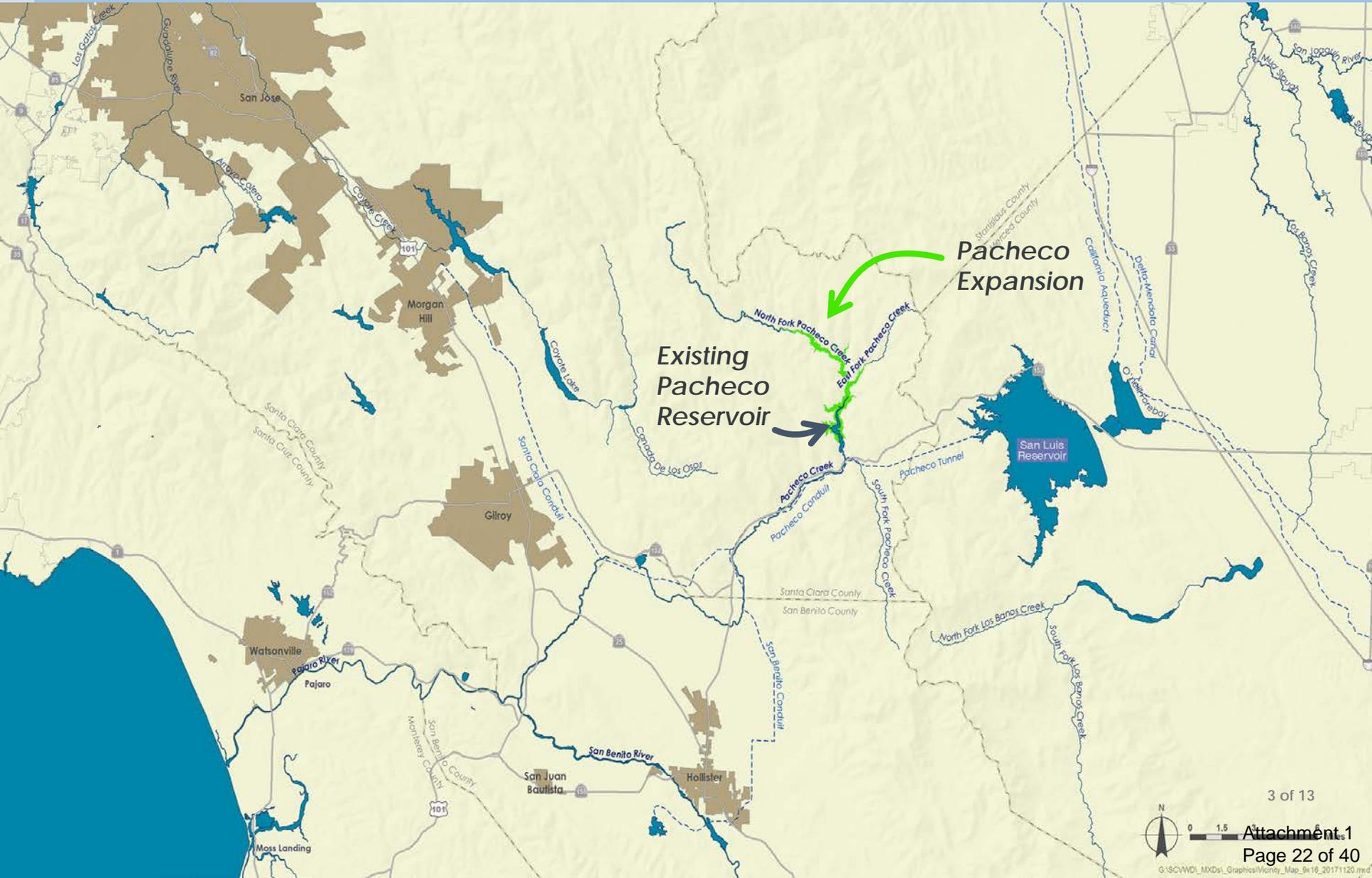


# Pacheco Reservoir Expansion Project

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# Pacheco Reservoir Expansion Project Location



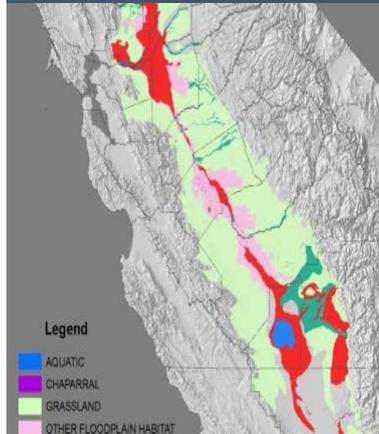
# The Pacheco Reservoir Expansion Will Address Five Big Challenges

Restore Federally Threatened Fish



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

Improve the Delta



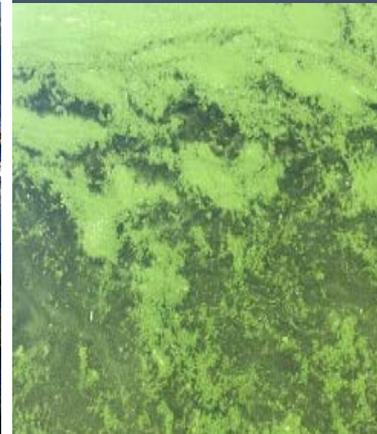
**90%** of Delta watershed wetlands have disappeared

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

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# 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

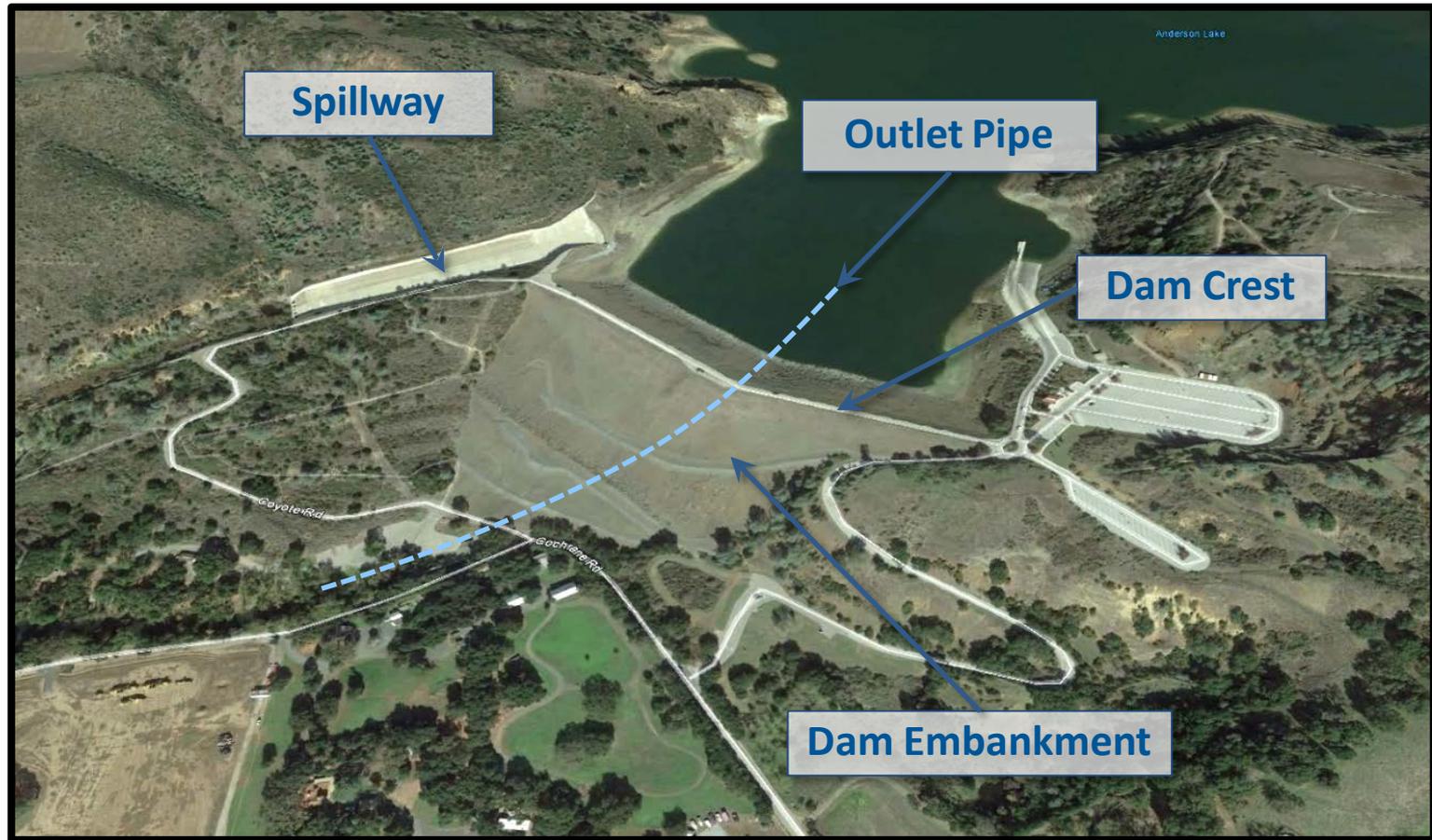


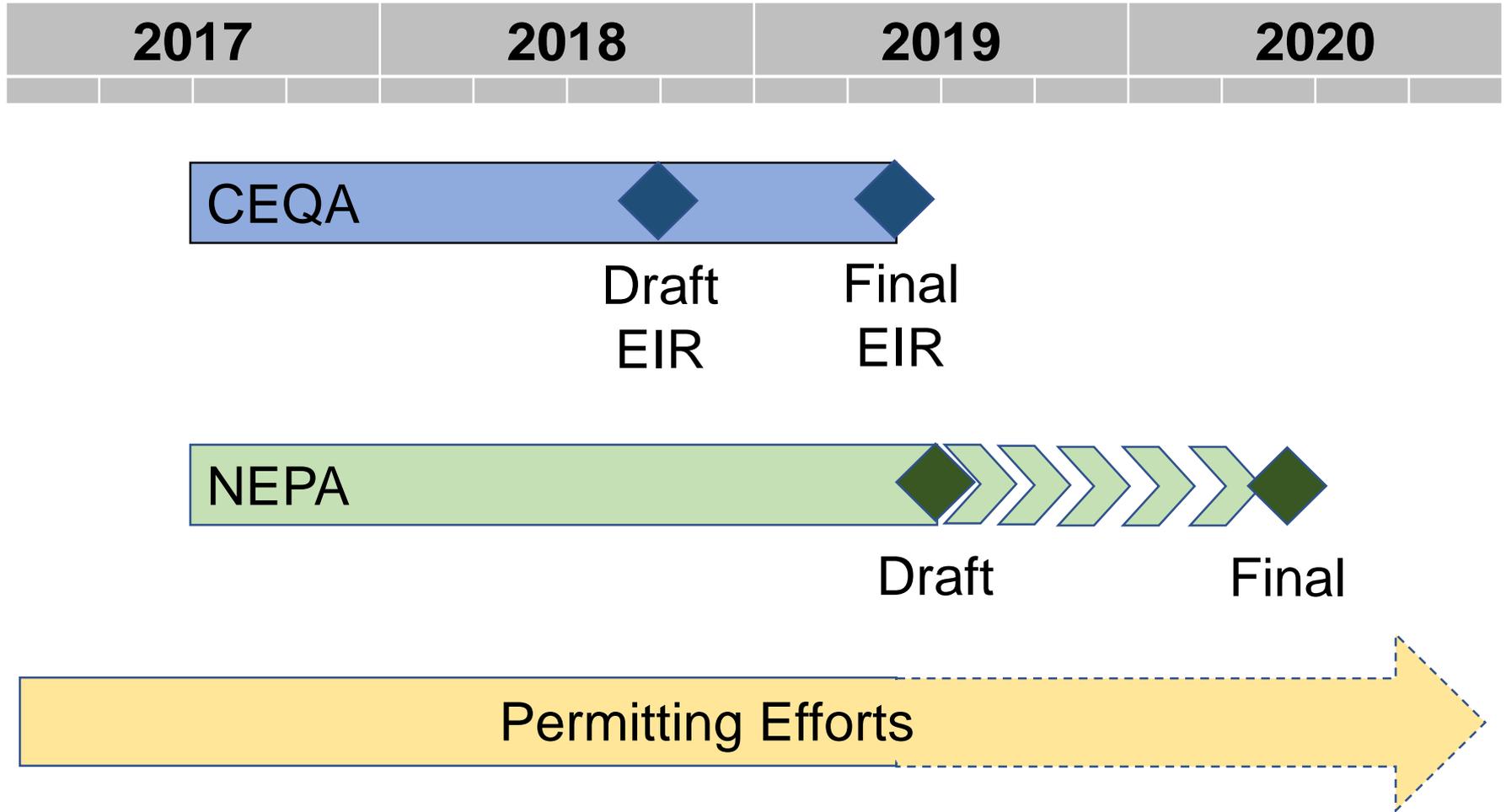
Image Source: Google Earth

# 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.

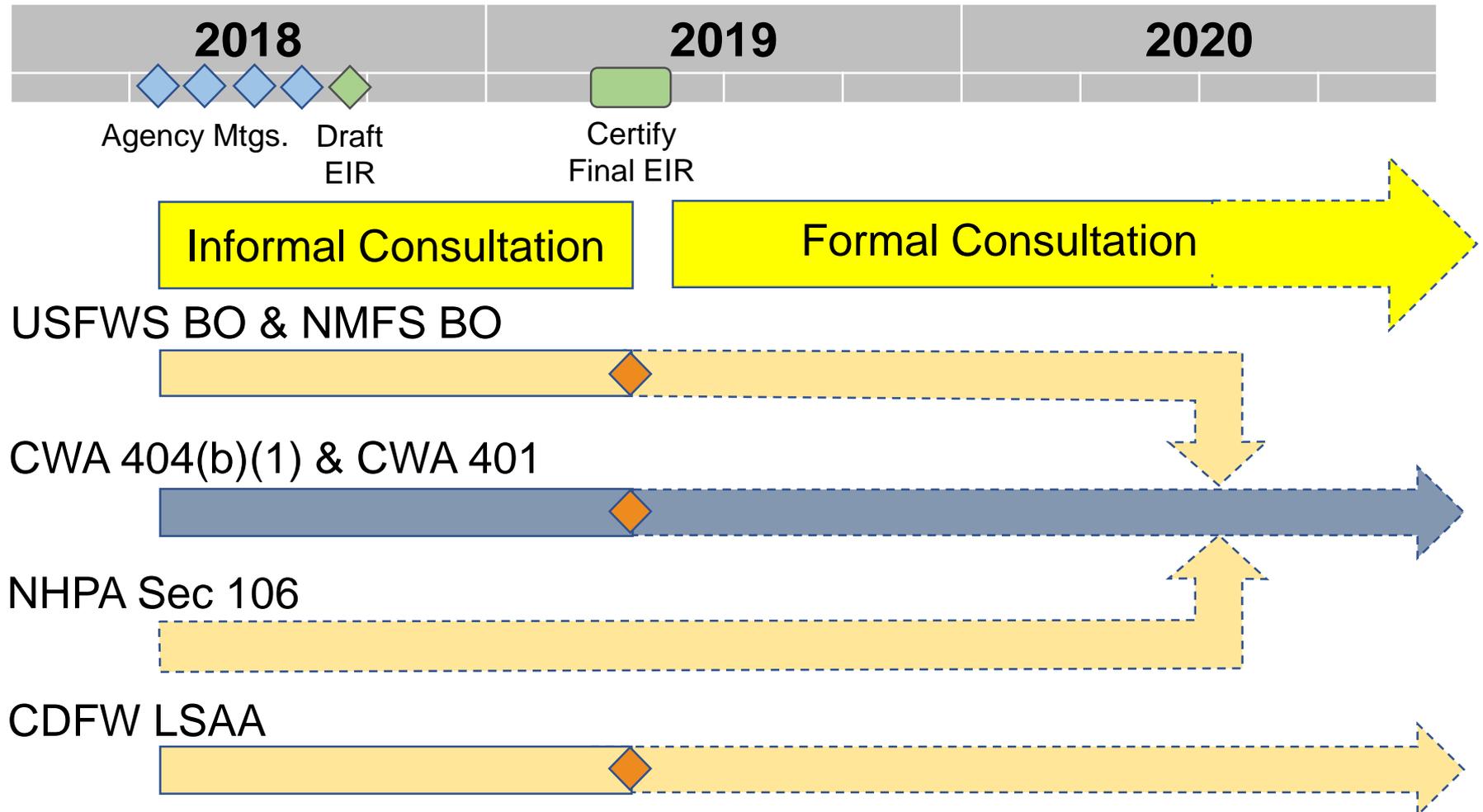
# CEQA/NEPA/Permitting Timeline Overview



# Anderson Dam Project - Necessary Permits

- Federal
  - FERC: Amendment to Exemption for Licensing
  - USACE: CWA Section 404 Permit
  - USFWS: Incidental take permit (VHP – see below)
  - NMFS: Incidental take permit (steelhead trout)
- State
  - DSOD: New dam application
  - CDFW: LSAA
  - VHP: Incidental take authorization (covered species for state and federal ESA)
  - SWRCB: General Construction NPDES Stormwater Permit
  - SWRCB/SFRWQCB: CWA Section 401 Water Quality Certification
  - SHPO: Section 106 of the NHPA
- Local: municipal approvals, encroachment permits, temporary rights of way

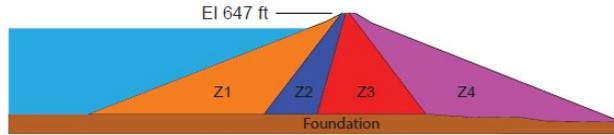
# Anderson Dam – Anticipated Permitting Process



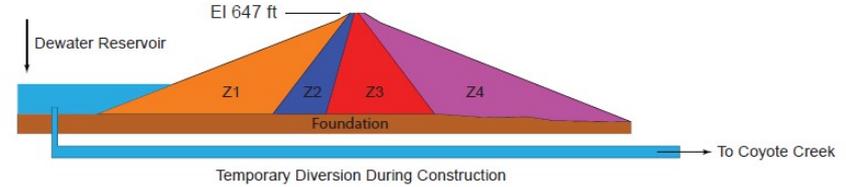
◆ Permit Applications

# Anderson Dam Embankment Retrofit Sequence

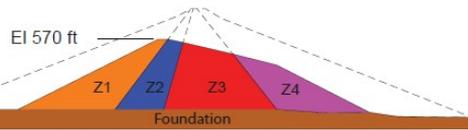
Existing Dam



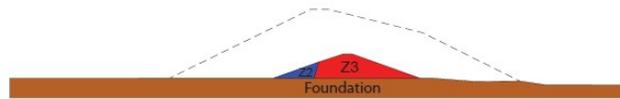
Existing Dam Dewatering



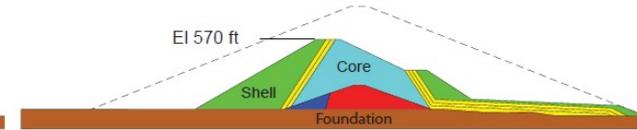
Stage 1 Excavation



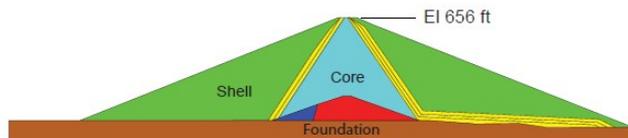
Stage 2 Excavation



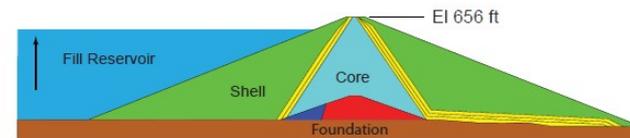
Stage 2 Fill



Stage 3 Fill



Final Configuration



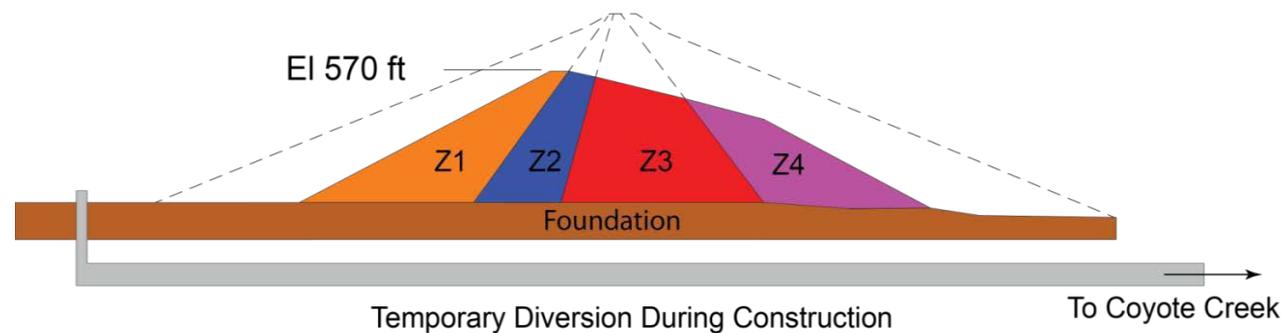
# Downstream Releases during Anderson Construction

- Key Objectives:

- Operate flow diversion pipe to minimize risk to interim dam  
Minimize downstream flood risk.

- Based on 100,000 simulations, annual risk of diversion releases greater than:

- ❖ 500 cfs = 30%
- ❖ 1,000 cfs = 2%
- ❖ 2,000 cfs = 0.4%
- ❖ 5,000 cfs = 0.03%

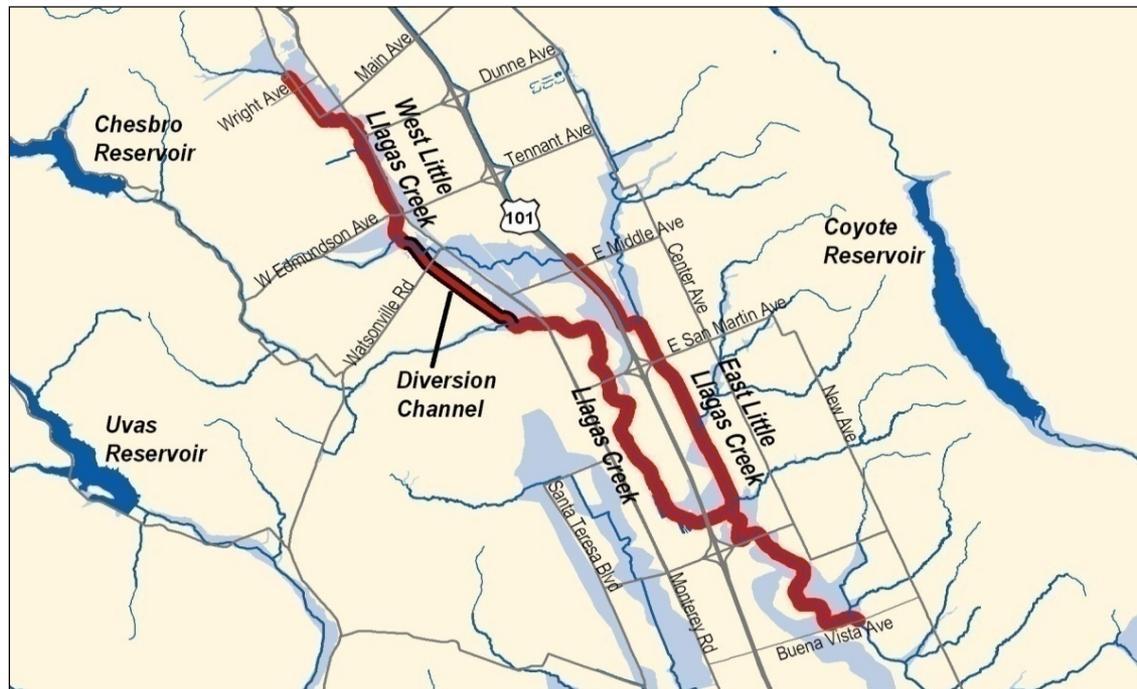


# Update on Morgan Hill/South County Flood Protection Projects

# Upper Llagas Creek Project Update

## Phase 1- Reaches 4-5, 7a

- 2 remaining rights of way in escrow;
- Awaiting Final Biological Opinion from USFWS
  - Army Corps finalizes Env. Impact Study (EIS);
  - Posts EIS in Federal Register;
  - Files Record of Decision
  - Issues final permit
- Project can proceed to construction.



## Phase 2 – Reaches 6, 7b, 8, 14

- 10 remaining rights of way to acquire;
- Start of construction will lag Phase 1 by one year.

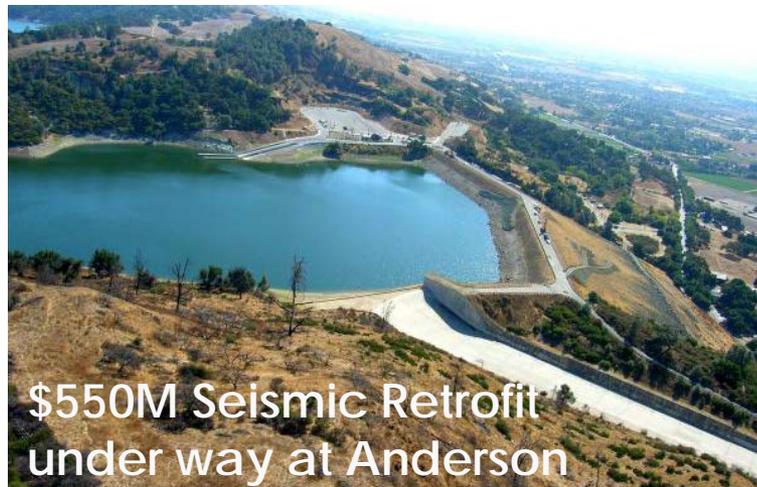
# How Water Supply Services Are Funded

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

## Construction at Anderson Reservoir, 1951



\$550M Seismic Retrofit under way at Anderson

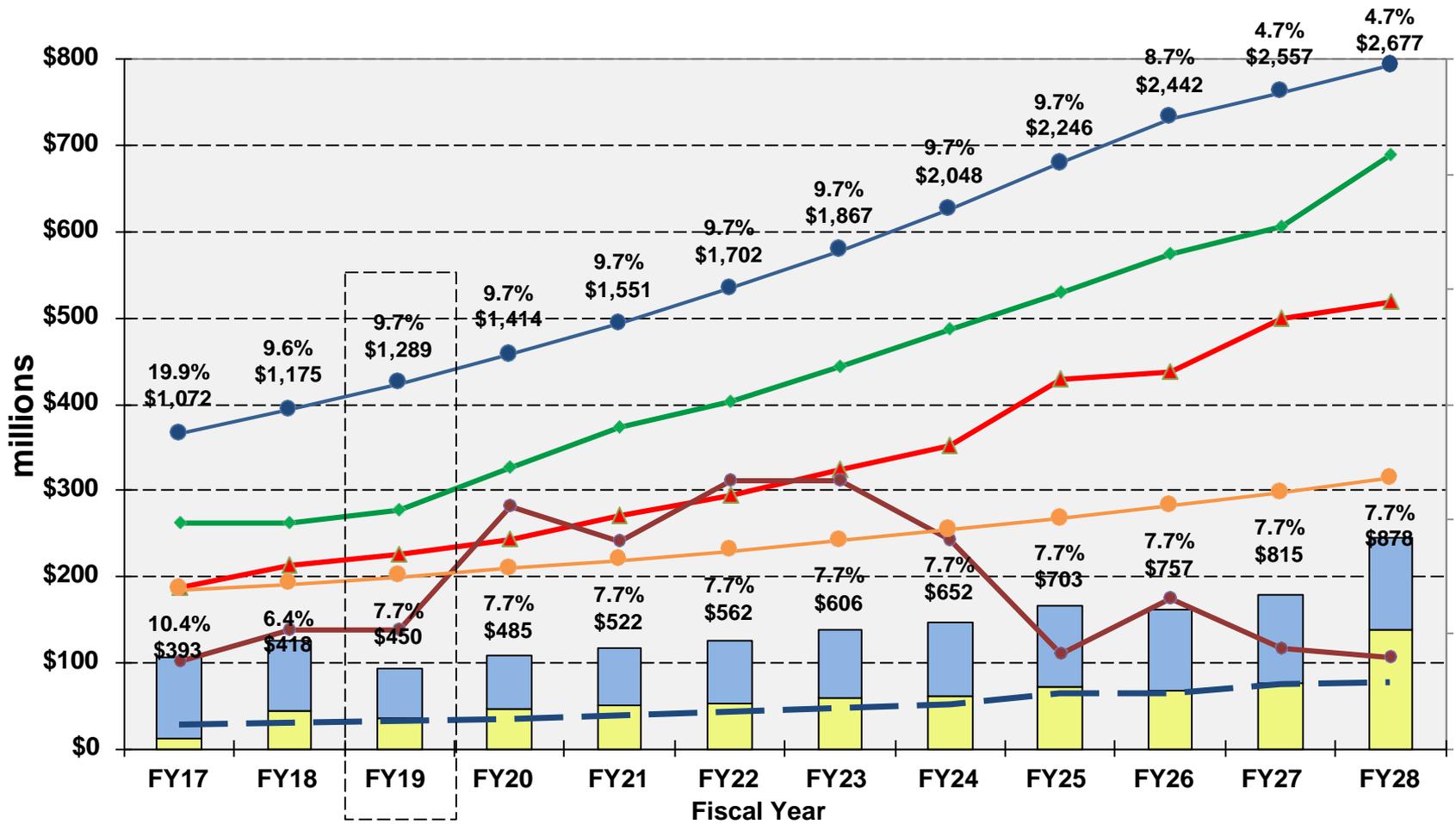
- ▶ Local rainfall cannot sustain Santa Clara County water needs
- ▶ Planning in early 1900's called for construction of reservoirs to capture rainwater to percolate into the ground
- ▶ Groundwater Production Charge is a reimbursement mechanism
  - ▶ pays for efforts to protect and augment water supply

# 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



# Financial Analysis: Proposed Groundwater Production Charge Projection



- Op & Cap Reserve
- ◆ Total Revenue + Xfers In
- Capital Projects
- North County M&I Rate (\$/AF)
- Restricted & Other Reserves excl. enc.
- ▲ Operating Exp. + Xfers Out
- Min Op & Cap Reserve
- South County M&I Rate (\$/AF)

# 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 \$1.10 per month in South County to average household**