



## Panel: Recycled Water Driver and Lessons Learned



- Moderator
  - Rhodora Biagtan, West Yost
- Panelists
  - Tracy Crane and Cody Smith, El Dorado Irrigation District
  - Gayleen Darting, Sac Sewer
  - Jennifer Burke, City of Santa Rosa
  - Pedro Hernandez, South Bay Water Recycling
  - Melody LaBella, Central San



# El Dorado Irrigation District

Tracy Crane,  
Wastewater/Recycled  
Water Operation  
Manager

Cody Smith, Recycled  
Water Operations  
Supervisor

# EL DORADO IRRIGATION DISTRICT RECYCLED WATER PROGRAM

## The District

- Water, Wastewater, Recycled Water, Recreation, Hydroelectric Power
- 220 square mile service area
- 500 feet to over 8,000 feet elevation
- 42,860 water accounts
- 24,303 wastewater accounts
- 5,636 recycled water accounts

## History

- 1989 - EL DORADO HILLS DEVELOPER PURCHASES 3500 AC PROPERTY
- 1990 - EID/SERRANO DEVELOPER AGREEMENT
- 1996 - RECYCLED WATER MASTER PLAN
- 1998 - SERRANO AGREEMENT FOR DUAL PLUMBED RESIDENTIAL PROPERTIES
- 2001 - MASTER RECLAMATION PERMIT RECEIVED
- 2002 - MANDATED REUSE POLICY WHERE FEASIBLE
- 2002 - RECYCLED WATER MASTER PLAN UPDATED
  - RECYCLED WATER SUPPLY DEFICIT PROJECTED
  - RECOMMENDED USE OF POTABLE SUPPLEMENTATION TO MEET DEMANDS IN EFFORT TO PROMOTE DUAL PLUMBED DEVELOPMENT

\*\*Serrano

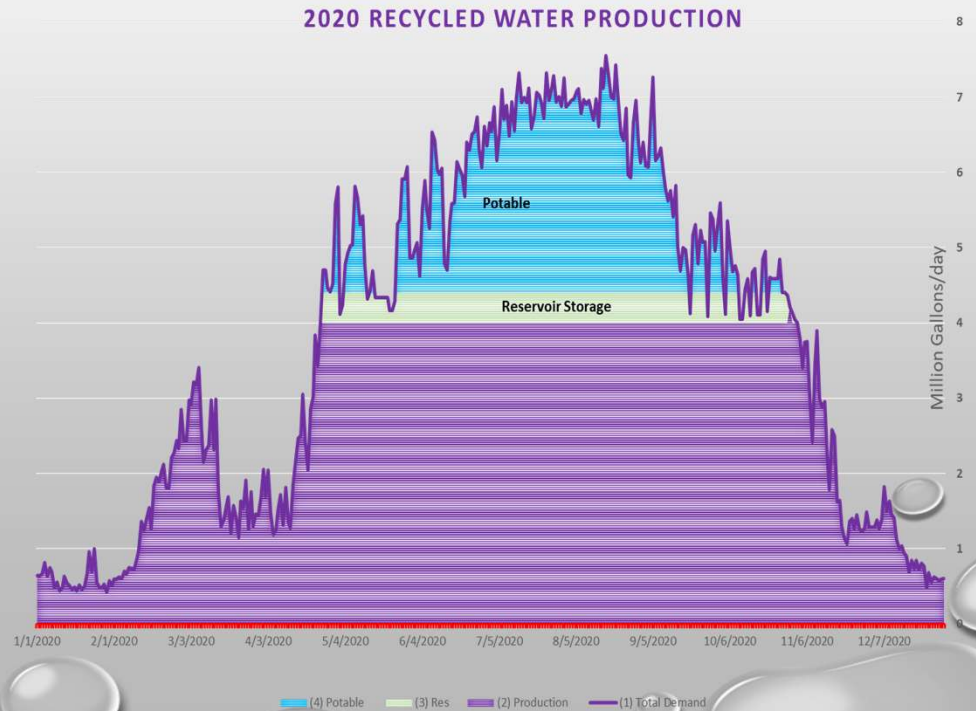
First subdivision in California to use “dual plumbed” front & back yard landscape irrigation

# LESSONS LEARNED

## Challenges

- Downstream residents objected to diversion of water from Deer Creek
  - Limited Recycled water production and Required Discharge to Deer Creek
- Conservation Efforts reduced volume of wastewater flows
- Drought and mandated conservation targets threaten supplementation supply
- Major RW compliance tasks
  - Front and backyard onsite irrigation system plan check
  - Construction inspections
  - Annual backflow inspections

## Recycled Water Supply Deficit





Sac Sewer



Gayleen Darting,  
Associate Civil Engineer

# Drivers



# Lessons Learned



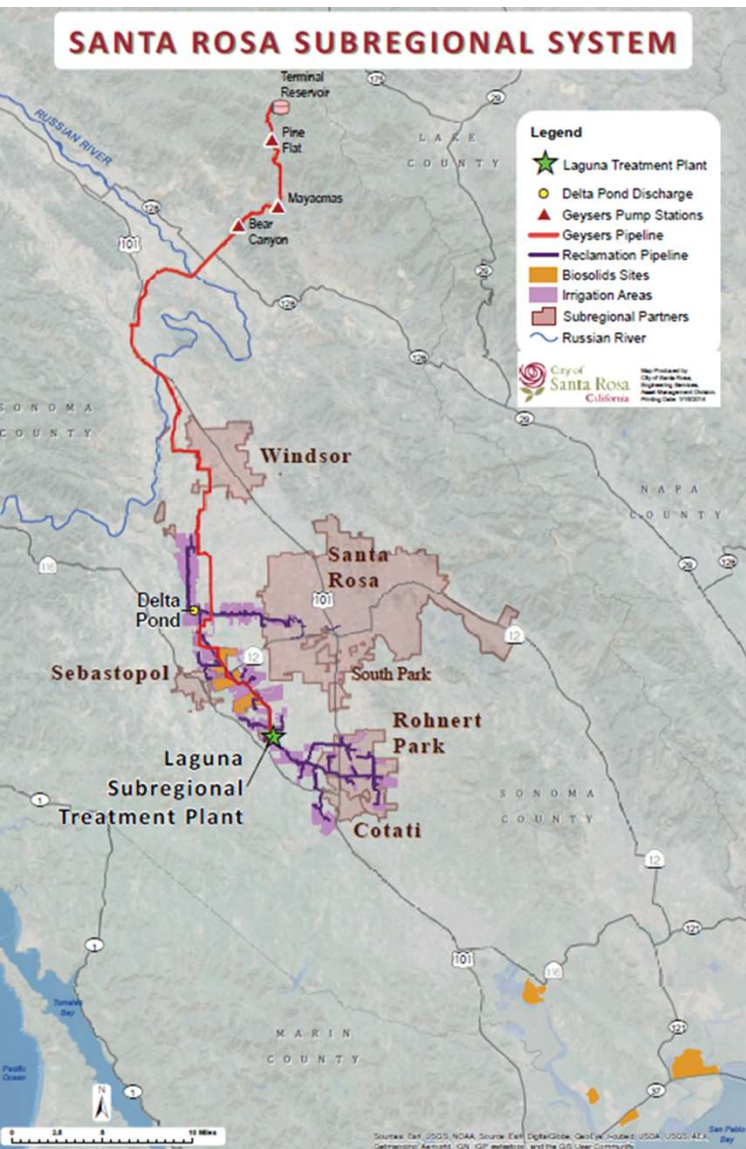


City of Santa Rosa



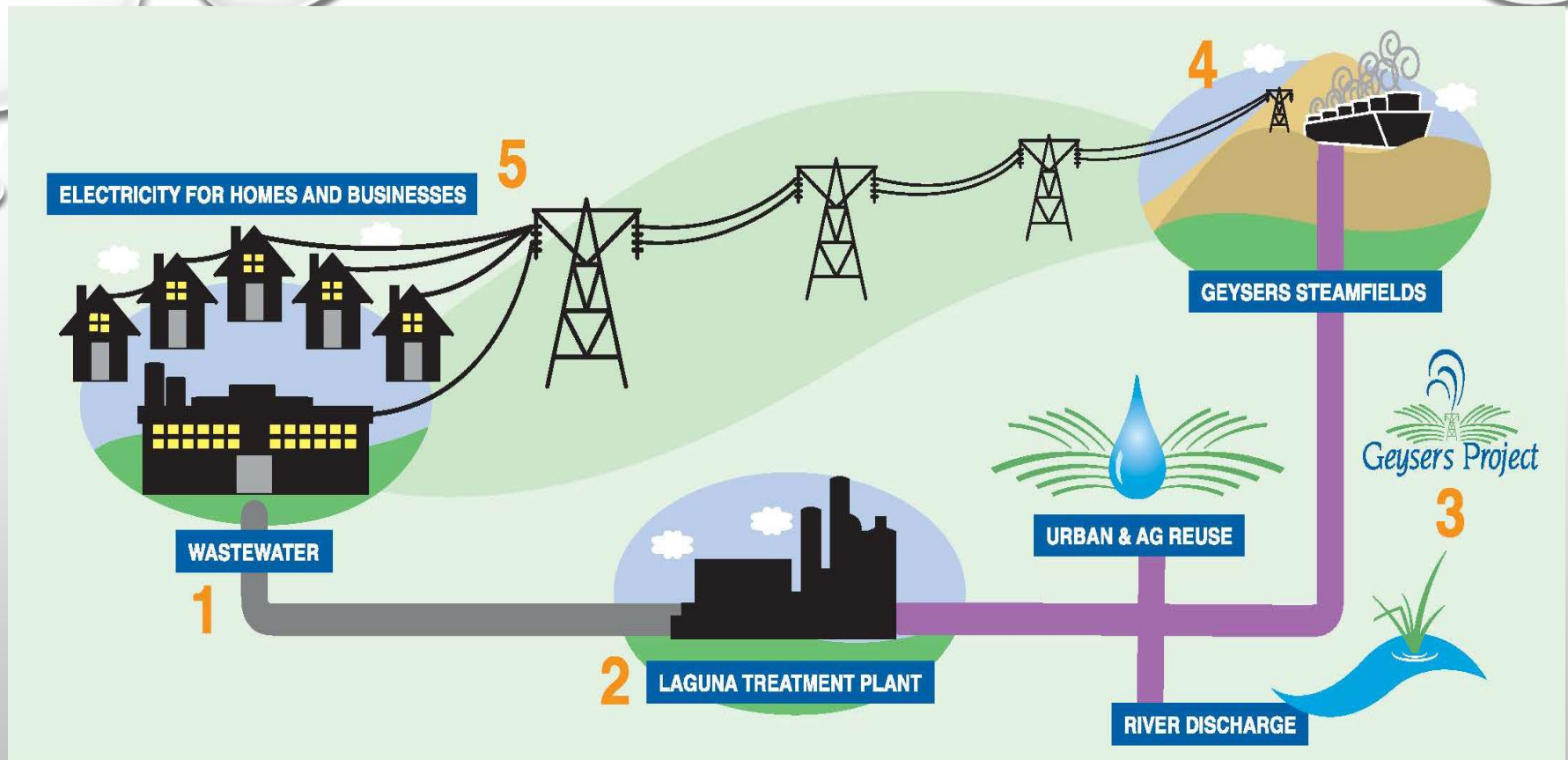
Jennifer Burke, Director  
of Santa Rosa Water





# Santa Rosa Water

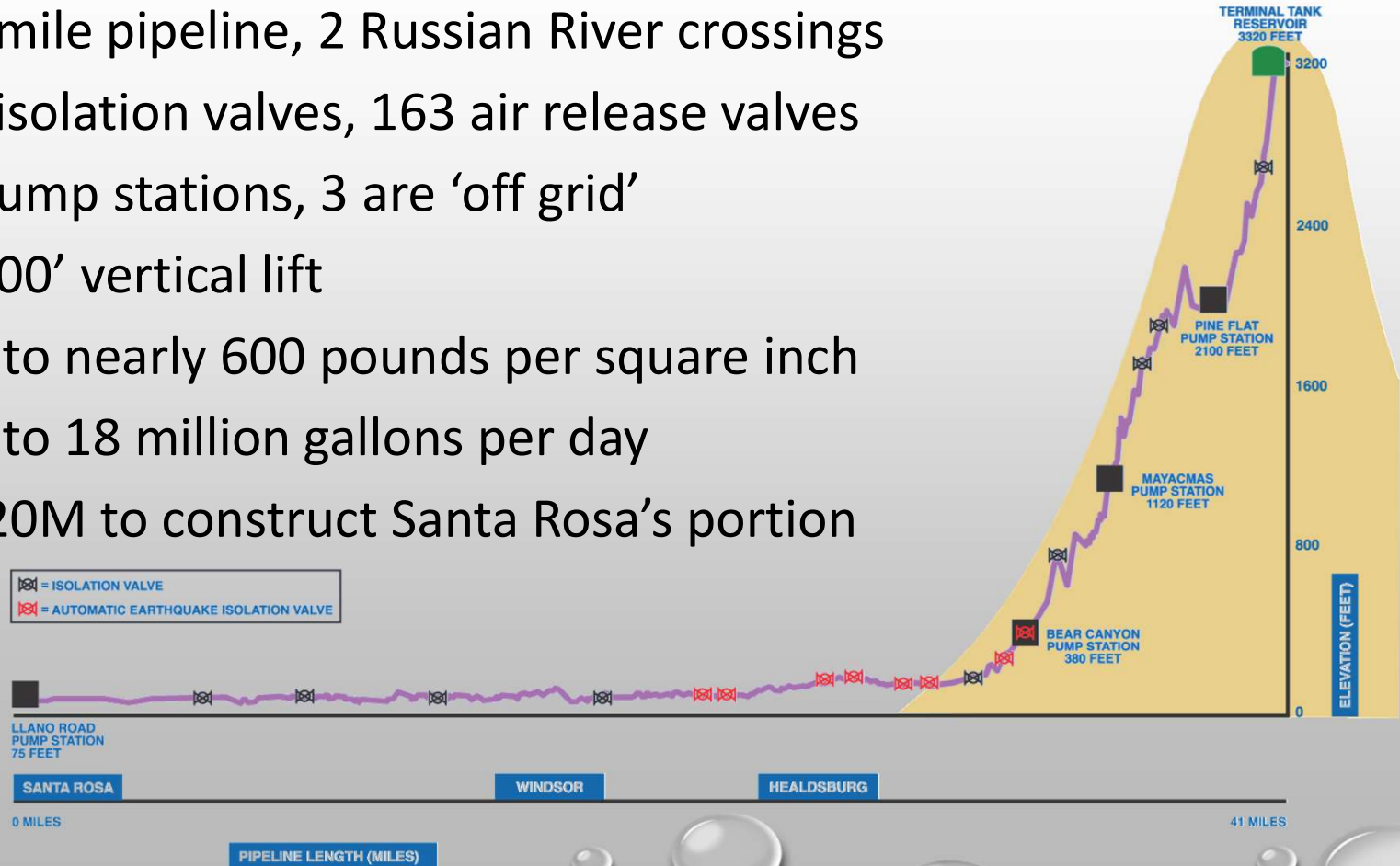
- Provide water and sewer service to 175,000 customers in Santa Rosa
- Deliver 6 billion gallons of water each year
- Maintain over 1,200 miles of water and sewer pipe
- Own and Operate regional Laguna Treatment Plant serving 5 partners
- Provide wastewater treatment for 213,000+ customers
- Treat and beneficially reuse 6.6 billion gallons of recycled water per year



98% Reuse on average, with 100% reuse in normal and dry years  
100 MW of clean, renewable energy

# By the Numbers

- 41 mile pipeline, 2 Russian River crossings
- 17 isolation valves, 163 air release valves
- 4 pump stations, 3 are 'off grid'
- 3,200' vertical lift
- Up to nearly 600 pounds per square inch
- Up to 18 million gallons per day
- \$220M to construct Santa Rosa's portion





City of San Jose,  
South Bay Water Recycling

Pedro Hernandez,  
Senior Environmental  
Program Manager -  
Purified Water and  
Regulatory Affairs  
Division

# South Bay Water Recycling Program



## Program Drivers



Photo courtesy of [USFWS](#)



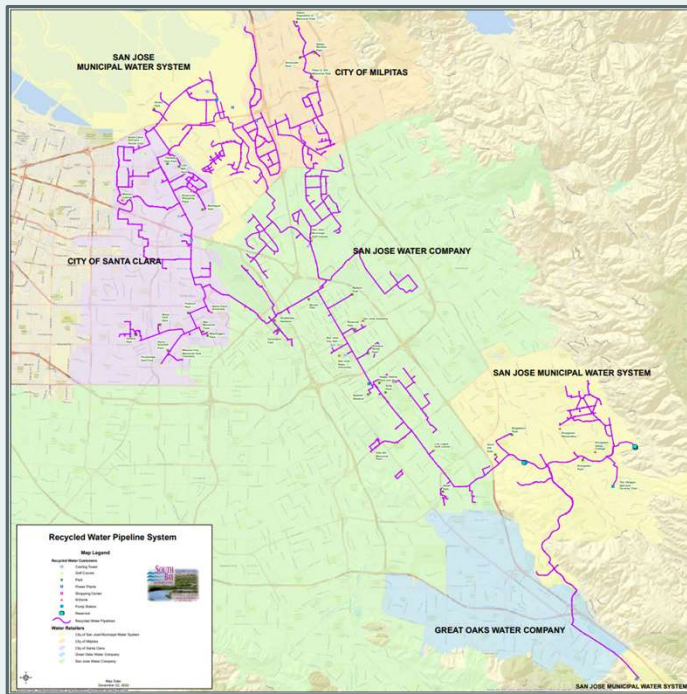
Photo courtesy of [USFWS](#)



Providing **Drought Proof, High Quality Water**  
for our **COMMUNITY.**



Photo courtesy of [wikipedia](https://www.wikipedia.org/)



- 1,000+ customers
- 190+ miles of pipeline
- 5 pump stations
- 3 storage reservoirs
  - capacity of 9.5 mg
- 11,000 afy
- ~14 mgd





City of San Jose,  
South Bay Water Recycling

Pedro Hernandez,  
Senior Environmental  
Program Manager -  
Purified Water and  
Regulatory Affairs  
Division

August 16, 2024

# Central San's Recycled Water Program

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WaterReuse Joint Chapter Meeting

**Melody LaBella, P.E.**  
Resource Recovery Program Manager





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# Original Drivers

- Clean Water Act
- EPA Construction Grant Fund



# Water Reclamation Facilities Constructed in 1970s

Forebays, Applied Water Pumps, Filter Plant Building



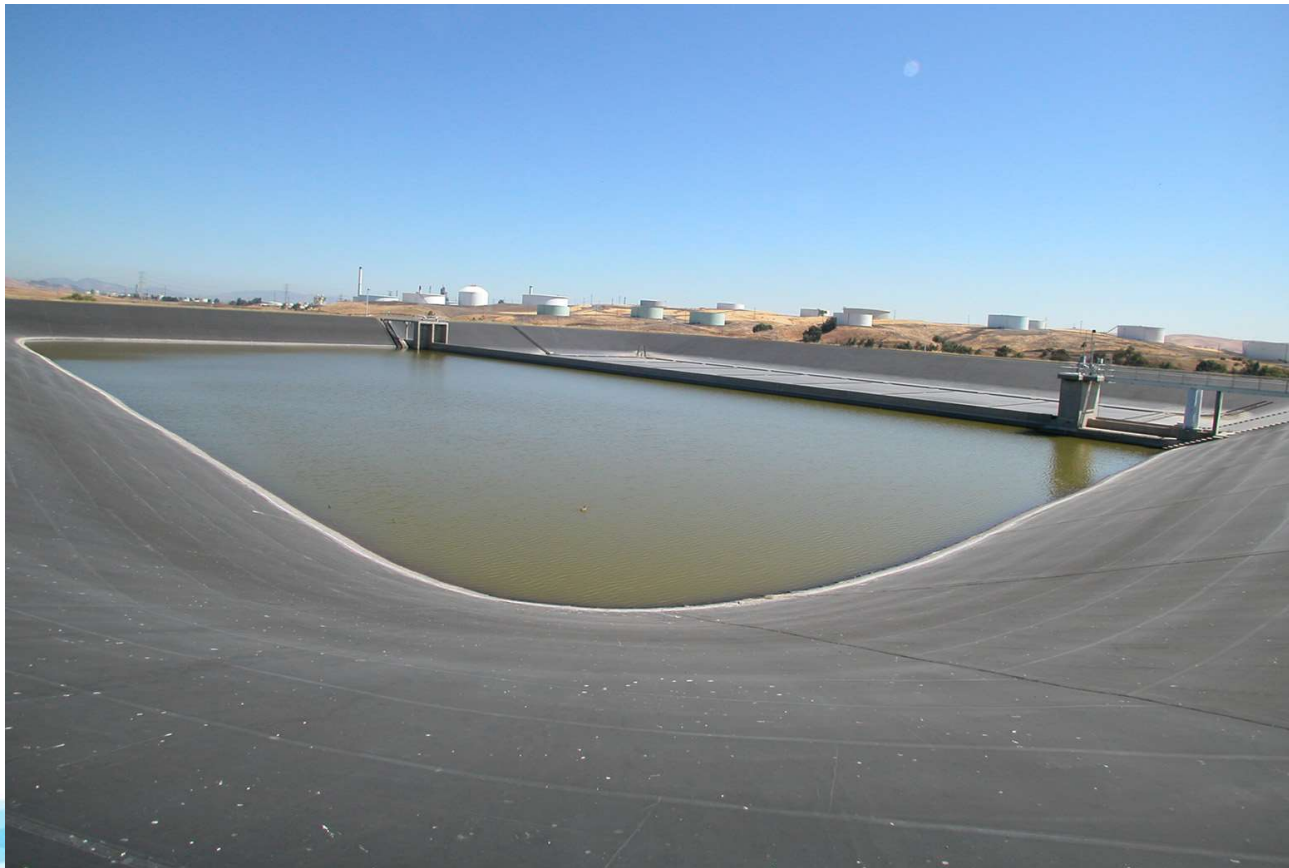
# Water Reclamation Facilities Constructed in 1970s

## Filters

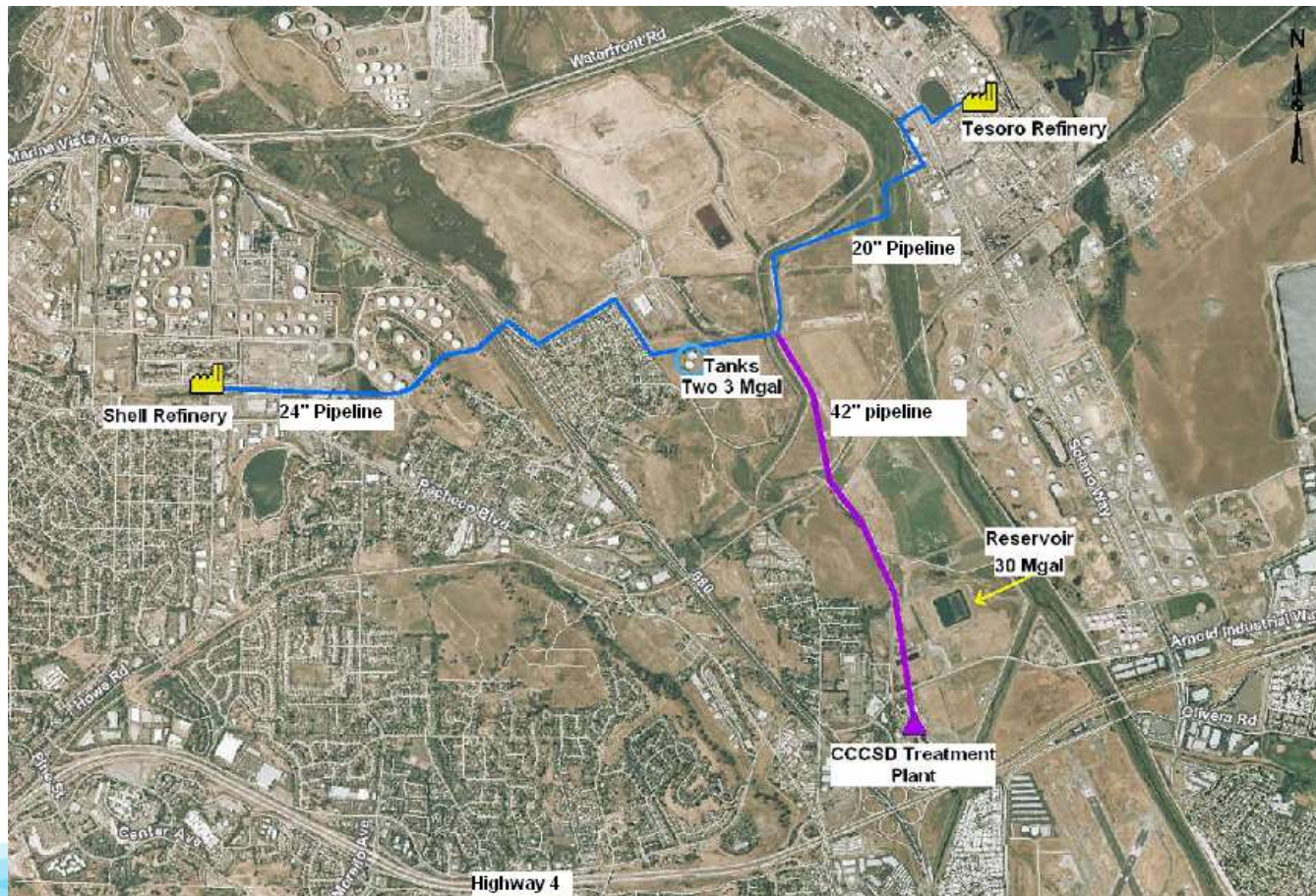


# Water Reclamation Facilities Constructed in 1970s

## Storage Reservoir



# Water Reclamation Facilities Constructed in 1970s Pipelines

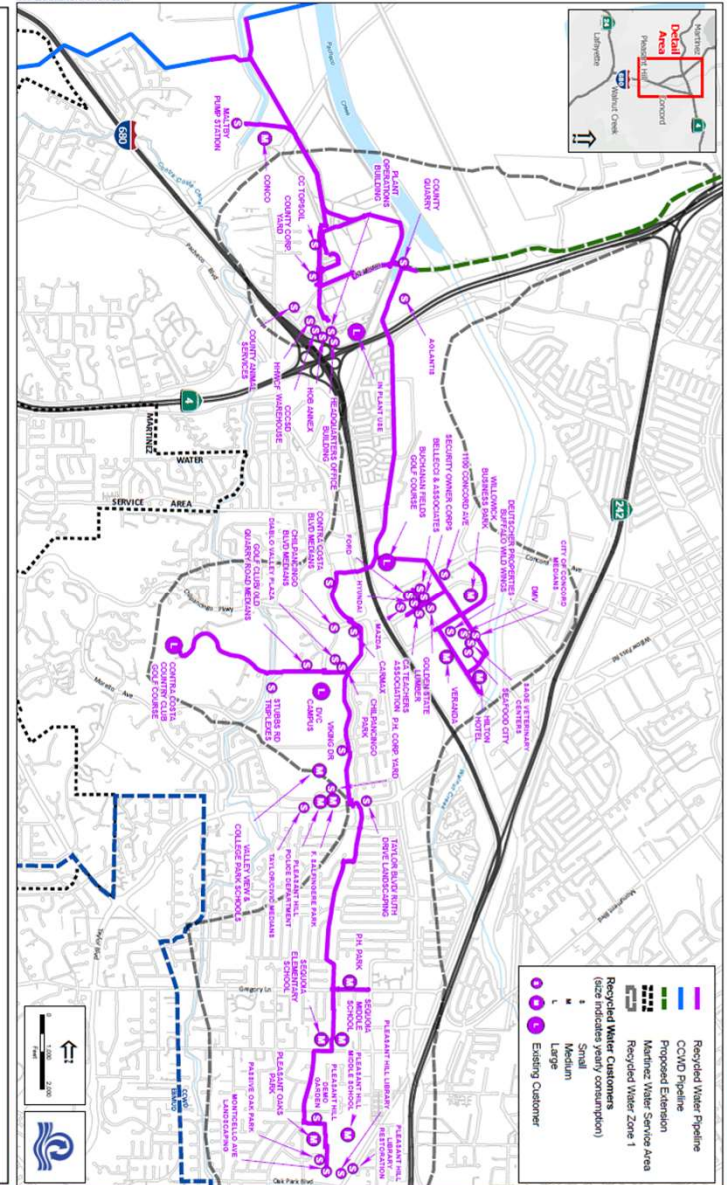
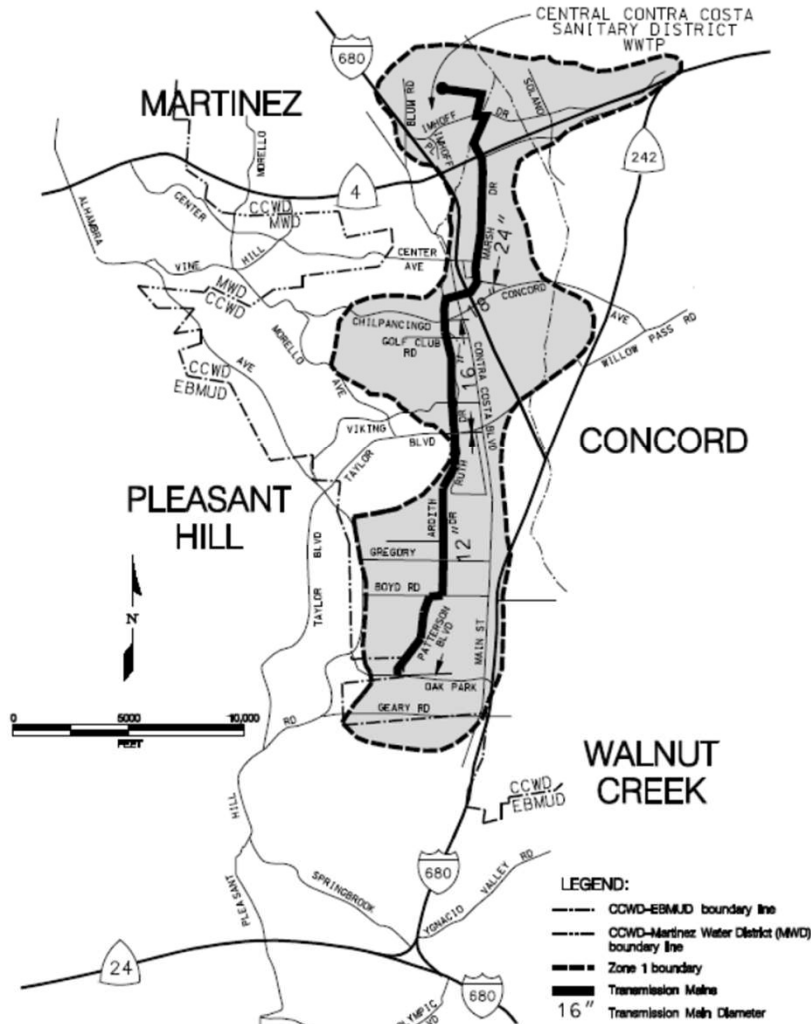


# Central San's Recycled Water Program





# ZONE 1 RECYCLED WATER PROJECT



# Central San's Recycled Water Customers



PLEASANT HILL RECREATION & PARK DISTRICT



MT. DIABLO UNIFIED SCHOOL DISTRICT





# Commercial Truck Fill Program

- This Program provides recycled water to licensed contractors for construction activities such as dust control, soil compaction, and plant establishment.
- Contractors can access recycled water from three purple fire hydrants or our Commercial Fill Station.
- The first 100,000 gallons of recycled water is free of charge.



One of Central San's purple hydrants (left) and a portable meter (middle) that contractors can use to obtain Central San's recycled water. Central San's Commercial Fill Station (right).

# Residential Fill Station



The Residential Fill Station Program allows central Contra Costa County residents to pick up recycled water free of charge at our HHW Collection Facility in Martinez for hand-watering lawns, landscaping, and gardens.

## How to use this program:

- Complete an Application/Use Agreement and a brief training class on the proper use of recycled water
- Brings containers with watertight lids; 1 gallon minimum to 300 gallon maximum
- Use appropriately-sized containers and vehicles for transport (water is heavy!)
- Unlimited trips allowed

AgLantis

CoCo San Sustainable Farm



AgLantis

CoCo San Sustainable Farm



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## Key Lessons Learned

- It would have been cheaper to pay back that EPA grant.
- Upgrading backflow prevention at customer sites with fire suppression systems is a potential deal killer.





# Discussions

# Bay Area Nutrients Watershed Permit

- Requires a 40% reduction in the dry season discharge of total inorganic nitrogen from 2022 baseline by October 2034
- Dry season = May 1 to September 30



## Media Release

**Regional Water Board adopts permit requiring critical investments to protect San Francisco Bay**

***Necessary sewage treatment upgrades over next decade will limit threat of 'red tides' that endanger water quality, aquatic species***

July 10, 2024 Contact: [Blair Robertson](#)—Information Officer

**OAKLAND** – To help protect water quality and aquatic life in San Francisco Bay for generations to come, the San Francisco Bay Regional Water Quality Control Board adopted a permit today that will for the first time require nutrient reductions for all wastewater treatment plants discharging into the bay.

The new permit, adopted under the Clean Water Act after years of monitoring and research, will go into effect Oct. 1. It requires that 40 sewage treatment plants must collectively reduce nitrogen discharges by 40% compared to 2022, when a ["red tide" harmful algal bloom \(HAB\)](#) triggered a massive fish kill in the San Francisco Bay. Nutrients are discharged into the bay from sewage treatment plants' wastewater. Excessive nutrients are a major contributor to HABs, which cause a dramatic depletion in dissolved oxygen levels, killing aquatic species.

Toxins from HABs can cause illnesses through direct contact, inhalation, and fish and shellfish poisoning. HABs can be particularly devastating to indigenous communities and subsistence fishers.