


# Imported Water Supplies
# 2022 Water 101 Academy

May 2022

Valley Water

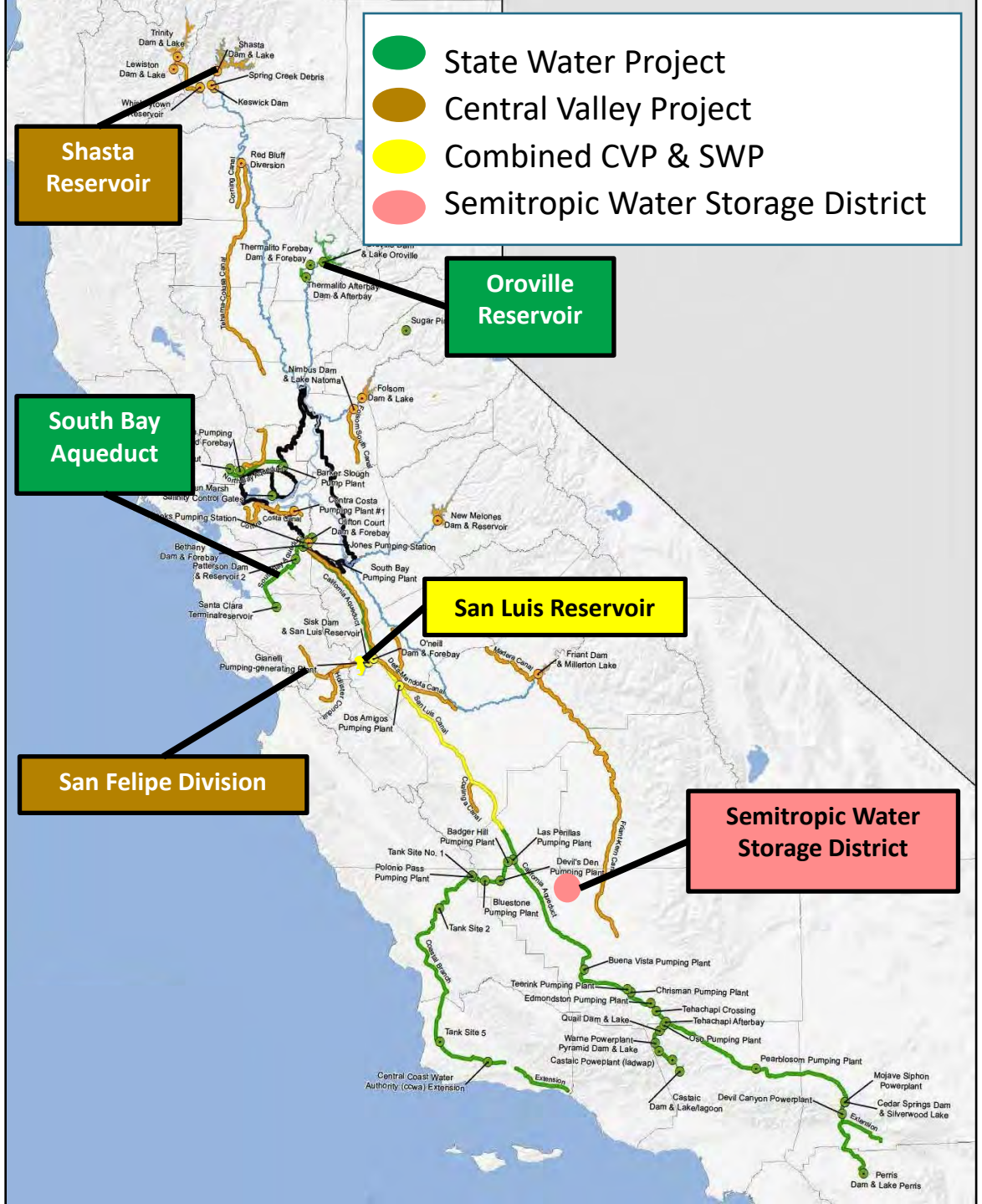
# State and Federal water supplies

State Water Project (SWP)

- Operated by CA DWR
- 1961 First deliveries to Santa Clara County
- Contract amount: 100,000 AF
- Est. long-term average deliveries: 55,000 AF

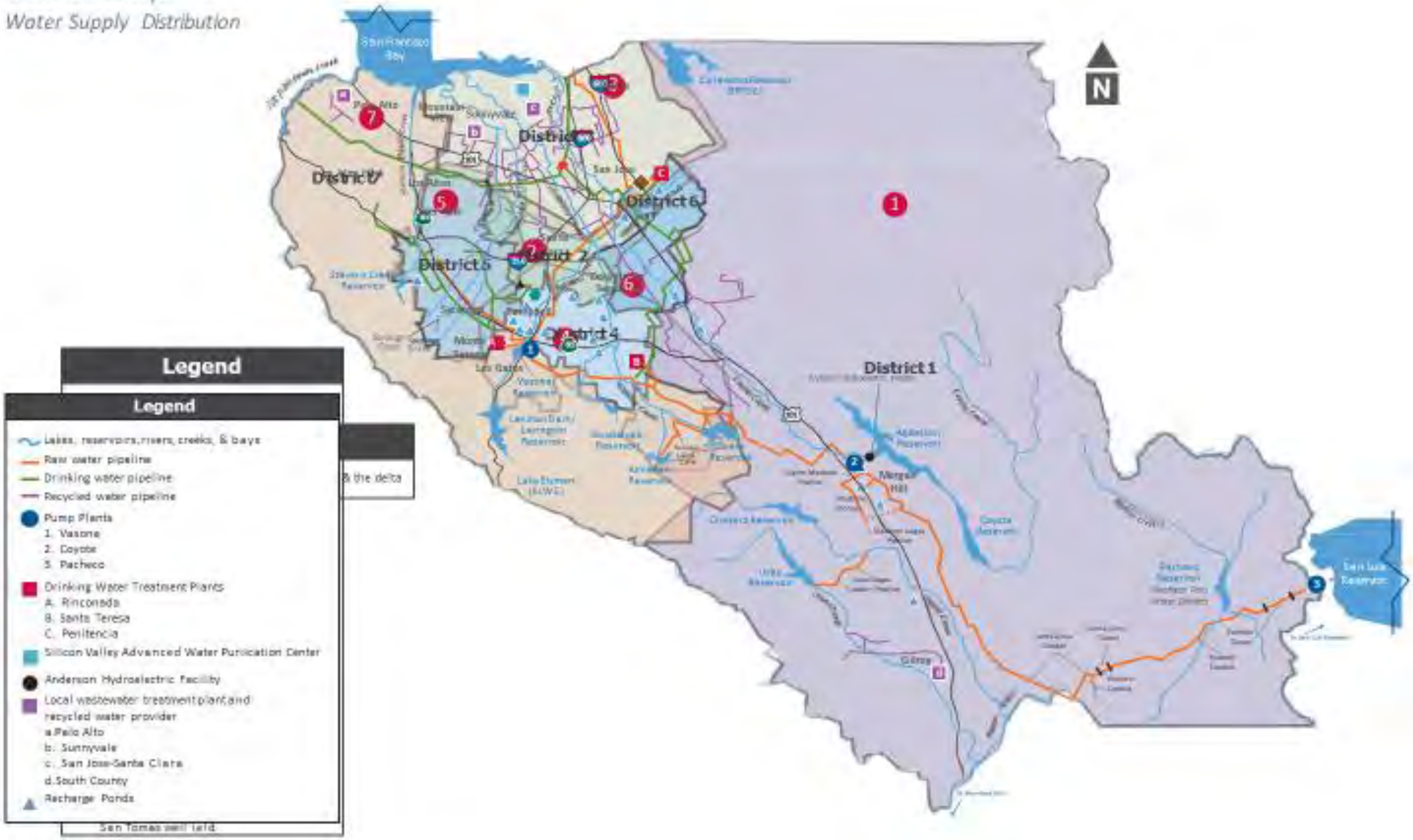
Central Valley Project (CVP)

- Operated by USBR
- 1987 First deliveries to Santa Clara County
- Contract amount: 152,500 AF
- Est. long-term average deliveries: 110,000 AF



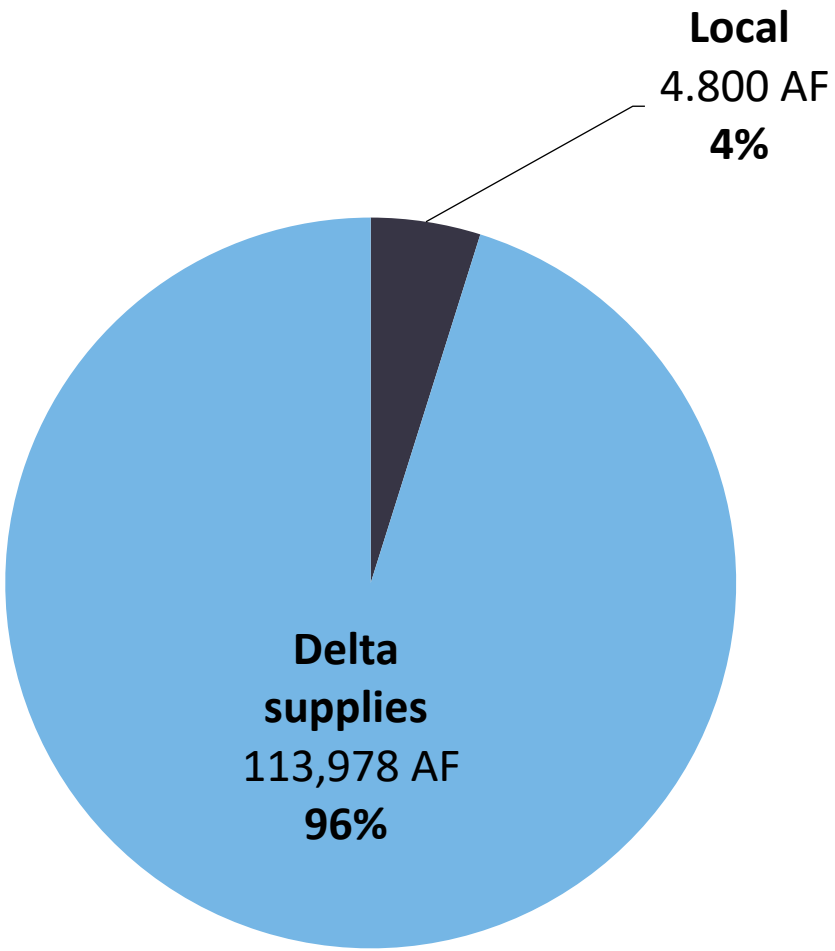
# District map

*Water Supply Distribution*

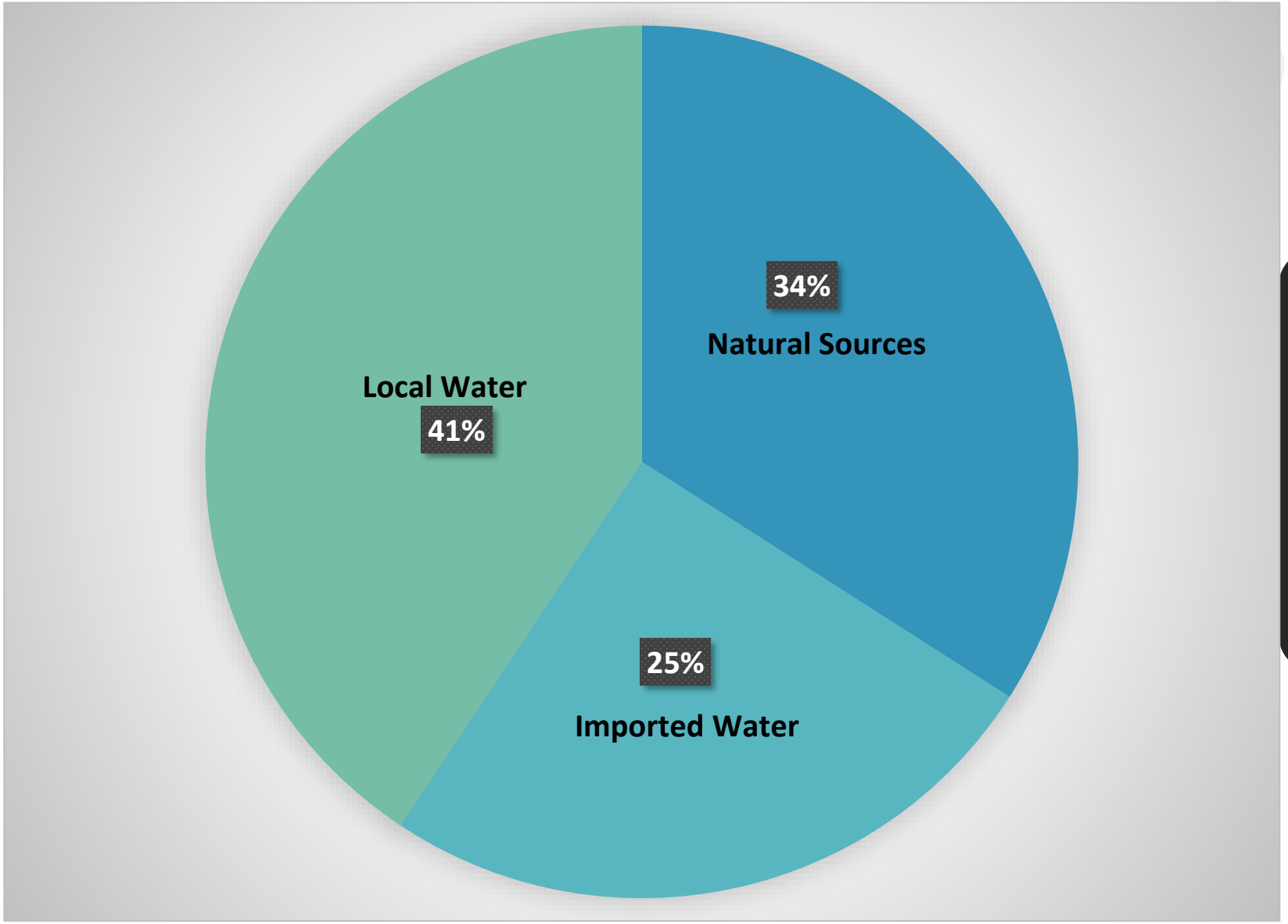


# County's water supplies to treatment plants (2011 – 2021)



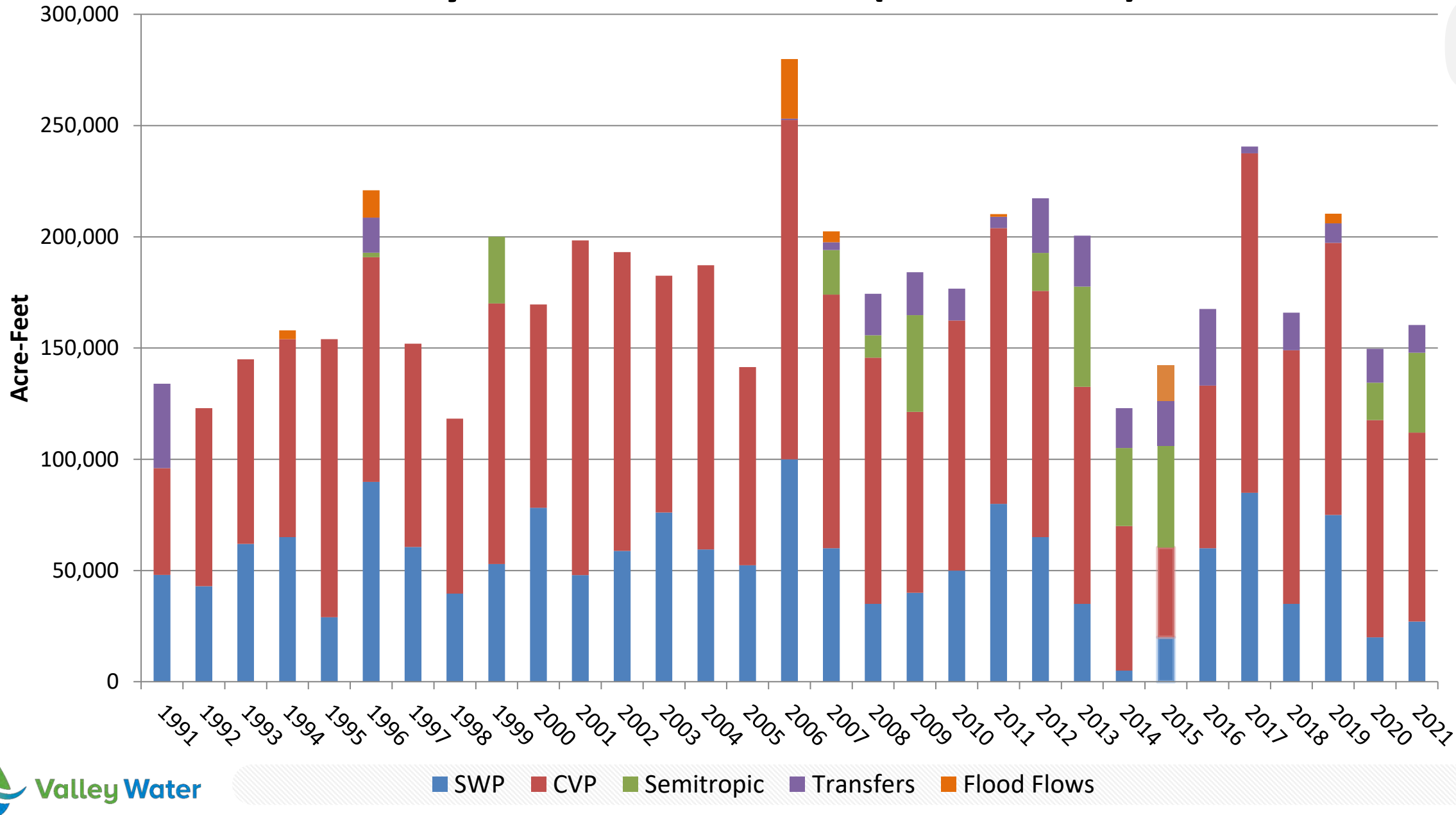



# IWU Groundwater Recharge (2016-2021)



# Valley Water Deliveries (1991-2021)





# Controlling Regulations



- US Bureau of Reclamation
- CA Department of Water Resources
- State Water Board
- National Marine Fisheries Service
- U.S. Fish & Wildlife Service
- CA Dept of Fish & Wildlife
- State Water Contractors
- San Luis & Delta Mendota Water Authority
- Other Water Agencies

# 2022 Water Supply Conditions

- 2021 was drier than 2014 or 2015, driest year since 1977
- 2020/2021 combination is 2nd driest on record
- First three months of calendar year 2022 driest on record
- Low statewide storage conditions

- Valley Water's SWP and CVP allocations:
  - SWP: 5%
  - CVP M&I: PHS
  - CVP Ag: 0%

# 2022 Water Supply Conditions (Cont'd)

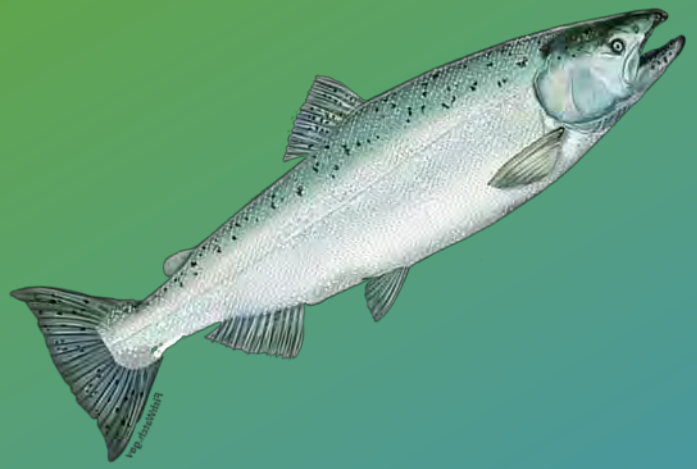
- FERC Order: Anderson Reservoir at Deadpool since late 2020

- Increased reliance on imported water for recharge and deliveries to water treatment plants

# San Luis Low Point



# Key 2022 Regulatory Issues



- Drought Activity
  - Temporary Urgency Change Petition
  - State Board hearings and workshops
  - Curtailments & Emergency Regulations
- ITP/BiOps
  - Implementation
  - Re-initiation of consultation
  - Litigation
- WQCP Updates & Voluntary Agreements
- Species Status

# Long-Term Planning

- Delta Conveyance Project
- Groundwater Banking
- Surface Storage
  - Pacheco Reservoir
  - Sites Reservoir
  - Los Vaqueros Reservoir expansion
  - San Luis Reservoir expansion

# Drought Impacts

- Mitigate low allocations with Semitropic
  - exchange capacity and water quality issues
- Transfers
  - Scarcity
  - Cost
  - Conveyance capability issues
- Water Quality concerns
  - San Luis Reservoir and SBA
- State Board actions
  - Curtailments
  - Temporary Urgency Change Petitions

*Image credit: DWR. Governor Newsom at 2021 drought press conference. Location: lakebed in Mendocino County.*

# Pacheco Reservoir Expansion Project Update

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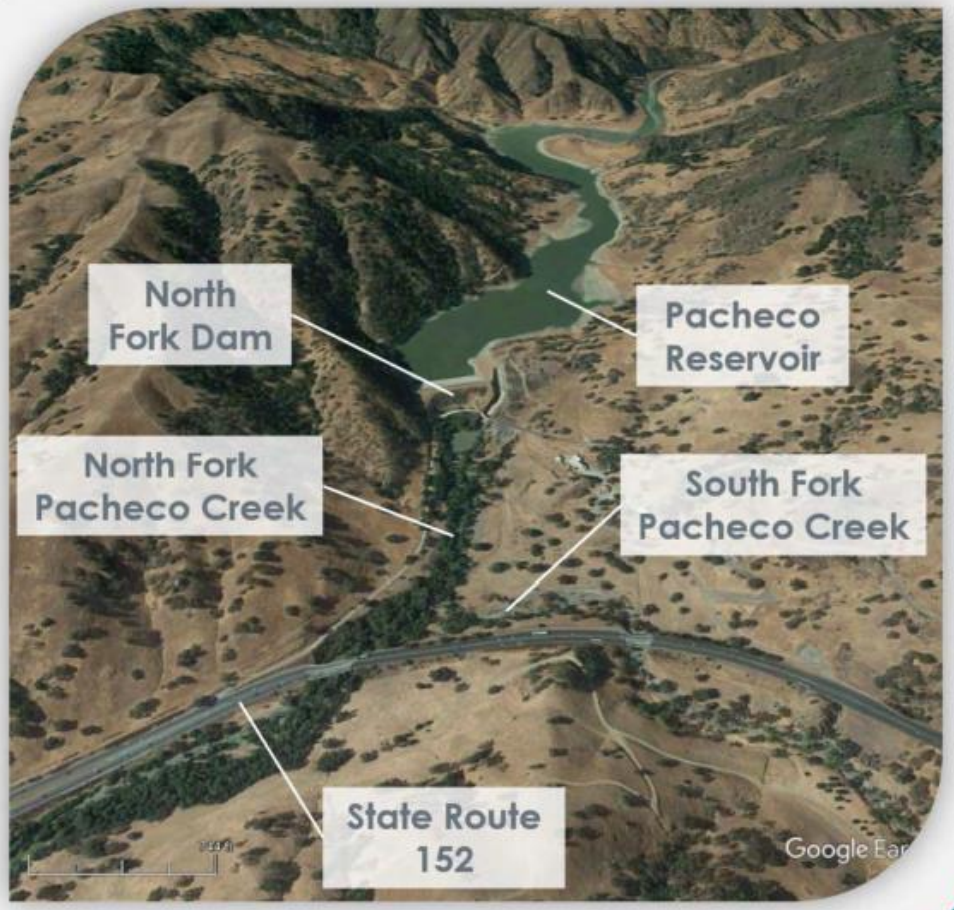
# Existing North Fork Dam and Pacheco Reservoir

## Dam

- 100-foot-tall earthen embankment dam
- 0.4 miles upstream of North Fork Creek and South Fork Creek confluence
- Construction completed in 1939

## Reservoir

- Current capacity: 5,500 acre-feet
- Operated for groundwater recharge along Pacheco Creek by Pacheco Pass Water District

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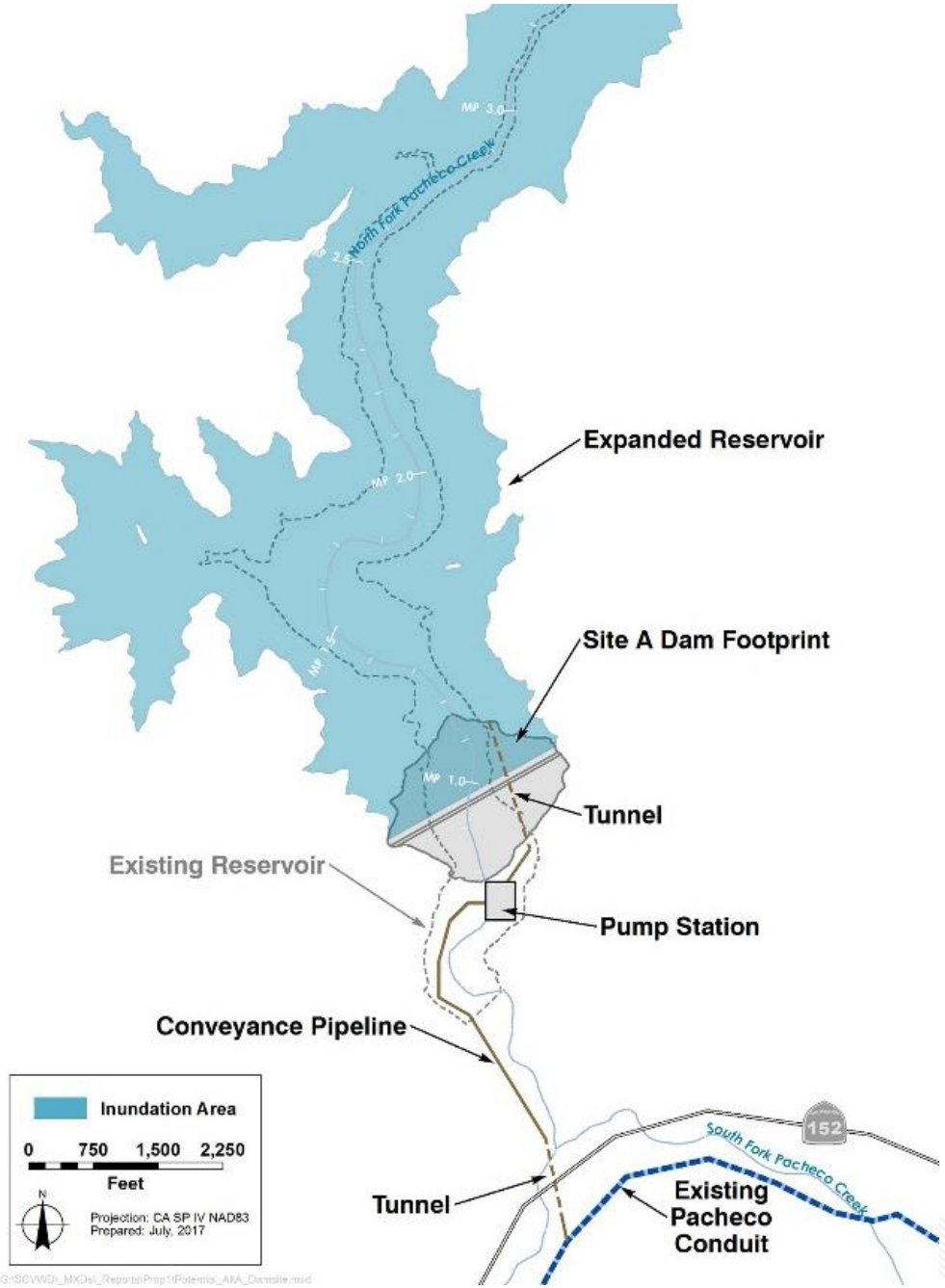
# Project Components



- **Dam** – approximately 300 feet high, one location under consideration
- **Reservoir** – up to 140 thousand acre-feet (TAF)
- **Spillway** – capable of passing the Maximum Probable Flood
- **Intake/Outlet Works** – large diameter pipe, smaller outlet pipe to Pacheco Creek
- **Pump Station & Conveyance Pipeline** – to transfer water to and from Pacheco Conduit
- **Roadways** – access to and from SR 152



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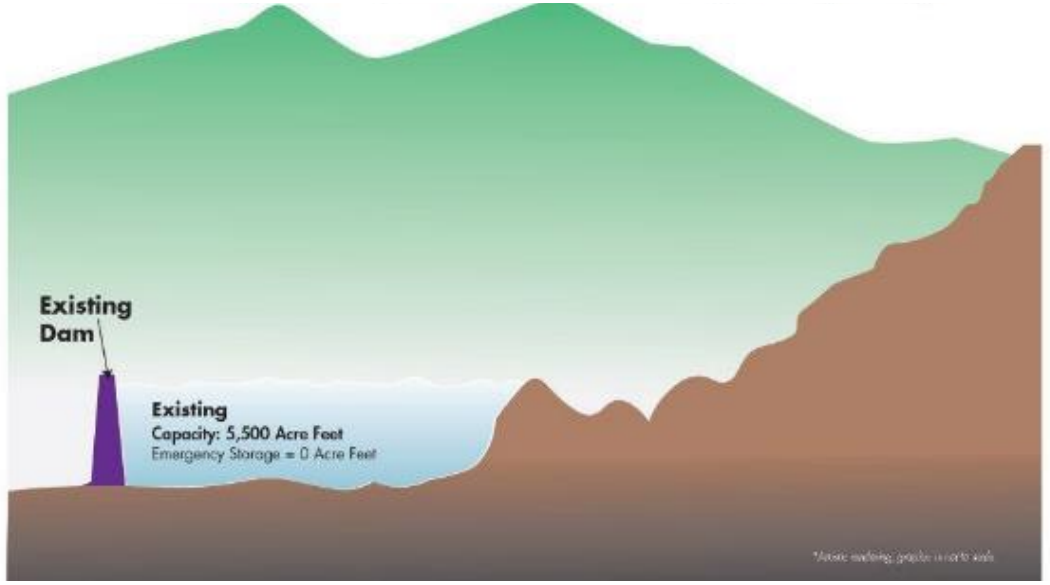
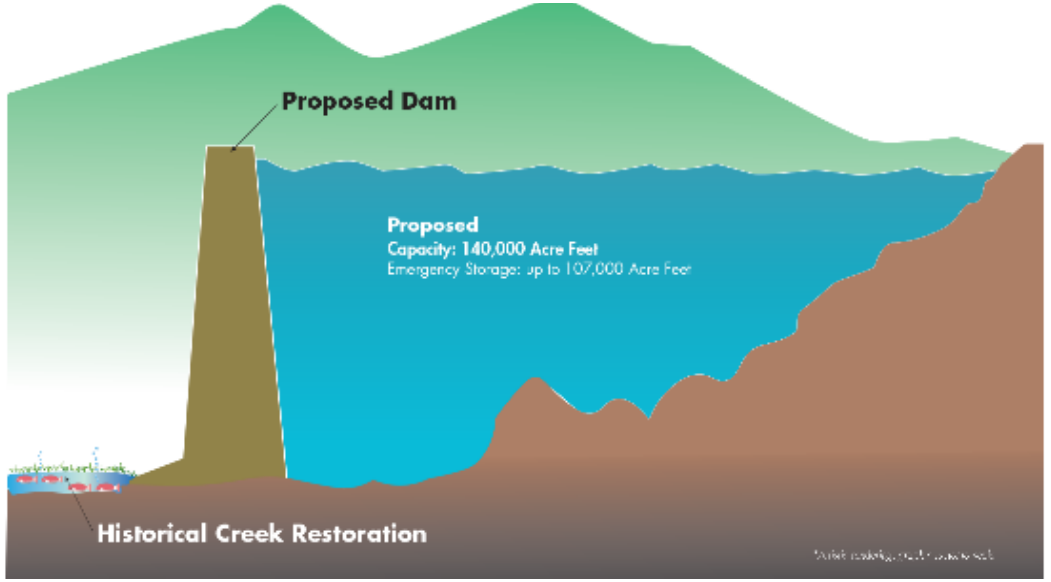
# Existing & Proposed Dam Storage Capacity



Existing – 5,500 AF




Expanded – 140,000 AF



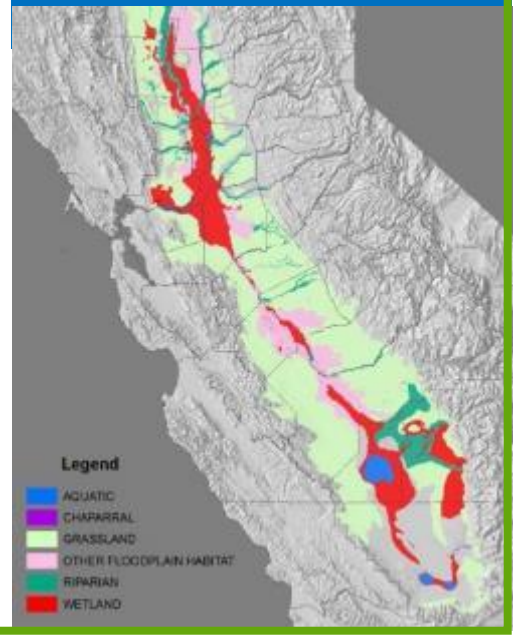
# Project Benefits



## ENVIRONMENTAL

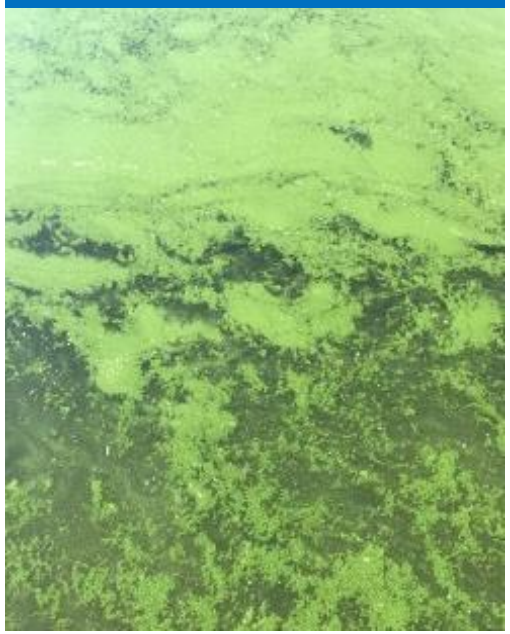
Enhance habitat for federally threatened steelhead

Enhance water supply in below- normal years to wildlife refuges in the Delta




Increase water supply reliability and emergency water supply

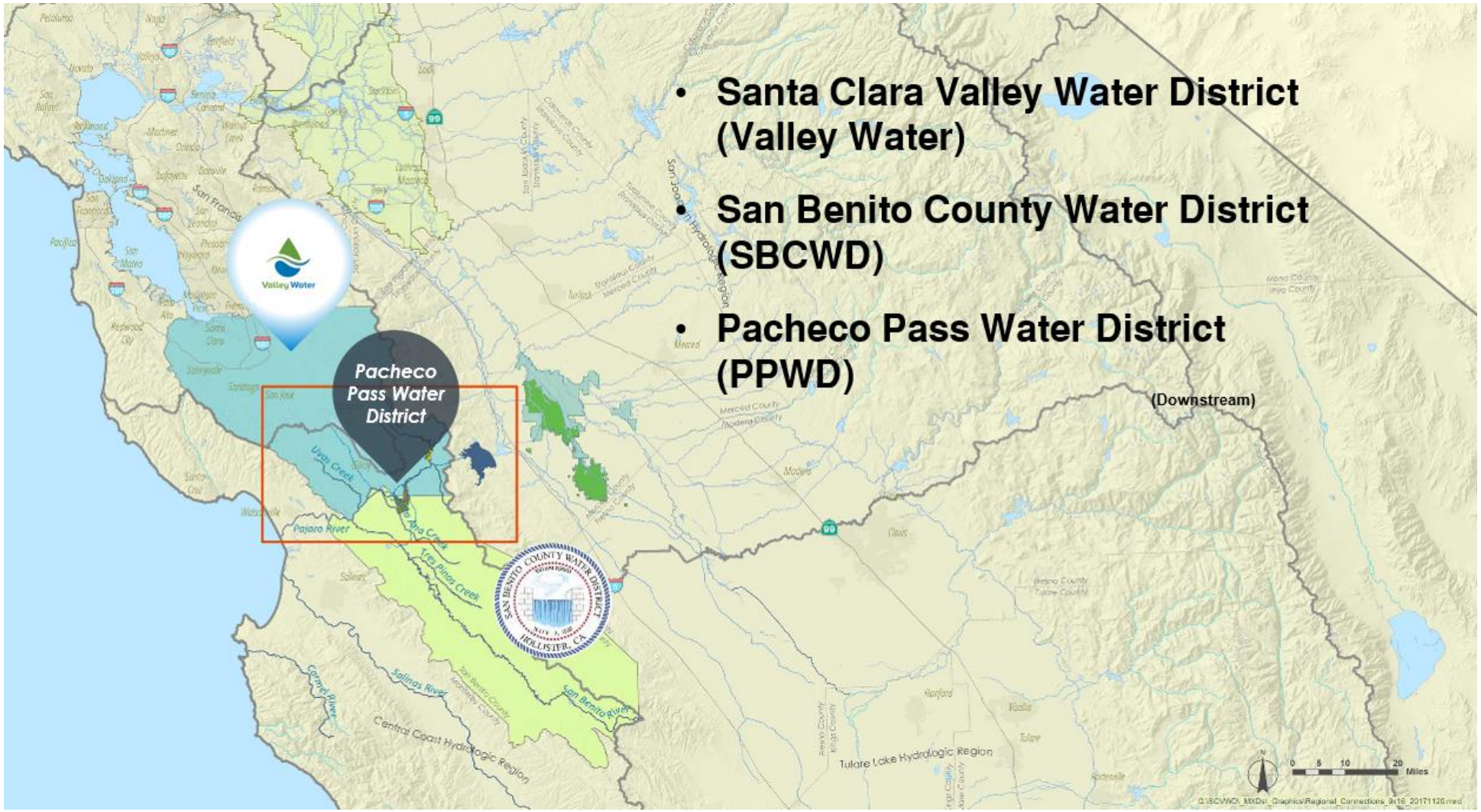
Resolve the water quality problem in supply sourced from San Luis Reservoir



Reduce flooding along Pacheco Creek and to disadvantaged communities

# Project Partners

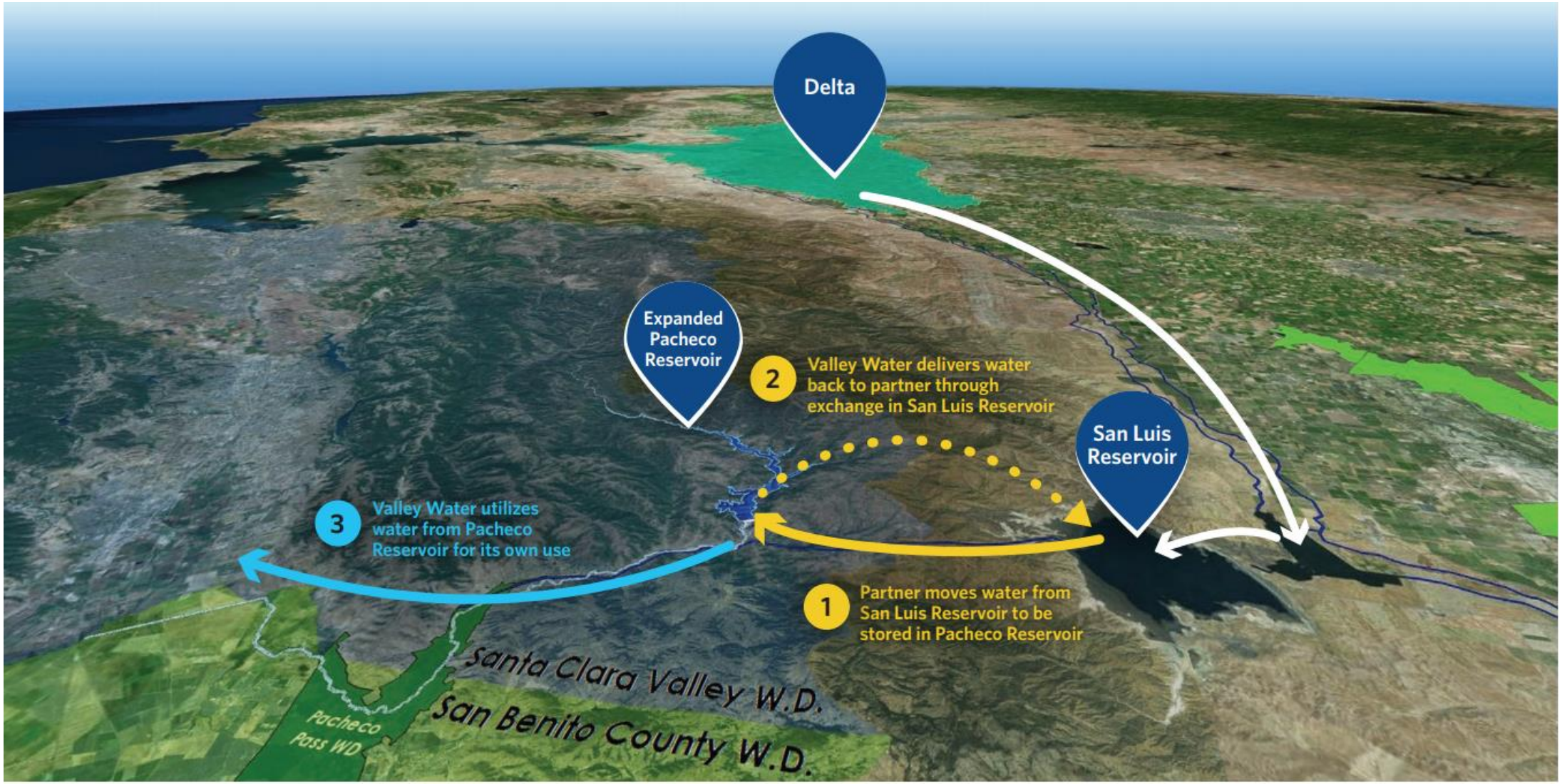





- Santa Clara Valley Water District (Valley Water)
- San Benito County Water District (SBCWD)
- Pacheco Pass Water District (PPWD)

# Example of Partner Use





# Necessary Permits



Federal

- USACE:  CWA Section 404 Permit
- USFWS:  ESA Section 7 Consultation
- NMFS:  Incidental take permit (steelhead trout)

State

- DSOD:  New dam application
- CALTRANS:  Encroachment Permit
- CDFW:  LSAA & Section 2081
- 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

# Key Project Schedule Milestones



- Present Planning Study Report – Fall 2021
- Perform additional environmental investigations – 2021
- Complete draft EIR for public review – Feb 2022
- Perform additional geotechnical investigations – 2022
- Advertise for construction – late 2024

# Anderson Dam Seismic Retrofit Project Update

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# Anderson Dam Seismic Retrofit Project

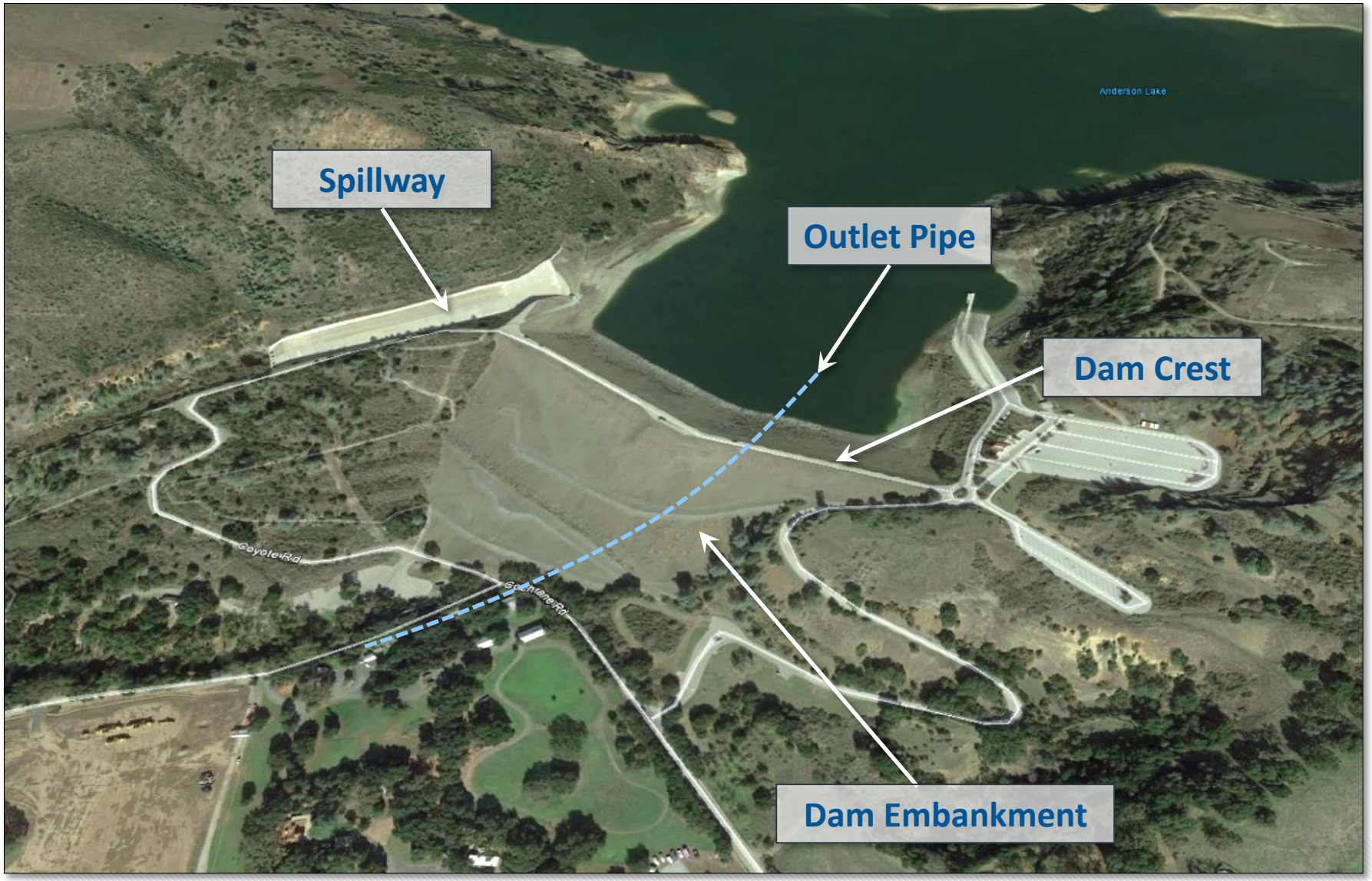


## Background

- Anderson Dam forms Anderson Reservoir, holding 90,000 acre feet of water when full and the largest of Valley Water's reservoirs.
- In 2012, following a seismic stability analysis, Valley Water began plans to retrofit the dam to meet current safety standards, creating the Anderson Dam Seismic Retrofit Project (ADSRP).
- On February 20, 2020, the Federal Energy Regulatory Commission (FERC) issued an order to Valley Water to undertake early implementation interim risk reduction measures associated with ADSRP immediately.

# Anderson Dam Existing Components





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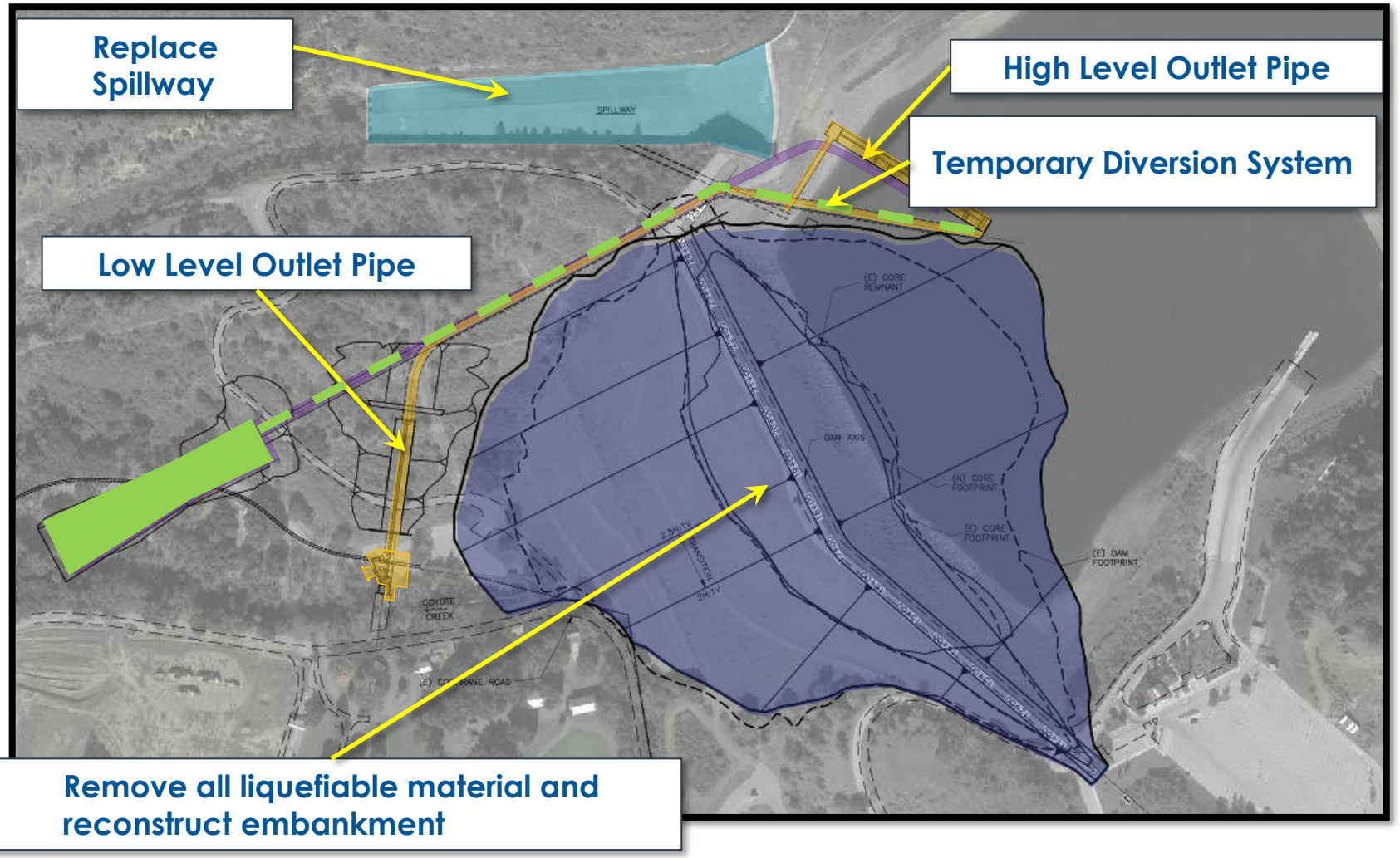
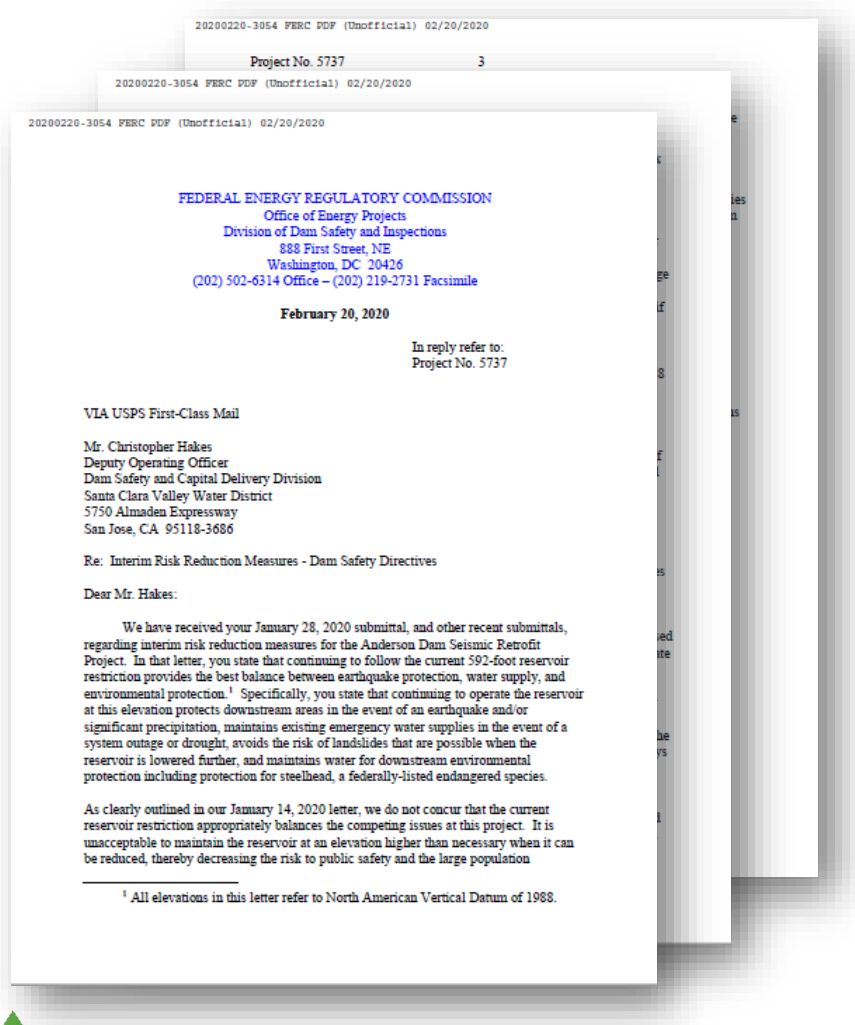
# Anderson Dam Seismic Retrofit Project Components





# FERC Directive: Risk Reduction Measures





20200220-3054 FERC PDF (Unofficial) 02/20/2020

Project No. 5737 3

20200220-3054 FERC PDF (Unofficial) 02/20/2020

20200220-3054 FERC PDF (Unofficial) 02/20/2020

FEDERAL ENERGY REGULATORY COMMISSION
Office of Energy Projects
Division of Dam Safety and Inspections
888 First Street, NE
Washington, DC 20426
(202) 502-6314 Office – (202) 219-2731 Facsimile

**February 20, 2020**

In reply refer to:
Project No. 5737

VIA USPS First-Class Mail

Mr. Christopher Hakes
Deputy Operating Officer
Dam Safety and Capital Delivery Division
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118-3686

Re: Interim Risk Reduction Measures - Dam Safety Directives

Dear Mr. Hakes:

We have received your January 28, 2020 submittal, and other recent submittals, regarding interim risk reduction measures for the Anderson Dam Seismic Retrofit Project. In that letter, you state that continuing to follow the current 592-foot reservoir restriction provides the best balance between earthquake protection, water supply, and environmental protection.[1] Specifically, you state that continuing to operate the reservoir at this elevation protects downstream areas in the event of an earthquake and/or significant precipitation, maintains existing emergency water supplies in the event of a system outage or drought, avoids the risk of landslides that are possible when the reservoir is lowered further, and maintains water for downstream environmental protection including protection for steelhead, a federally-listed endangered species.

As clearly outlined in our January 14, 2020 letter, we do not concur that the current reservoir restriction appropriately balances the competing issues at this project. It is unacceptable to maintain the reservoir at an elevation higher than necessary when it can be reduced, thereby decreasing the risk to public safety and the large population

[1] All elevations in this letter refer to North American Vertical Datum of 1988.

1. Lower reservoir to new restriction (El. 565’) ✓
2. Take all necessary measures to safely prepare and drain the reservoir to El. 488’ ✓
3. Oct. 1 - Begin draining reservoir to dead pool (El. 488’) ✓
4. Develop plan to maintain dead pool elevation in event of significant inflow ✓
5. Expedite design and construction of new Outlet Tunnel ⚙
6. Secure permits and complete design of larger Seismic Retrofit Project ⚙

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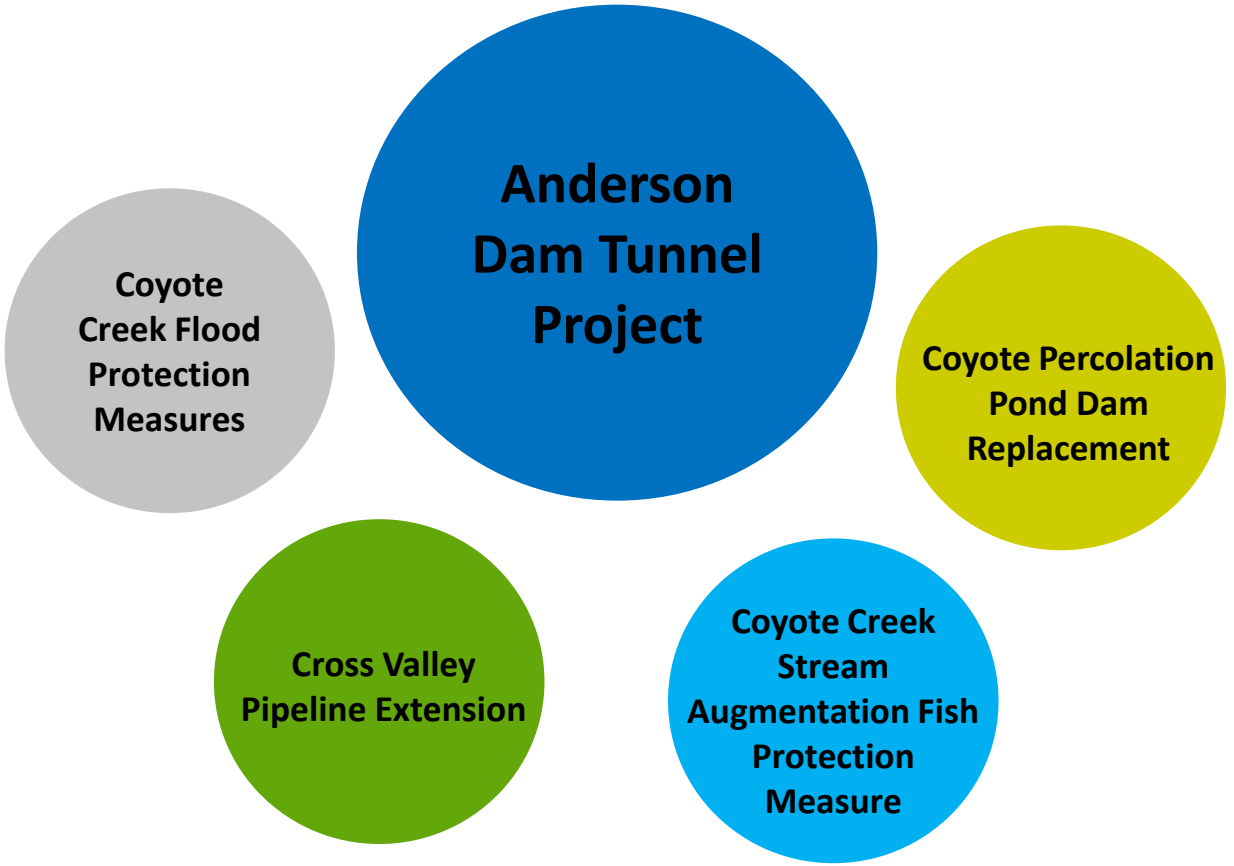
# Anderson Dam Federal Energy Regulatory Commission Order Compliance Projects (FOCP)




## ADSRP

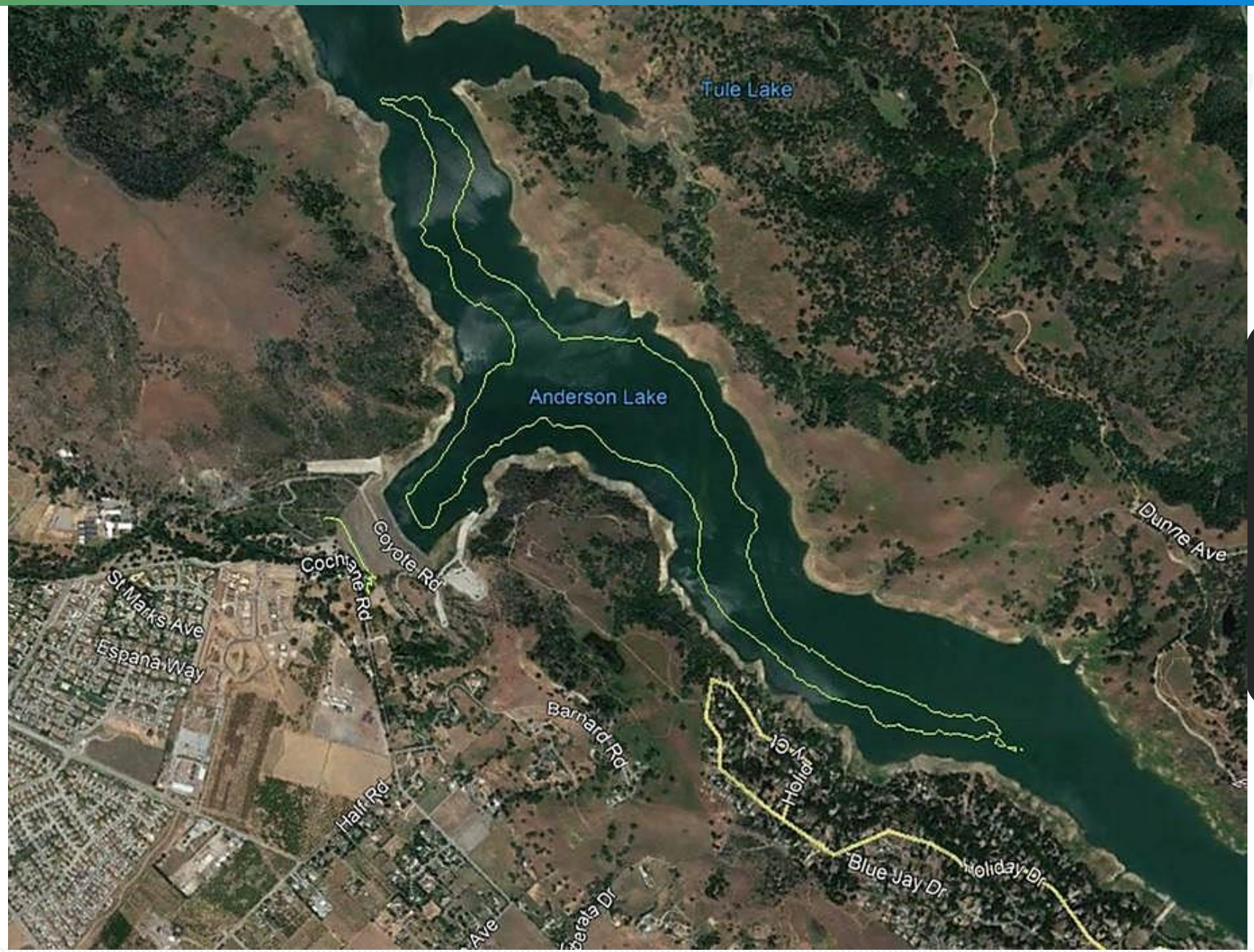
- Seismic retrofit of dam embankment
- Construction of new higher capacity outlet tunnel and outlet works
- Replacement of concrete spillway and raising wall height 9-feet to safely discharge large storm flows
- Increase dam crest height 7-feet

# FOCP Elements - Current Status



- Reservoir Drawdown to Deadpool and Maintain Level at Deadpool – Complete
- Anderson Dam Tunnel Project (ADTP) Construction – On-going
- Anderson Dam Tunnel Operation and Maintenance – Post ADTP Construction
- Bank and Rim Stability Improvements (Included in ADTP)
- Existing Intake Structure Modifications (Included in ADTP)
- Creek Channel and Bank Erosion Control Modifications (Included in ADTP)
- Imported Water Releases and Cross Valley Pipeline Extension – On-going
- Coyote Percolation Dam Replacement – In Design
- Coyote Creek Flood Management Measures – In Design
- Steelhead Fish Avoidance and Minimization Measures – In Design
- Implementation of Additional Project Specific Avoidance and Minimization Measures - In Planning/Design

# Anderson Reservoir at 3% Capacity - Map

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# Anderson Dewatered



# Potential Impacts



- After storm events, the water level in the reservoir will rise temporarily
- Increased flows in Coyote Creek, downstream of the dam, after storm events
- Noise from construction equipment (large diesel engines) and backup alarms
- Work activities will mainly be Monday through Friday during the daytime, but some Saturdays may be required
- Smells caused by elevated levels of algae in the summer.
  Algal blooms can deplete oxygen levels in the water and produce hydrogen sulfide (rotten egg taste and odor)

# 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)

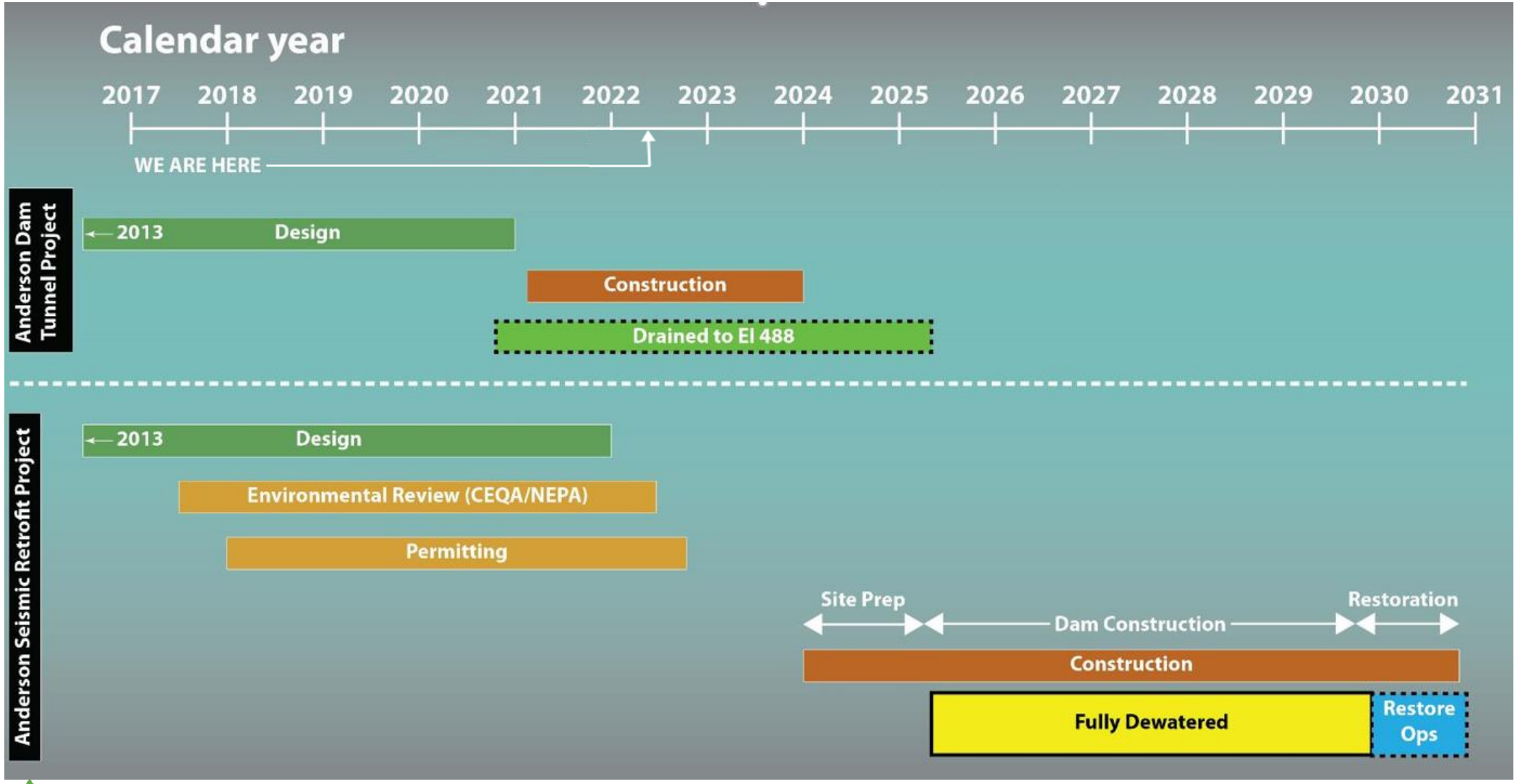
State

- 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

# Project Schedule





# QUESTIONS

# Permanente Creek Flood Protection Project

Water 101 Tour – May 11, 2022

# Project Objectives

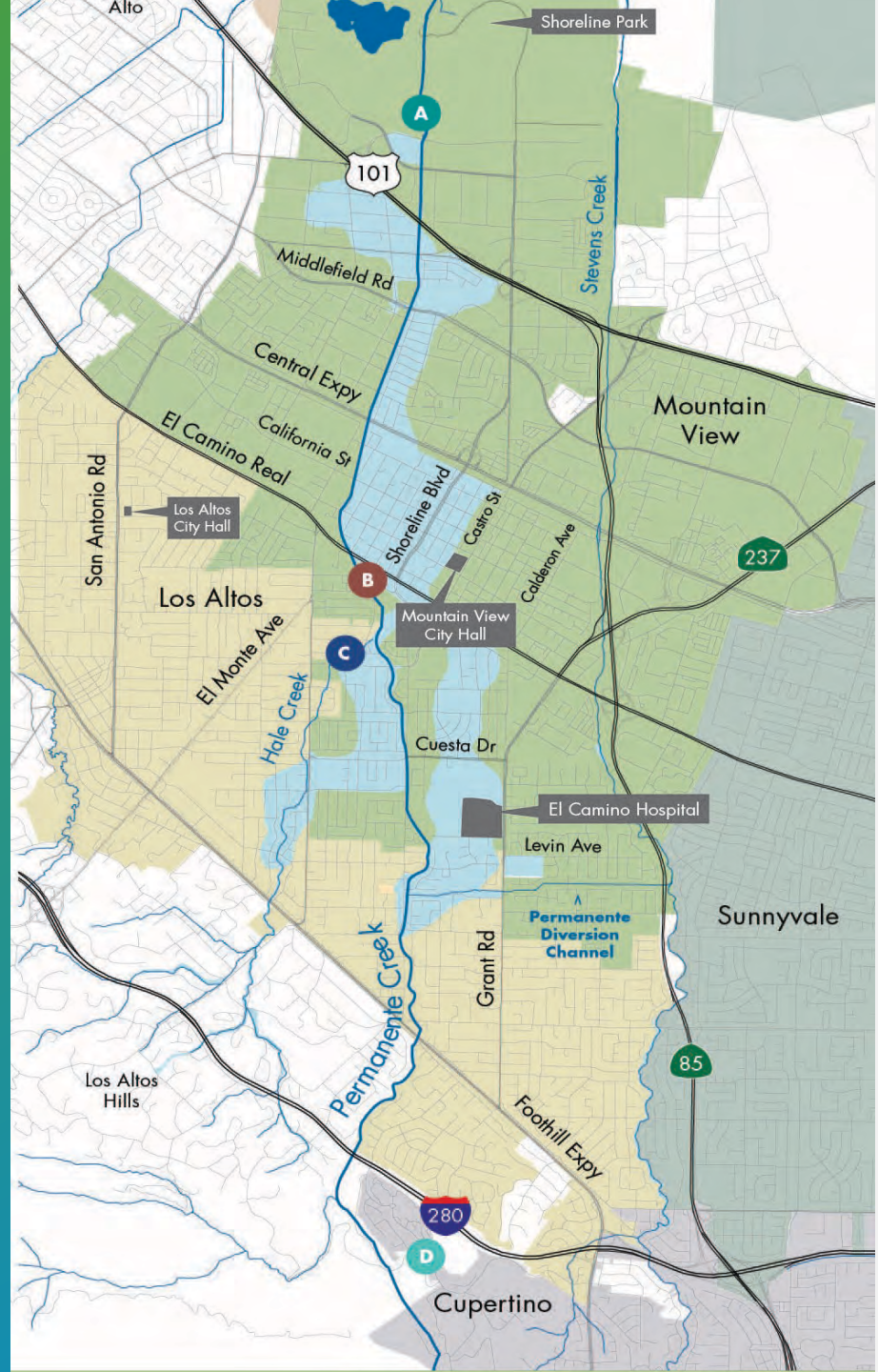
- Provide 1% flood protection to Mountain View and Los Altos using a natural flood protection approach
- Address deteriorating concrete channels
- Provide opportunities for environmental enhancements and recreational benefits
- Minimize long-term maintenance cost

# Permanente Project Elements

- A Floodwalls
- C Channel widening

Flood detention areas:

- B McKelvey Park
- D Rancho San Antonio Park



# Project Cost



- Planning and Design: $13M
- Construction: $80M
- Construction Contract Amounts
  - McKelvey Detention Basin: $31M
  - Rancho San Antonio Detention Basin: $20M
  - Permanente Creek Channel Improvements: $8M
- Funding Source
  - Watershed Stream Stewardship Fund
  - Safe Clean Water Fund

# Project Description

## Channel Improvements



- Floodwalls
- Channel Widening

# Floodwall



# Channel Widening



# Project Description

## McKelvey Park

- Sunken fields
- 13 concrete retaining and soldier pile walls
- Weir & pump station
- Other park amenities

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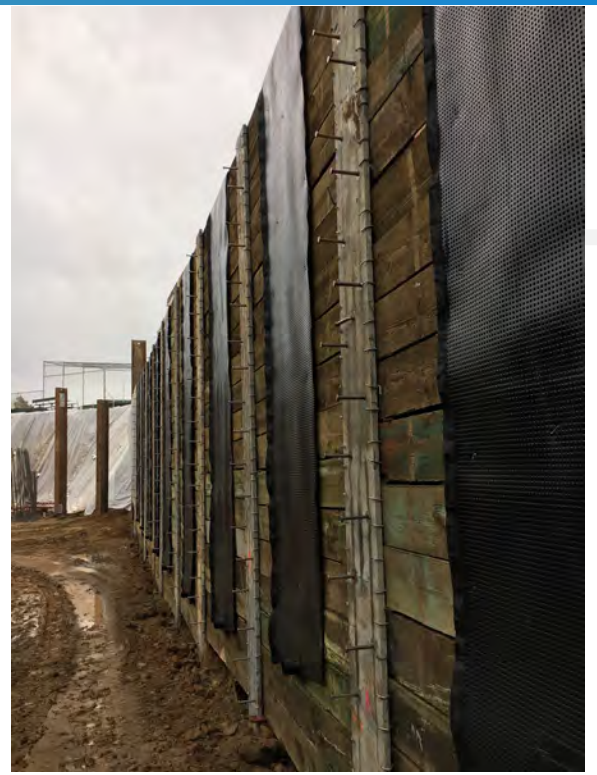
# Babe Ruth Field




# Little League Field



# Weir and Pump Station





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# Pedestrian Bridge






# Babe Ruth Field Building







# Little League Field Building







# Community Building







# Mini Park (Shaefer Park)







MV
EAGLES

# Project Description

## Rancho San Antonio

- Detention Basins
- Maintenance Bridge
- Restroom/Leach Field
- Parking Lot
- Planting

# Inlet Structure and South Basin



# North Basin and New Parking Lot





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# North Basin



# Planting





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# Completed Project Video



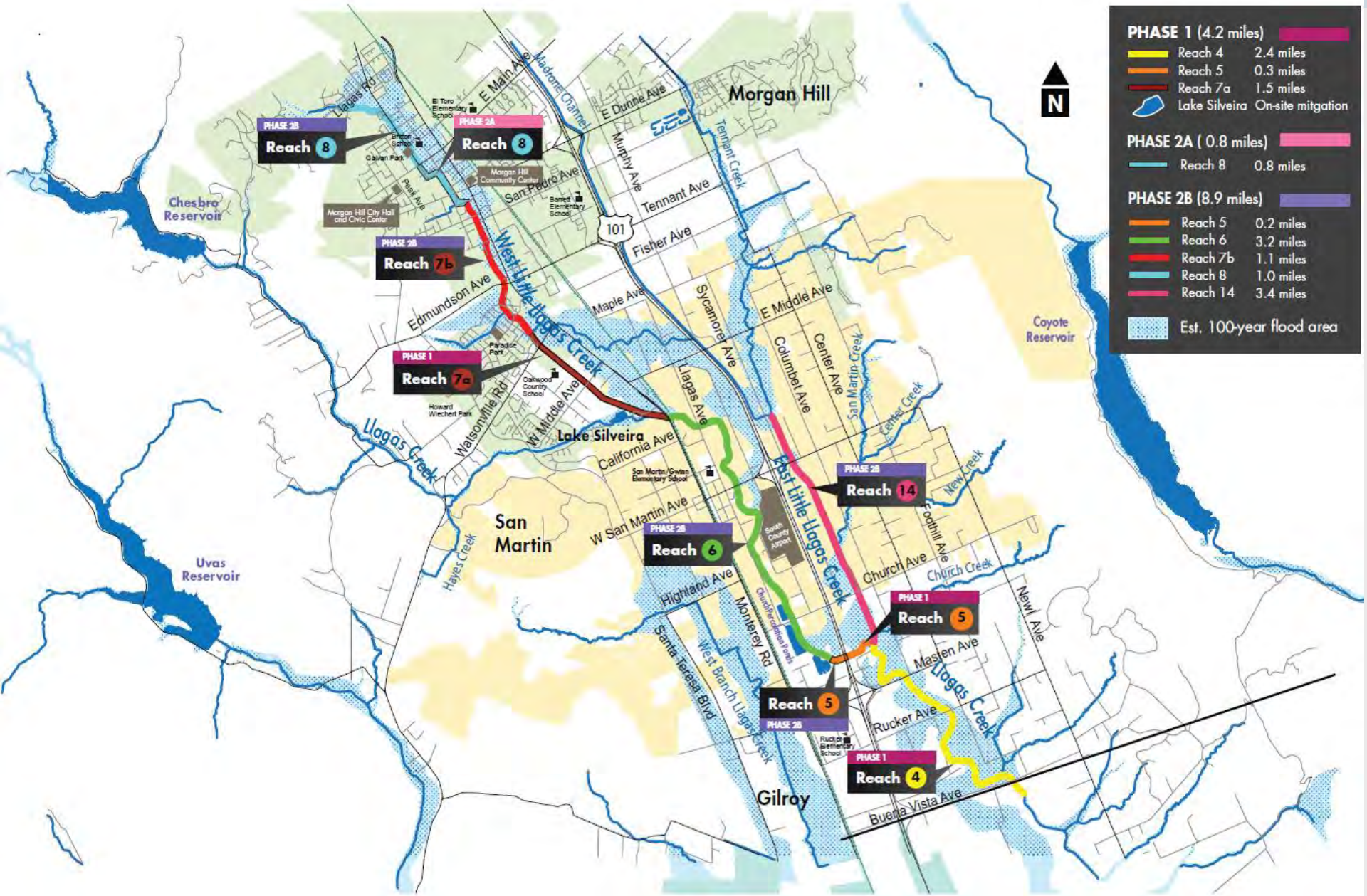
https://www.youtube.com/watch?v=OpQJZb66hd8

# Upper Llagas Creek Project

May 11, 2022

Santa Clara Valley Water District

# Upper Llagas Creek Flood Protection Project



# Flooding history

- Upper Llagas Creek has experienced flooding during major storm events in 1955, 1958, 1962, 1963, 1969, 1982, 1986, 1996, 1997, 1998, 2002, 2008, 2009, 2011, and 2017.


*Oct.13, 2009*

# Project objectives

Provide 100-year flood protection to Reaches 7 & 8

Provide 10-year level of flood protection in Reach 14 and no induced flooding in Reaches 4, 5 & 6

Other project specific objectives:

Design a stable channel

Preserve and enhance habitat

Santa Clara Valley Water District

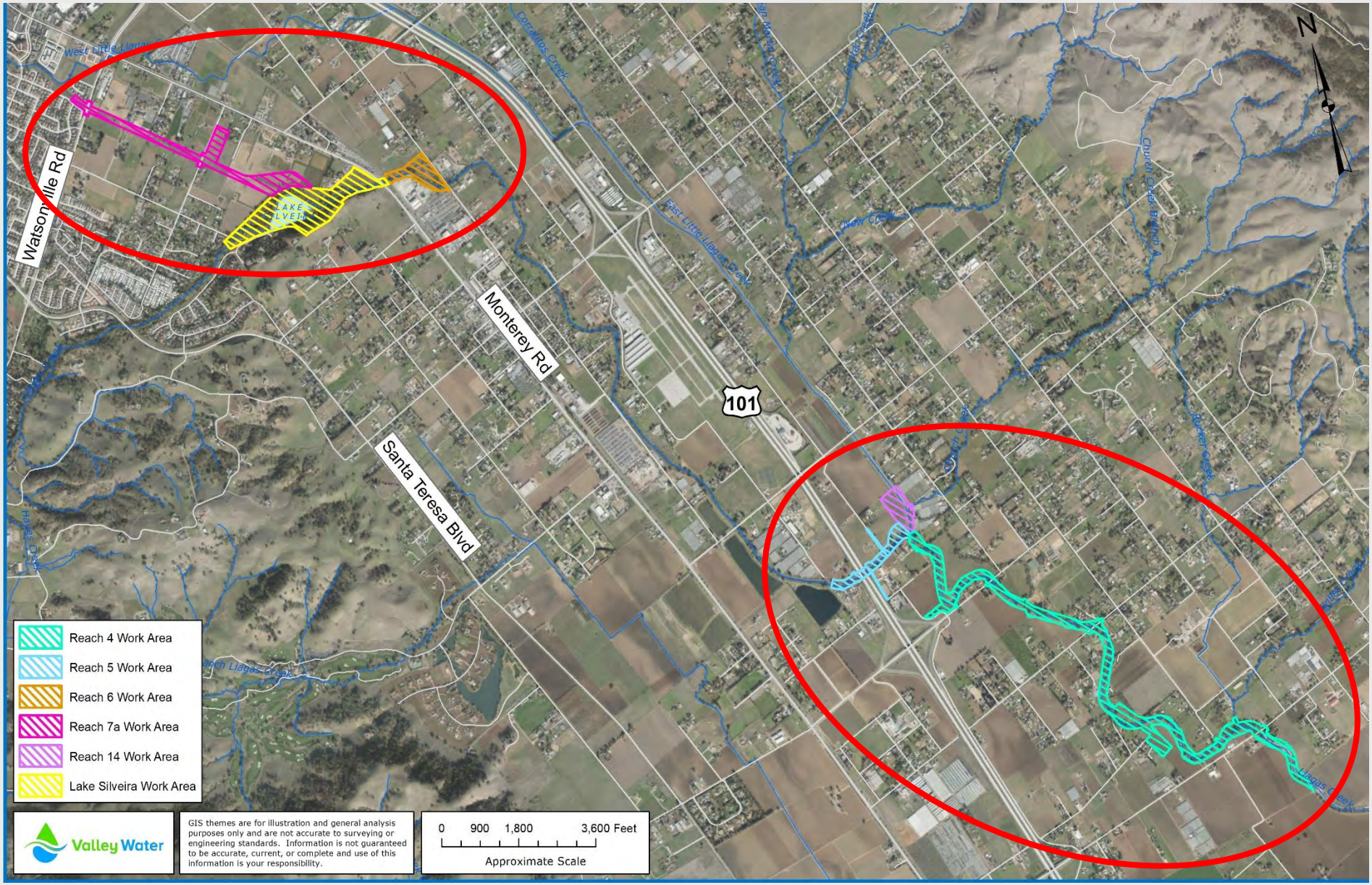
# Major Project Components



- Creek widening and deepening
- Bridge/culvert modifications
- Utility relocations
- 105 acres of riparian planting
- Construction of maintenance roads
- Tunnel construction
- Wetland creation and stream restoration
- Property acquisitions
- Long-term maintenance

# Phase 1 Construction 2019 - 2022

Reaches 4 (2.4 miles), 5 (2500 feet), 6 (1600 feet) 14 (1000 feet) 7a (1.5 miles), Lake Silveira Mitigation



# Phase 1 Construction 2019 - 2022

Reach 7a chute and pools, , Reach 4, revegetation Reach 7a

Santa Clara Valley Water District

# Phase 1 Construction 2019 - 2022

Final excavations, planting, fencing, and collaboration with City of Morgan Hill

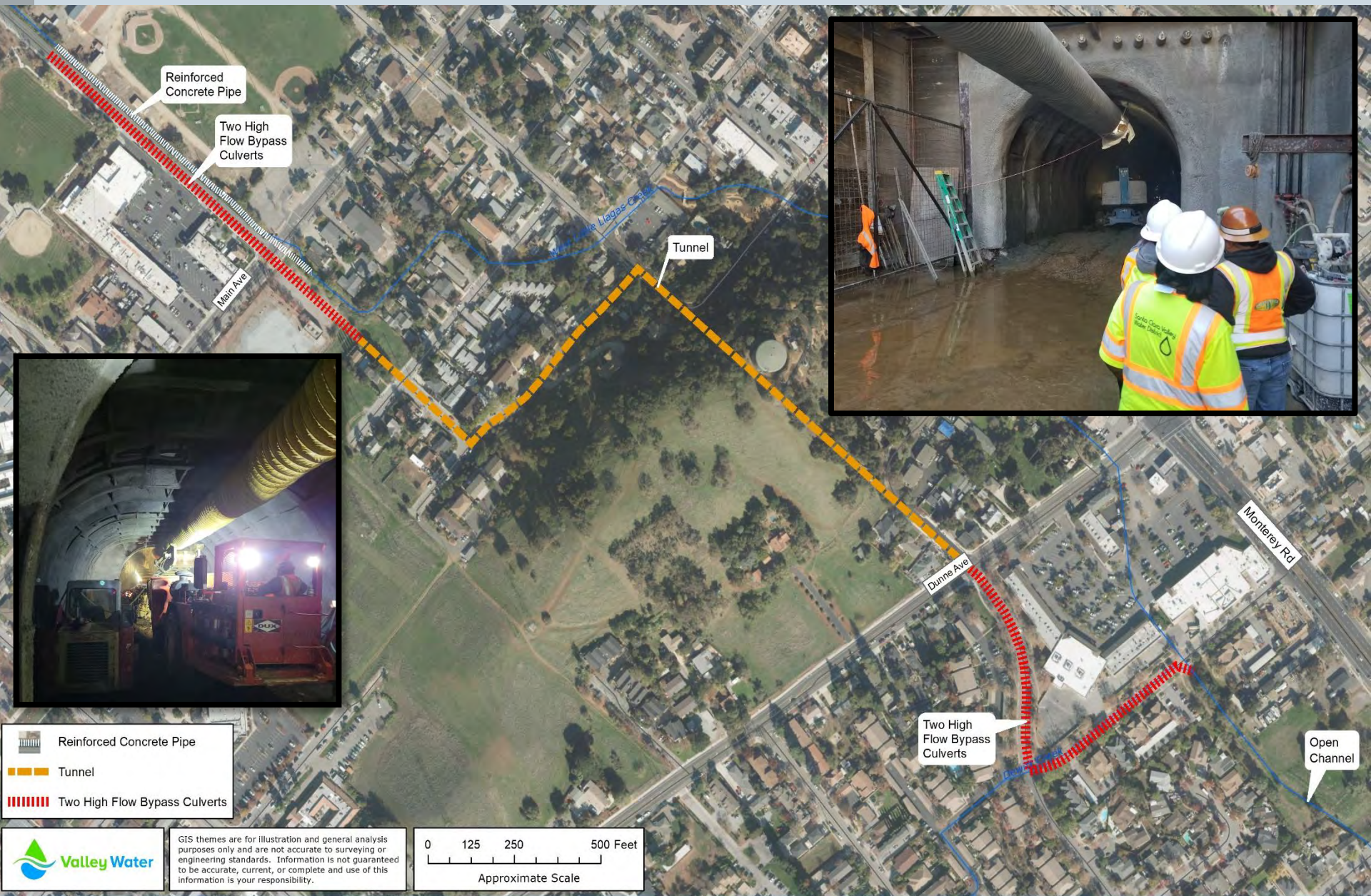
Santa Clara Valley Water District

# Phase 2a Construction 2021 - 2023

Reach 8 includes construction of an underground bypass tunnel

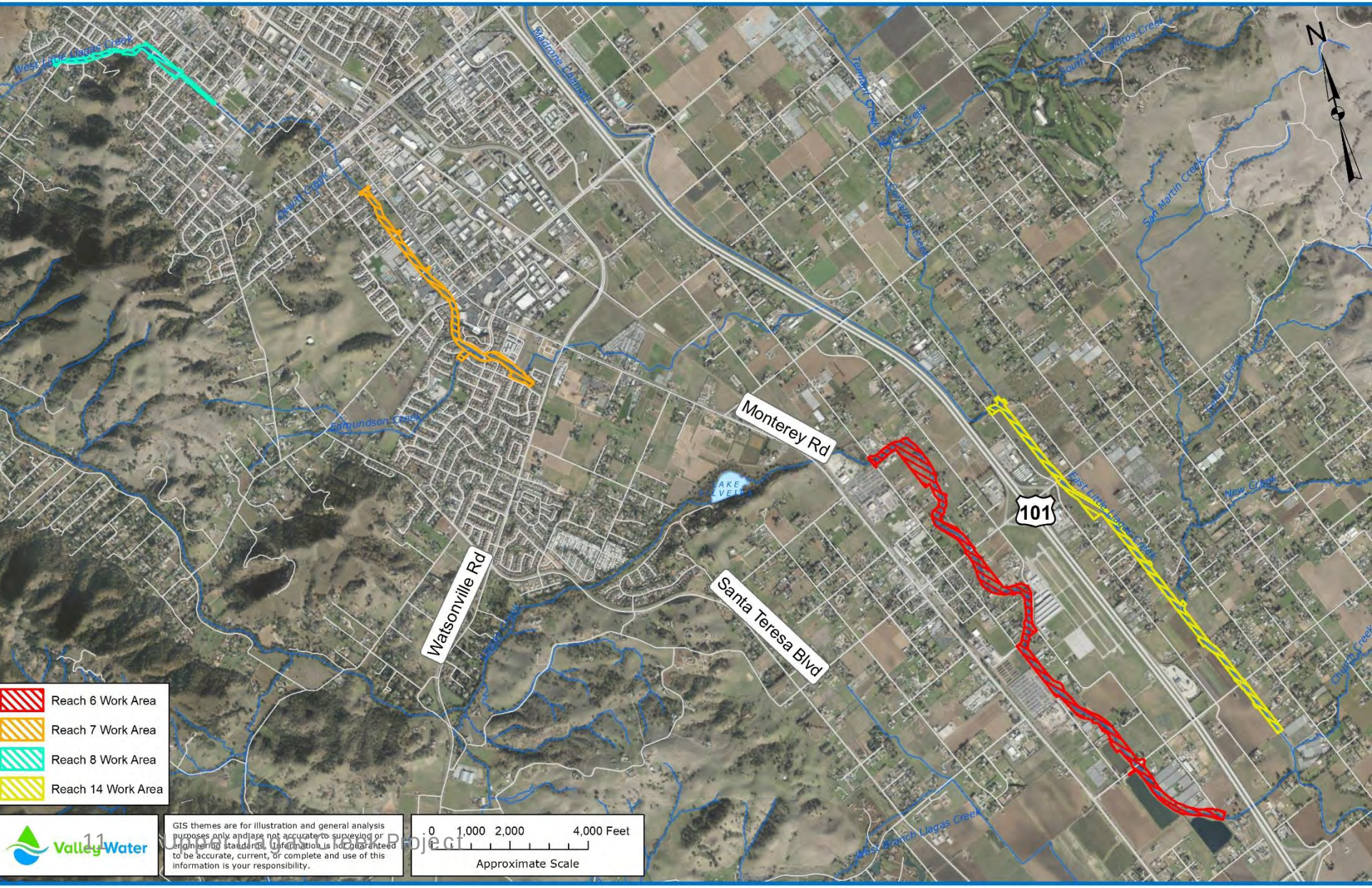
# Phase 2a Construction 2021 - 2023

Tunnel and culvert alignment



# Phase 2b Construction

Schedule to be determined



# Lake Silveira Compensatory Mitigation

Compensatory Mitigation for Project Impacts to state and federal waters

# Lake Silveira

## Mitigation plan

REMOVAL OF CONCRETE WALL

MAINTENANCE ROAD

FILL SLOPE

REACH 7a
LAKE SILVEIRA

HISTORIC LLAGAS CREEK CHANNEL

ISLAND

OPEN WATER

SECTION A
(FIGURE 5)

REACH 7a
LAKE SILVEIRA

SOUTHEAST PLANTING AREA

LAKE OUTLET CHANNEL

NEW LAKE OUTLET STRUCTURE
(~100' SOUTH OF EXISTING OUTLET)

LAKE INLET CHANNEL

FLOW-SPLIT STRUCTURE

PLANTING LEGEND

- FOREST
- SYCAMORE FOREST
- UNDERSTORY FOREST
- WILLOW FOREST
- WETLAND MARSH (~4.6 ACRES)
- TURTLE BASKING LOG

N
0 110 220 440
Feet

# Lake Silveira Construction

Construction began May 1, 2020


# Lake Silveira 2022

Establishment and operation of the wetlands

Santa Clara Valley Water District