



# **US Coast Guard TRACEN Wastewater Facilities Little Utility with a Big Vision: Wastewater Problems to Water Supply Solutions**

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June 2015





# US Coast Guard TRACEN Wastewater Facilities

## Project Team

USCG Facilities Design and Construction Center

USCG TRACEN Staff

Marcy Wong Donn Logan Architects

GHD



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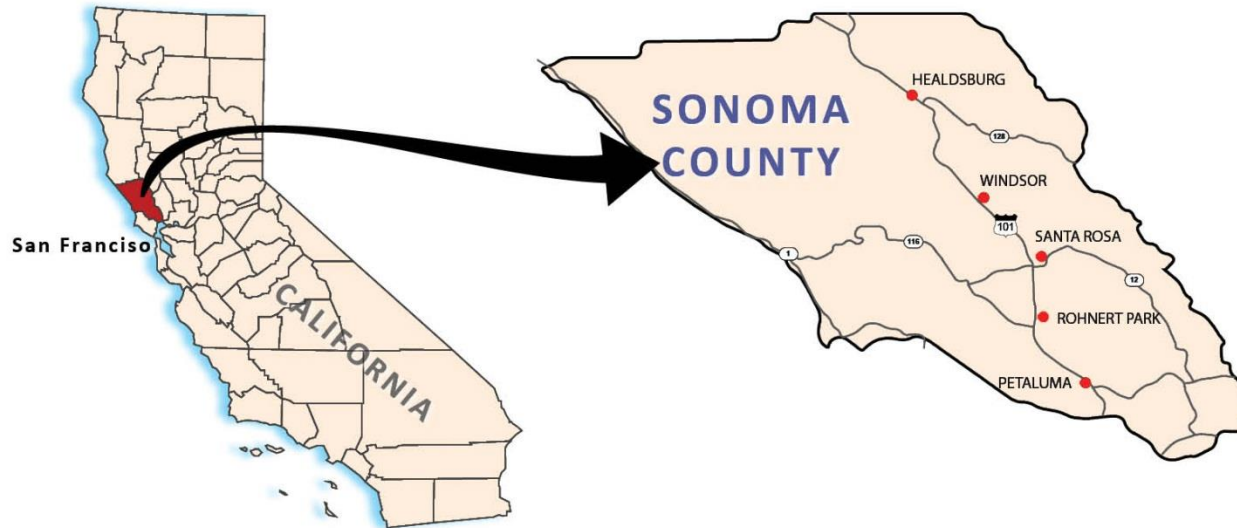


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# USCG TRACEN

## Petaluma Location



### Training Center

- Cooks
- Electronics
- Business Services
- 1250 personnel on site





# Project Drivers

- Natural Resource Protection - Zero discharge requirements and problems with lack of storage and insufficient treatment
- Increased Wastewater Treatment Capabilities – WWF needed to meet North Coast Basin Plan Water Quality Standards and address Cease and Desist Order
- Potable Water Offset - Tertiary filtration for landscape irrigation





# TRACEN Petaluma Vision

- To be the best place to live, work and train
- To become the most environmentally friendly Coast Guard base in the world

## Petaluma Green Program

- Solar Photovoltaic
- Energy Conservation
- Water Conservation
- Wind Power
- Waste Diversion
- Natural Resource Protection



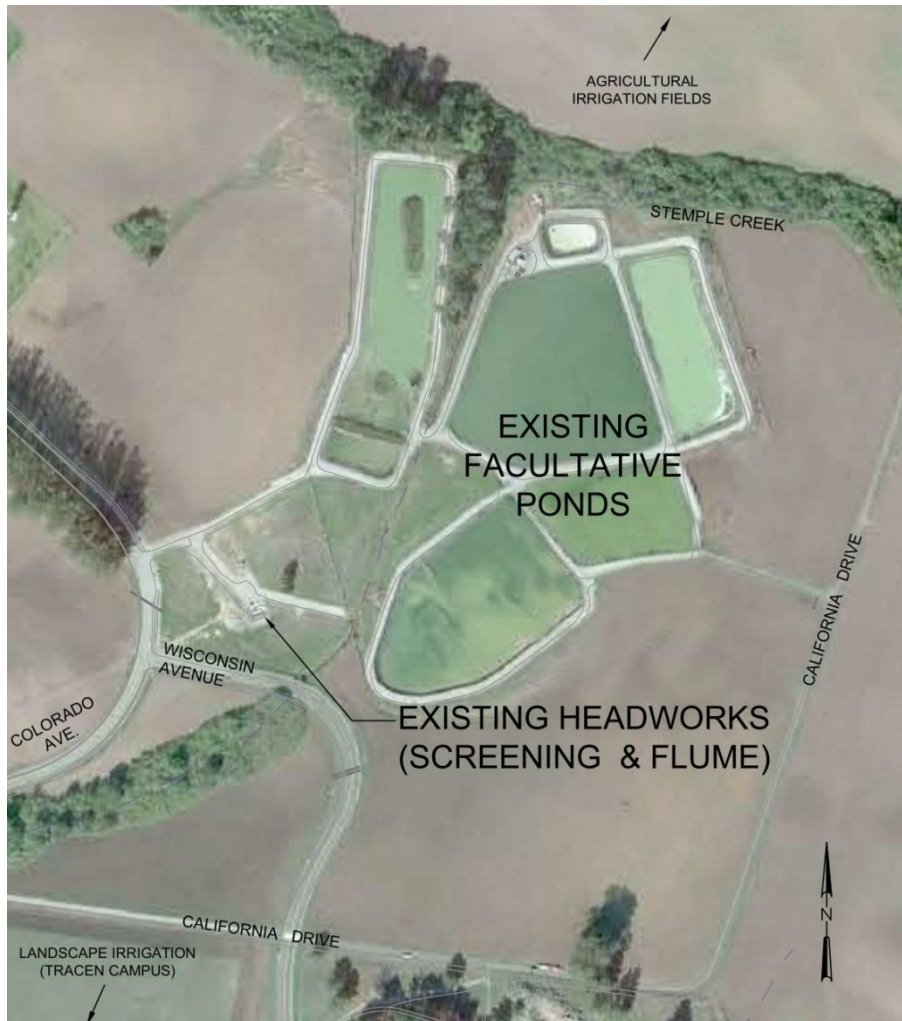


# Getting the Project Approved and Funded

- TRACEN Petaluma identified need for new plant
- Regional review, approval, and prioritization
- Analysis of Alternatives completed, outline of budget request sent to HQ
- Project Proposal Report with preliminary design, revised budget
- Design and Request for Proposal completed
- Congressional budget approval, Construction RFP put out for bid



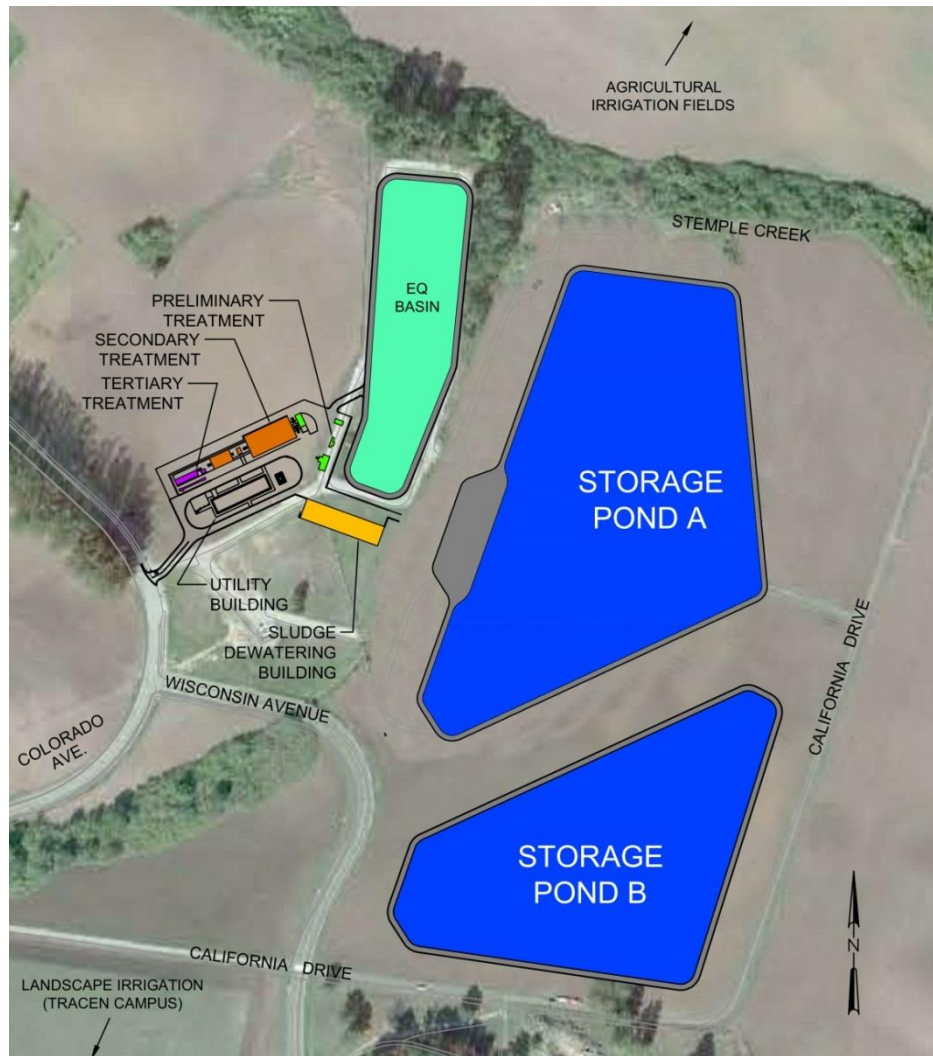
# Original Wastewater Facilities



- Course Screening
- Five Facultative Pond in Series
- Chlorine Disinfection
- Agricultural Irrigation Disposal



# New Wastewater Facilities



- New WWTP Design Criteria
  - 0.225 MGD ADF
  - 0.9 MGD PWWF
  - BOD5 - 250 mg/l
- Effluent Quality
  - $\text{BOD5} \leq 10 \text{ mg/l}$
  - $\text{TSS} \leq 15 \text{ mg/l}$
  - $\text{TN} \leq 10 \text{ mg/l}$
  - $\text{NH3-N} \leq 1 \text{ mg/l}$
- New Storage Ponds (215 AF)
- New EQ Basin (3 MG)



# Wastewater Disposal

- TRACEN acreage is used for disposal of secondary treated wastewater by spray irrigation
- Partnership with local farmer to crop the land with a grass blend for dairy cattle
- Tertiary Disposal – landscape irrigation is used to offset up to 50,000 gpd





# Agricultural Irrigation – 73 Acres





# Landscape Irrigation – 25 Acres



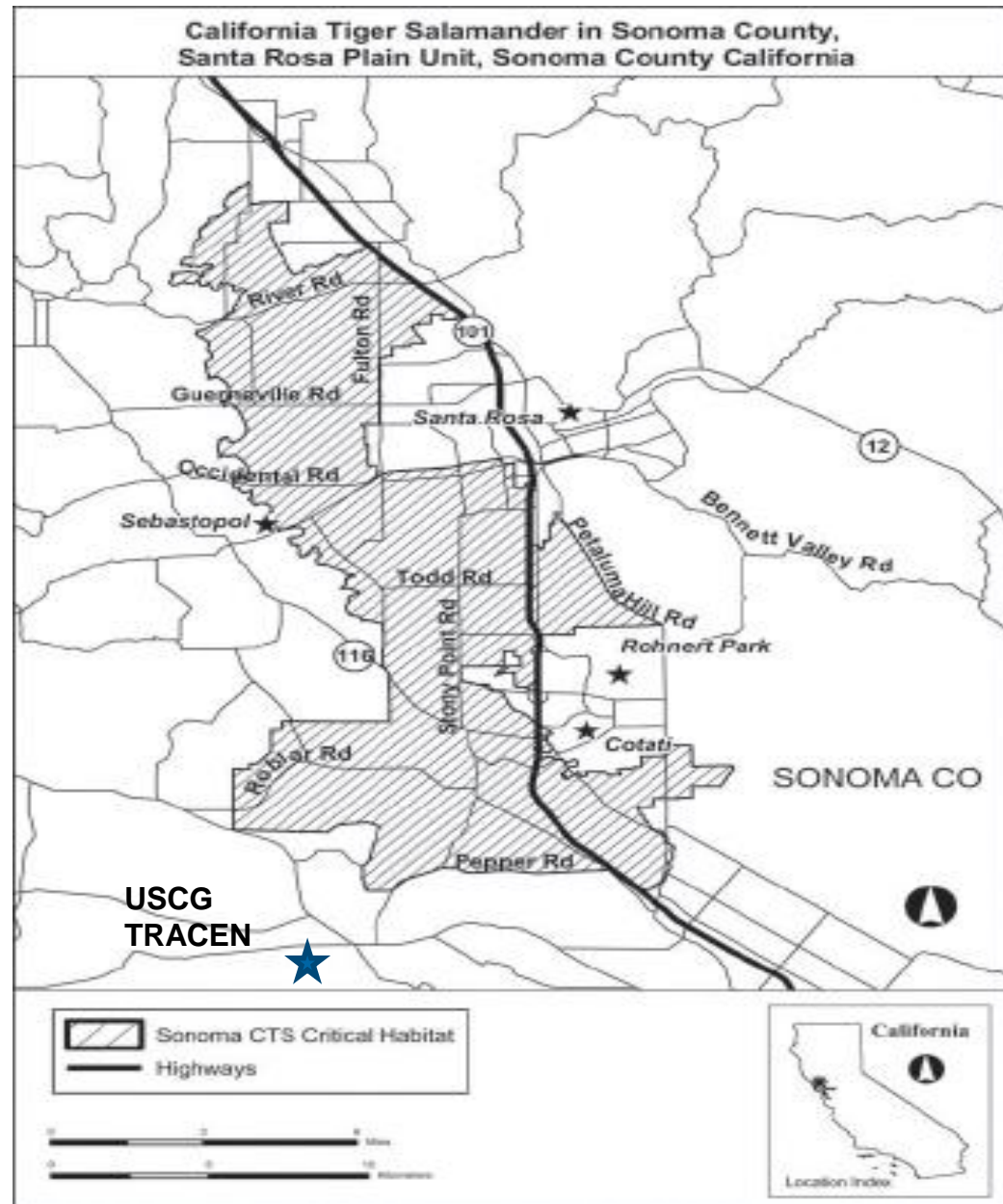


# **Recycled Water MYTHS AND FACTS**

## **Does Recycled Water Affect CTS?**



Do CTS Respect  
the Critical  
Habitat Boundary  
that we  
prescribe?



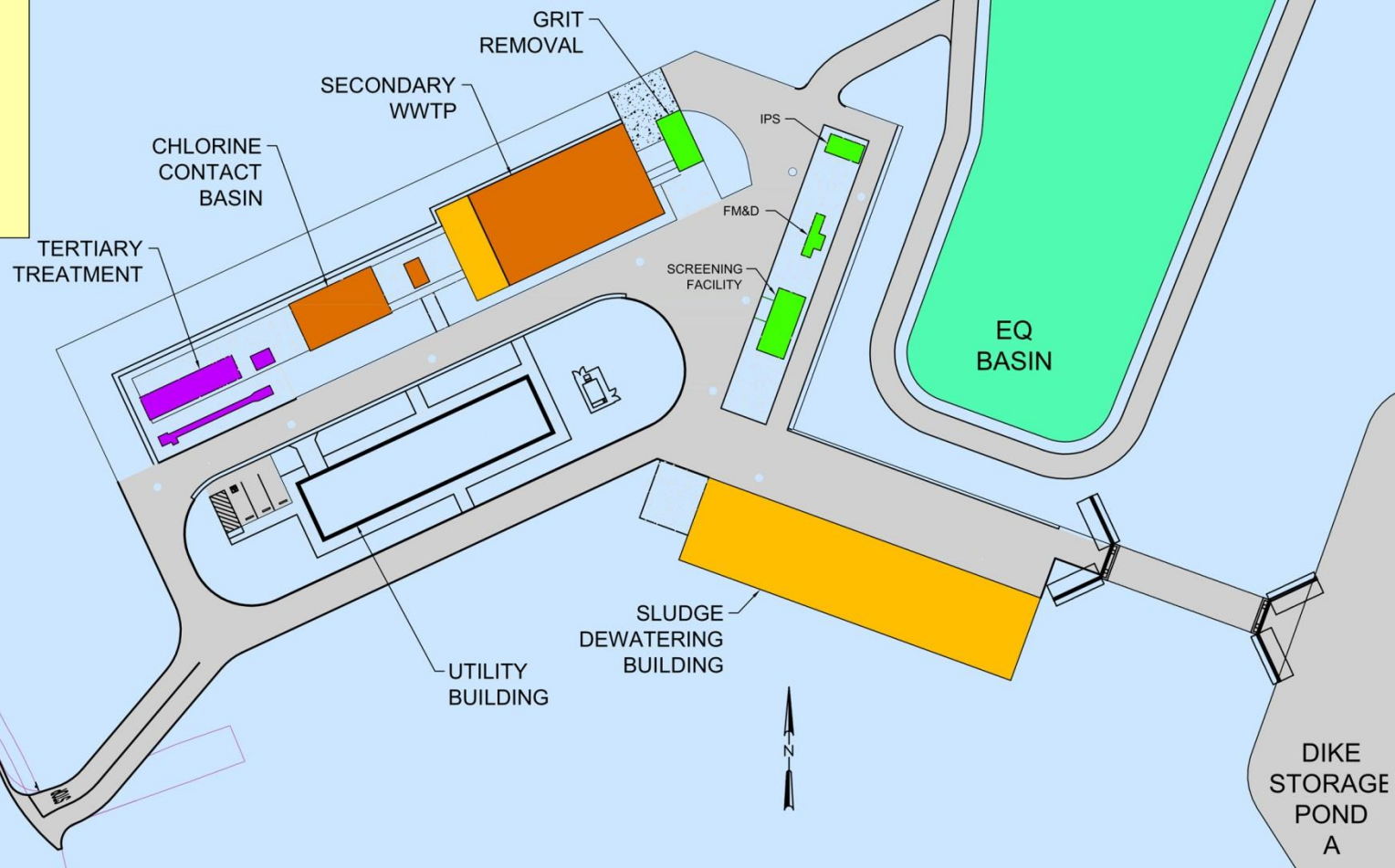
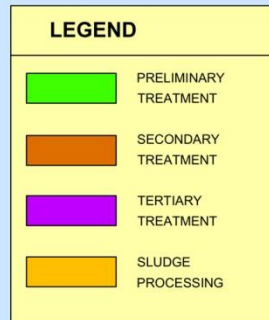


**No and No!**



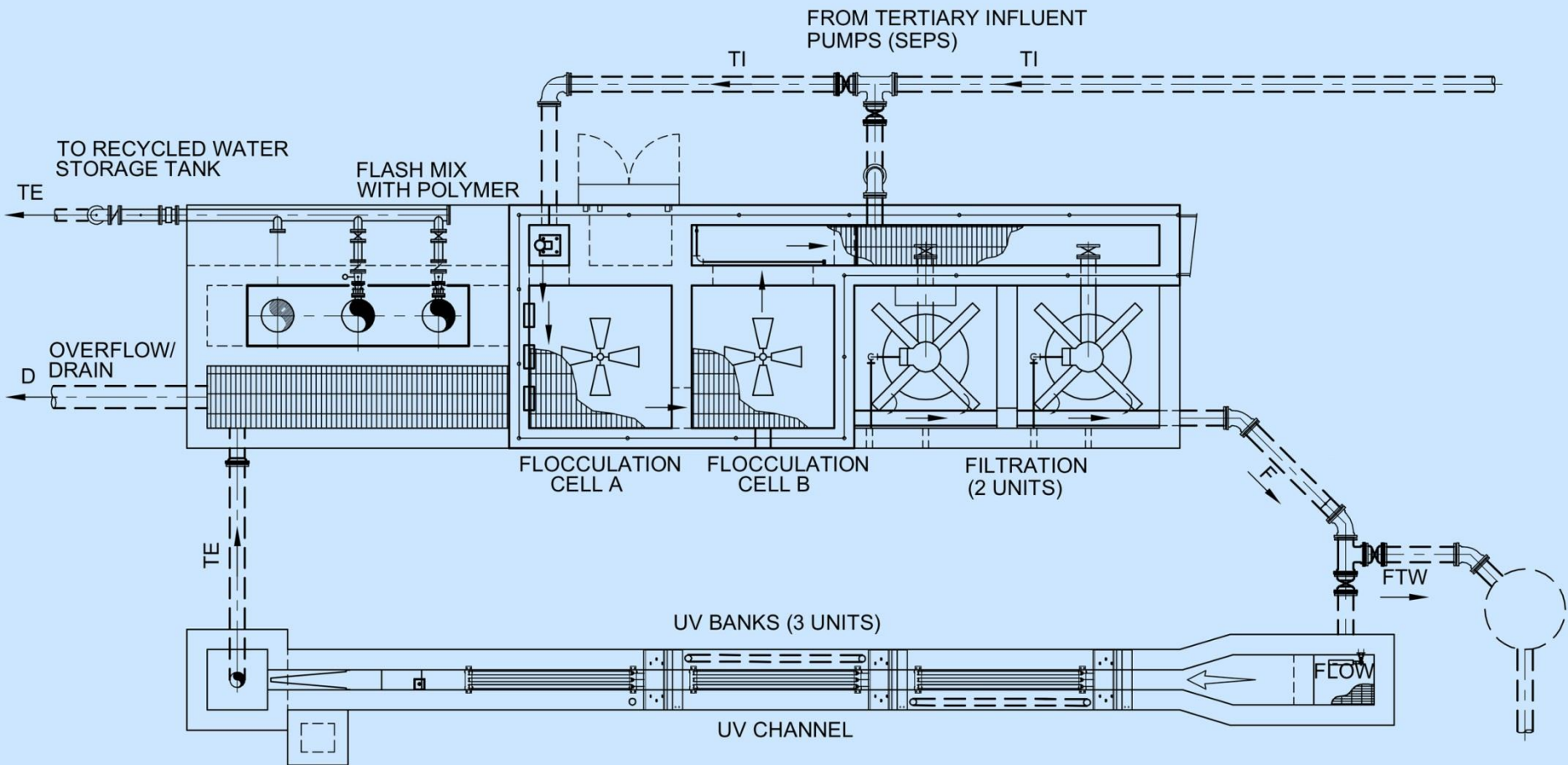


# WWTP Site Plan



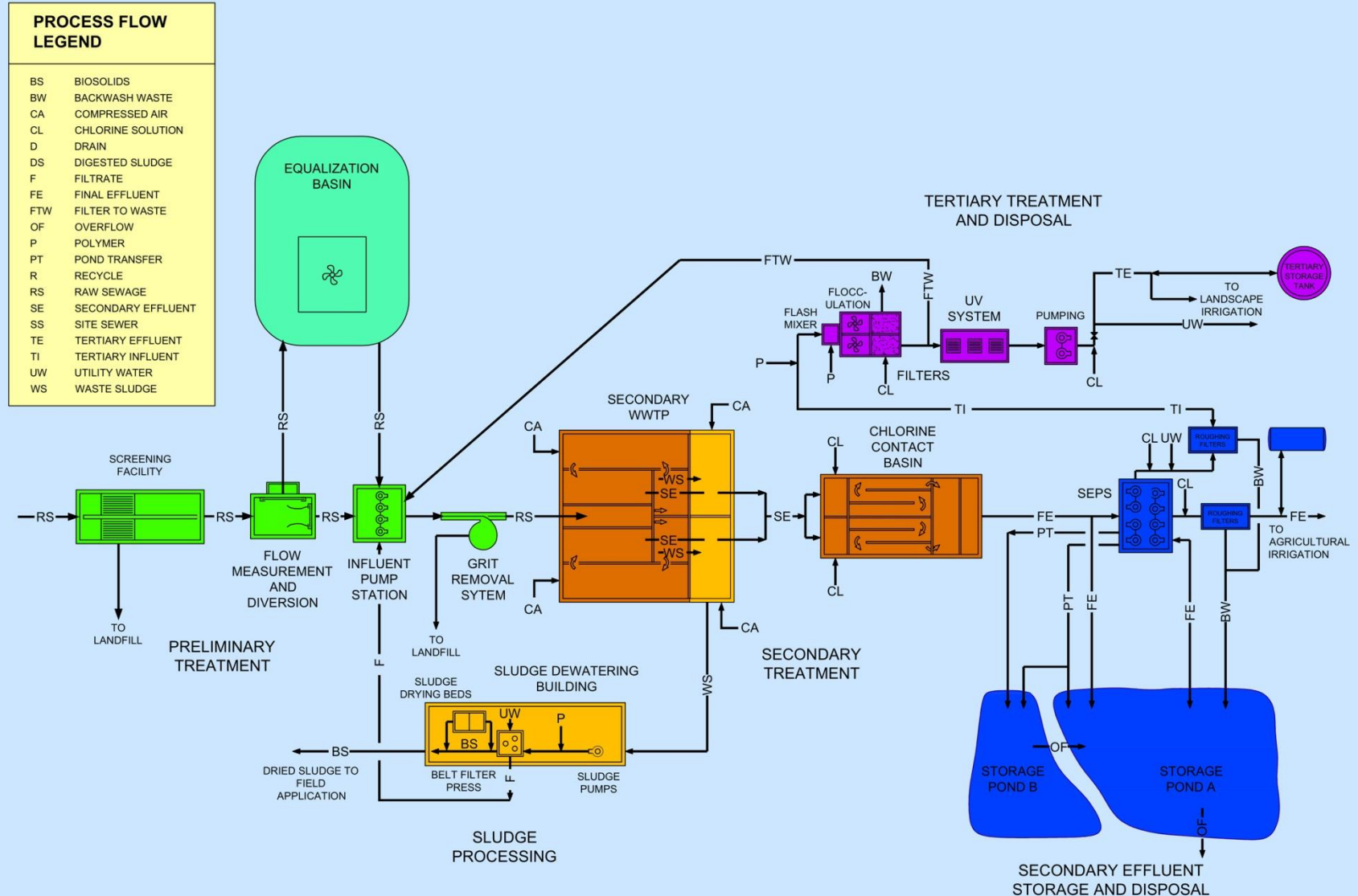


# Tertiary Treatment System



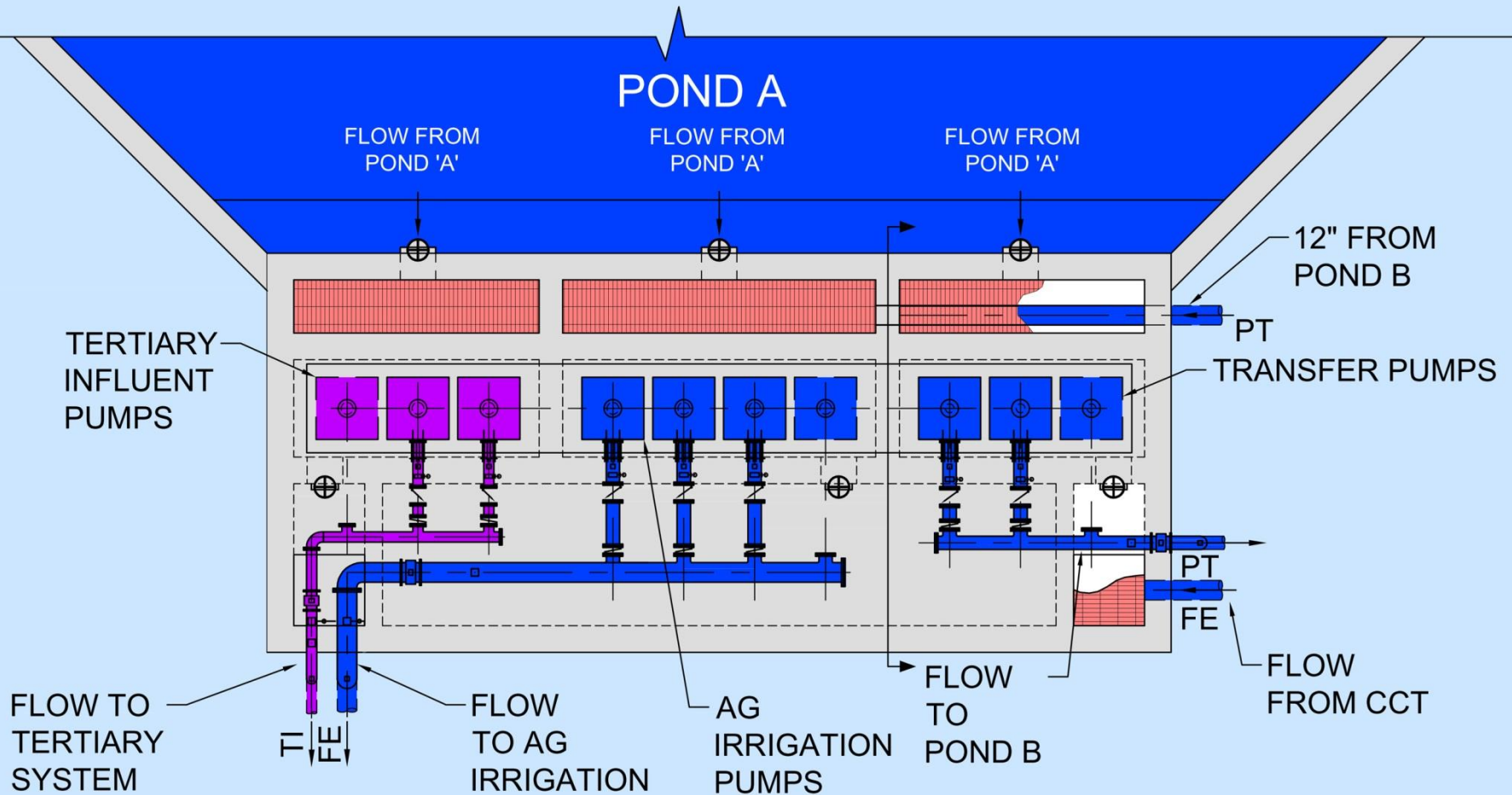


## Process Flow Schematic





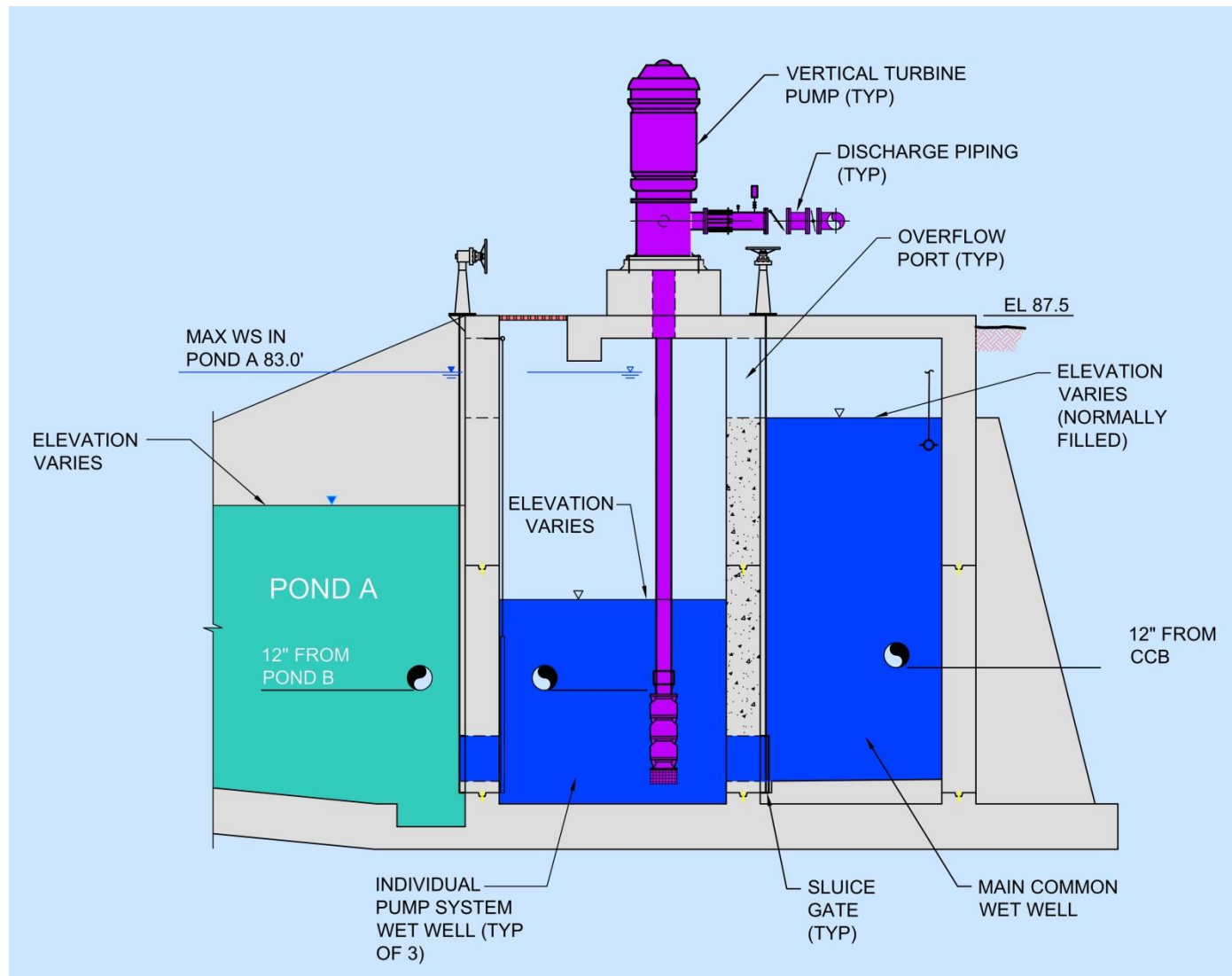
# Secondary Effluent Pump Station



**Plan View**



# Secondary Effluent Pump Station



**Section View**



# Secondary Effluent Pump Station





# Control Building, Generator, WWTP





# The Benefit of Architectural Input





## Project Success and Benefits

- Compliance with State Agency Waste Discharge Requirements
- Flexibility to Meet Future Growth and Regulations
- Meet TRACEN Mission of Potable Water Offsets





**Questions?**



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