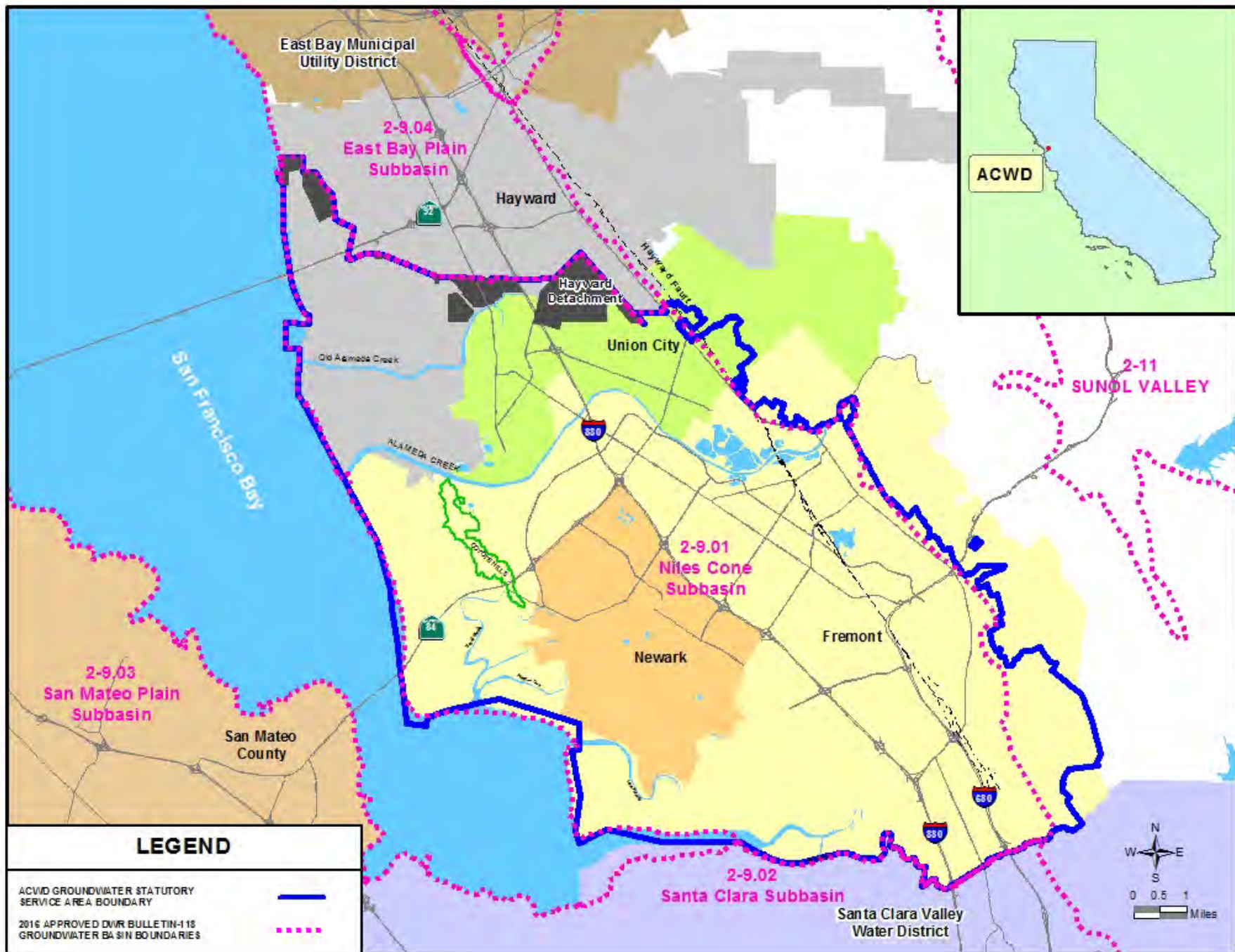




# **Alameda County Water District**

## *Niles Cone Groundwater Basin Management*

October 25, 2016



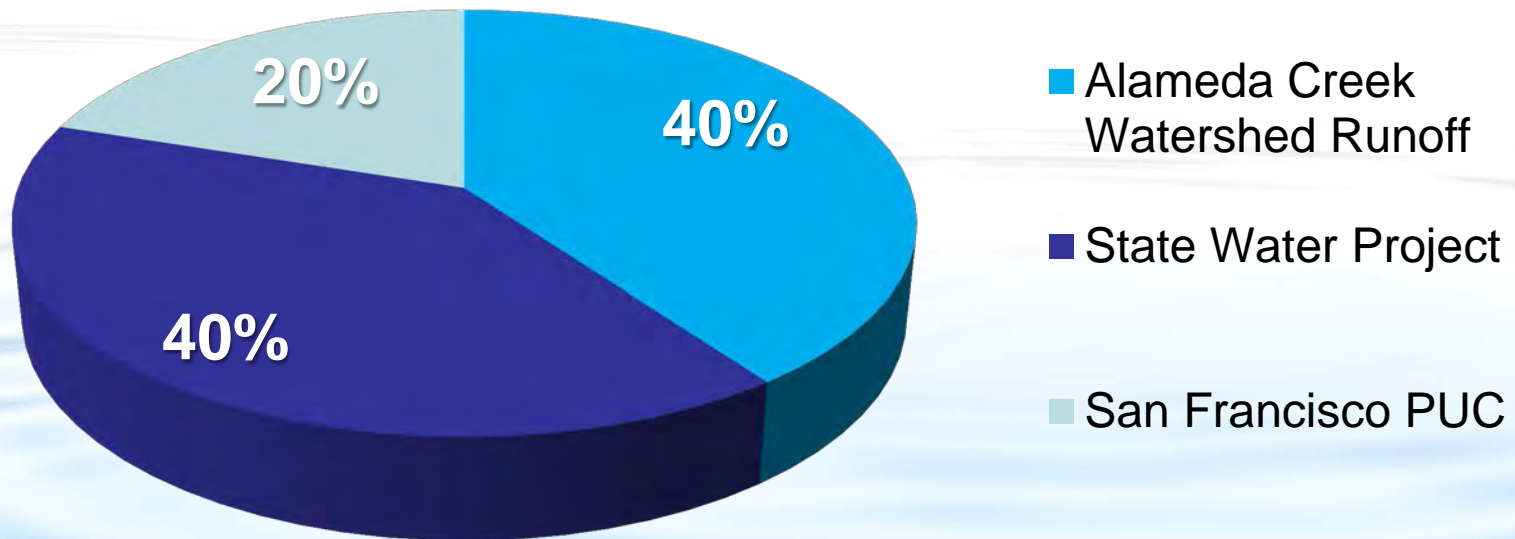
# ACWD Overview

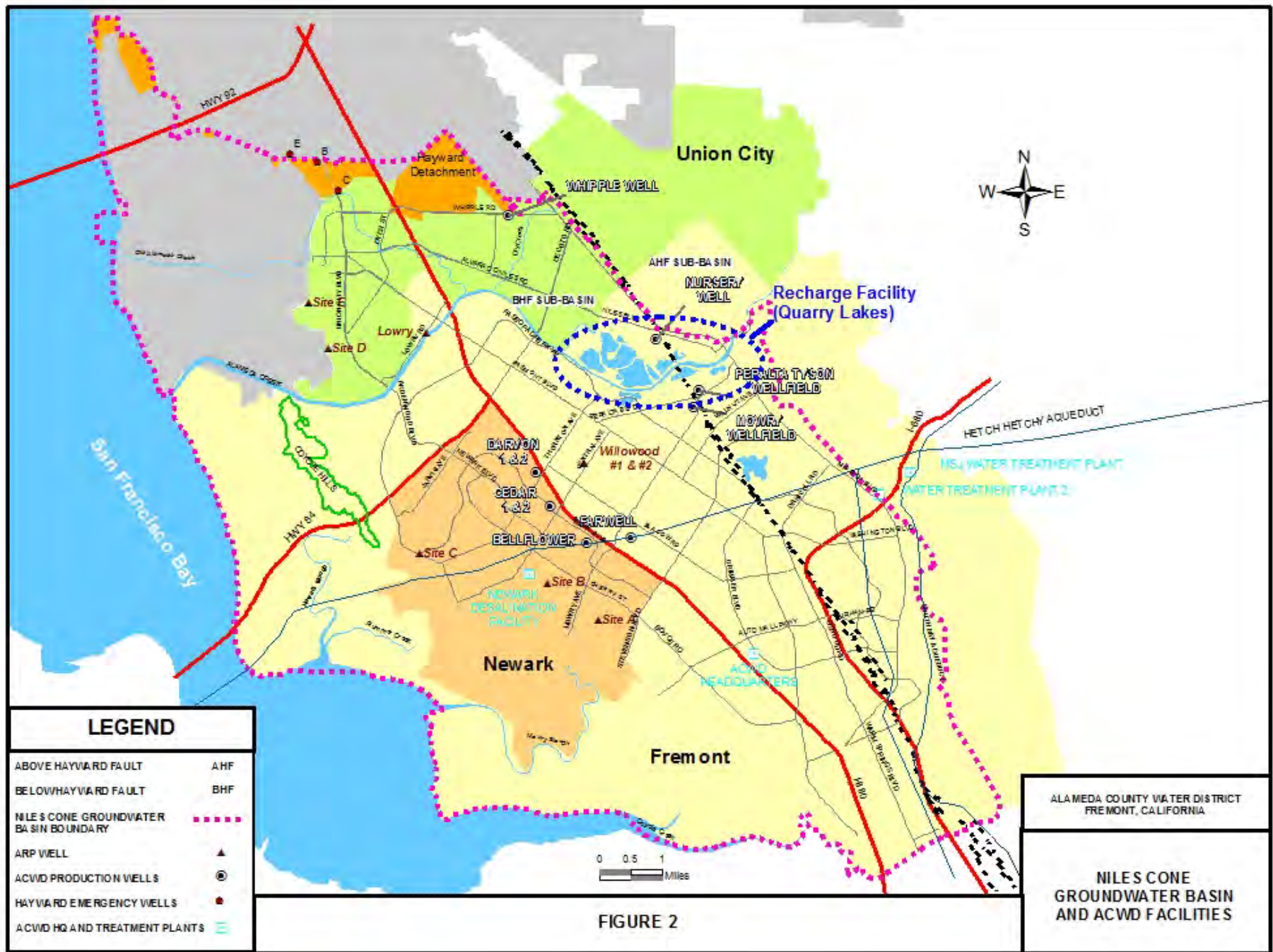


- Founded in 1914
- Serve Fremont, Newark, and Union City
- Population Served: ~347,000
- Nearly 83,000 Connections
- Elected Board: 5 Directors



# ACWD Water Supply Sources – Typical

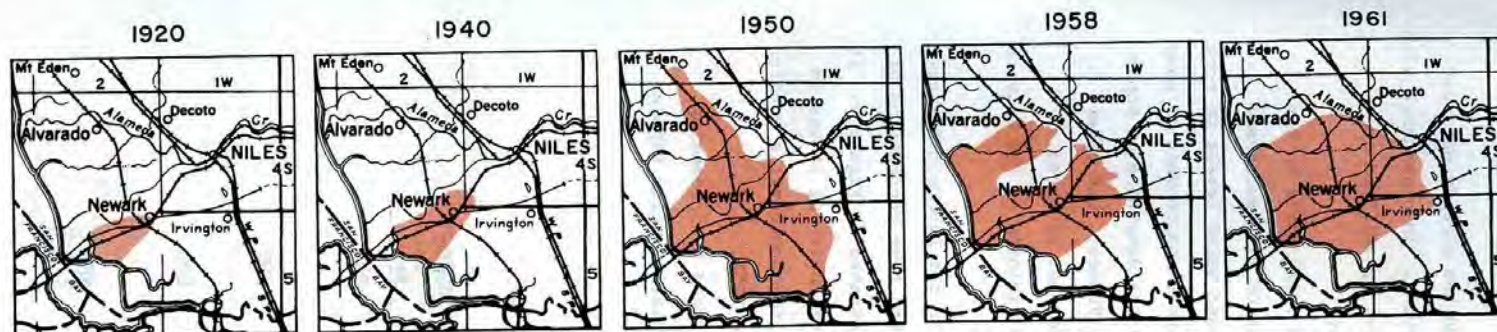




# Niles Cone Groundwater Basin: Seawater Intrusion



- Salt water intrusion observed in the 1920s
- Growing water demand from farmers, ranchers, and nearby towns
- Groundwater level dropped below sea level - landward migration of sea water
- Unregulated installation and abandonment of wells



SHALLOW GROUND WATER AQUIFER

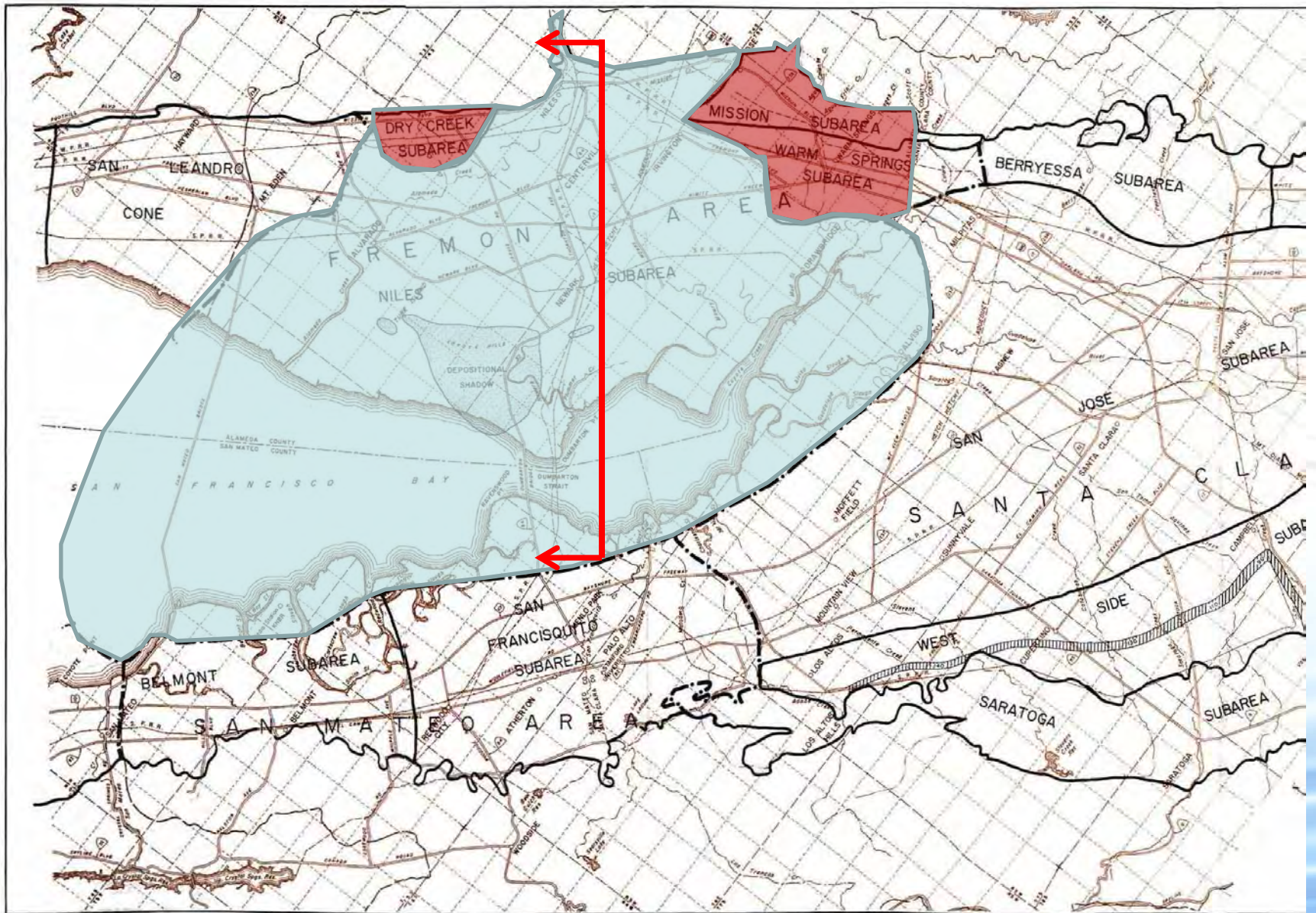


DEEP GROUND WATER AQUIFER

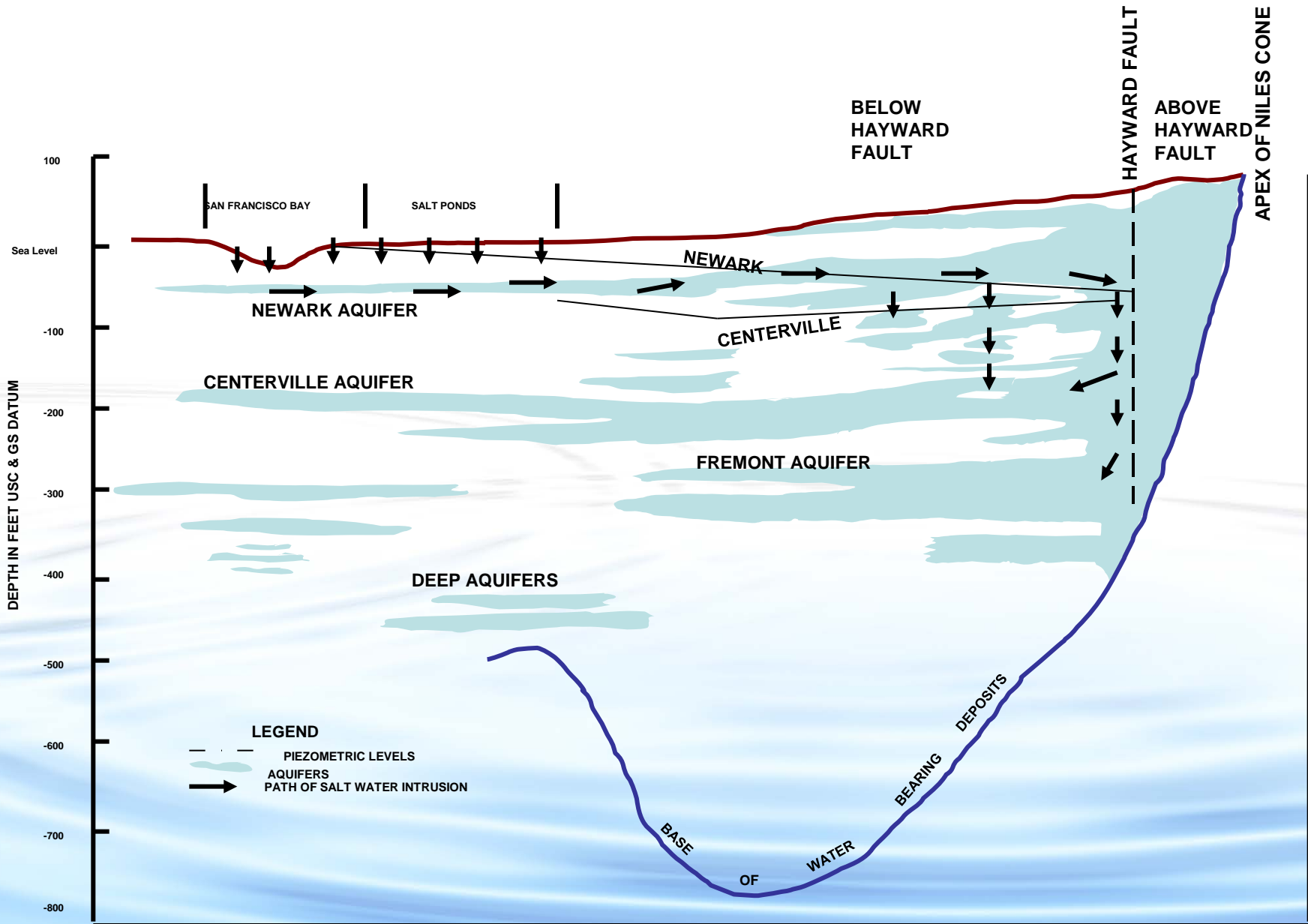
INDICATES WATER WITH CHLORIDE CONCENTRATIONS EXCEEDING 350 PPM  
 SCALE OF MILES  
 0 2 4 6 8 10 12

Figure 4.

SALT-WATER DEGRADATION OF GROUND WATER IN THE SHALLOW NEWARK AQUIFER AND DEEP CENTERVILLE AQUIFER IN THE BAY PLAIN

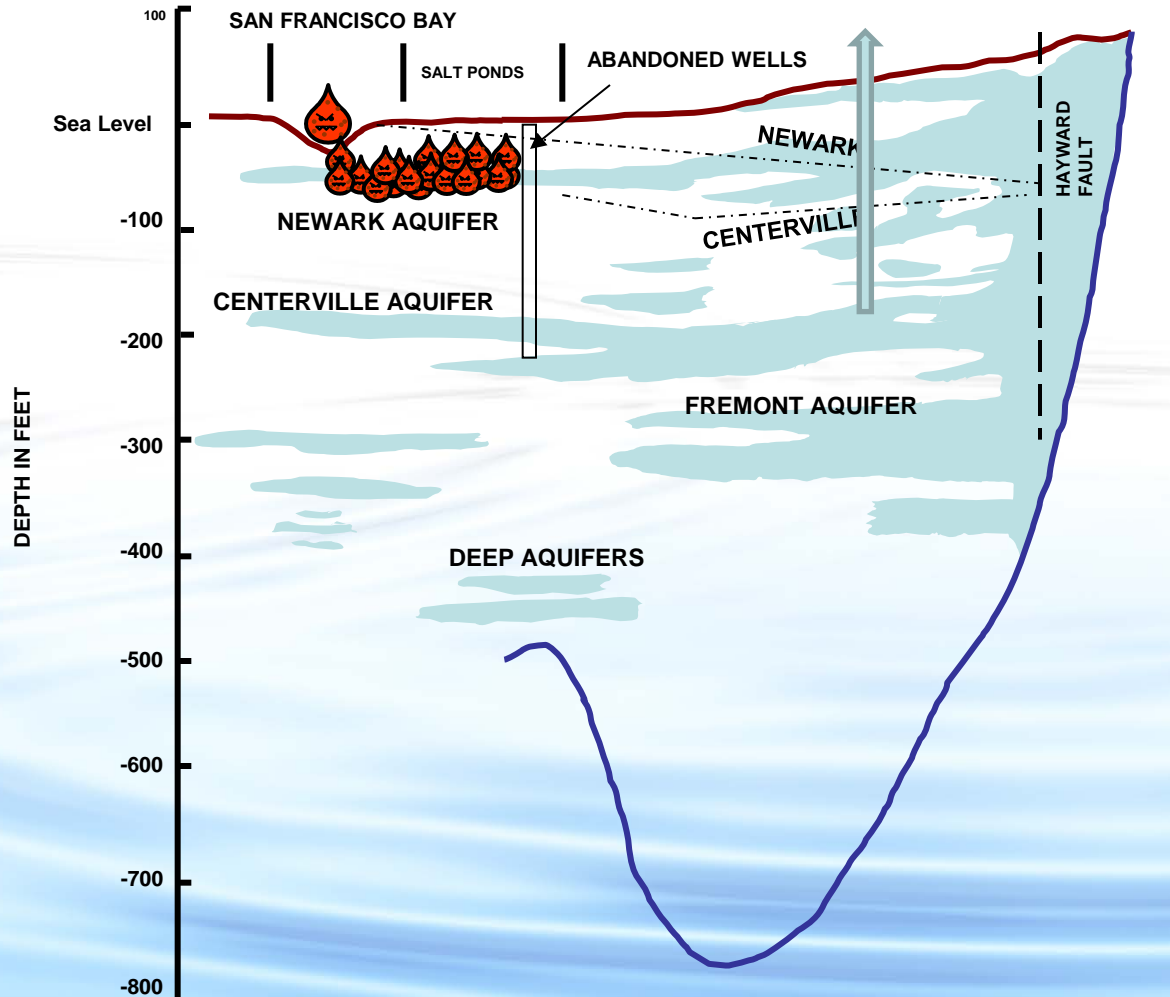




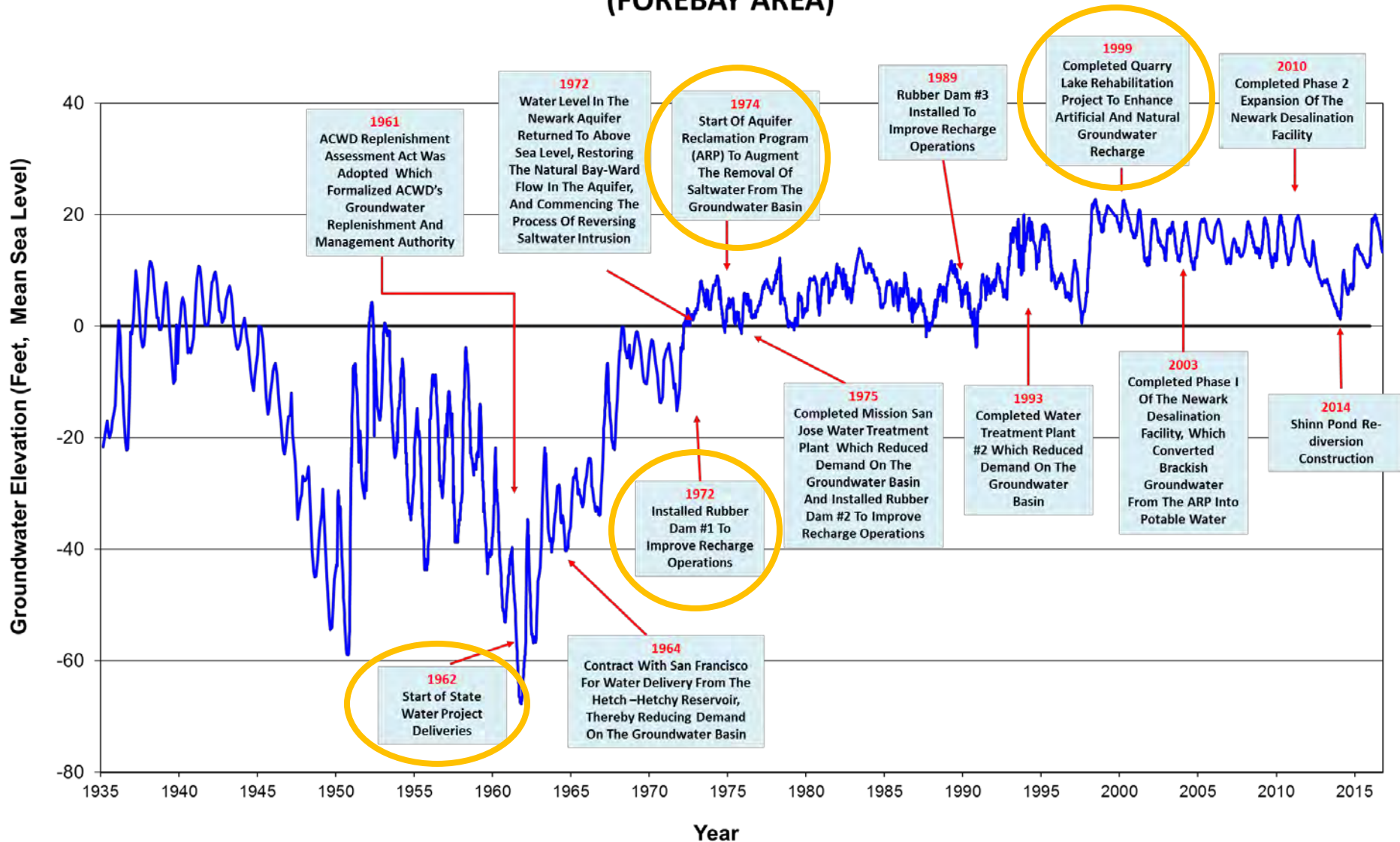


**INTRUSION OF SALT WATER INTO THE FREMONT STUDY AREA**

# Salt Water Intrusion



# HISTORICAL WATER LEVELS IN THE NEWARK AQUIFER (FOREBAY AREA)



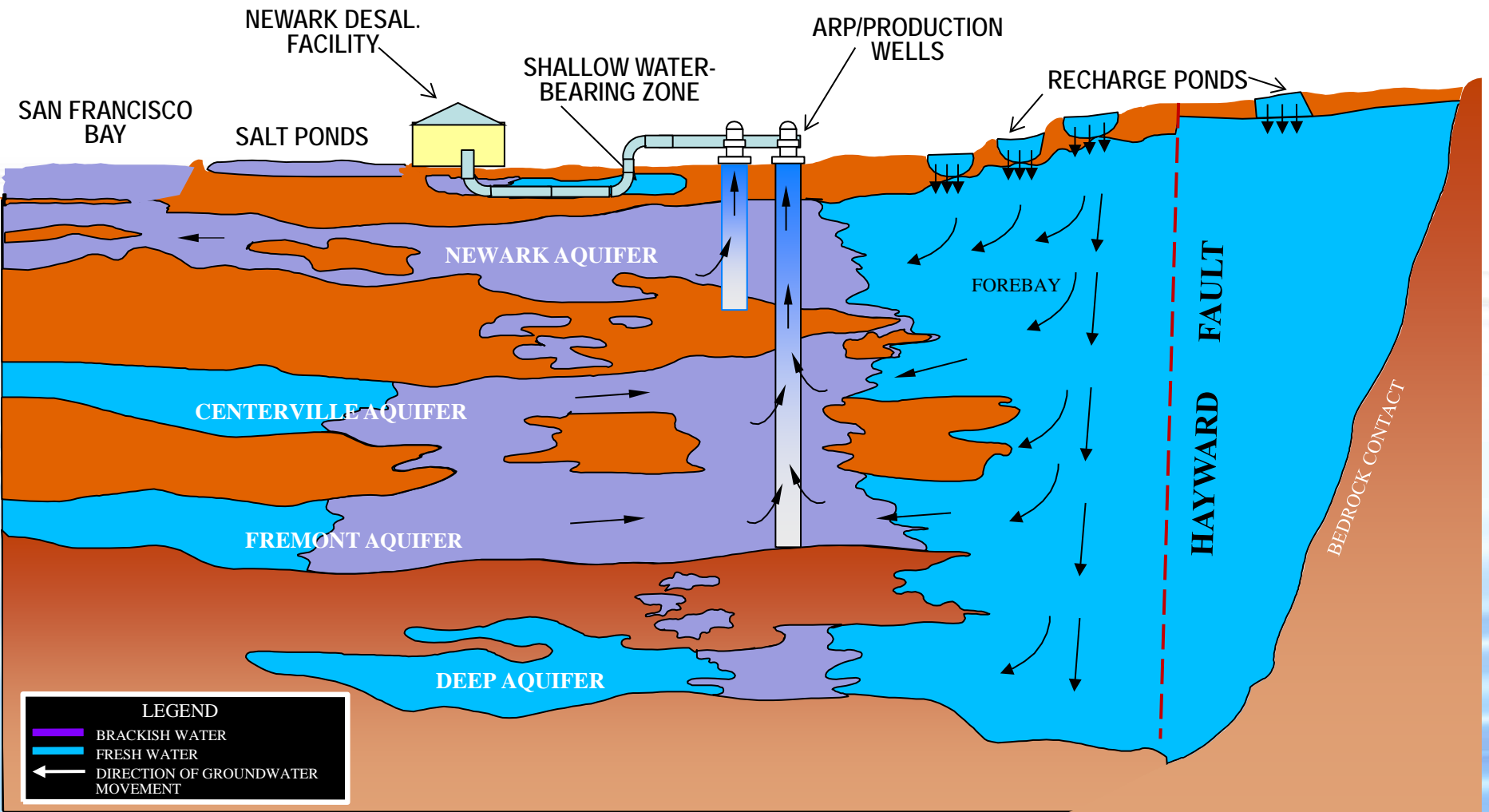


# Aquifer Reclamation Program



"BELOW HAYWARD FAULT"

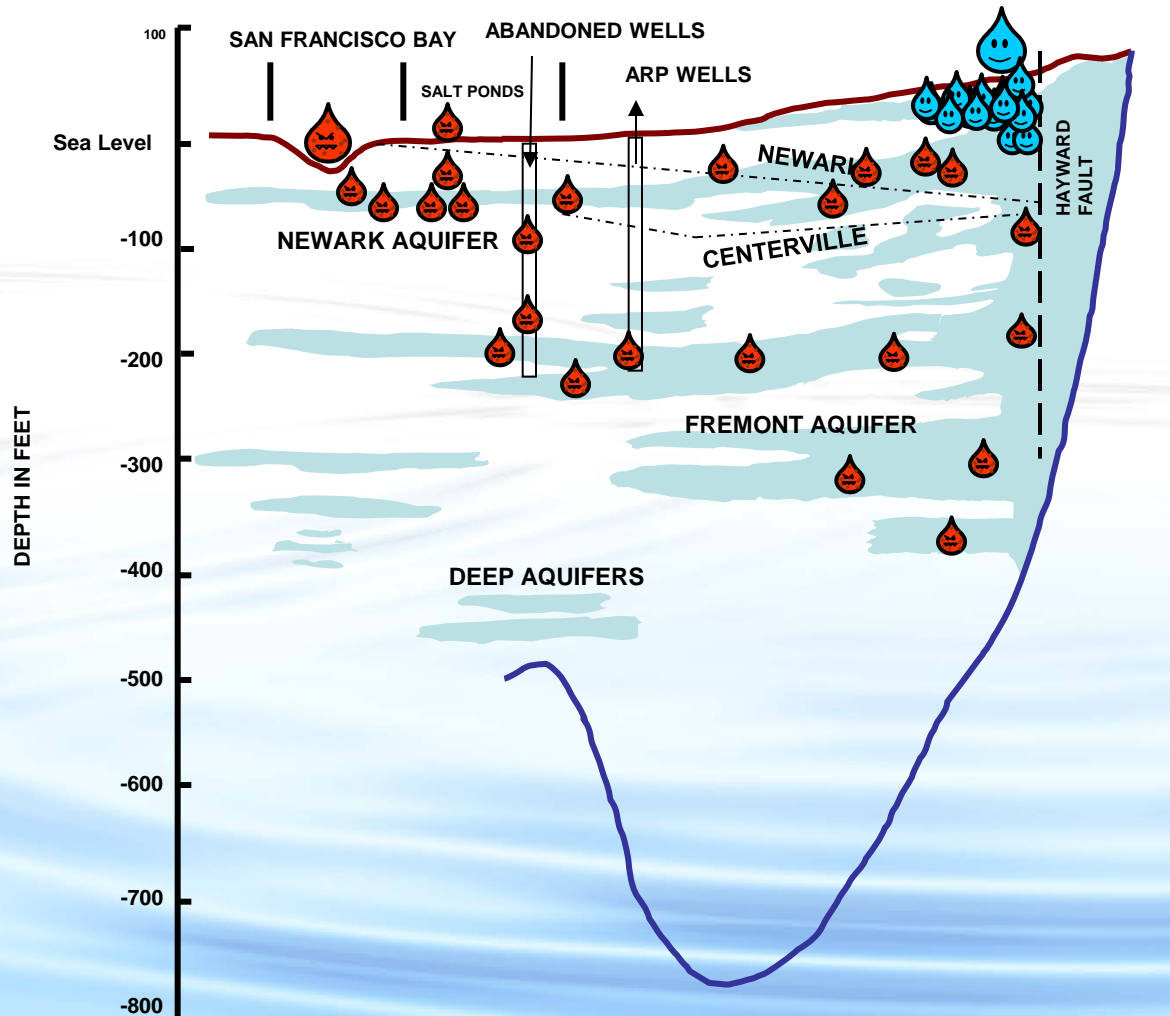
"ABOVE HAYWARD FAULT"



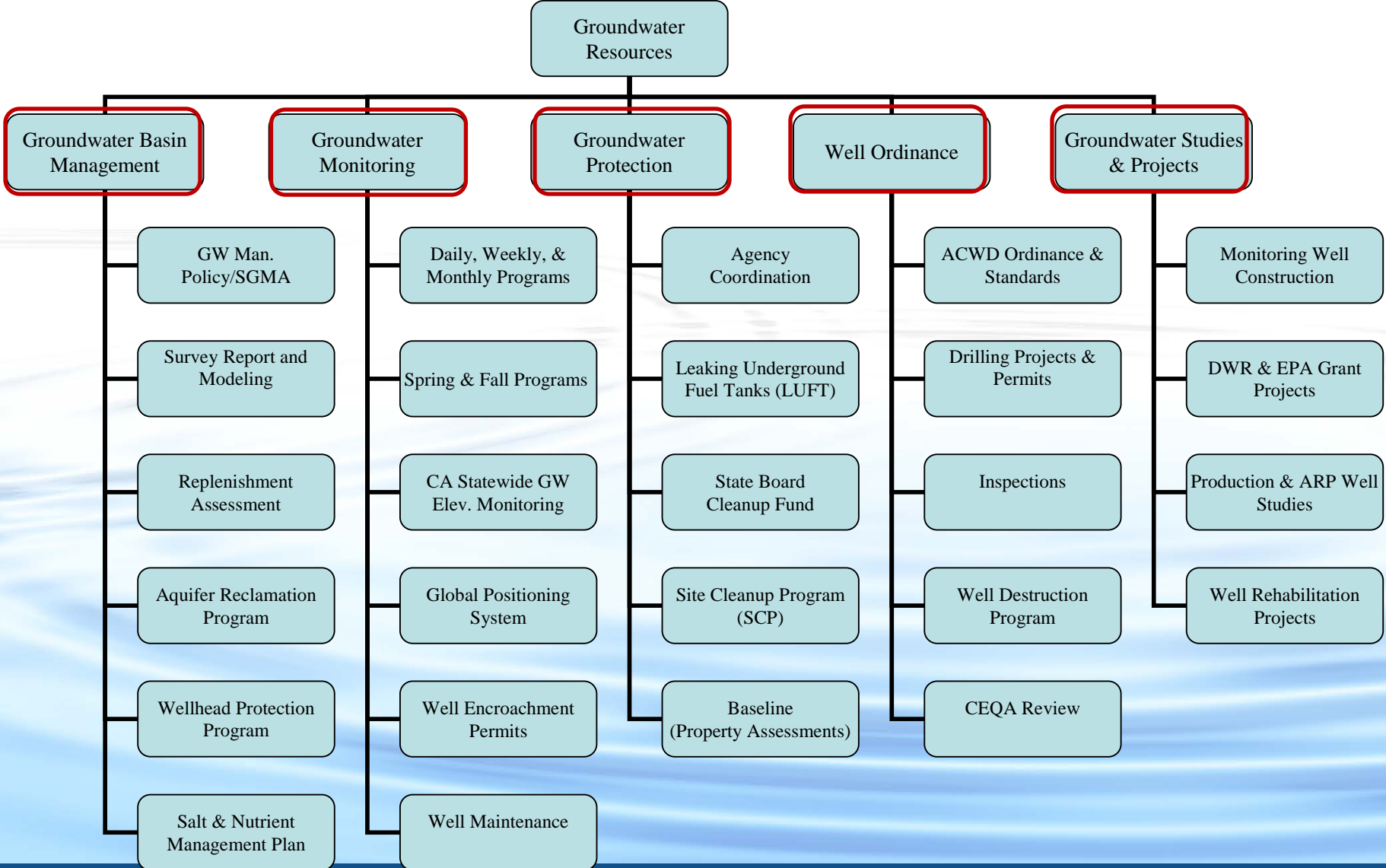
**LEGEND**

- BRACKISH WATER
- FRESH WATER
- DIRECTION OF GROUNDWATER MOVEMENT

# Aquifer Reclamation Program



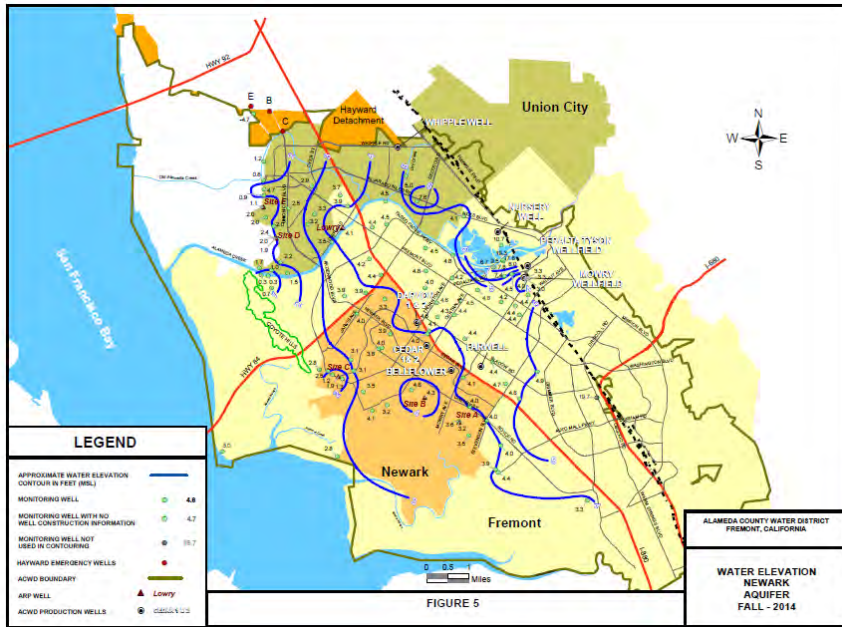
# Groundwater Functional Org. Chart



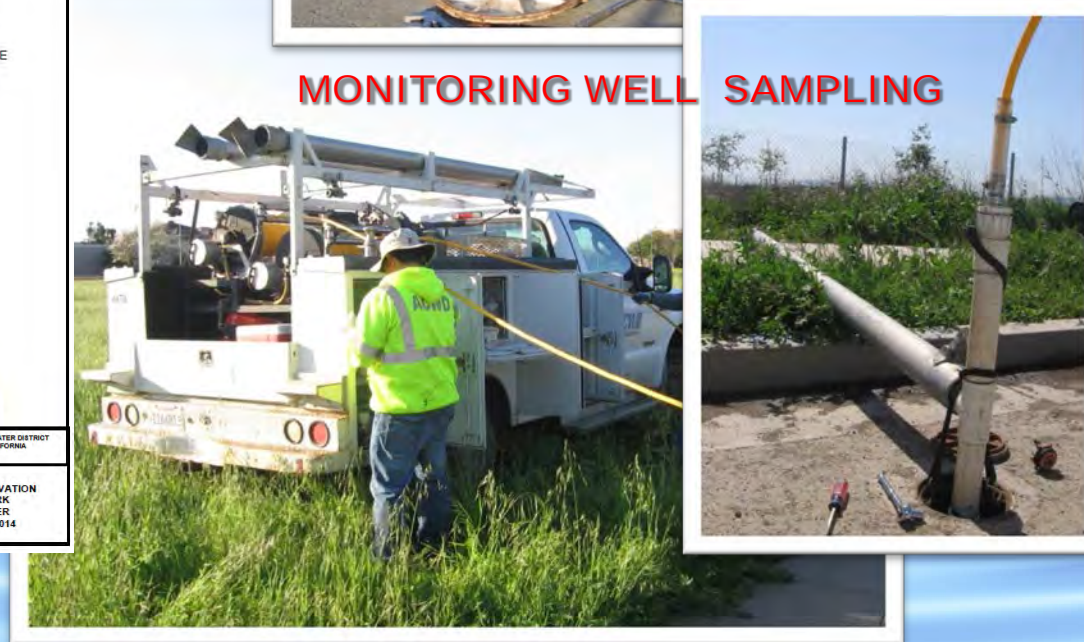
# Groundwater Monitoring



**MONITORING WELL WATER LEVEL MEASUREMENT**



**MONITORING WELL SAMPLING**





# Groundwater Protection Program - Cooperative Agreements



- Agreement: Oversight of the investigation and remediation of unauthorized releases that threaten groundwater.
- Scope: (1) All LUFT Sites (84 Open)  
(2) Most SCP Sites (82 Open)
- Term: Indefinite
- Adopted: Regional Board – June 27, 1996  
Fremont – March 25, 1997  
Newark – ACDEH – Oct. 8, 2009  
Union City – August 12, 1997  
Hayward – July 27, 2000

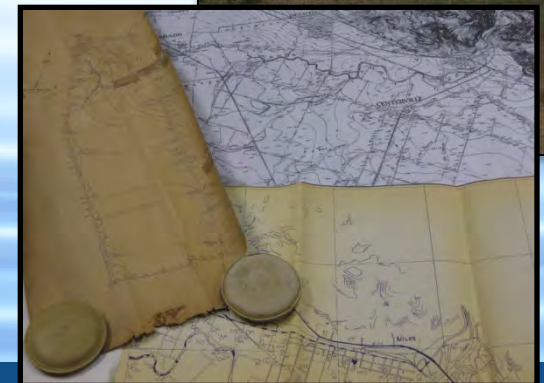
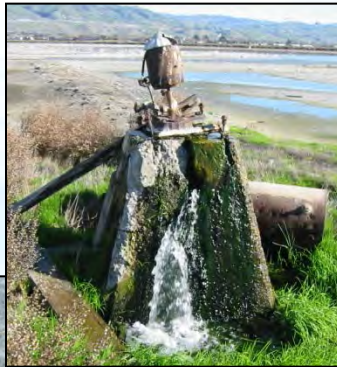
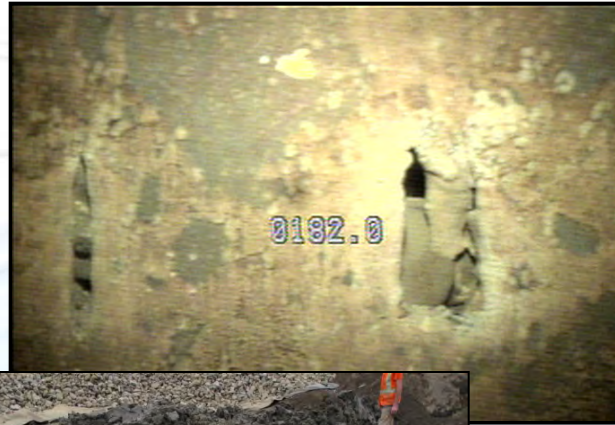


LUFT = Leaking Underground Fuel Tank; SCP = Site Cleanup Program

# Well Ordinance Program-ACWD Groundwater Protection Act



- Drilling Permits (537 permits in 2015)
- Inspection (886 inspections in 2015)
- Well Records
- Historical Maps
- Well Destruction



# Groundwater Studies & Projects



- Monitoring Well Installation Program started in 1994
- Grants
  - 4 DWR Local Groundwater Assistance Grants
  - 2 EPA Injection Control Well Studies
- Recently completed April 2016
- Total of 91 Wells Installed in the Program





# Sustainable Groundwater Management Act (SGMA)

- Signed into law September 16, 2014
- Niles Cone Groundwater Basin is a Medium Priority Basin
- ACWD is identified in SGMA as an Exclusive Local Agency
- On October 18, 2016, ACWD's final Basin Boundary modification was posted on DWR's Website
- On November 10, 2016, ACWD is holding a Public Hearing to consider becoming the Groundwater Sustainability Agency for the Nile Cone Groundwater Basin



# Lower Alameda Creek Fish Passage Program Status Update

Alameda Creek Watershed Forum

October 25, 2016

# Agenda

- Background
- Program Overview
- Remaining Improvements
- CEQA
- Permitting
- Schedule

# Background



Steelhead  
1956

- Alameda Creek native fish species: steelhead and salmon (anadromous)
- Fisheries declined with urbanization
- 70s Army Corp of Engineers realigned channel for flood protection
- 70s-80s Construction of ACWD facilities, no fish passage requirements



Steelhead  
1959



Steelhead  
1961



Chinook  
1964

## Background

- 1997 - Steelhead (Central California Coast ESU) protected by Endangered Species Act
- 2002 – Alameda Creek identified as a priority for regional fisheries restoration
  - Quality habitat in upper reaches
  - Strays support restoration of neighboring watersheds



## Background

- 1999 – ACWD joins Fisheries Workgroup
  - Cooperatively address issues related to restoring Alameda Creek Watershed fisheries
  - Restore a self-sustaining population of native steelhead to the watershed
- Workgroup conclusions - constraints to steelhead restoration include:
  - Barriers to upstream and downstream passage
  - Potential entrainment at water diversions

## Background

- ACWD Fish Passage Program Goals
  - Support fisheries restoration
  - Enhance upstream and downstream passage
  - Reduce fish entrainment
  - Continue maintaining creek diversions
  - Meet obligations to provide reliable high quality water

# Program Elements

# Fish Passage Program Commitment



## ACWD Recharge Facilities – Circa 1997

Three  
Inflatable  
Rubber  
Dams

Seven  
unscreened  
pts of  
diversion



North

### Legend

- ← Diversion Pipe
- Rubber Dam Structure (RD #)
- Fish Screen



# Completed Program Elements



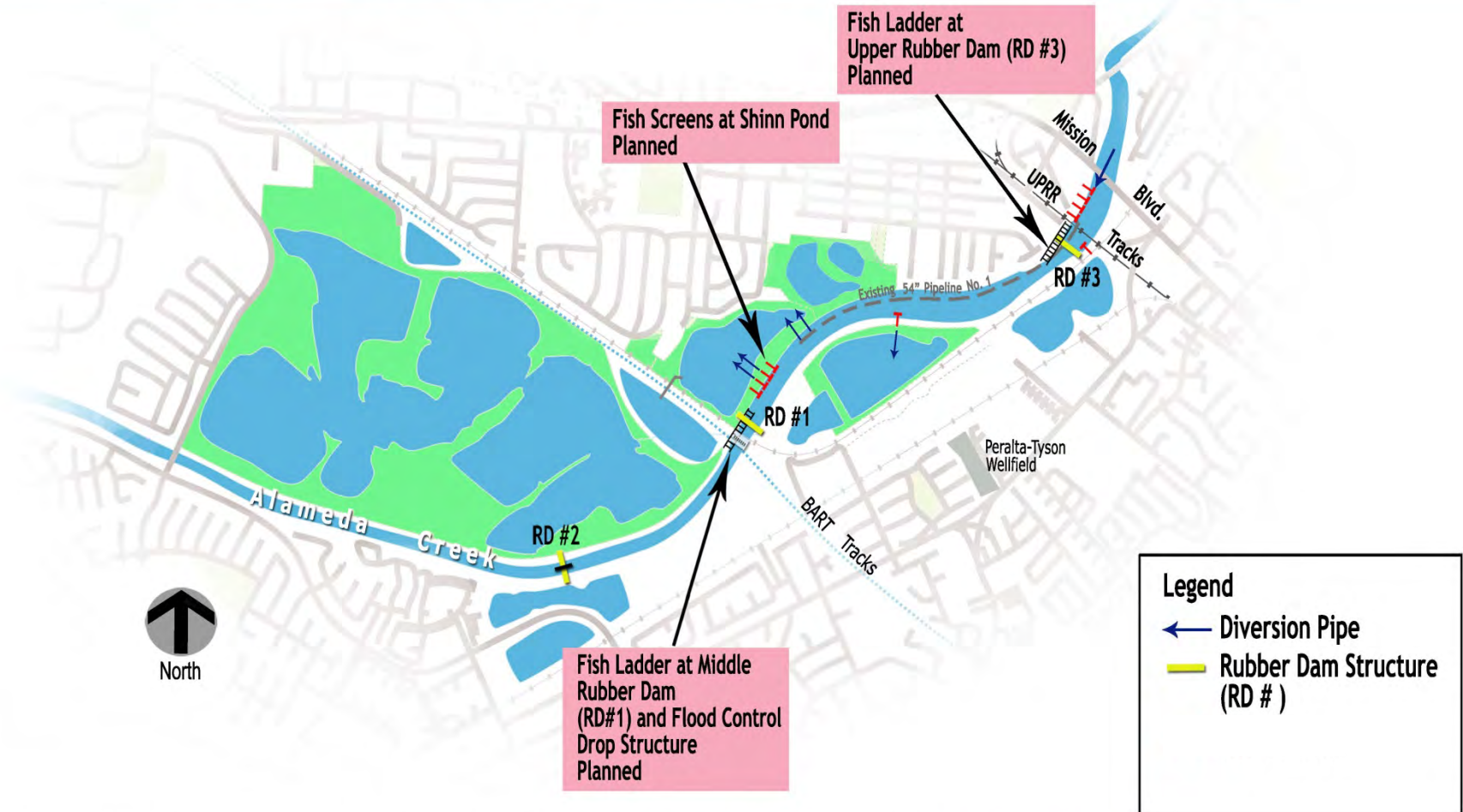
**2008 to 2014 – Removed One dam & Two Diversions, Screened 3 of remaining 5 Diversions**



# Remaining Program Elements



## Next steps – Passage Facilities + Screens



# Remaining Program Elements



Lowering RD3

RD3 Lowered



# Remaining Program Elements



RD1 Lowered



RD1 Raised



# Remaining Program Elements



Drop Structure looking up at RD1



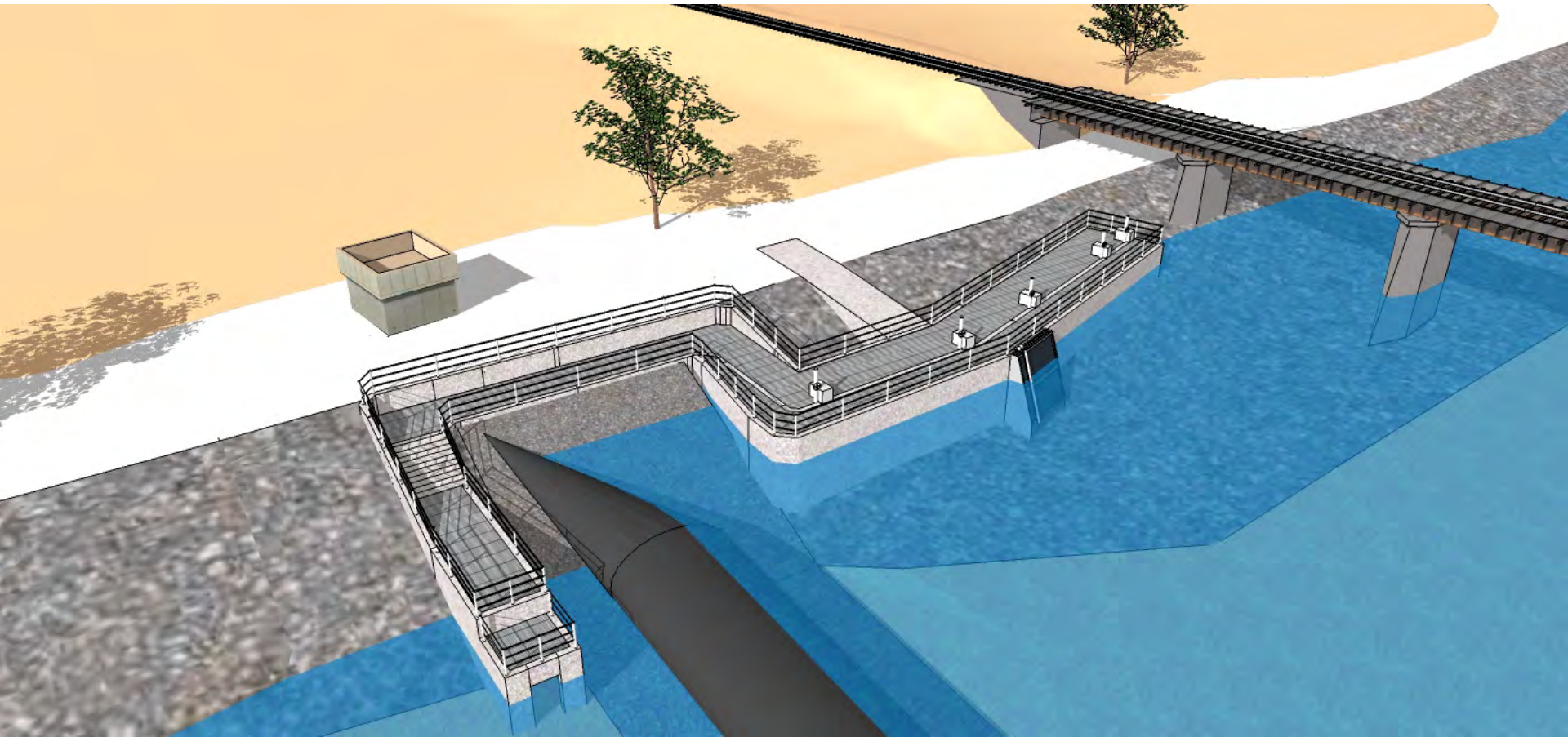
RD1/Drop Structure aerial

## Fish Passage Projects Design Team

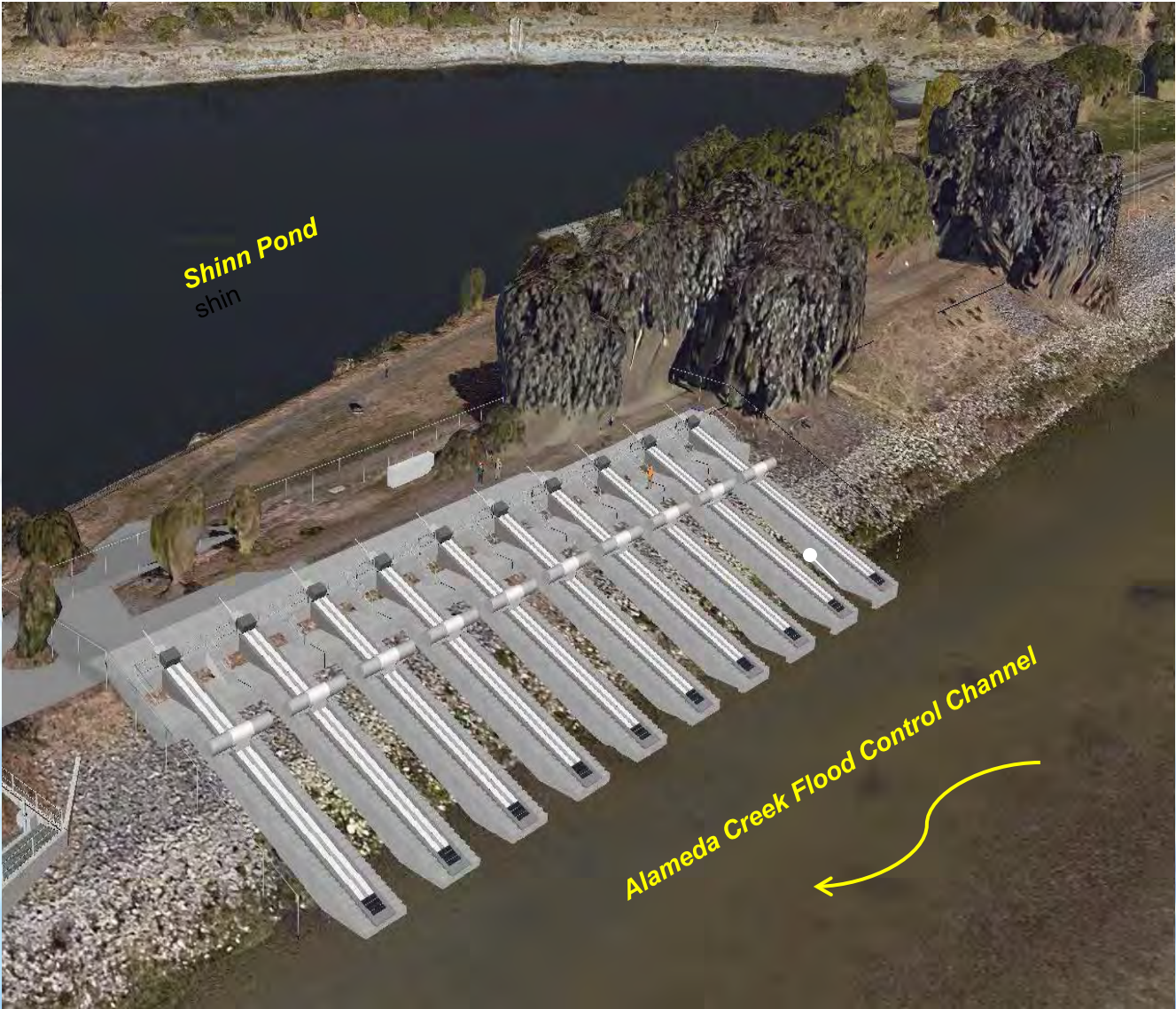
- Project Design Consultant: GHD Engineering, Inc.
  - Principal in Charge – Tony Petrocitto
  - Project Manager – Steve Allen
- Fish Passage Design Consultants
  - Mike Love and Associates – Hydrologic Solutions
  - Kozmo “Ken” Bates – Fish Passage Engineer

# Remaining Facilities

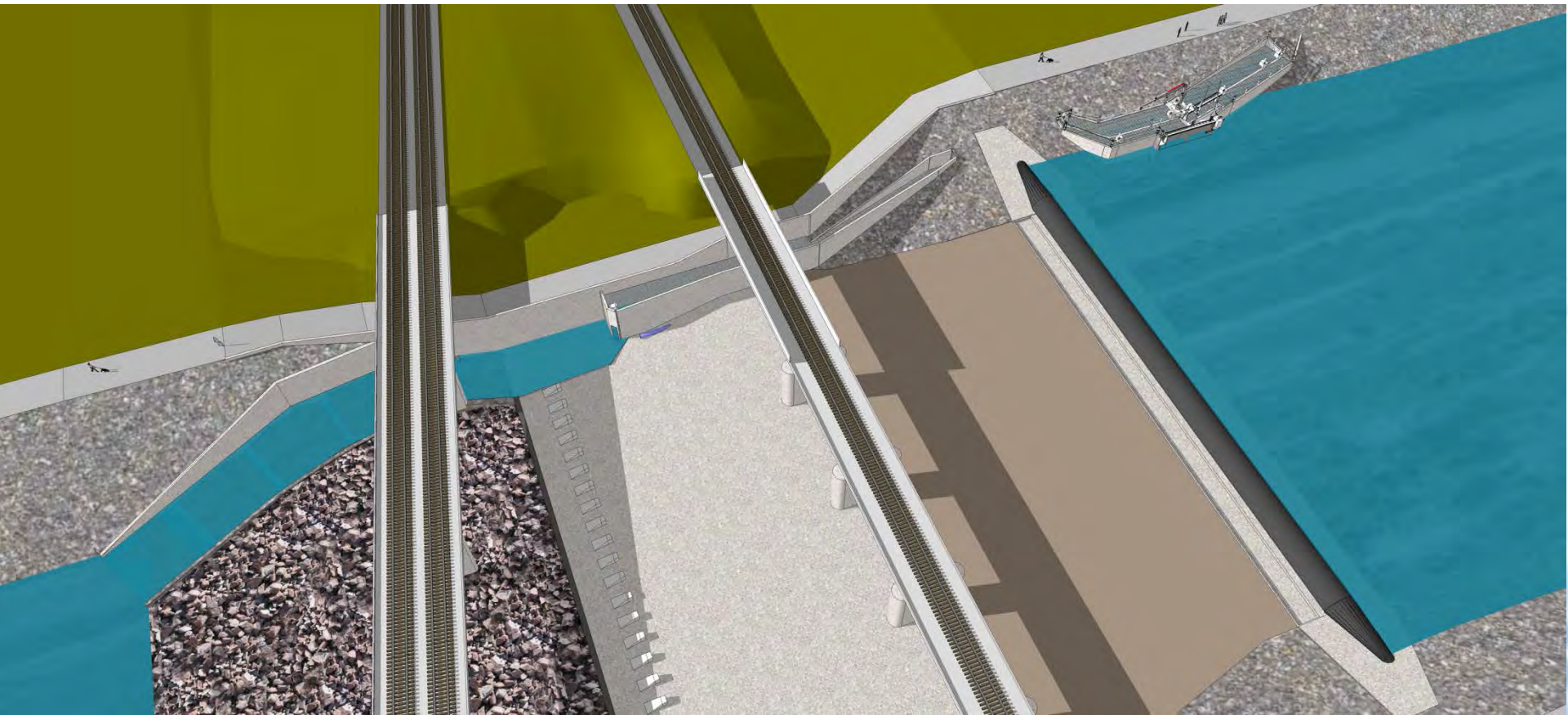
# RD3 Fish Ladder Rendering



# Shinn Screening Facility Rendering

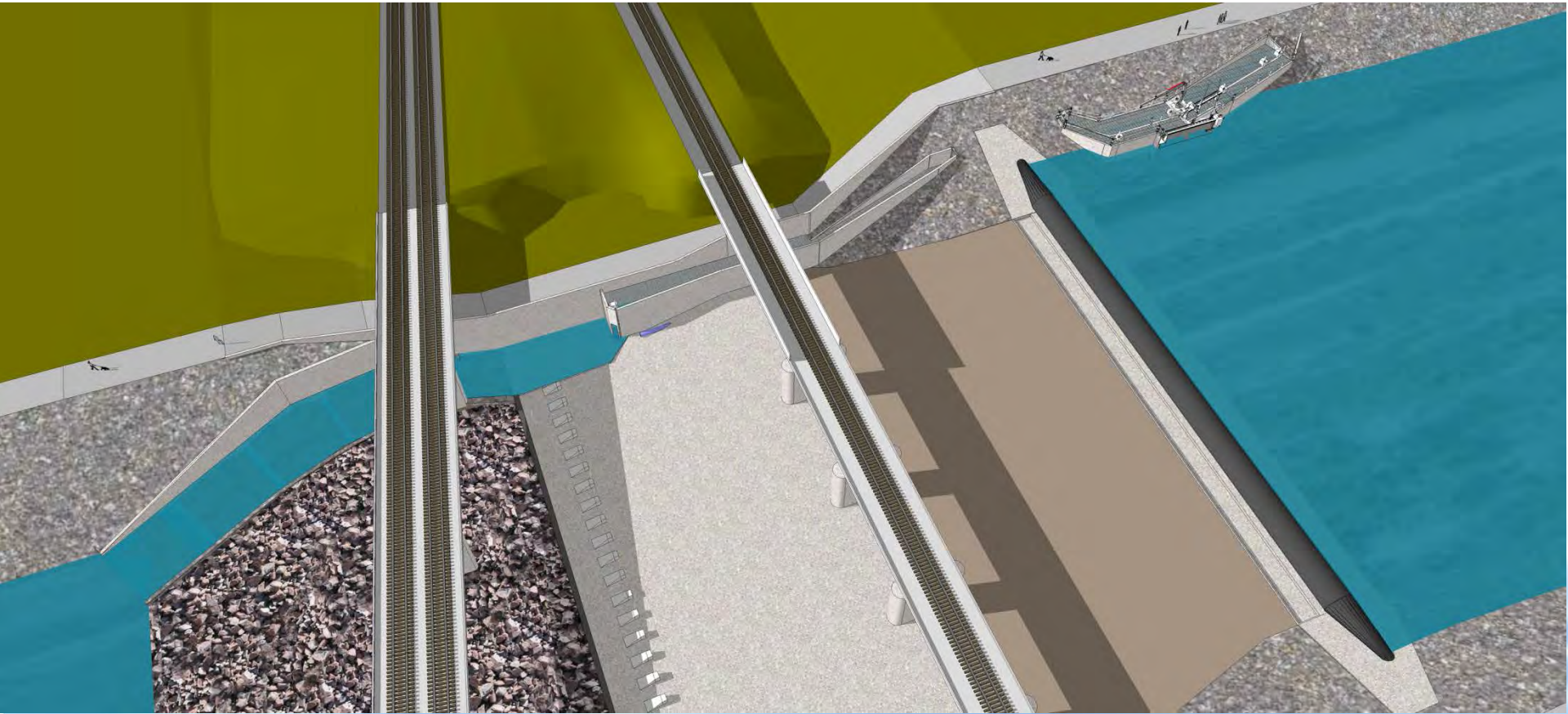


# RD1/Drop Structure Fish Ladder Rendering



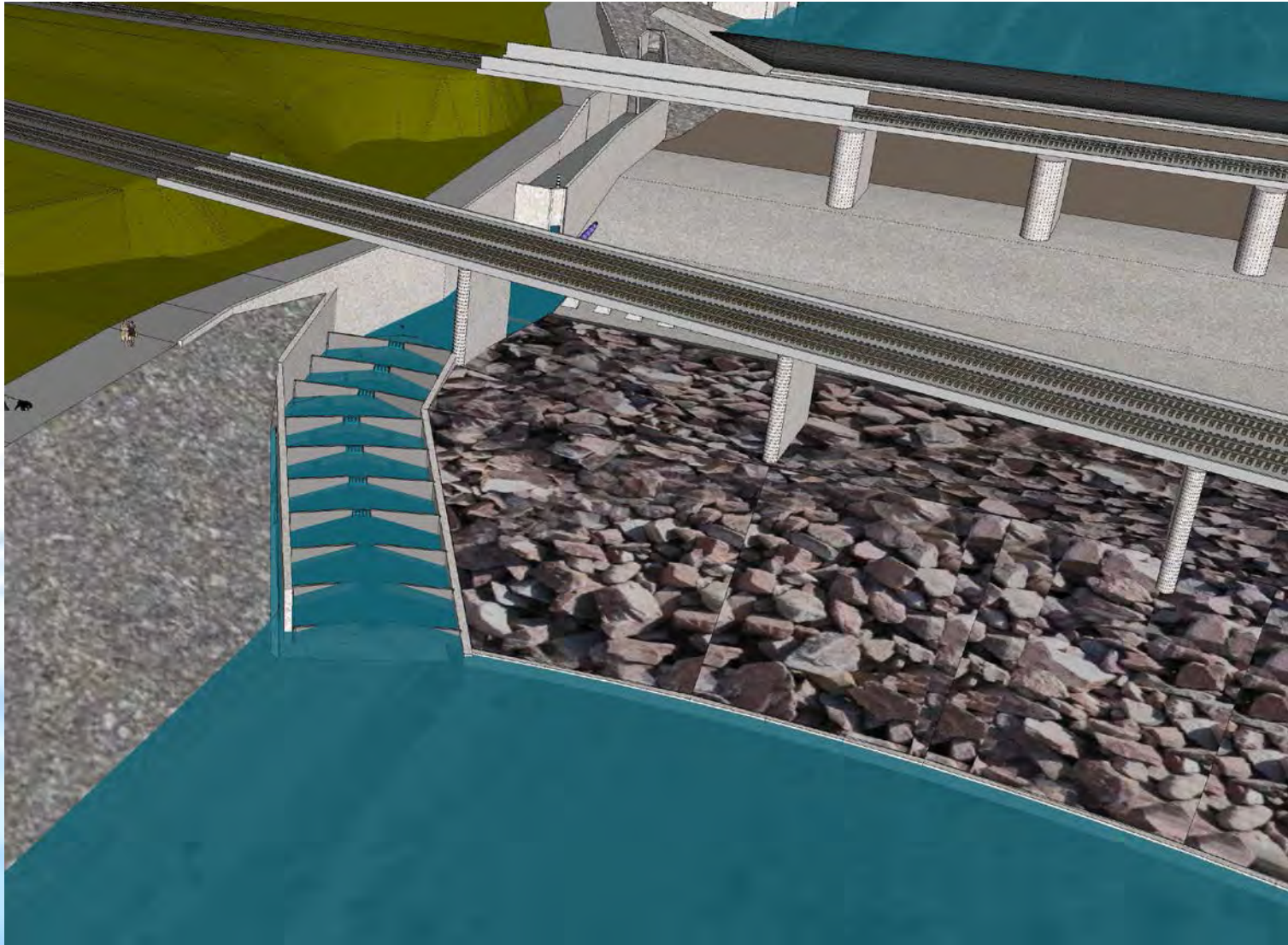


# RD1/Drop Structure Fish Ladder Rendering





# Pool & Weir + Guide Wall Concept



# CEQA

# CEQA



- CEQA Mitigated Negative Declaration public review/adoption by ACWD – 2013
- Identified need for further revisions
  - Address stakeholder concerns
  - Army Corps of Engineers - National Environmental Protection Act (NEPA) compliance
- In Recirculation: October 3-November 3

## Next Steps

- Complete CEQA process
- Use revised MND for permitting

# Permitting

# Permitting

- Applications submitted - 2013
  - *USACE, RWQCB, CDFW*
- Design Review and Comment by Agencies
  - *NMFS, USACE, RWQCB, CDFW, DSOD (RD3)*
- New information regarding 408 process and CEQA
- All Agency Meeting – May 2016

## Next Steps

- Implement Section 408 analysis
- Update applications to include aforementioned changes
- Revise BA for NMFS and USFWS ESA consultation
- Incorporate comments into final design

# Schedule

## Schedule

Schedule Elements	Start	End
CEQA - Recirculation		Winter 2016
Lower Fishway Mods & Final Design	Summer 2016	Fall 2017
Permit Acquisition		Summer 2017
Construction RD3 Fishway	Spring 2018	Fall 2018
Construction RD1/ Drop structure Fishway + Shinn Screening	Spring 2019	Fall 2021

