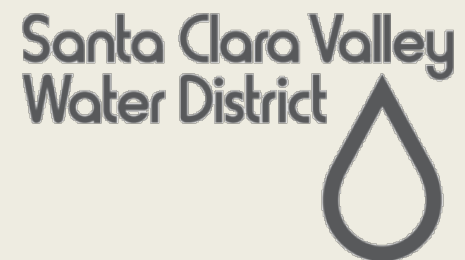


# Issues Facing the District's Imported Water Supplies and the Delta Ecosystem

SCVWD Board Meeting  
August 22, 2017



# The Delta serves important functions for the State, Delta communities, fish and wildlife, and Silicon Valley



- ❖ Conveyance pathway for State's and Silicon Valley's water supplies
- ❖ Critical infrastructure for the State
- ❖ Home to more than 500,000 people
- ❖ Important ecosystem for many plants and animals
- ❖ Migratory pathway for birds and fish
- ❖ Valuable agricultural production
- ❖ Recreation destination



On average, 40% of Santa Clara County's water supply is conveyed through the Delta by the SWP and CVP



### Shasta Lake

Federal Central Valley Project (CVP)



### Lake Oroville

State Water Project (SWP)

### Hetch Hetchy

San Francisco



Sacramento-San  
Joaquin  
River Delta

## Our water sources...

### 55% District imported water

- 40% through Delta to replenish groundwater and supply water to drinking water treatment plants
- 15% from Hetch Hetchy system

### 40% local water

- natural groundwater
- from reservoirs to groundwater
- from reservoirs to drinking water treatment plants

### 5% recycled water

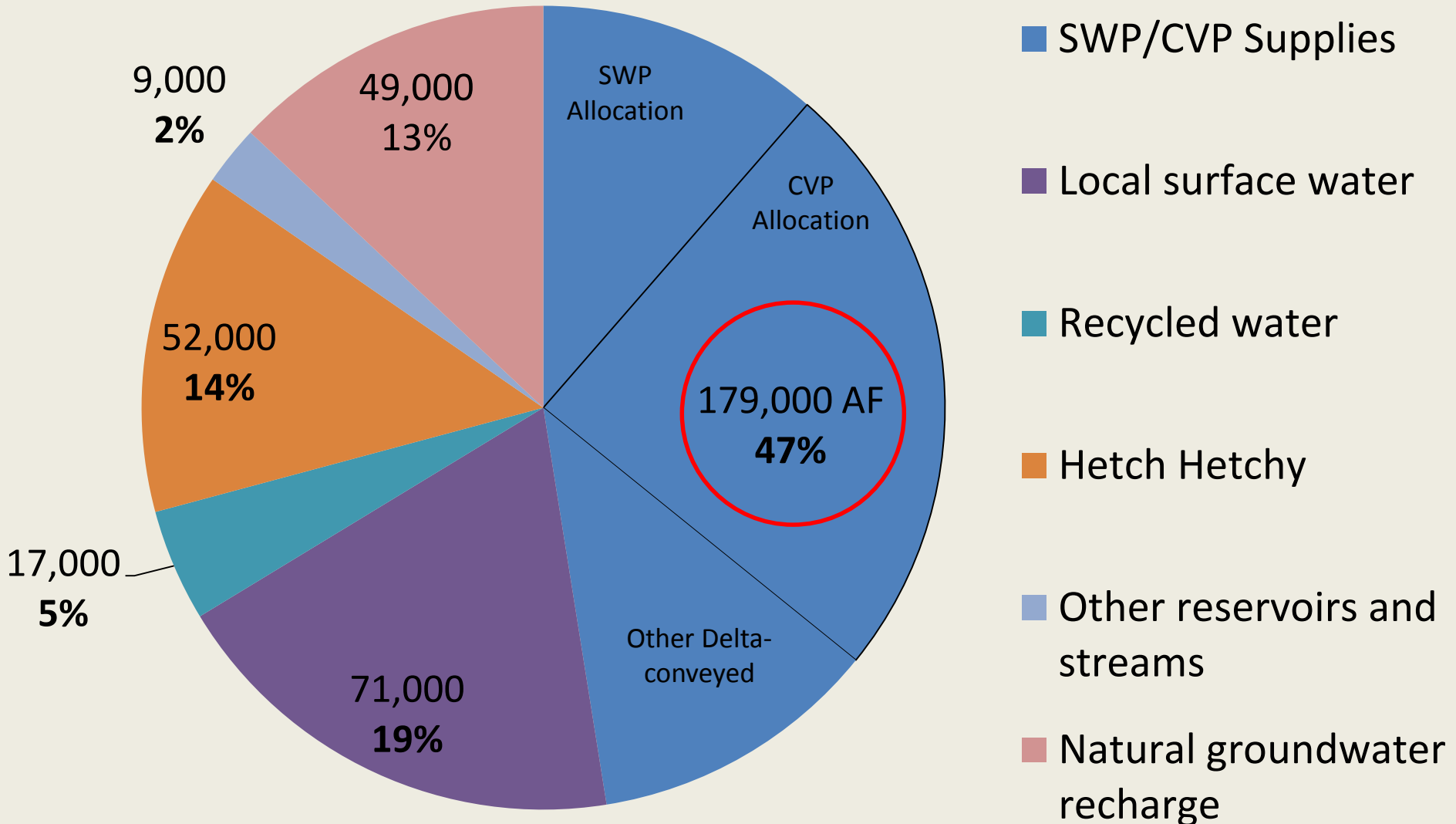
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**100% TOTAL SUPPLIES**

*Based on average values from 2010 to 2014.*

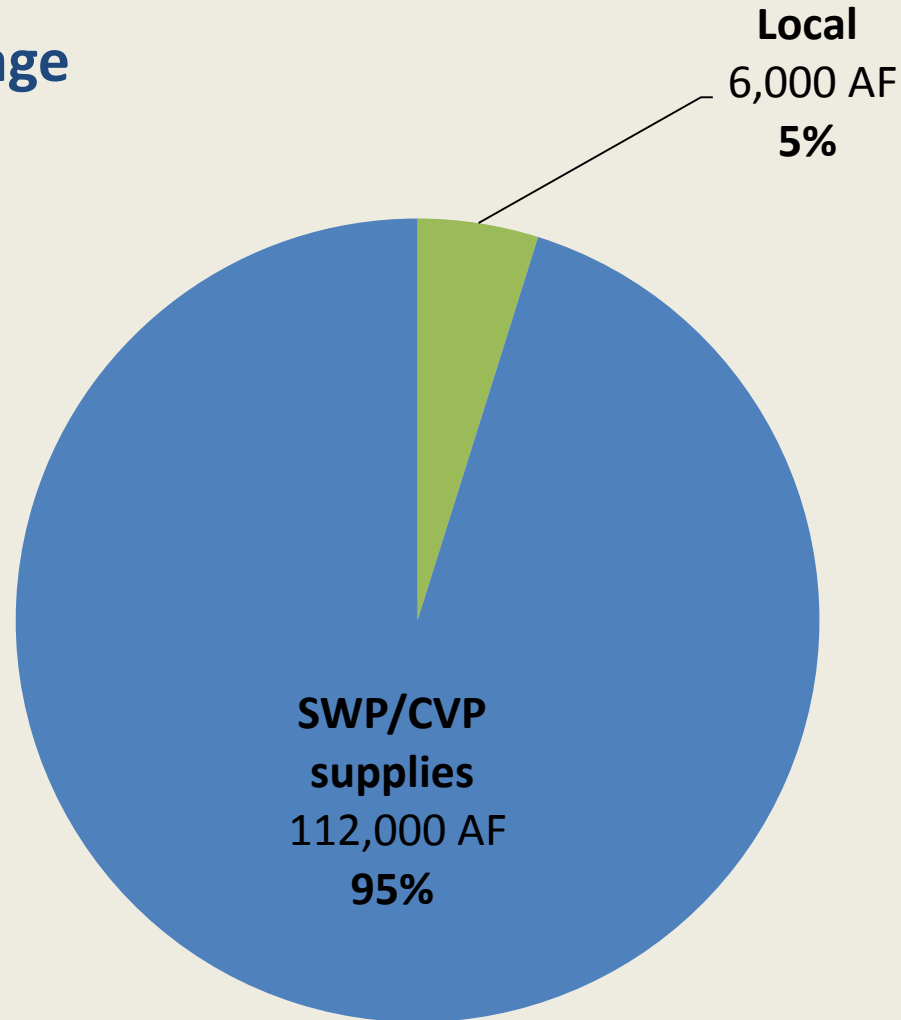
# Santa Clara County is even more reliant on SWP/CVP water supplies during droughts

**Average water supplies for Santa Clara County (2007-2015)**



# SWP/CVP water supplies provide the majority of water for the District's three drinking water treatment plants

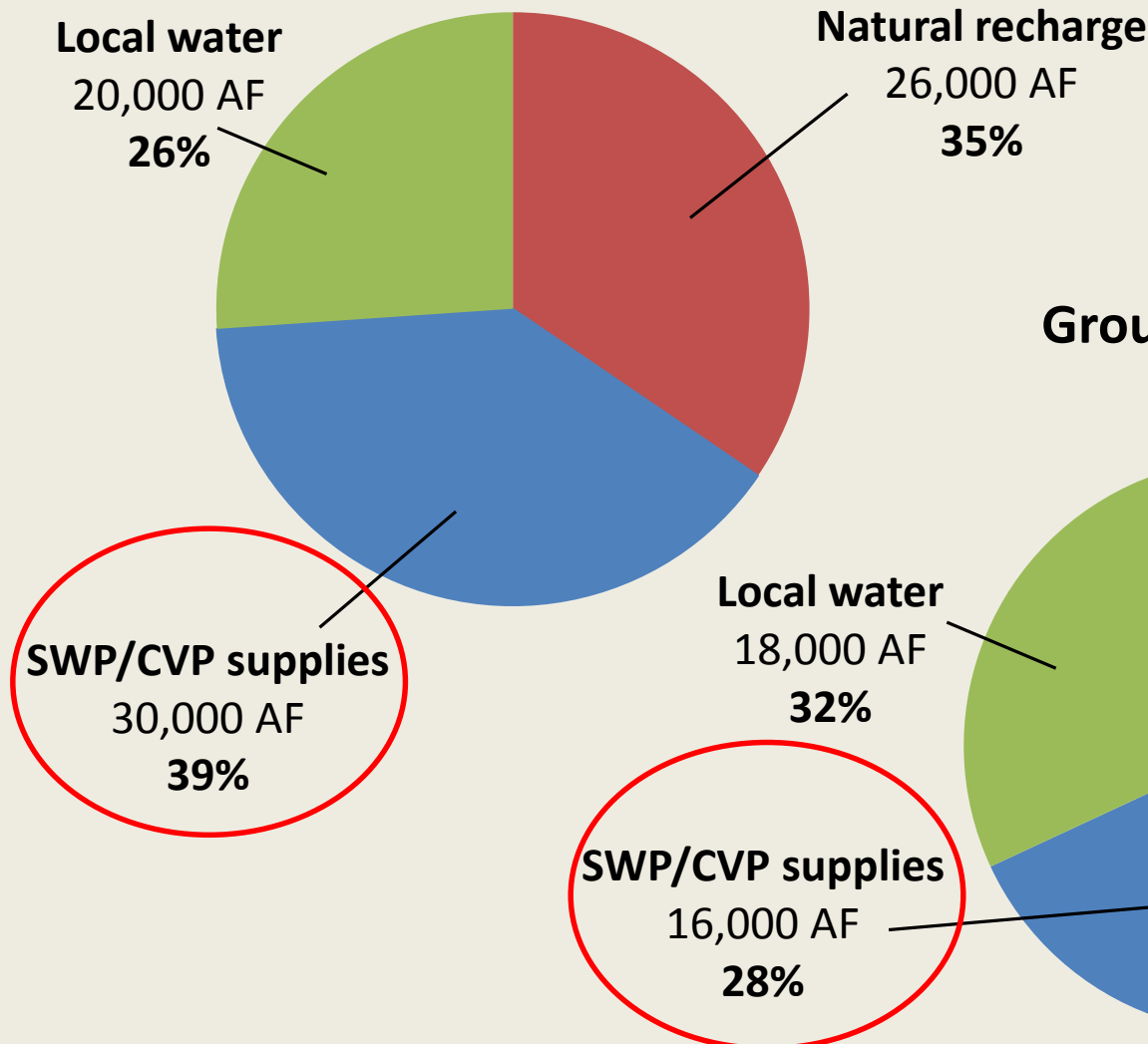
**2007 – 2015 average**



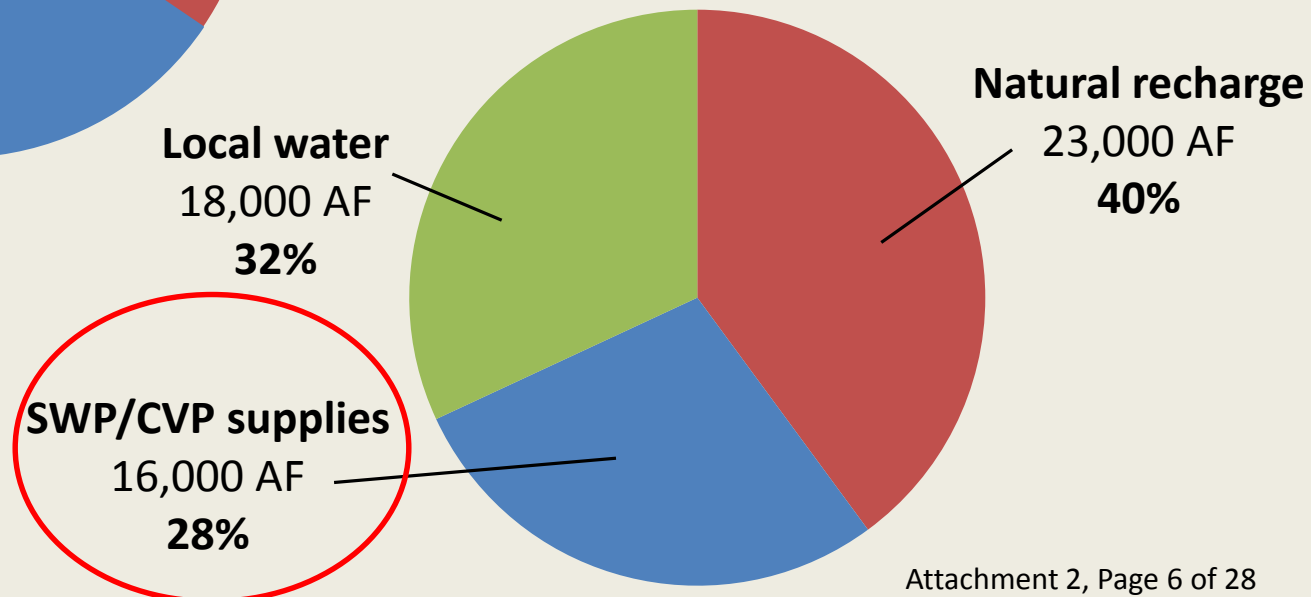
SWP/CVP water supplies are also critical to County's groundwater, refilling our groundwater basins to ensure sustainable supplies

## Groundwater replenishment in North County

2007 – 2015 average



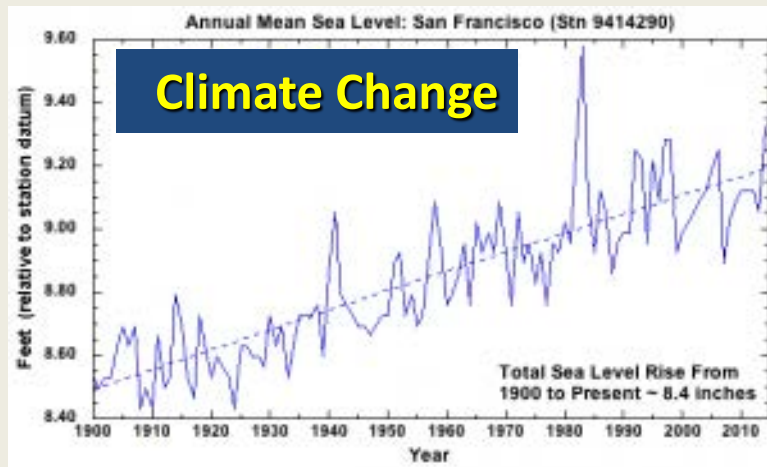
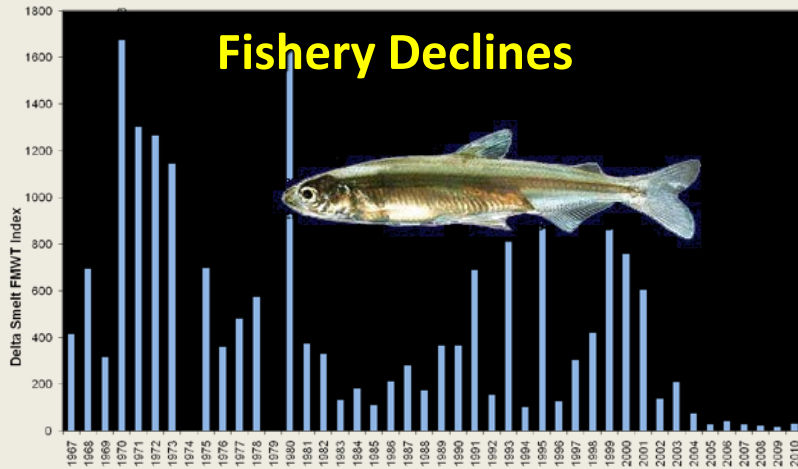
## Groundwater replenishment in South County



# Experts agree that status quo is not sustainable for water supplies, including Santa Clara County's, or the Delta ecosystem

- ❖ Delta Lead Scientists say,  
*"The current arrangement...is unsustainable, as evidenced by both declines in native species and dissatisfaction with water deliveries"*
- ❖ Public Policy Institute of California says,  
*"...business as usual is unsustainable for current stakeholders"*
- ❖ Governor's Blue Ribbon Task Force says,  
*"The current condition and uses of the Delta are unsustainable"*

# There are multiple risks & challenges facing the Delta which could result in negative impacts to Santa Clara County

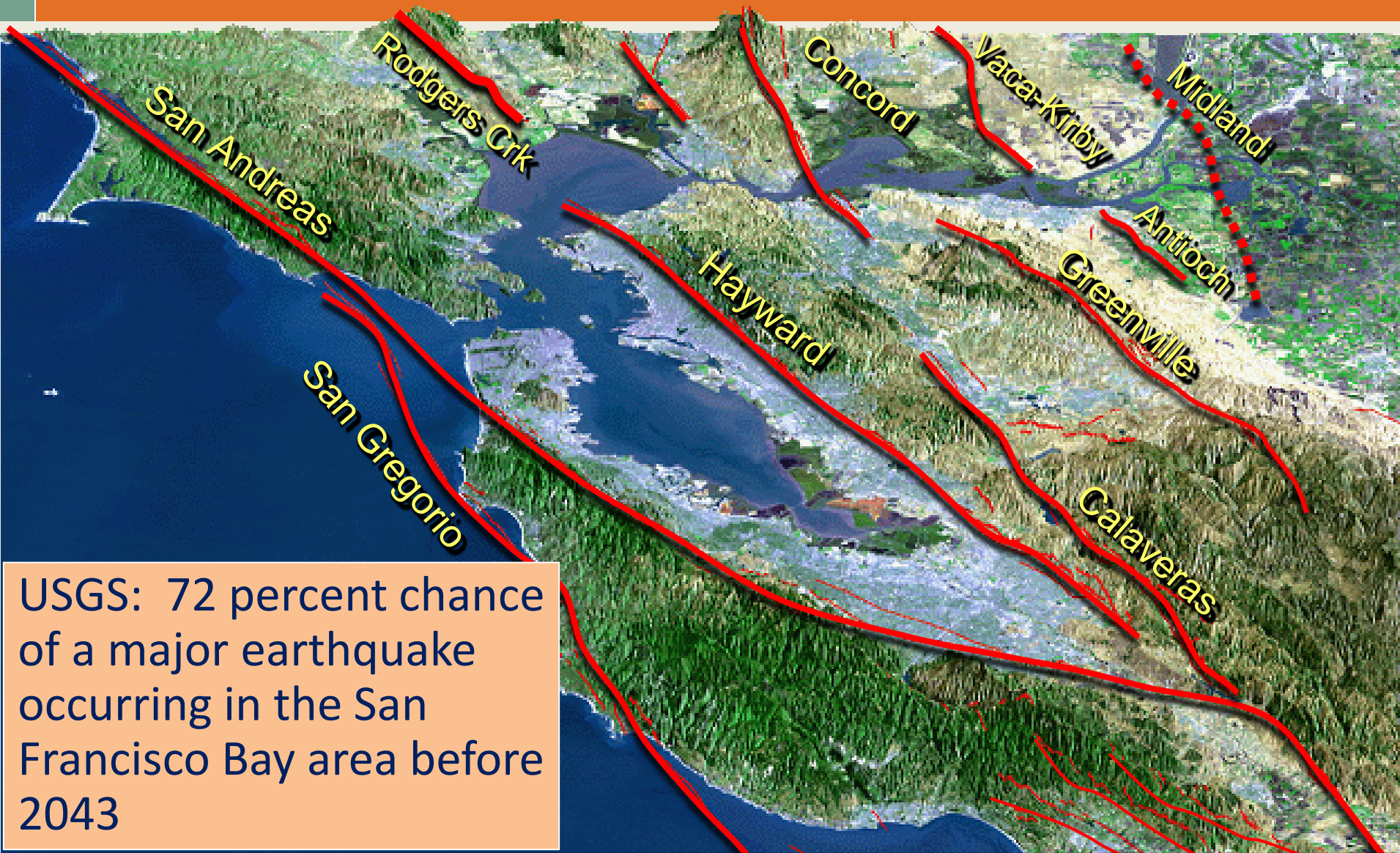




# Santa Clara County's SWP/CVP water supplies rely on the Delta's aging levees to keep them clean and flowing



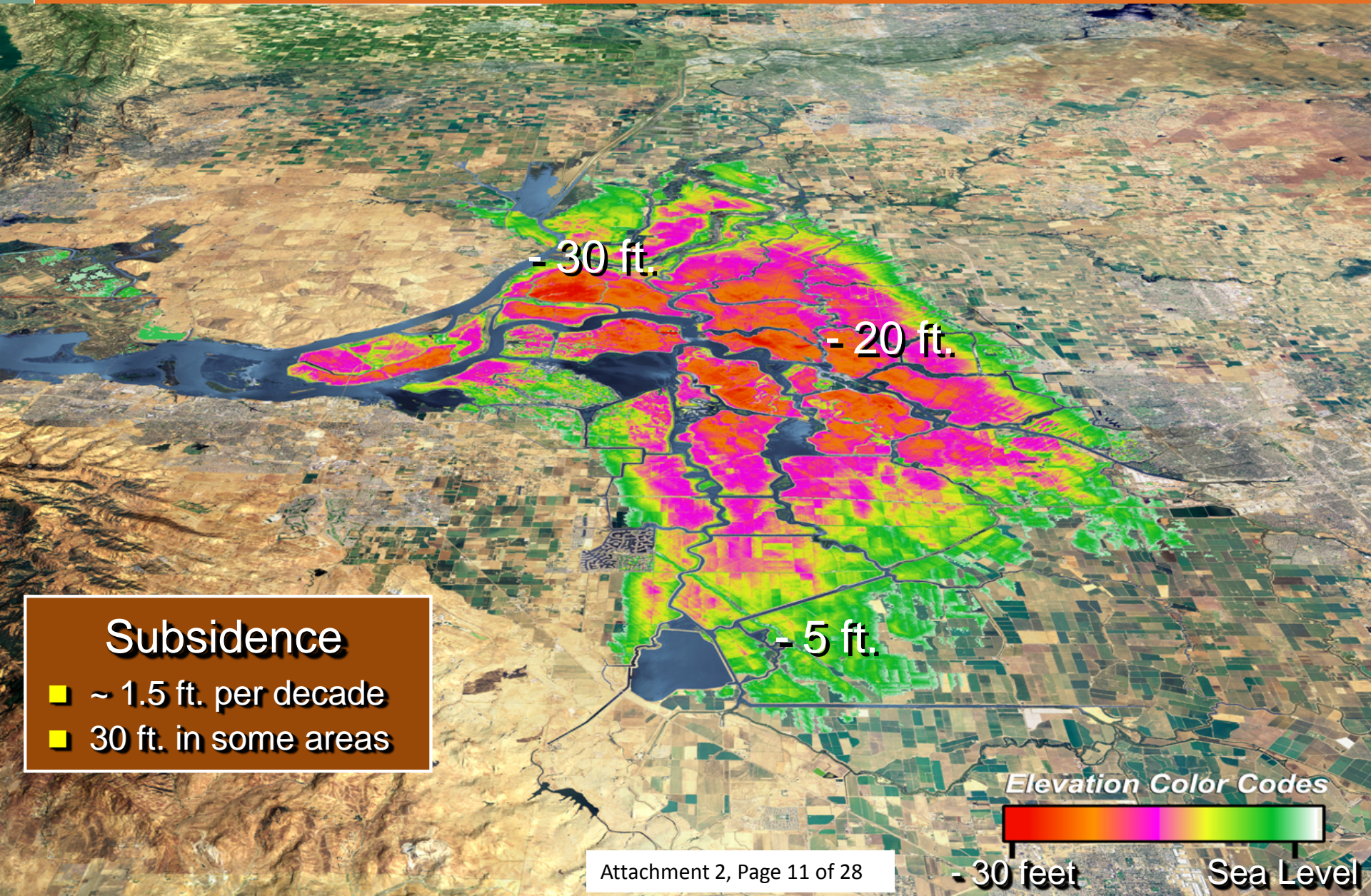
High probability of earthquake could lead to multiple levee failures, cutting off Santa Clara County's SWP/CVP water supplies



USGS: 72 percent chance of a major earthquake occurring in the San Francisco Bay area before 2043

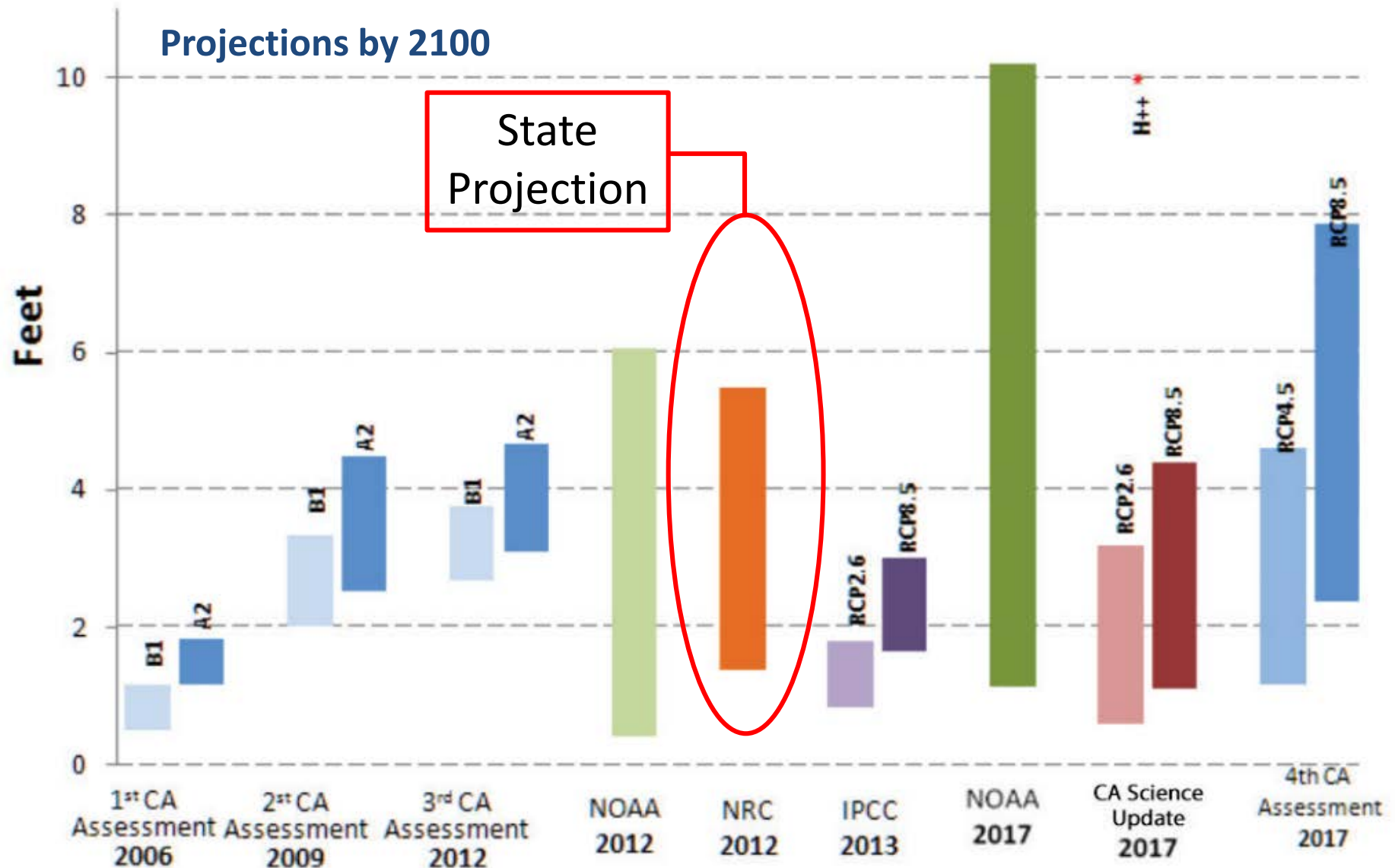


# Land subsidence due to farming of peat soils puts additional pressure on levees that protect Santa Clara County's water supplies





# The Delta's aging levees will have difficulty holding back rising sea levels



Source: California Ocean Protection Council Science Advisory Team (April 2017), "Rising Seas in California: An Update on Sea-level Rise Science." Attachment 2, Page 12 of 28



# Delta levees have failed and are likely to fail in the future

Public Policy Institute of CA - 90% probability half islands flood next 50 years  
Dept. of Water Resources – 50% chance 20+ islands fail due to quake by 2030

High Risk Zone

Sacramento

Bay  
Area

Stockton

162 Delta levee breaches have occurred in past century



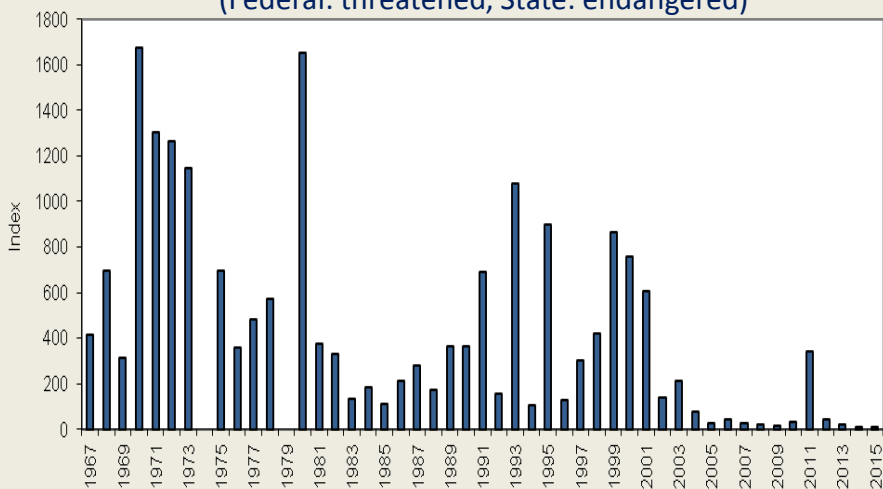
# Consequence of levee failures: A large portion of Santa Clara County's water supplies can't be delivered or too salty



# County's water supplies are affected by continued declines in threatened and endangered fish populations

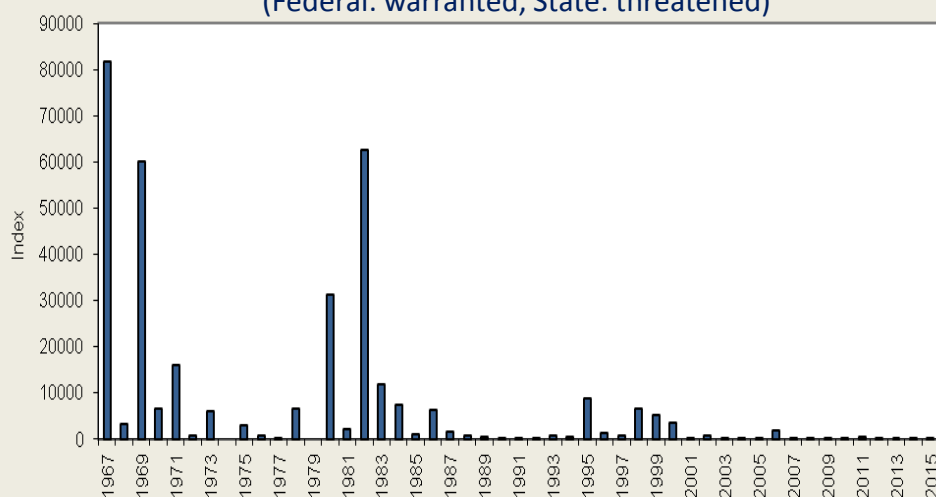
## Delta Smelt

(Federal: threatened, State: endangered)



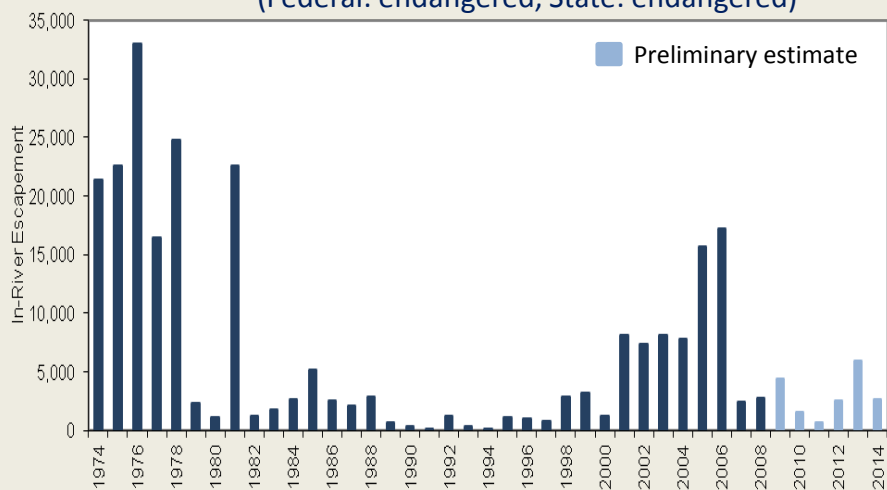
## Longfin Smelt

(Federal: warranted, State: threatened)



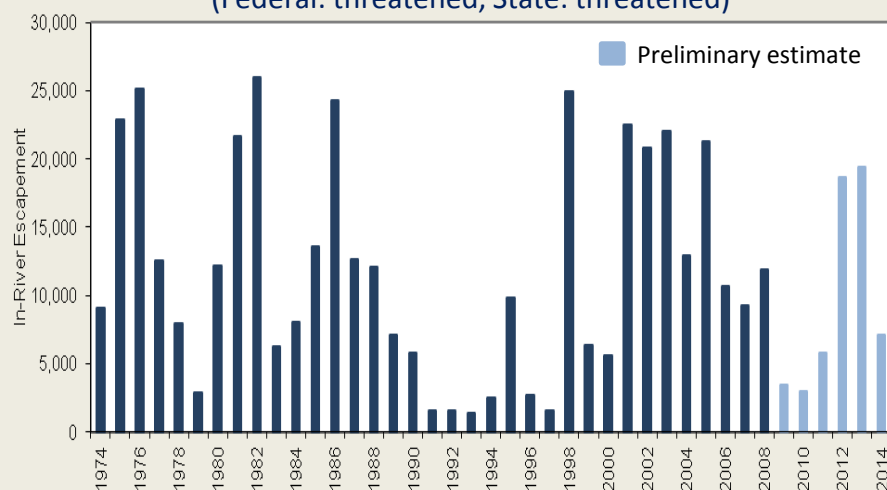
## Winter-Run Chinook Salmon

(Federal: endangered, State: endangered)



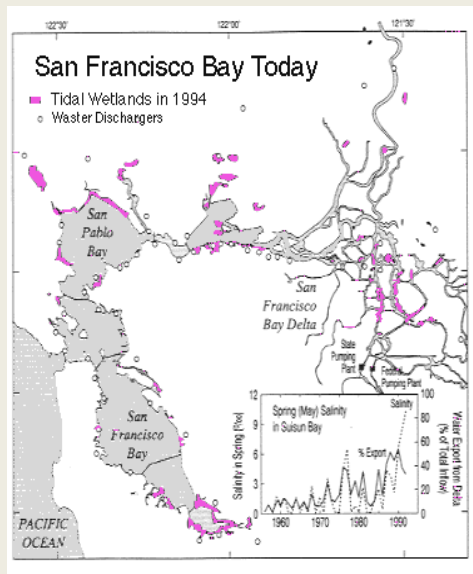
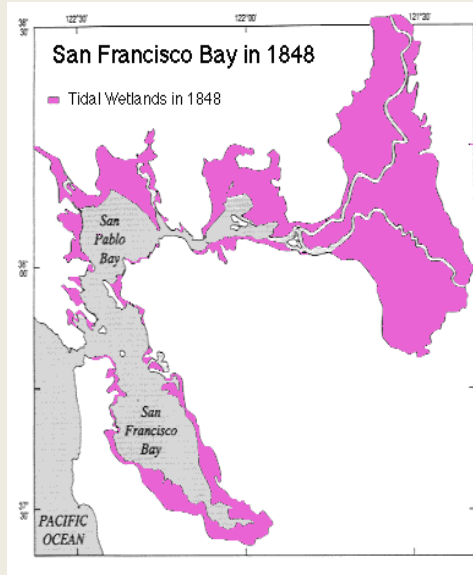
## Spring-Run Chinook Salmon

(Federal: threatened, State: threatened)





# Many factors, including water diversions, contribute to fish decline



Stressors include:

- ❖ Loss of wetlands & floodplains
- ❖ Channelization
- ❖ Water diversions
- ❖ Contaminants
- ❖ Non-native and invasive species
- ❖ Harvest
- ❖ Hatcheries
- ❖ Fish passage
- ❖ Ocean conditions



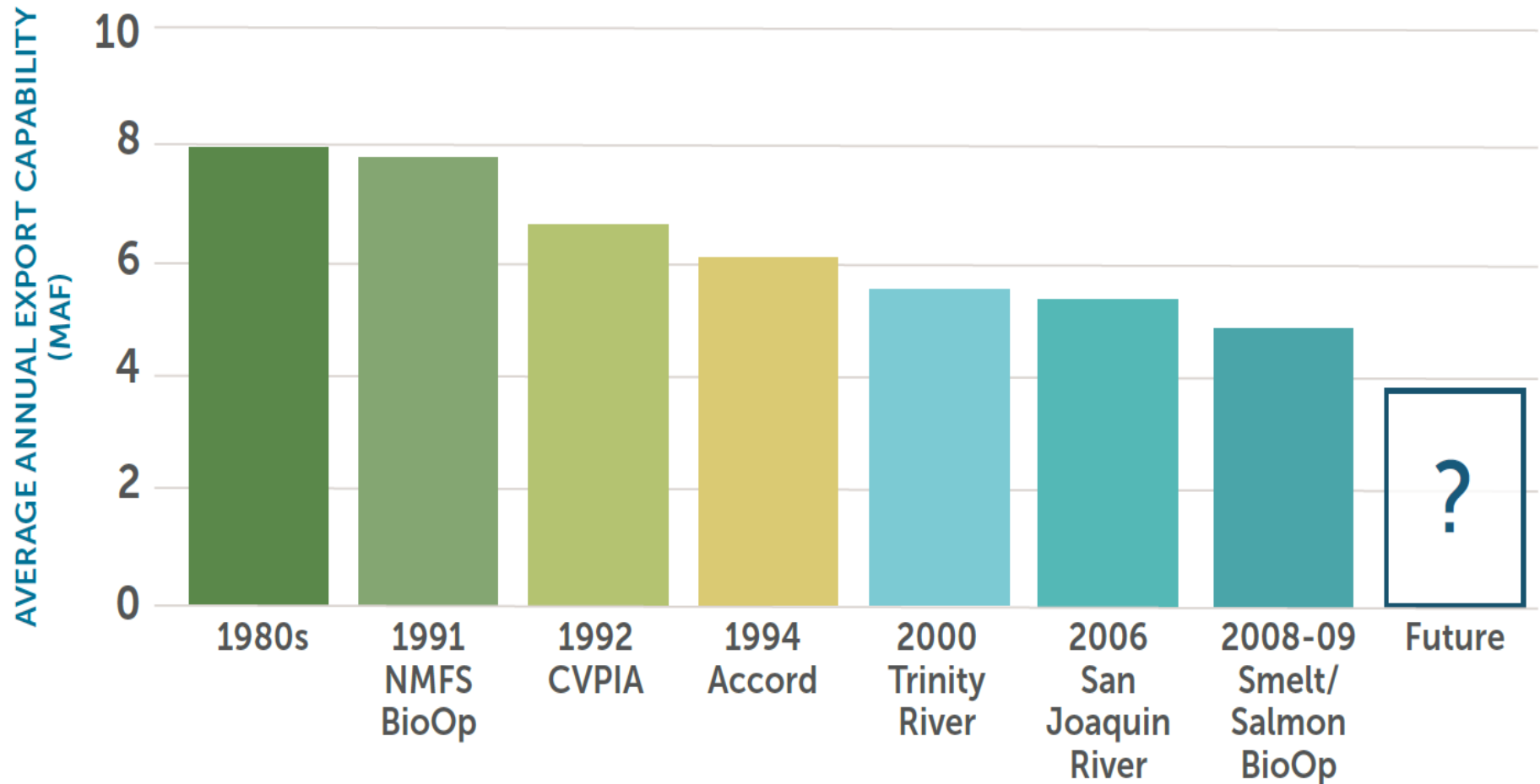
Current SWP/CVP diversions create unnatural flow patterns, trapping some fish, and potentially confusing other fish



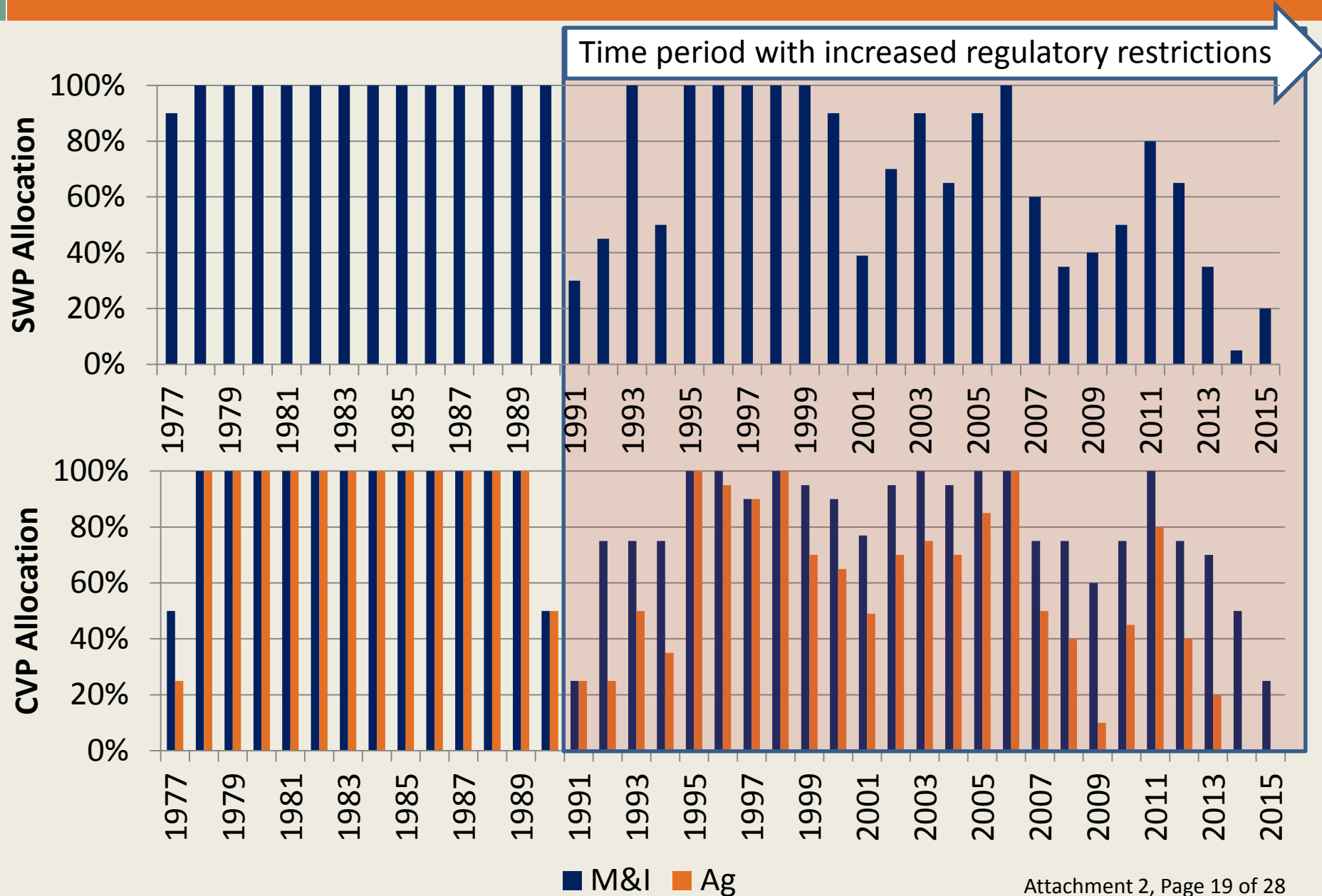
# Increasing regulatory restrictions have decreased water supplies for our District and other districts south of the Delta

## Combined SWP and CVP Export Capabilities (MAF)

### HISTORY OF REGULATORY RESTRICTIONS

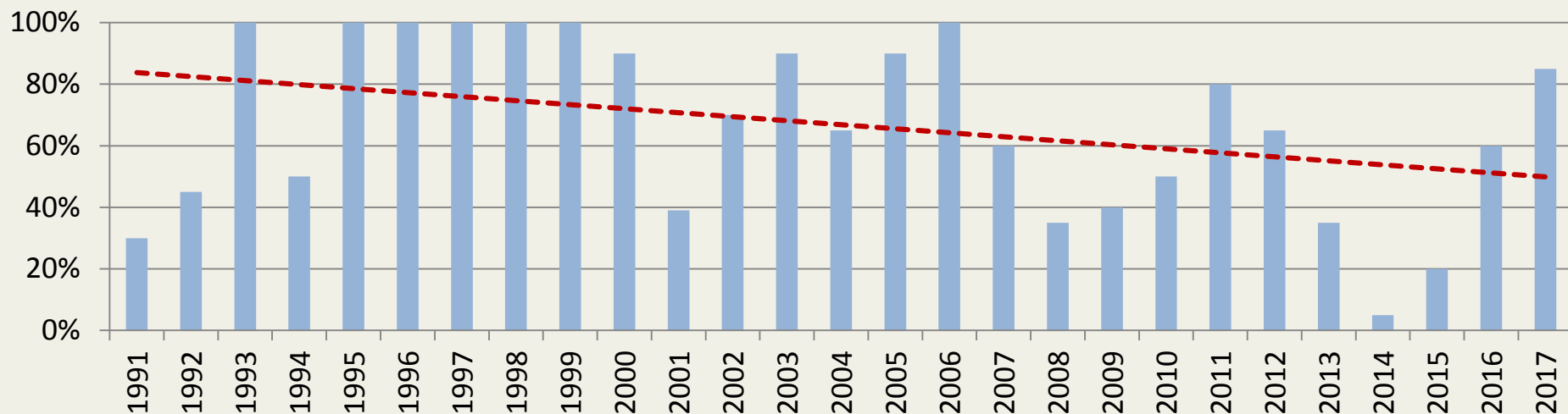


# SWP/CVP water supply allocations to Santa Clara County have decreased and fluctuated due to additional regulations

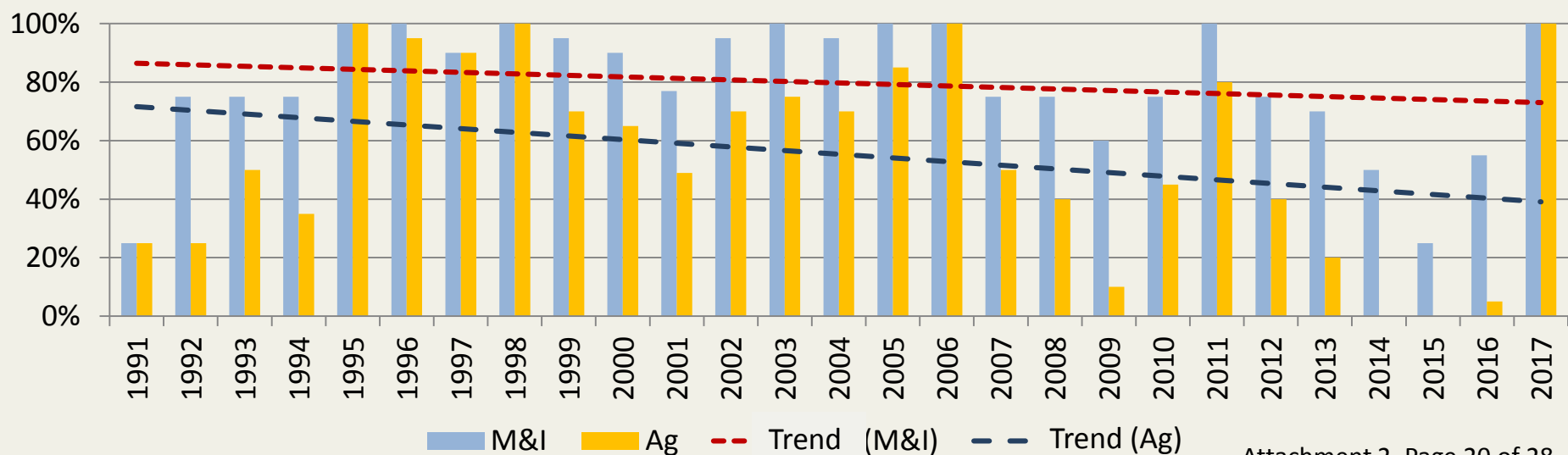


# SWP/CVP water supply allocations to Santa Clara County have decreased since additional regulations were imposed

## State Water Project

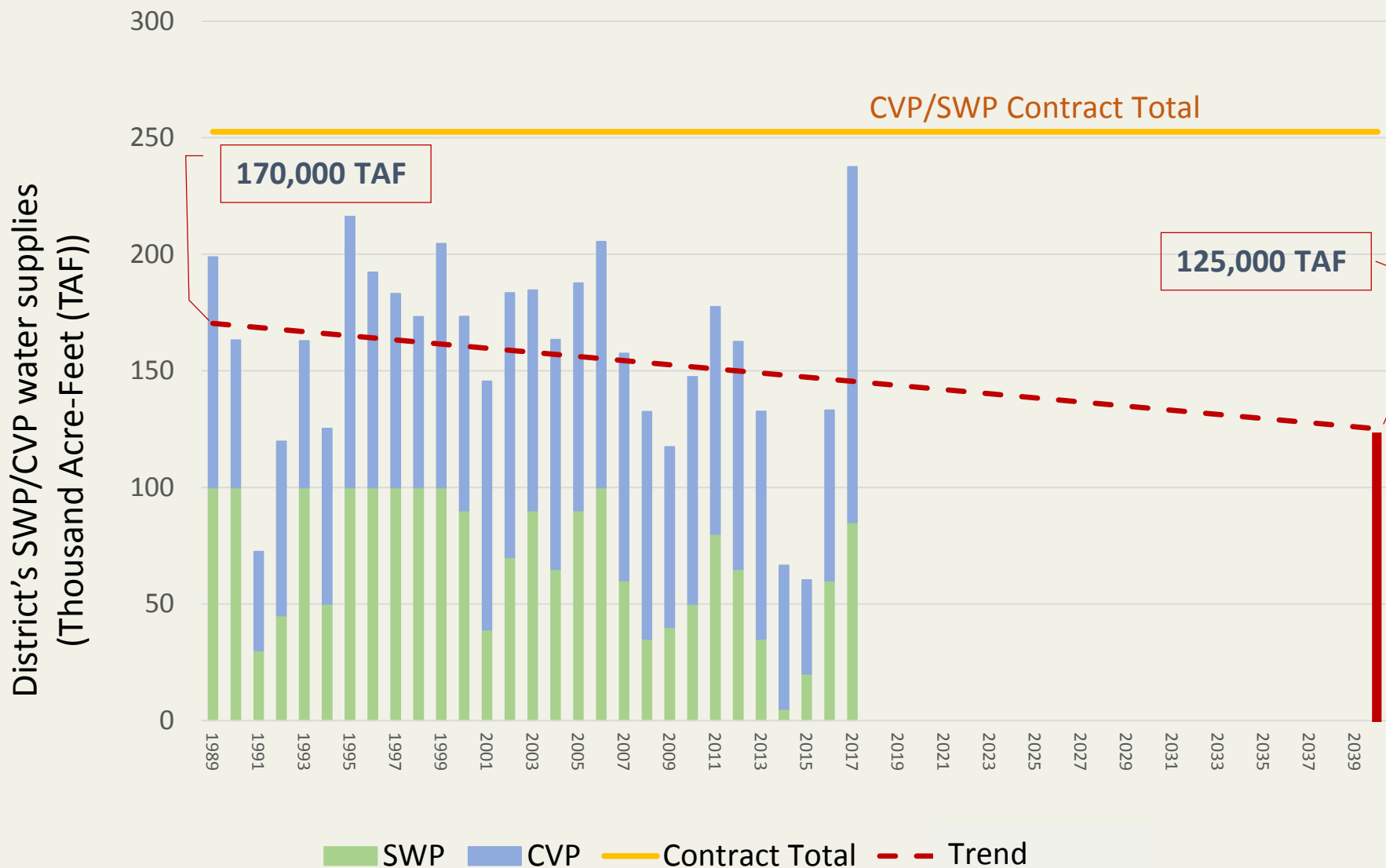


## Central Valley Project





# The District's imported water supplies have declined overtime and can be expected to decline more in the future



New regulations currently being considered:

- ❖ **Water Quality Control Plan Update**

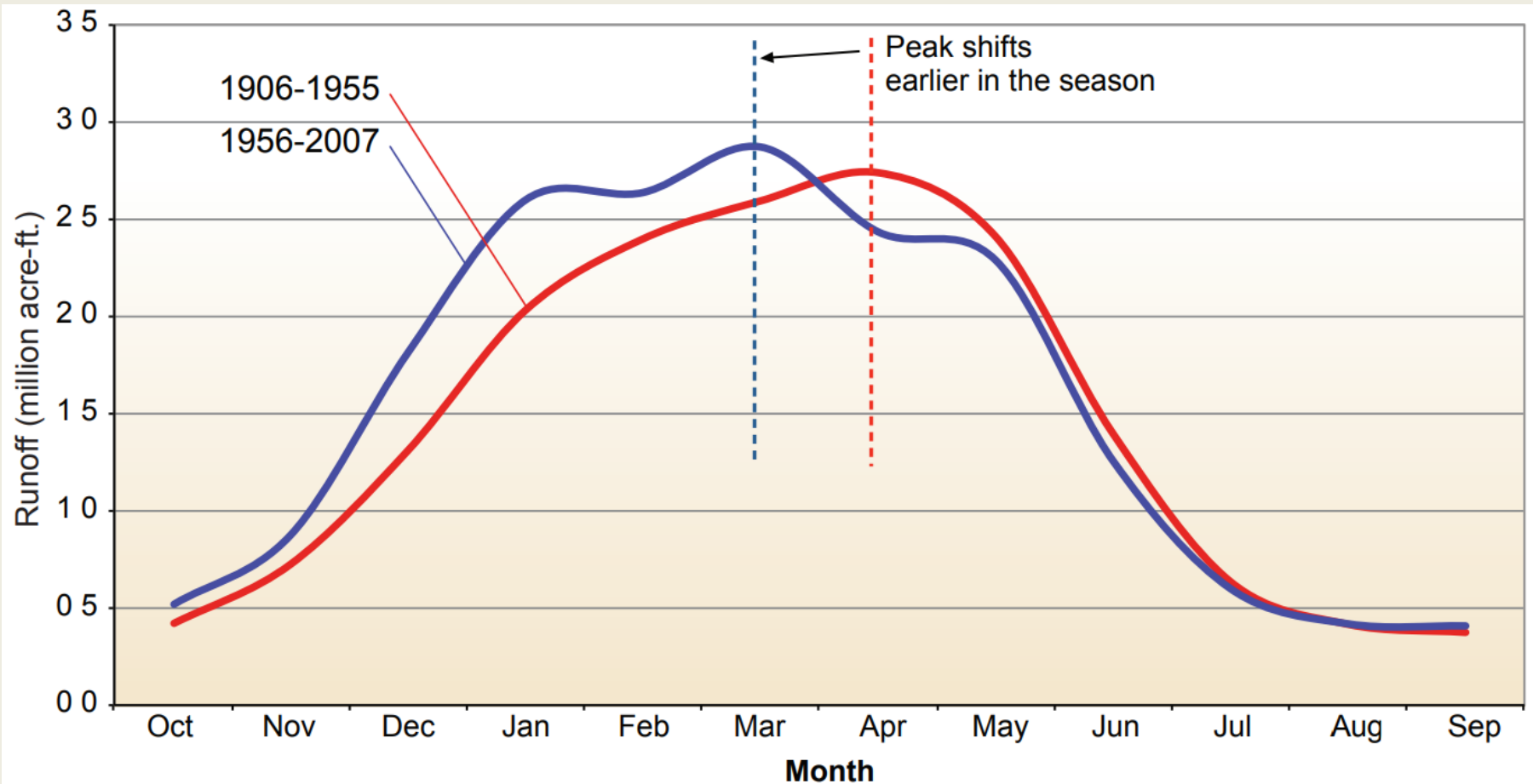
- ❖ Phase 1: may reduce San Francisco water supplies by 137 TAF in a six-year severe drought, may add pressure on District's supplies

- ❖ Phase 2 Update: may impose similar reductions on the District's SWP/CVP supplies

- ❖ **Reconsultation on the Biological Opinions**

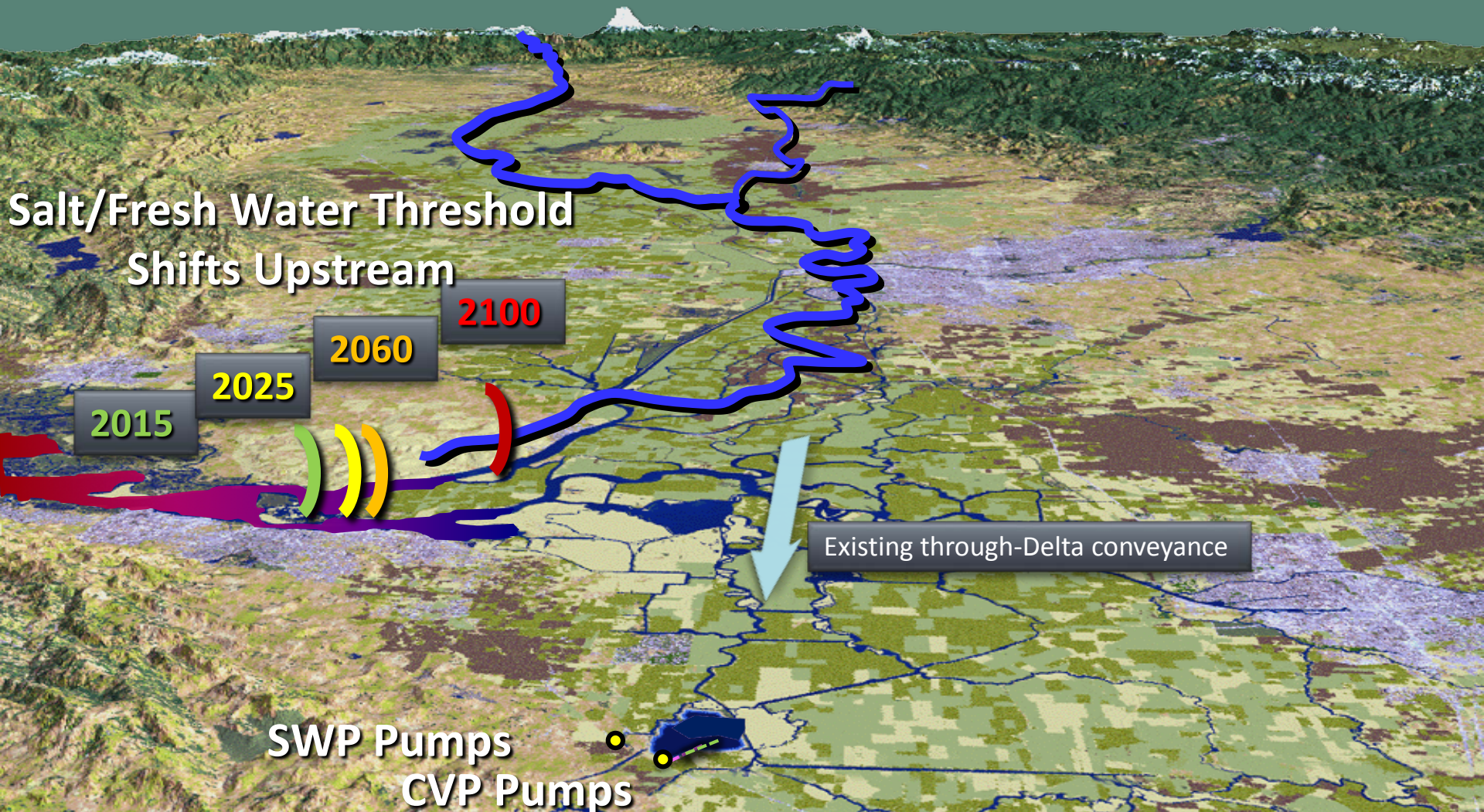
- ❖ **Update to Sacramento River temperature management requirements**

## Monthly Average Runoff of Sacramento River System





Sea level rise will lead to increased salt water intrusion into the Delta, requiring more fresh water to repel it, decreasing County's supplies





## ❖ **Delta Reform Act: Reduce Reliance on the Delta**

- District's 2012 Water Master Plan reduces County's reliance on Delta from 40% to 30%
  - Nearly 100,000 AFY in conservation savings by 2030
  - Up to 24,000 AFY in potable reuse by 2025
- District's 2017 Water Supply Master Plan will likely include:
  - Additional water conservation savings
  - Rainwater harvesting
  - Stormwater capture

# Current activities at the State level are addressing some Delta risks and challenges, but risks remain

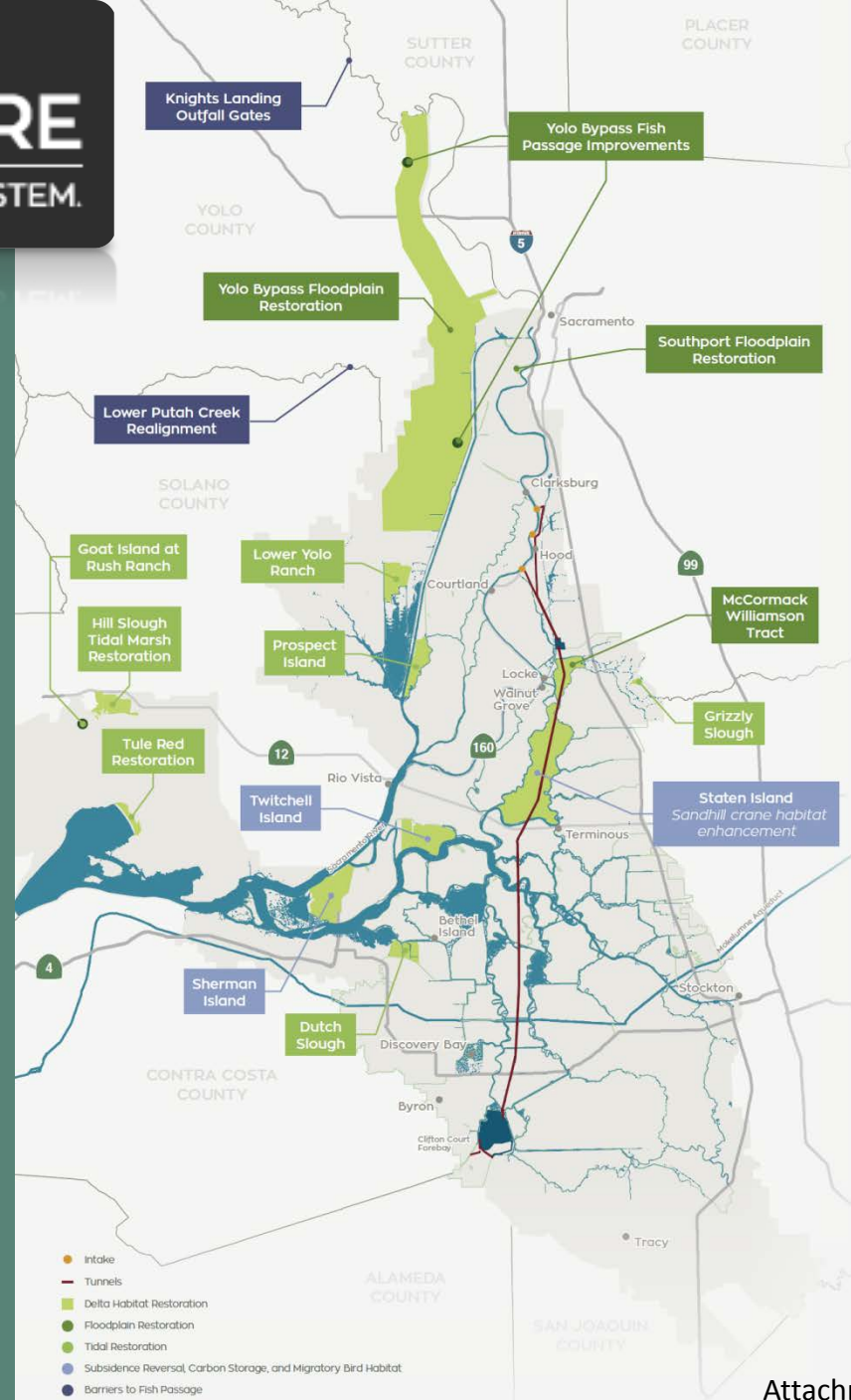
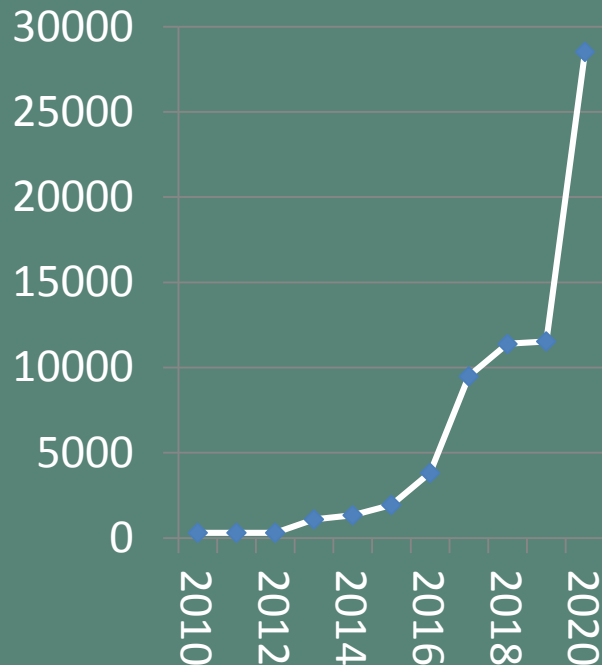
- ❖ Delta Reform Act
  - Reduce Reliance on the Delta
- ❖ California EcoRestore
  - At least 30,000 acres of habitat restoration by 2020
- ❖ 2016 Delta Smelt Resiliency Strategy
  - 13 actions to benefit Delta Smelt within 3 years
- ❖ 2017 Sacramento River Salmon Resiliency Strategy
  - 13 actions to benefit salmon by 2027
- ❖ California WaterFix
  - State's proposal to improve SWP/CVP infrastructure



# CALIFORNIA ECO RESTORE

A STRONGER DELTA ECOSYSTEM.

## Cumulative Acreage



## PRIORITY RESTORATION OBJECTIVES BREAKING GROUND BETWEEN 2015 AND 2018



- ❖ Status quo is unsustainable
- ❖ Silicon Valley's water supplies continue to be at risk
- ❖ Delta ecosystem continues to be at risk, impacting County's water supplies
- ❖ Several actions at the State and local level are occurring and should continue, but more action is needed
- ❖ Need to decide what water supply investments will ensure our community has sufficient supplies at an affordable cost into the future.