

# Our Water, Our Future

Santa Cruz Consultant and  
Contractor Open House

May 23, 2019 9:00-11:00 AM



## Open House Program

- Presentation 9:15 – 9:45
- Tabling 9:45 – 10:50
- Raffle/End 10:50 – 11:00
- WTP Tour 11:00 – 12:30



Santa Cruz Water Program

# Presentation Agenda

1. Welcome and Safety Moment
2. Overview of Water Department
3. Water Program
4. Project Highlight Reel
5. Doing Business with the City





01

**Welcome and Safety Moment**

# Program

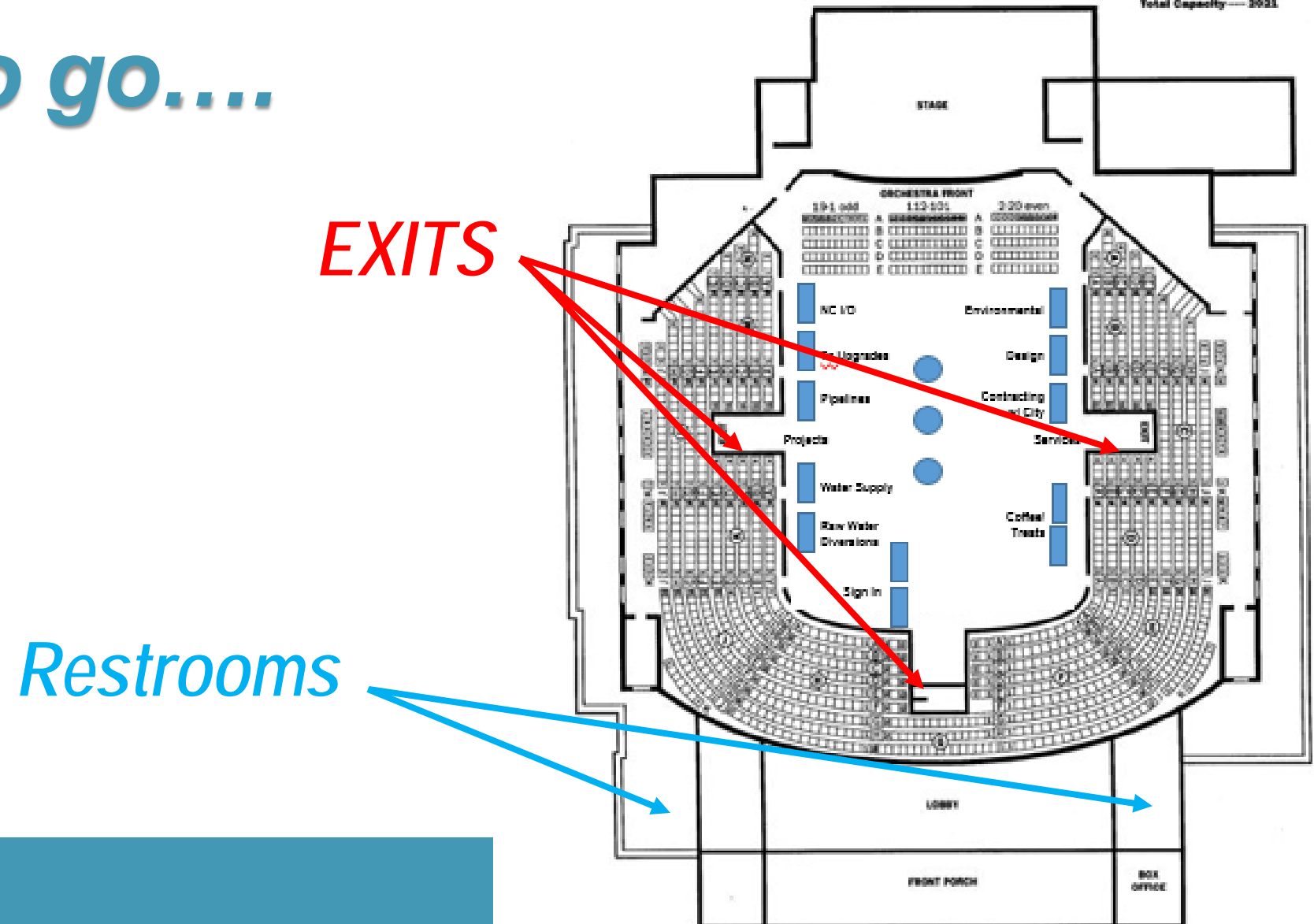
- Presentation 9:15 – 9:45
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- Raffle 10:50 – 11:00
- WTP Tour 11:00 – 12:30



Contractor & Consultant  
Open House

***If you need to go....***

**Fixed Seating..... 1108**  
**Total Capacity---- 2021**





02

## **Overview of the Santa Cruz Water Department**

# Sources



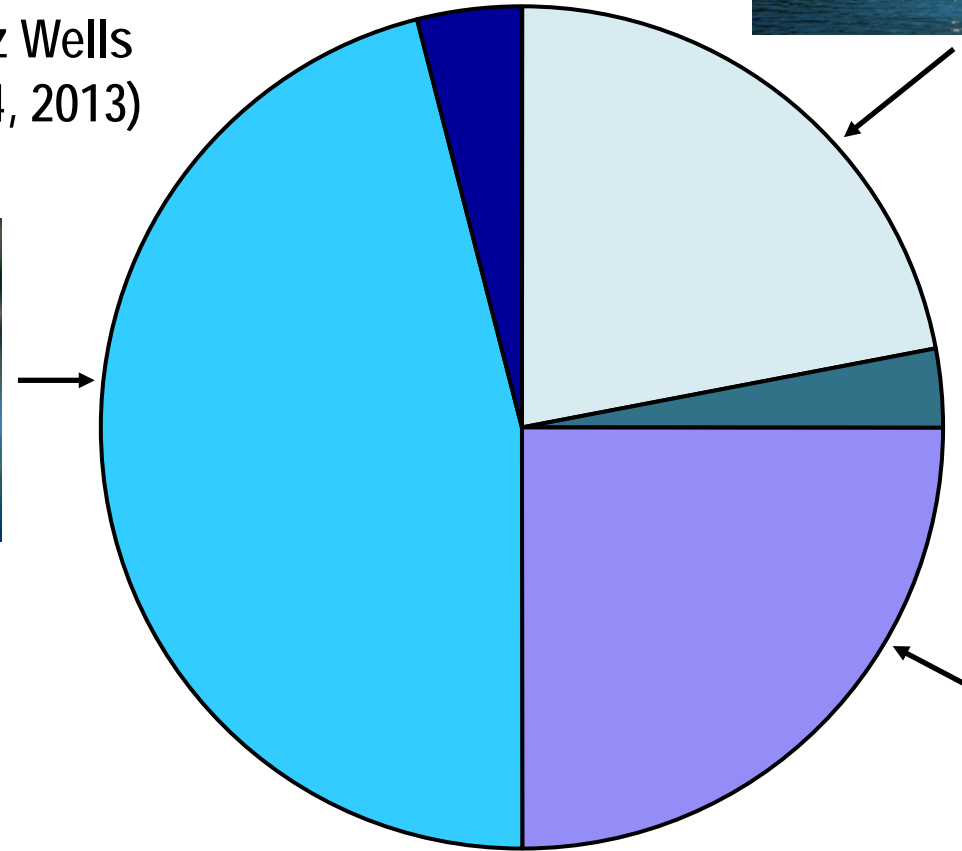
Beltz Wells  
(1964, 2013)



Loch Lomond Reservoir  
(1960)



San Lorenzo River  
(1924)



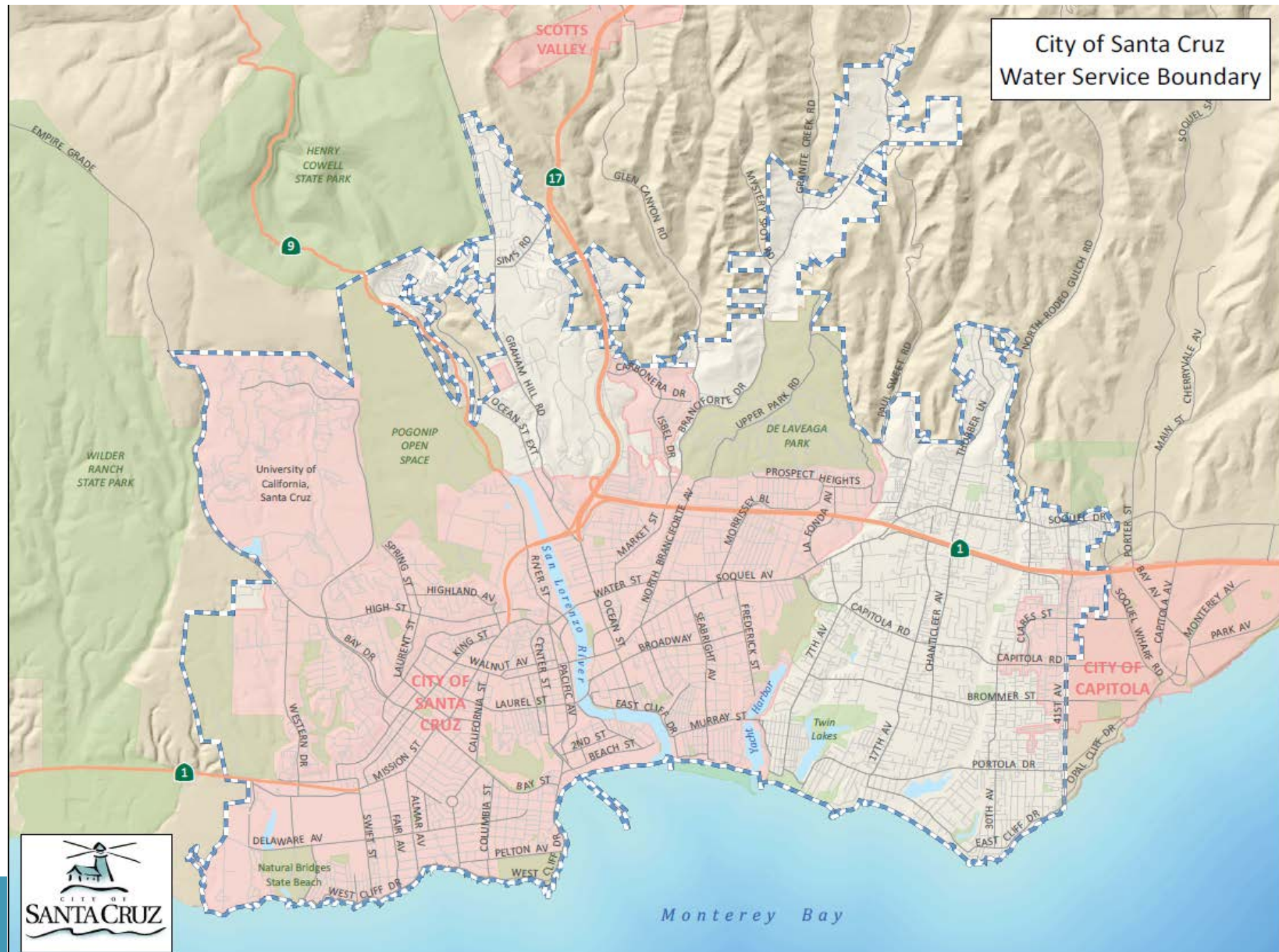
North Coast Streams  
(1880)

□ Loch Lomond 22%   ■ Tait Wells 3%   ■ North Coast Streams 25%   ■ San Lorenzo River 46%   ■ Beltz Wells 4%

## Jurisdictions Served:

- City
- County
- Capitola
- University of California

Population: 98,000



# Santa Cruz Water Department At A Glance



**0**

Violations of  
drinking water  
standards



**264**

Miles of  
water mains

**2.68**

Billion gallons  
produced  
per year

**48  
GPCD**

Average daily  
residential  
water use



**98K**

Population  
served

**2K**

Students served  
through education  
programs



**114**

Employees

**45K**

calls answered annually  
by customer  
service staff

**14%**

Solar power  
generated and  
used onsite



Building a  
21<sup>st</sup> Century  
Water System

[cityofsantacruz.com/water](https://cityofsantacruz.com/water)



Our  
Water,  
Our  
Future



03

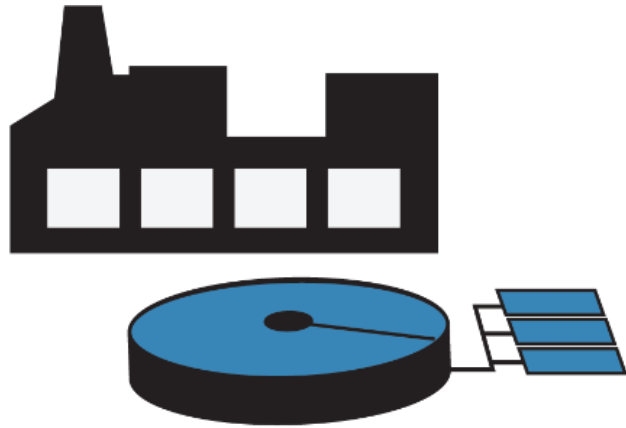
## The Santa Cruz Water Program

# The Santa Cruz Water Program

*Building a 21<sup>st</sup> century water system  
for our community and the environment*



Renew Diversions,  
Pipelines, and Pumps

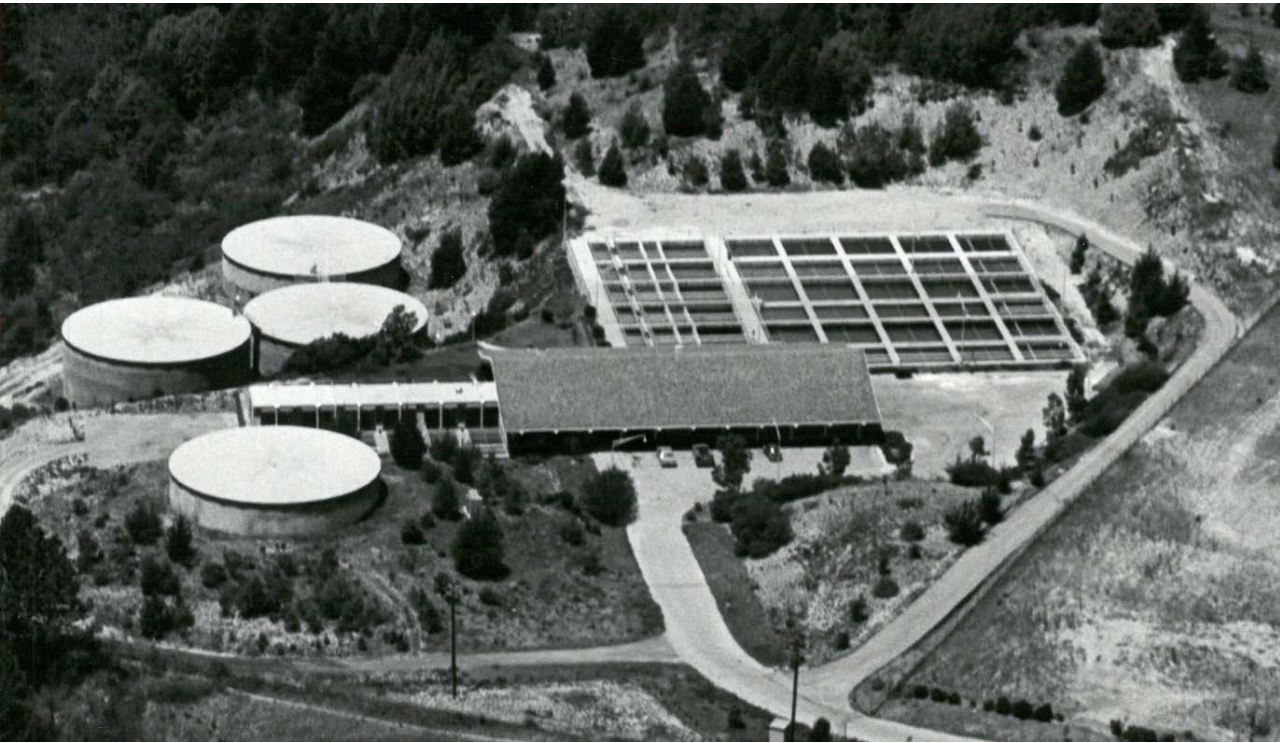


Improve Treatment  
Reliability



Water Supply  
Augmentation

# Graham Hill Water Treatment Plant



Year 1968



Year 2018



# SANTA CRUZ WATER PROGRAM MAP

## 1.0 Raw Water Diversion Projects

- 1.1 North Coast System Laguna Diversion Rehab  
Construction: 2021 - 2023
- 1.2 North Coast System Majors Diversion Rehab  
Construction: 2025 - 2026
- 1.3.1 San Lorenzo River Diversion Rehab/Replacement  
(In stream work)  
Construction: 2021
- 1.3.2 Coastal Pump Station Rehab/Replacement  
Construction: 2027 - 2028
- 1.4 Felton Diversion Bladder Replacement & Pump  
Station Assessment  
Construction: 2021 - 2022  
Bladder replacement completed: 2018
- 1.5 Newell Creek Dam Inlet/Outlet Replacement  
Project  
Construction: 2020 - 2022
- 1.5.1 NCD I/O Project - Spillway Bridge Replacement  
Construction completed: 2019

## 2.0 Raw Water Pipeline Projects

- 2.1 North Coast System Repair & Replacement  
Project  
Construction: 2026 - 2028
- 2.2 Newell Creek Pipeline Rehab/Replacement  
Construction: 2025 - 2028
- 2.3 Coast Pump Station 20-inch Raw Water  
Pipeline Replacement  
Construction: 2020

## 3.0 Water Supply Augmentation

- 3.1 Water Supply Augmentation Planning  
Construction: NA
- 3.2 Recycled Water Feasibility Study  
Construction: NA
- 3.3 Aquifer Storage & Recovery - Mid-County Basin  
Construction: 2022 - 2024
- 3.4 Aquifer Storage & Recovery - Santa Margarita Basin  
Construction: 2027 - 2030

## 4.0 Water Treatment Reliability Projects

- 4.1 Graham Hill WTP Tube Settlers Replacement  
In construction
- 4.2 Graham Hill WTP Flocculator Rehab/Replacement  
Construction: 2019 - 2020
- 4.3 Graham Hill WTP Concrete Tanks Project  
Construction: 2020 - 2022
- 4.4 Graham Hill WTP Facility Improvement Plan  
Construction: 2022 - 2025
- 4.5 River Bank Filtration Study  
Construction: 2019 - 2021

## 5.0 Multiple Location Projects

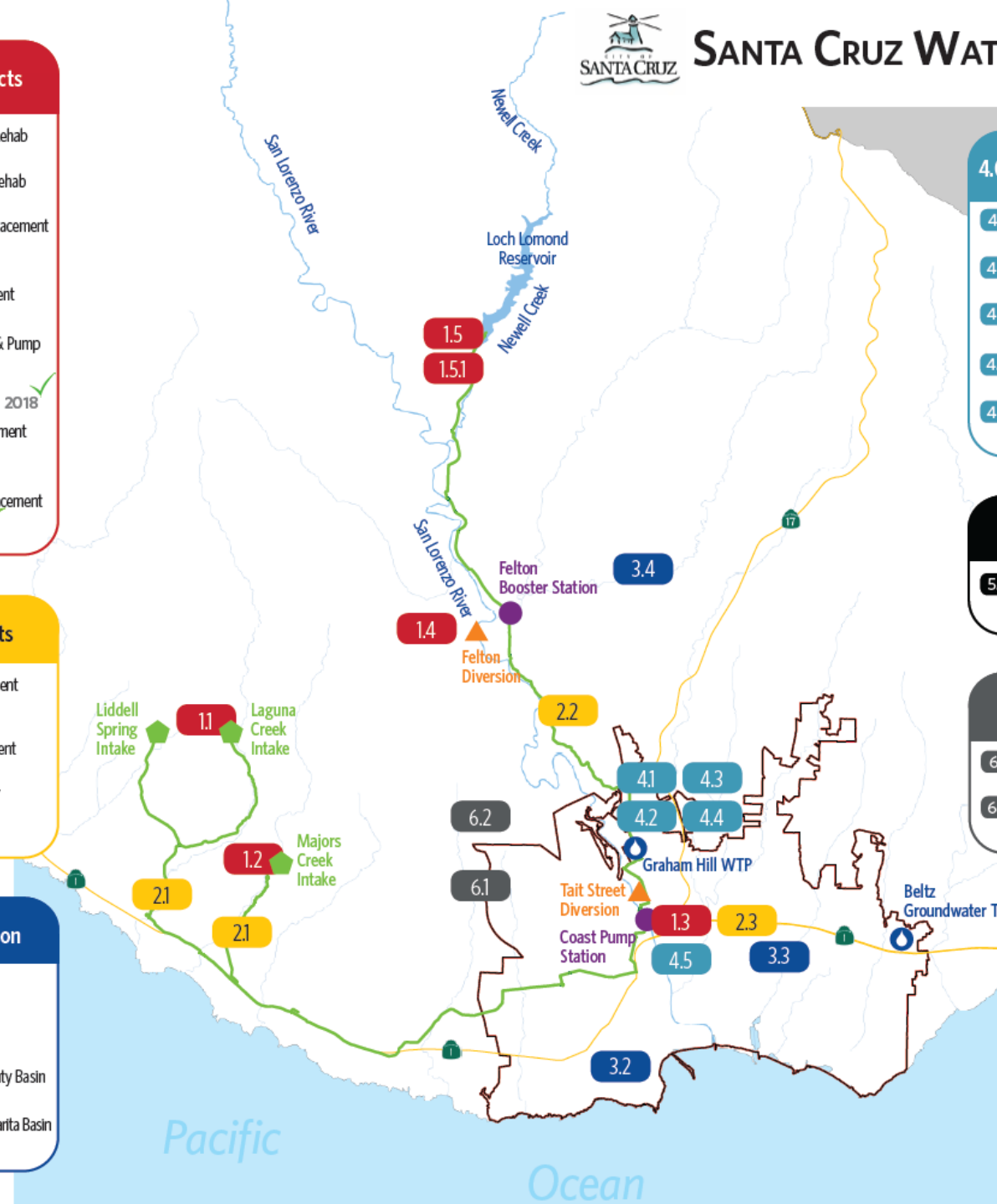
- 5.2 Advanced Metering Infrastructure  
Construction: 2021-2022

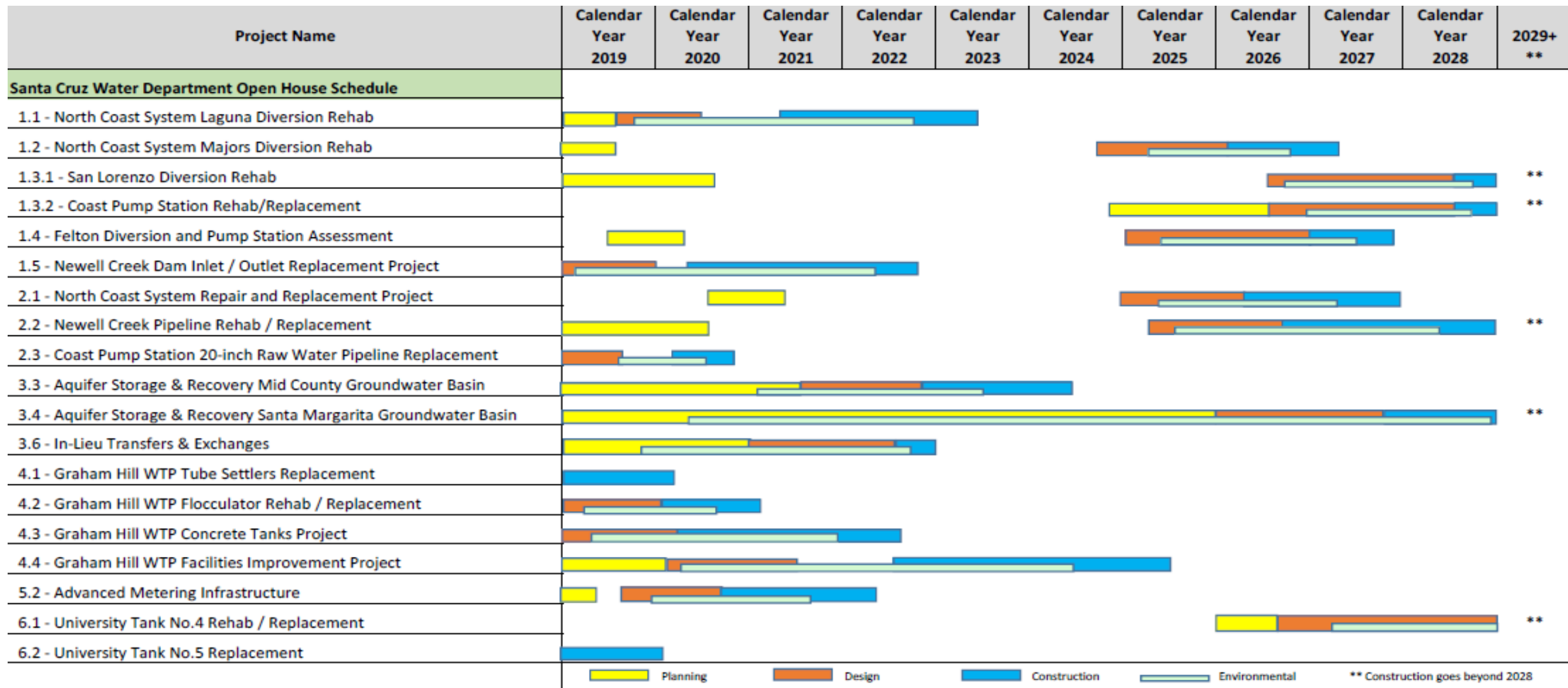
## 6.0 Treated Water Storage Projects

- 6.1 University Tank No. 4 Rehab/Replacement  
Construction: 2029 - 2030
- 6.2 University Tank No. 5 Replacement  
In construction

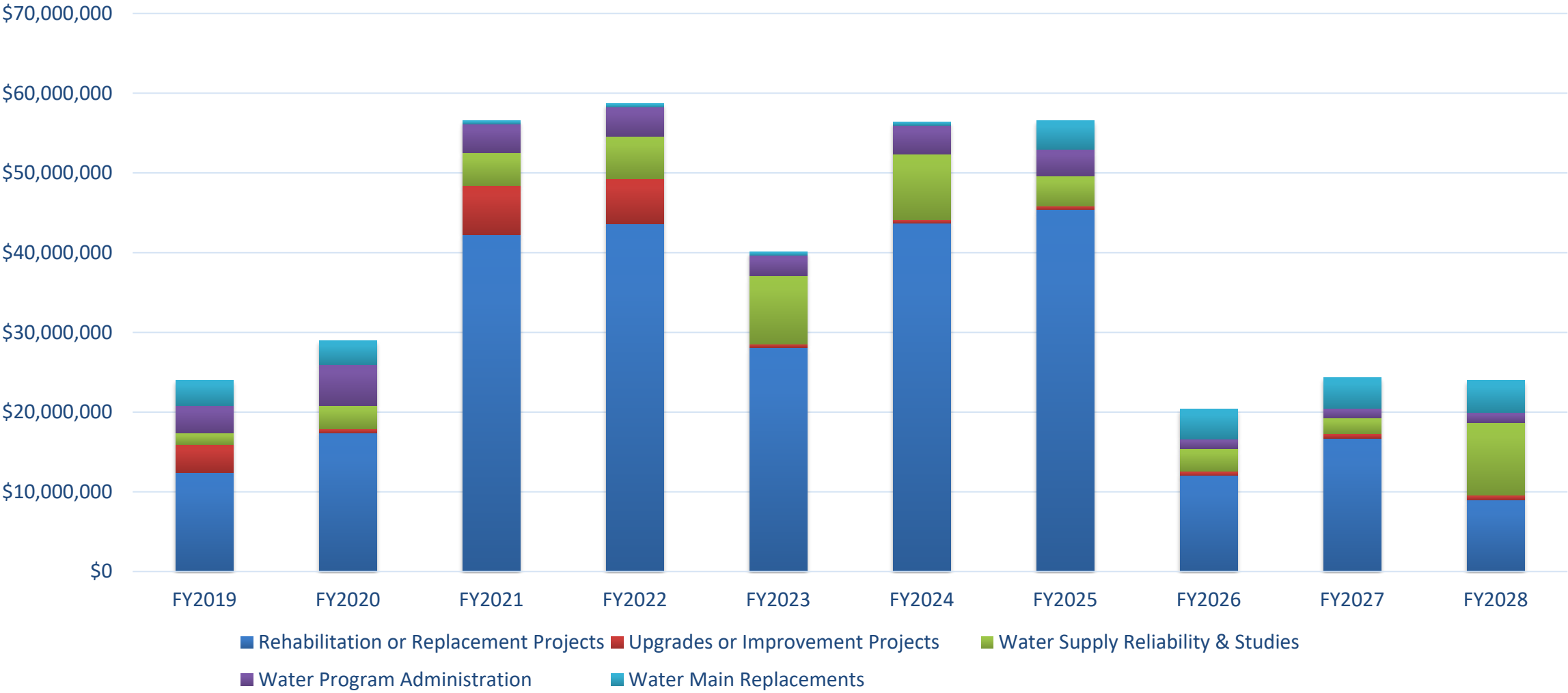
### LEGEND

- ▲ Diversion
- ◆ Intake
- Pump Station
- ⦿ Water Treatment Plant
- Water Pipelines
- Highways
- ▭ Service Area





# FY 2019-28 CIP Spending

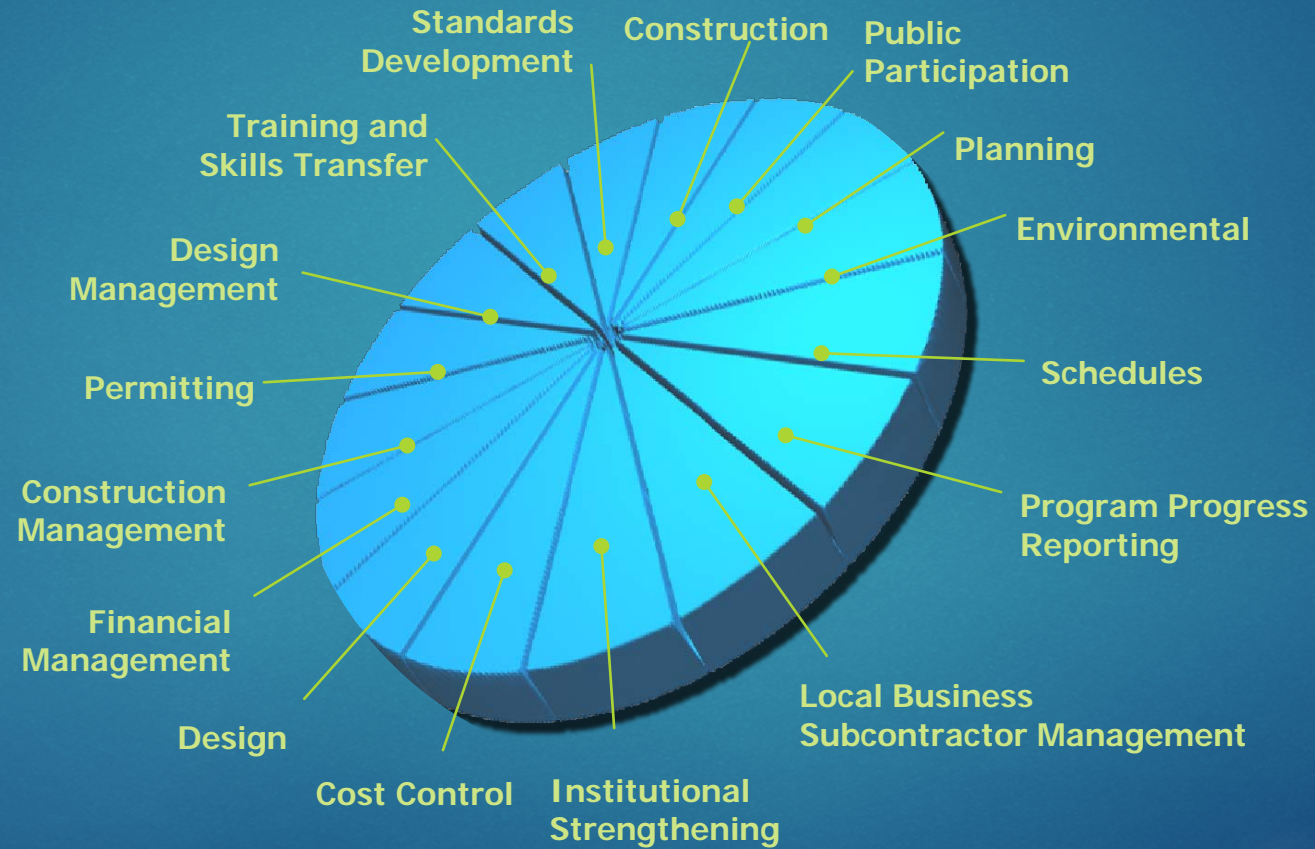


# Funding Strategies

- Pay Go
- Bonds
- Low interest loans
  - State Revolving Fund (SRF)
  - WIFIA
- Grants

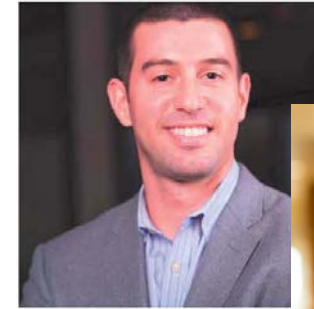


# Program Management



# Program Management

- HDR, awarded contract in December 2017
- 5 year contract with option to renew
  - Program Management
  - Planning
  - Construction Project Management



## Project Controls



Document Control



Reporting



Change Orders



Risk Management



Earned Value Management



Claims & Forensic Analysis



Cost Management



Scheduling



Contract Compliance



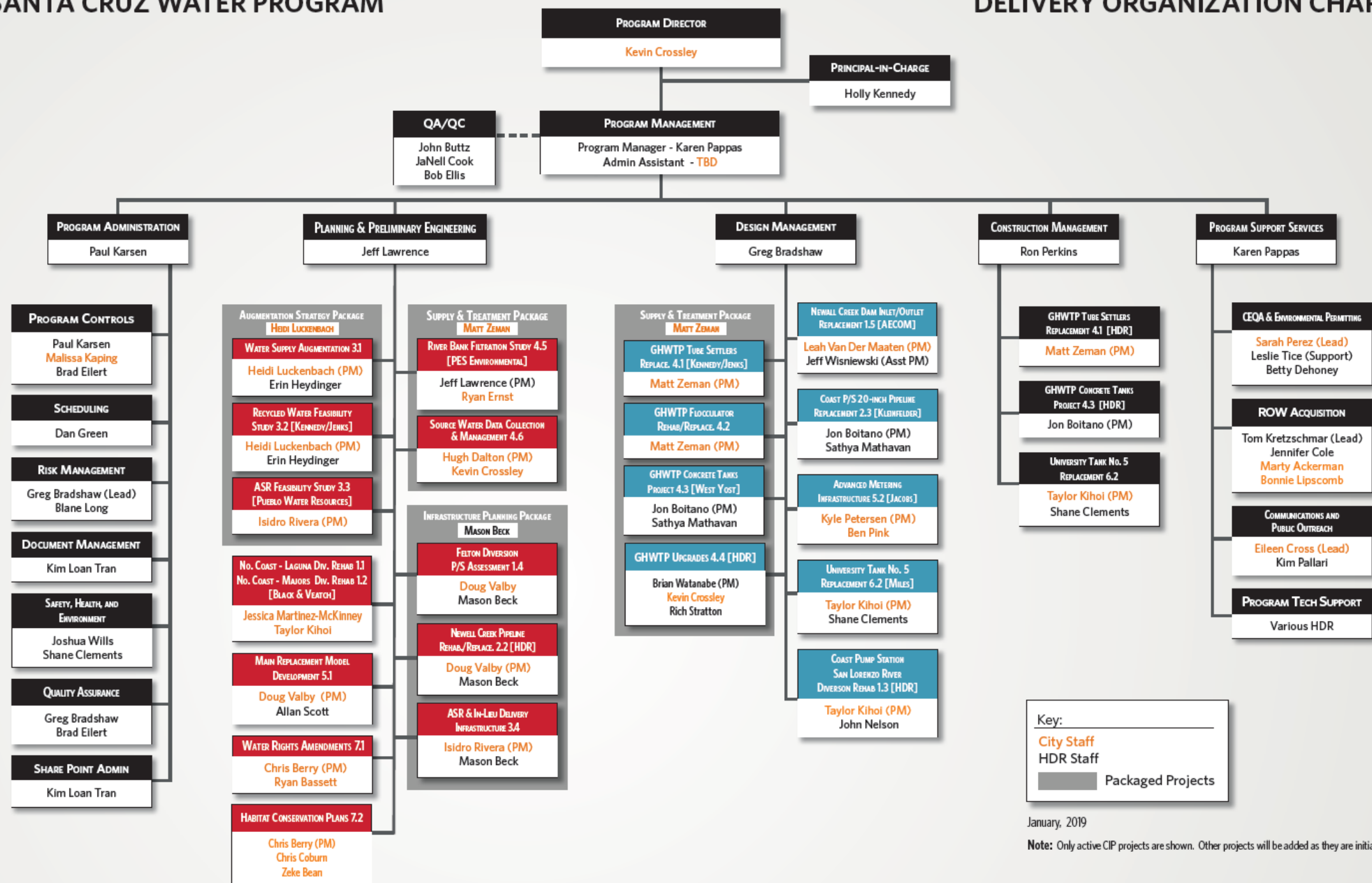
Cost Estimating



Closeout

# SANTA CRUZ WATER PROGRAM

# DELIVERY ORGANIZATION CHART





04

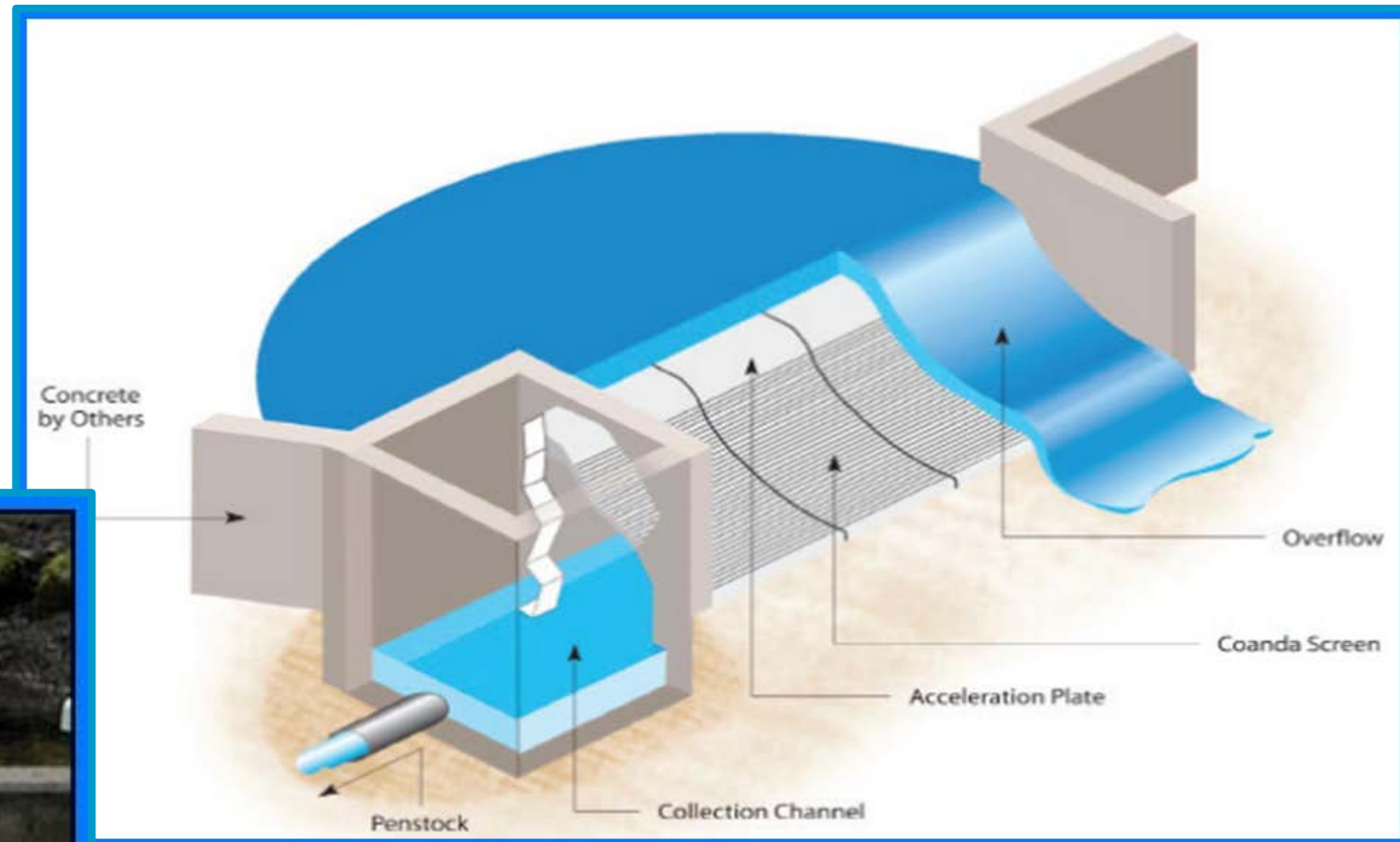
## Projects Highlight Reel

# 1.1 North Coast Laguna Diversion Rehab.

Current Status:	Planning
Estimated Construction Cost	\$1,000,000
Project Elements	<ul style="list-style-type: none"><li>• New Coanda Intake, Fish screening improvements</li><li>• Sediment management</li><li>• Remote operation &amp; monitoring</li><li>• Accessibility and safety improvements</li></ul>



# Coanda Screens



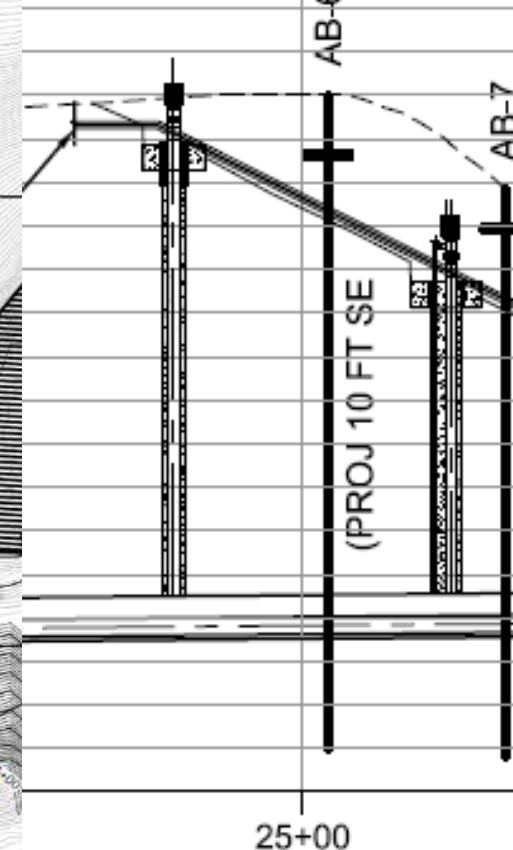
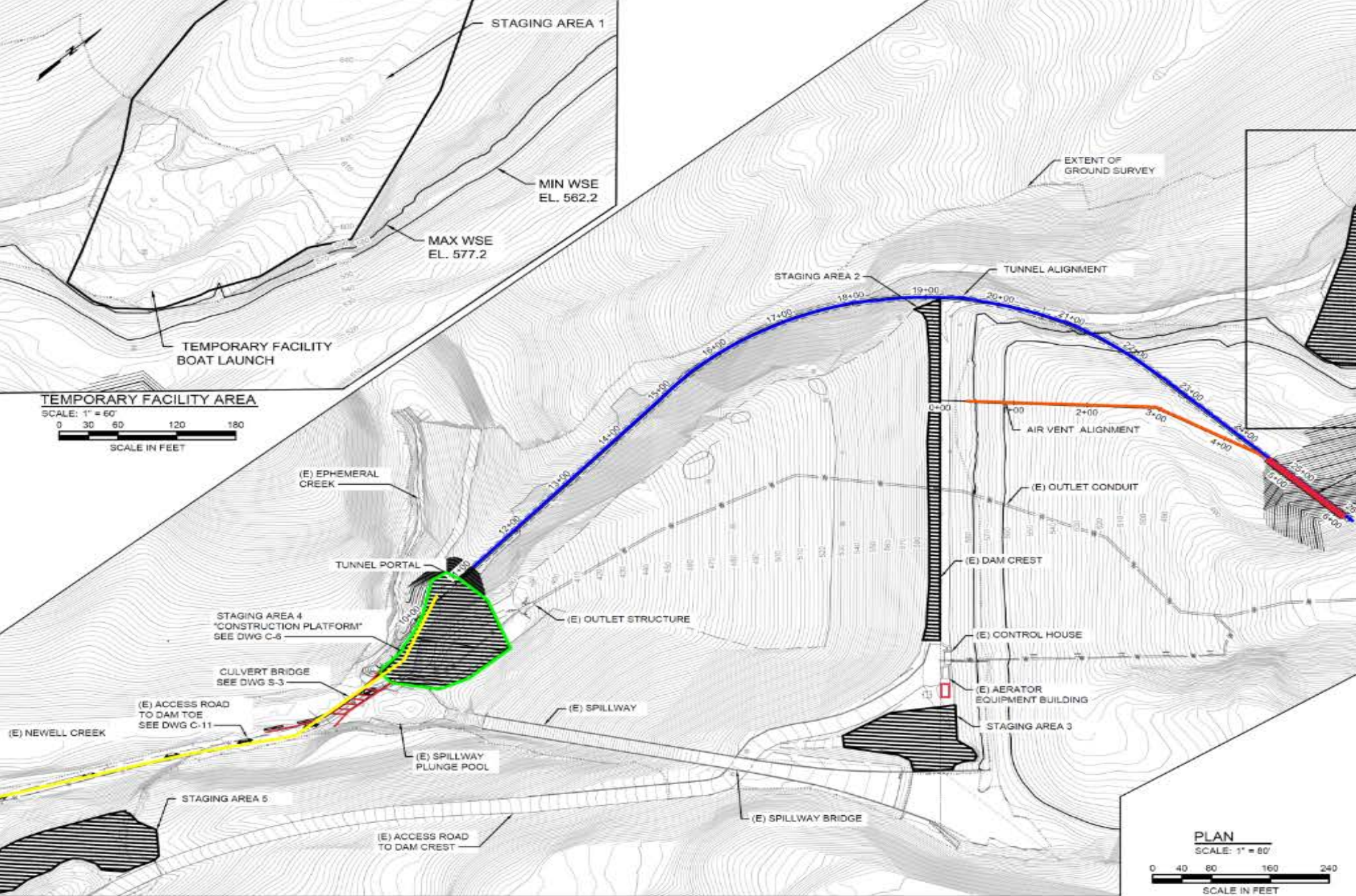
- Compact and O&M Friendly
- Self-Cleaning/No Power
- In Use for Nearly 4 Decades
- Developed for Grit Screening in Mining Industry

# 1.5 Newell Creek Dam Inlet/Outlet

Current Status:	90% Design
Estimated Construction Cost	\$50,000,000
Project Elements	<ul style="list-style-type: none"><li>• 1,500 LF Tunnel (10-14 feet diameter)</li><li>• 3 vertical intakes</li><li>• 2,000 LF - 24" Pipe</li><li>• Access Bridge, Electrical, Controls</li></ul>

## ■ Overview – Current System





**NOTES**

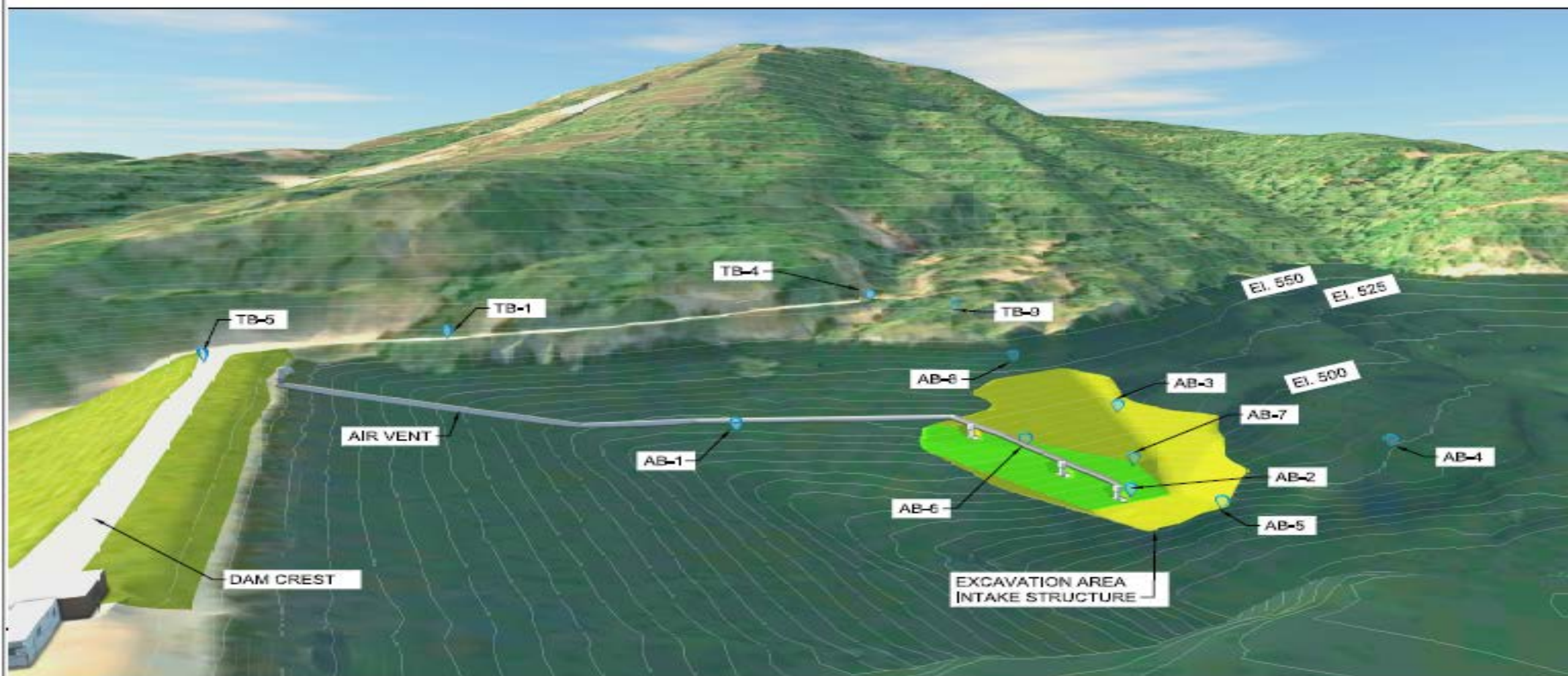
1. STAGING AREAS ARE PROVIDED FOR CONTRACTOR'S USE. THESE STAGING, PARKING AND OFFICE TRAILER ARE SHOWN AS MAXIMUM CONTRACTOR TEMPORARY FACILITIES. CONTRACTOR MAY ELECT TO PROVIDE TEMPORARY FACILITIES.
2. CONTRACTOR IS RESPONSIBLE FOR SECURING THESE EQUIPMENTS.
3. SURFACE ALL CONSTRUCTION OFFICE TRAILER PADS WITH GRAVEL.
4. A PORTION OF STAGING AREA 1 IS DESIGNATED FOR USE AS A TUNNEL PORTAL. CONTRACTOR IS RESPONSIBLE FOR PROVIDING GRADING, SURFACE IMPROVEMENTS AS NECESSARY TO LAUNCH AND RETRIEVE BOAT WORK WITHIN THE RESERVOIR.

**PLAN**

SCALE: 1" = 80'



DRAFT 50% PROGRESS  
NOT FOR CONSTRUCTION



BEDROCK  
 UNCONSOLIDATED MATERIAL OR BEDROCK

# RESERVOIR WORK 3D VIEWS NORTHWEST VIEW

December 5, 2018  
 DRAWN: I.ZARCHI  
 DESIGNED: I.ZARCHI  
 CHECKED: G.REICHERT

ATTACHMENT  
3A

# 3.3 Aquifer Storage and Recovery-Mid County GW Basin

Current Status:	Feasibility
Estimated Construction Cost	\$16,000,000
Project Elements	<ul style="list-style-type: none"> <li>• Retrofit existing wells</li> <li>• Drill new wells</li> <li>• Groundwater Treatment Plant Improvements</li> <li>• Distribution pipe upgrades</li> <li>• Property acquisition</li> </ul>





*ASR Pilot Testing underway at Beltz 12.  
22 MG injected and recovered (March, 2019)*

## 4.2 GHWTP Concrete Tanks Project

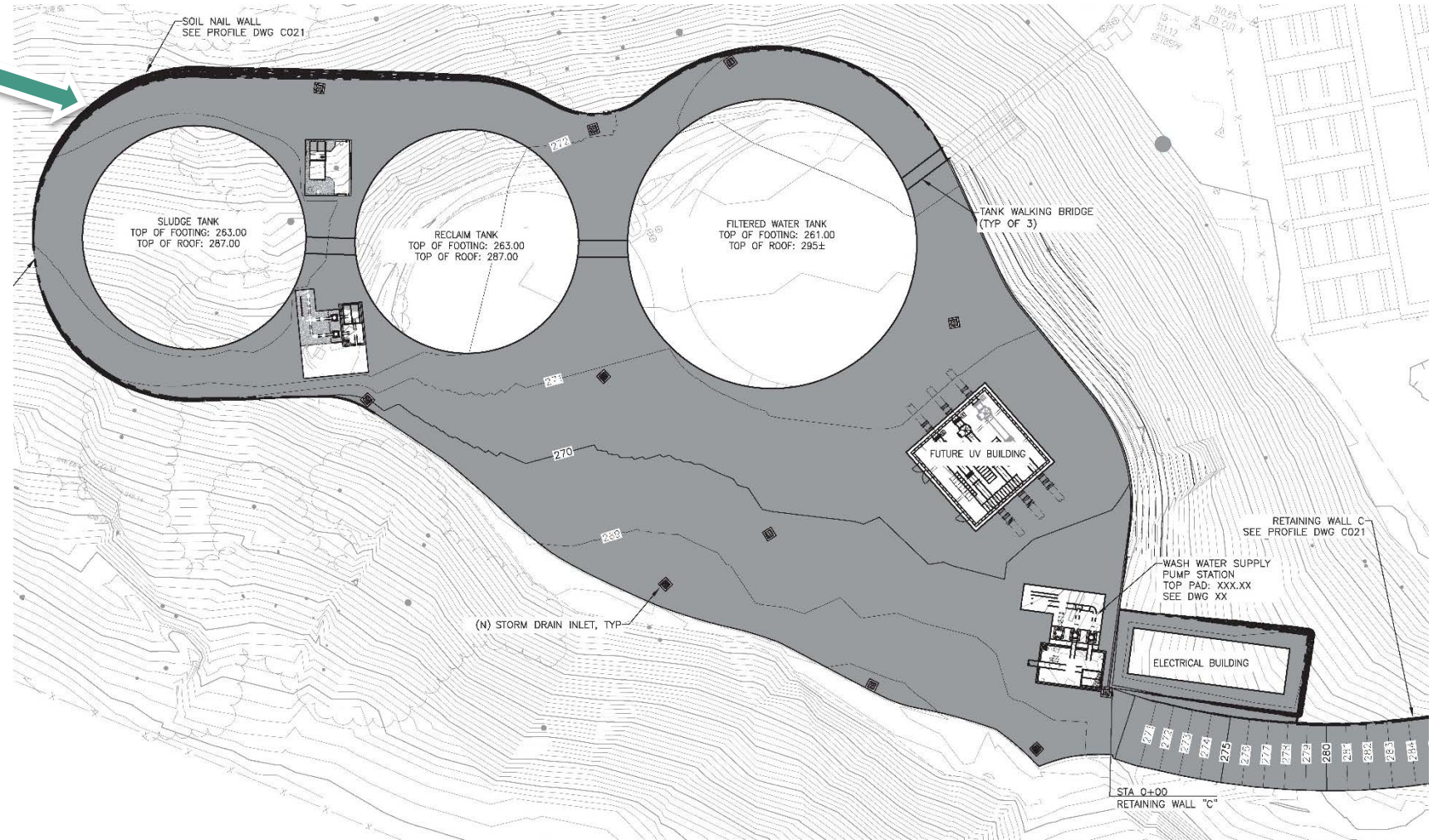
Current Status:	75 % Design
Estimated Construction Cost	\$22,000,000
Project Elements	<ul style="list-style-type: none"><li>• 1.0 MG Filter Water Tank</li><li>• Two 0.7 MG Reclaim/Sludge Tanks</li><li>• Pump Station</li><li>• Retaining Walls</li><li>• Underground Piping</li></ul>



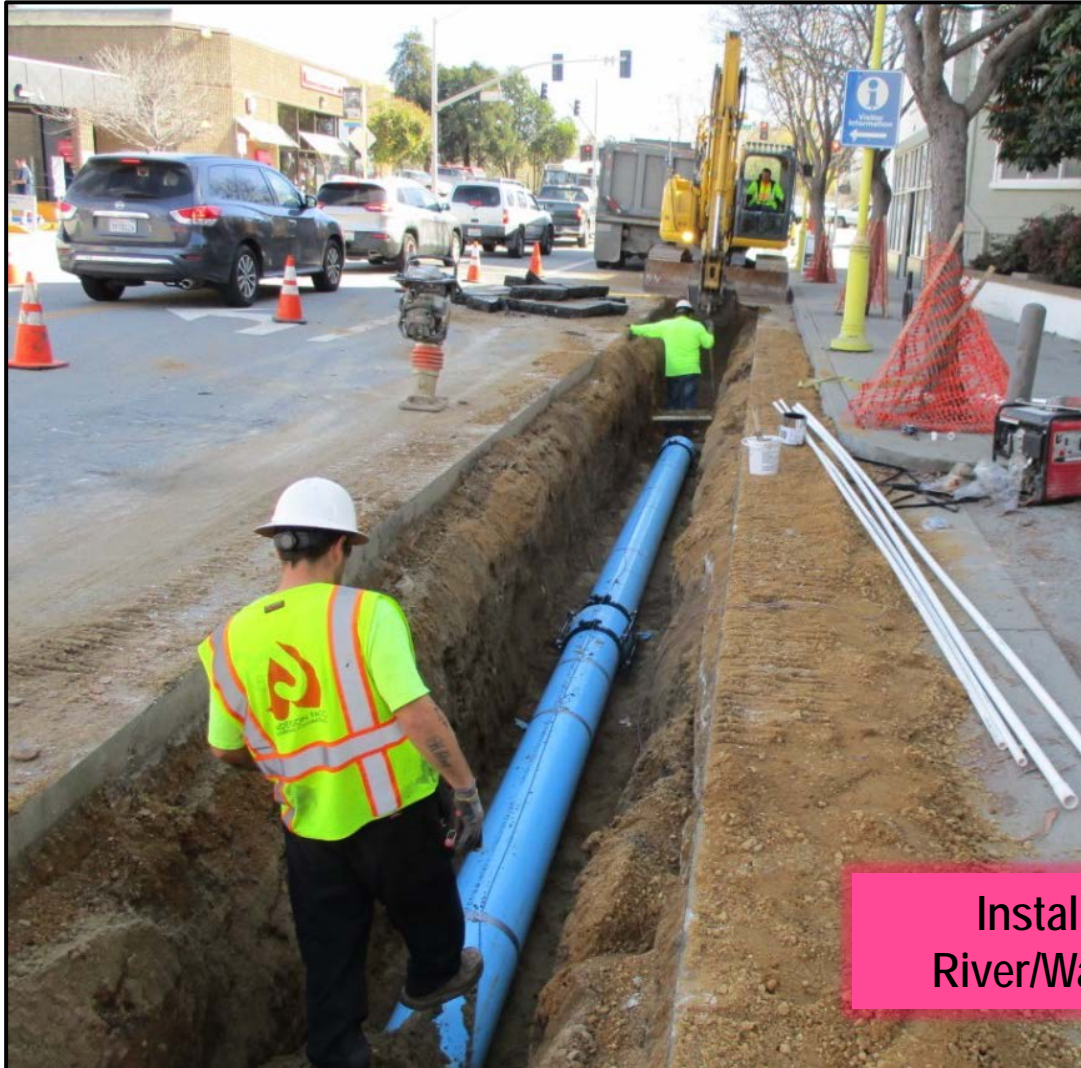
# PROJECT ELEMENTS



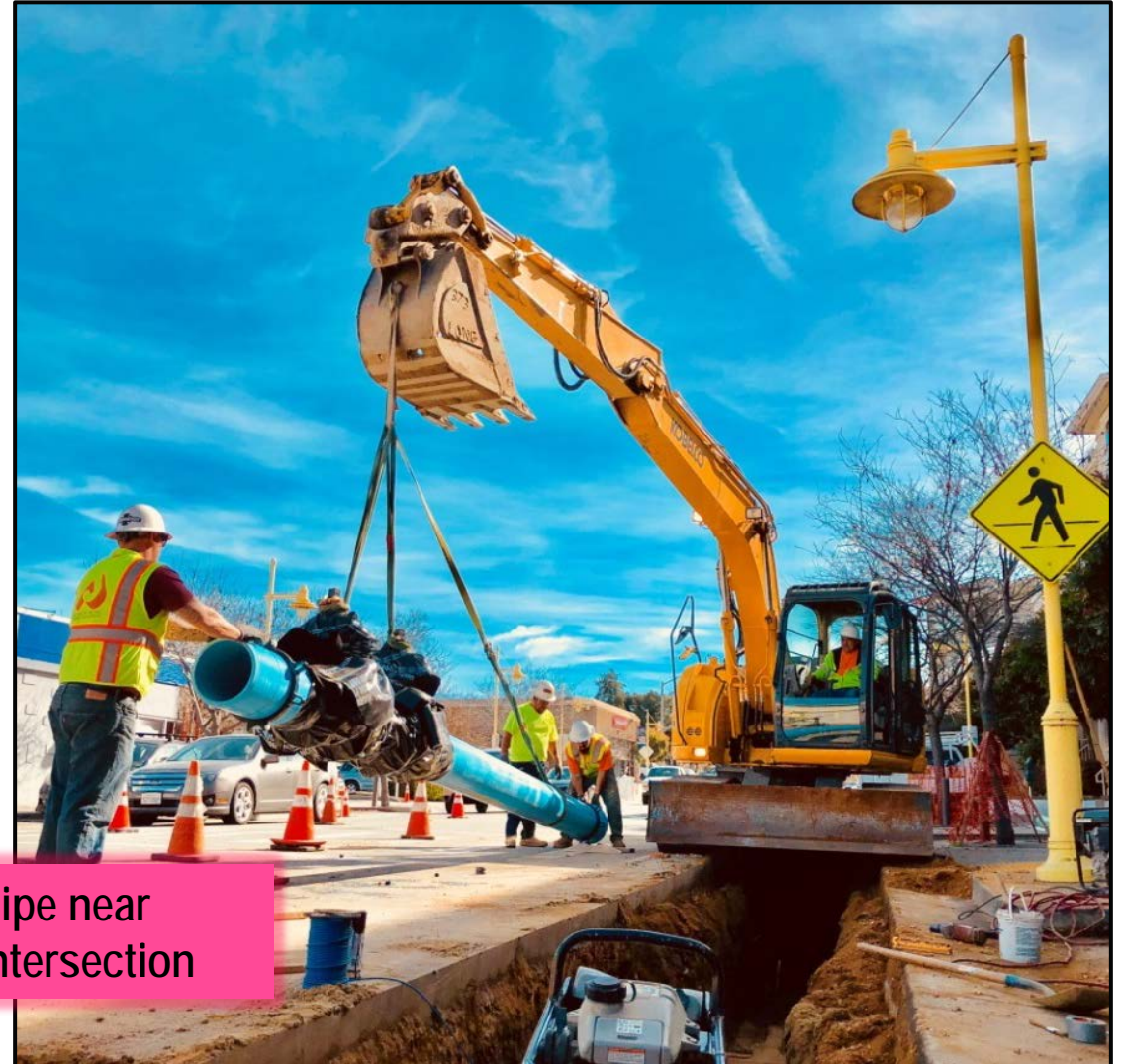
- An expanded pad to accommodate new tank configuration (includes a site drainage system)
- A new (replaced) Sludge Storage Tank
- A new (replaced) Reclaim Tank
- A new (replaced) Filtered Water Tank
- A new electrical building
- New retaining walls around project area
- A new (replaced) access stairs and bridge
- Keyhole for future UV facility



# Routine Main Replacement Program ~ 1.5 miles per year



Install of 12" pipe near  
River/Water St. intersection



# Tank Rehab/Replacement Program

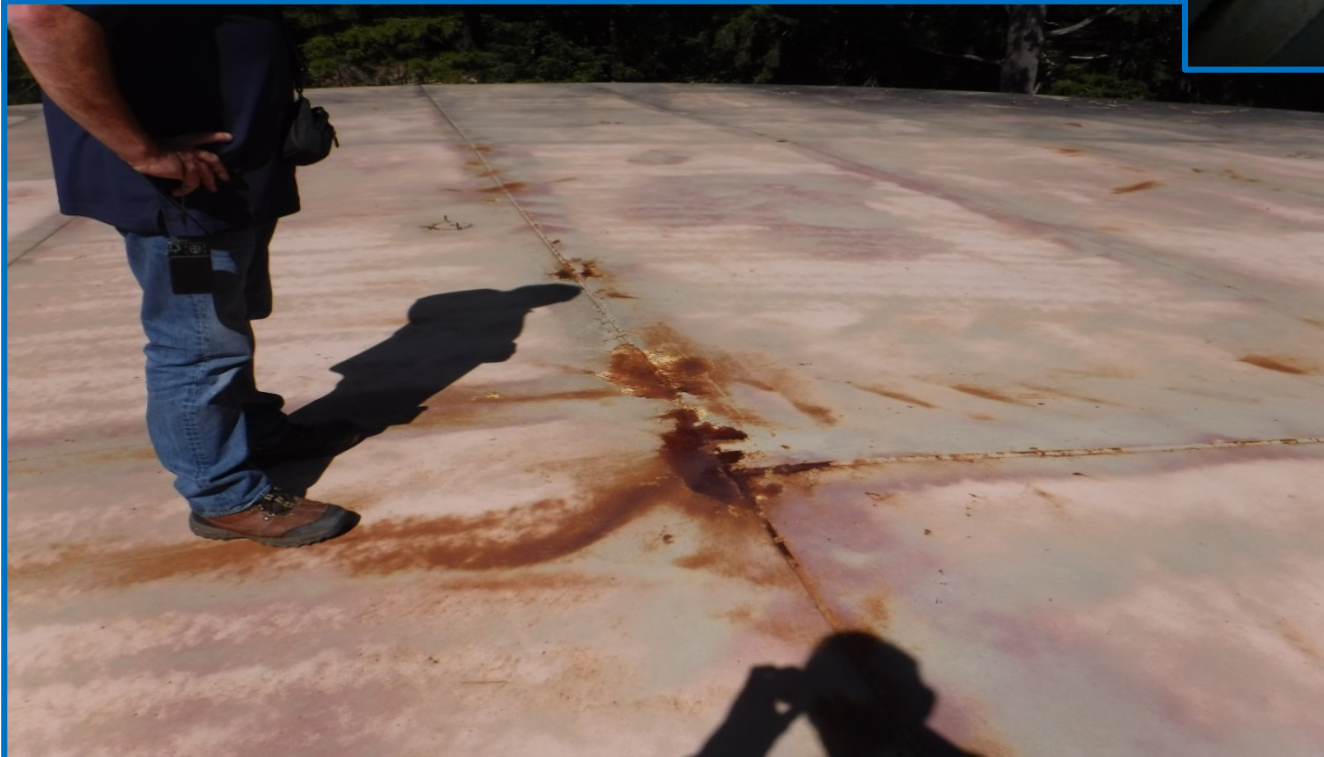
U2 Tank →  
Rehabilitation Completed - 2014  
Addition of New Maintenance Tank



← U5 Tank  
Inspection / Investigation - 2015  
Planning/Design – 2016-2018  
Construction – 2017-2019

U4 Tank →  
Inspection / Investigation – 2019/2020





# ***Commonly Used Alternative Delivery Approaches***

## **Construction Management at Risk**

- "CM/GC, GCCM"

## **Fixed Price Design-Build**

- "Lump Sum Design-Build"

## **Progressive Design-Build**

- "Engineer-Procure-Construct (EPC)"

## ***Traditional Delivery Options***

Contractor pre-qualification

"Best value" selection



## **Water and Wastewater Design-Build Handbook**

Fourth Edition



# Environmental

- Species of local interest
  - Steelhead trout, CA red-legged frog, Mount Hermon june beetle, migratory birds, and others
- Resources of local interest
  - Sandhills, Wetlands, Waters, Riparian Habitat, Historic Structures, Cultural and Tribal Resources, Paleontological Resources





05

## Doing Business with the City



59°F

Translate

Pay Online

All Meetings

Jobs

Santa Cruz Wharf

Co



Services

Community

Business

Government

Ho

Bidding Information

Building Inspection  
Services

Business License  
Database

Business Licenses and  
Permits

Business Resources

Chamber of Commerce  
Community Profile

Downtown Association

Green Business Program

Planning and Community  
Development

Selling to the City

Starting a Business

Street Banners

Choose Santa O  
Business Portal

Search...

GO

# Local Hire Provisions for Construction Contractors

- Not as scary as it sounds, projects can be exempted
- Require *good faith effort* to staff project with 50% local labor.
  - Local is Santa Cruz County resident **or** member of trade org that has jurisdiction over area
  - Does not force contractor to hire anyone off the street who applies
- Submit 1 page summary report monthly along with pay-app/cert. payroll

# If you have more questions about:

- Professional Service Agreements
- Insurance or Licensing requirements
- Construction Contracts
- Anything really...

»**Malissa Kaping** has the answers

# Water Program Page

- These Open House Materials
- Upcoming Procurements
- Project Status



Website: [cityofsantacruz.com/ourwaterourfuture](http://cityofsantacruz.com/ourwaterourfuture)



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