

# Cambria Community Services District

Wastewater  
and  
Water  
Department  
Infrastructure  
Projects  
2015-2018

# Wastewater Treatment & Collection System Plant Improvements

March 2015

New controls & new pump assembly on lift station B



# Wastewater Treatment & Collection System Plant Improvements

April 2015

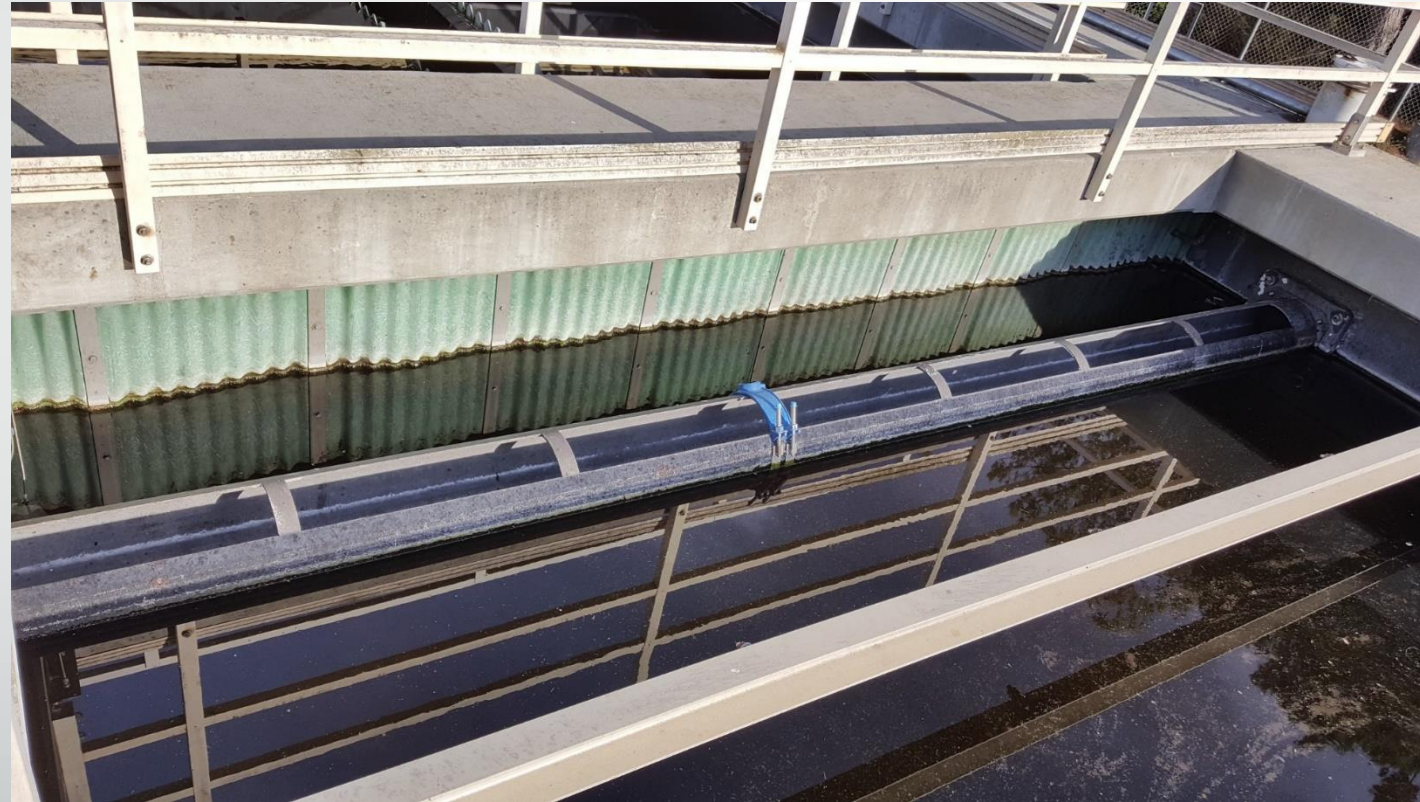
New generator installed at the Moonstone Beach lift station



# Wastewater Treatment & Collection System Plant Improvements

December 2015

Rebuilt clarifier



# Wastewater Treatment & Collection System Plant Improvements

December 2015

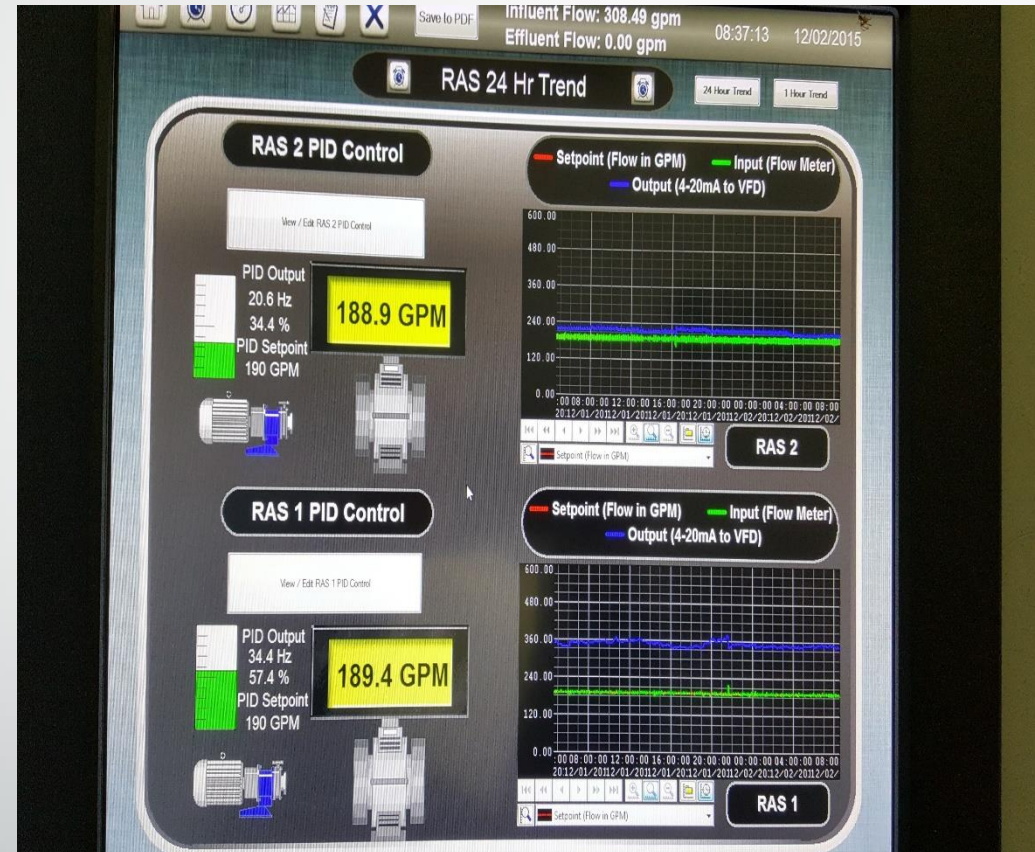
Incorporated an anoxic zone and reduced nitrate levels from 30-40 P.P.M. to 1.0 P.P.M. or less



# Wastewater Treatment & Collection System Plant Improvements

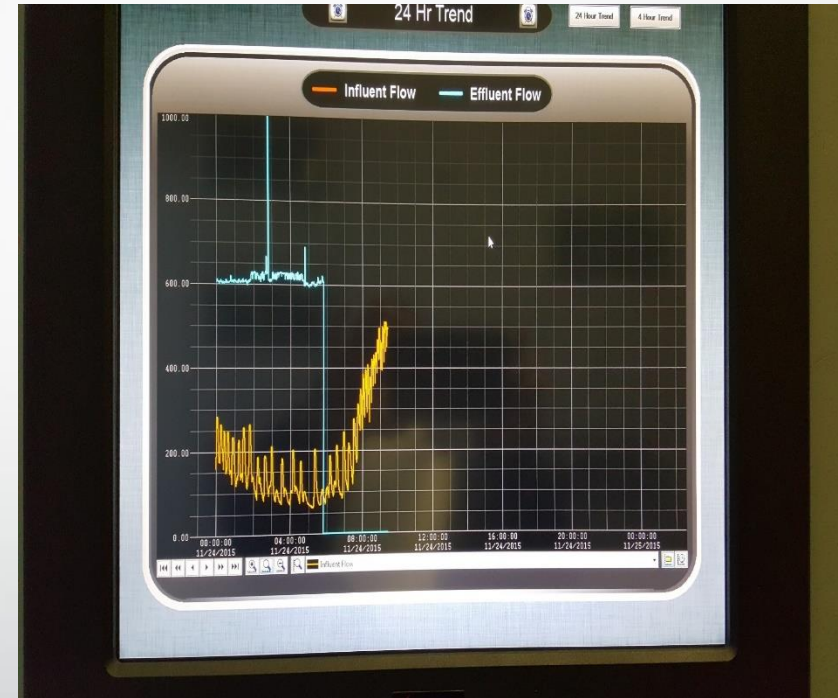
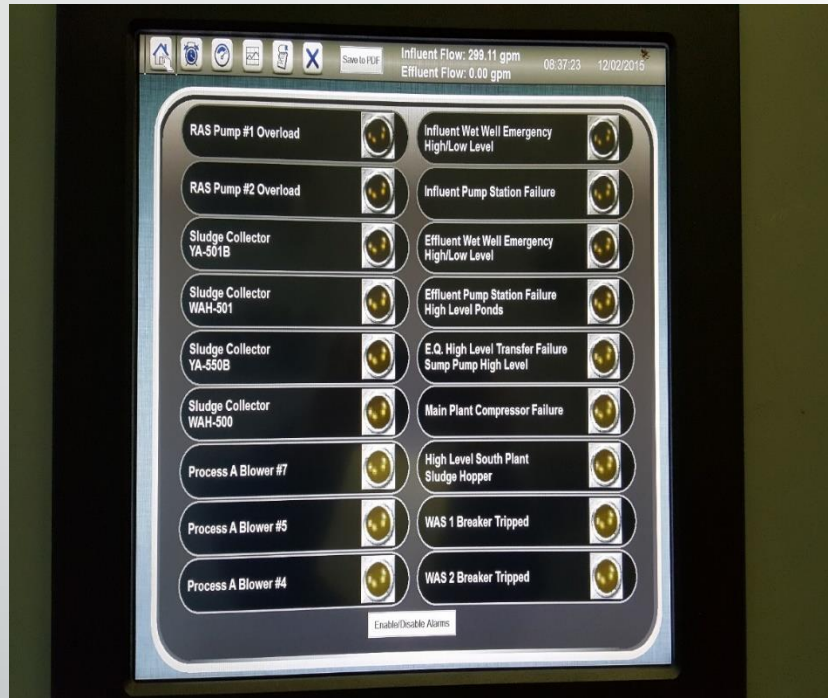
December 2015

SCADA controls return activated sludge pumps



# Wastewater Treatment & Collection System Plant Improvements December 2015

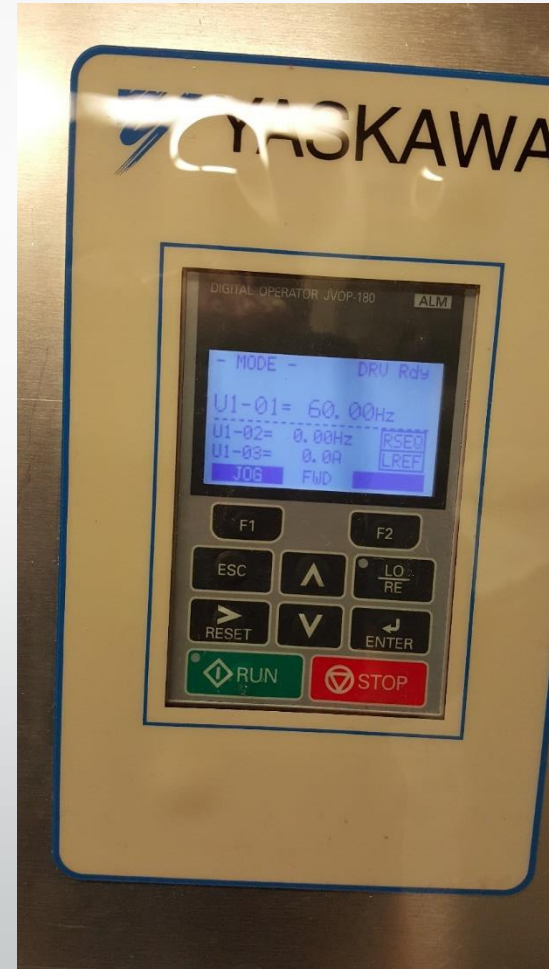
## Installed motion



# Wastewater Treatment & Collection System Plant Improvements

## December 2015

### Auto motion





# Wastewater Treatment & Collection System Plant Improvements

December 2015

Put digester into proper operational status. It had never been cleaned



# Wastewater Treatment & Collection System Plant Improvements December 2015 Cleaned digester and repaired lines



# Wastewater Treatment & Collection System Plant Improvements

December 2015

Rebuilt filtronics & iron removal water plant completely automated system



# Wastewater Treatment & Collection System Plant Improvements December 2015 Enhanced effluent quality



# Wastewater Treatment & Collection System Plant Improvements

## December 2015

### Rebuilt blower



# Wastewater Treatment & Collection System Plant Improvements

December 2015  
Repaired the smaller blower



# Wastewater Treatment & Collection System Plant Improvements June 2016

Improved Operational Efficiencies – Removed sludge from the plant and made arrangements to have the sludge removed as it's produced



# Wastewater Treatment & Collection System Plant Improvements

June 2016

Staff replaced the degraded hand rails





# Wastewater Treatment & Collection System Plant Improvements August 2016

Replaced the bypass valve at the grit chamber



# Wastewater Treatment & Collection System Plant Improvements August 2016

After the bypass valve was replaced they cleaned the lines



# Wastewater Treatment & Collection System Plant Improvements August 2016

After the bypass valve was replaced, they installed new asphalt. This was a major undertaking



# Wastewater Treatment & Collection System Plant Improvements August 2016

The department emptied the flow effluent equalization ponds and pumped sludge to the digesters



Wastewater Treatment & Collection System Plant Improvements  
August 2016  
Completed SCADA upgrades



# Wastewater Treatment & Collection System Plant Improvements August 2016 SCADA upgrades for pump controls



Wastewater Treatment & Collection System Plant Improvements  
August 2016  
Installed variable frequency drives



# Wastewater Treatment & Collection System Plant Improvements

August 2016

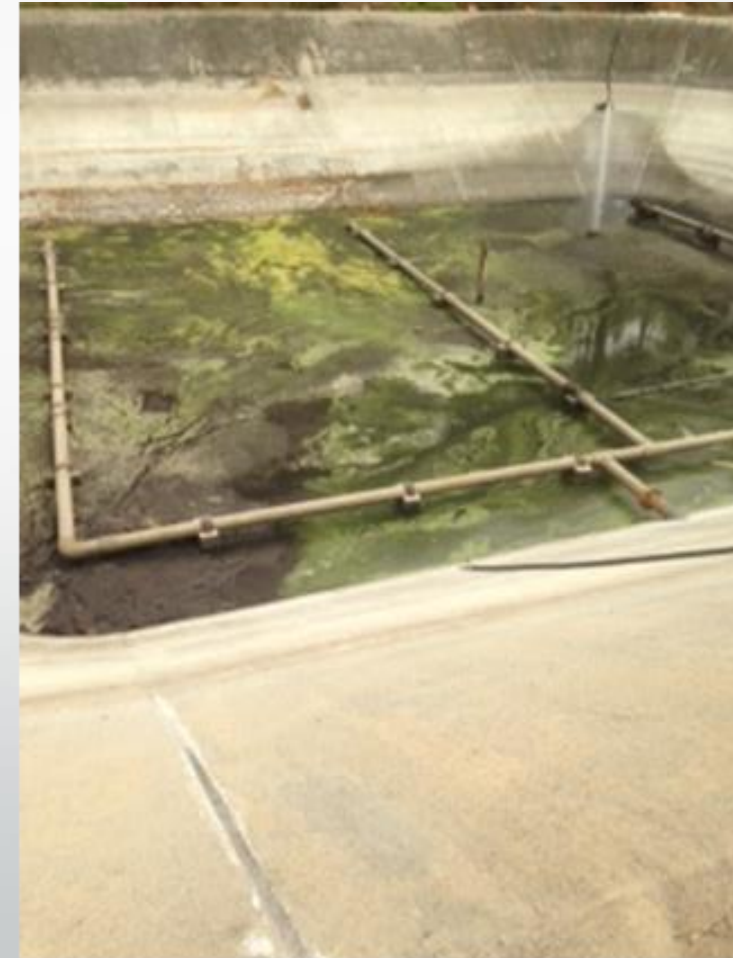
Fixed both effluent pumps and variable frequency drives. Pumps replaced and fully automated





# Wastewater Treatment & Collection System Plant Improvements August 2016

The flow effluent equalization ponds were emptied and cleaned



# Wastewater Treatment & Collection System Plant Improvements

August 2016

Replaced the Fiscalini Tank



# Wastewater Treatment & Collection System Plant Improvements August 2016 through October 2016

The fences along the perimeter of the plant were repaired

August 2016



October 2016



# Wastewater Treatment & Collection System Plant Improvements

## September 2016

### Replaced the Fiscalini Tank



Wastewater Treatment & Collection System Plant Improvements  
September 2016  
Installed new controls at lift station B<sub>4</sub>



# Wastewater Treatment & Collection System Plant Improvements September 2016

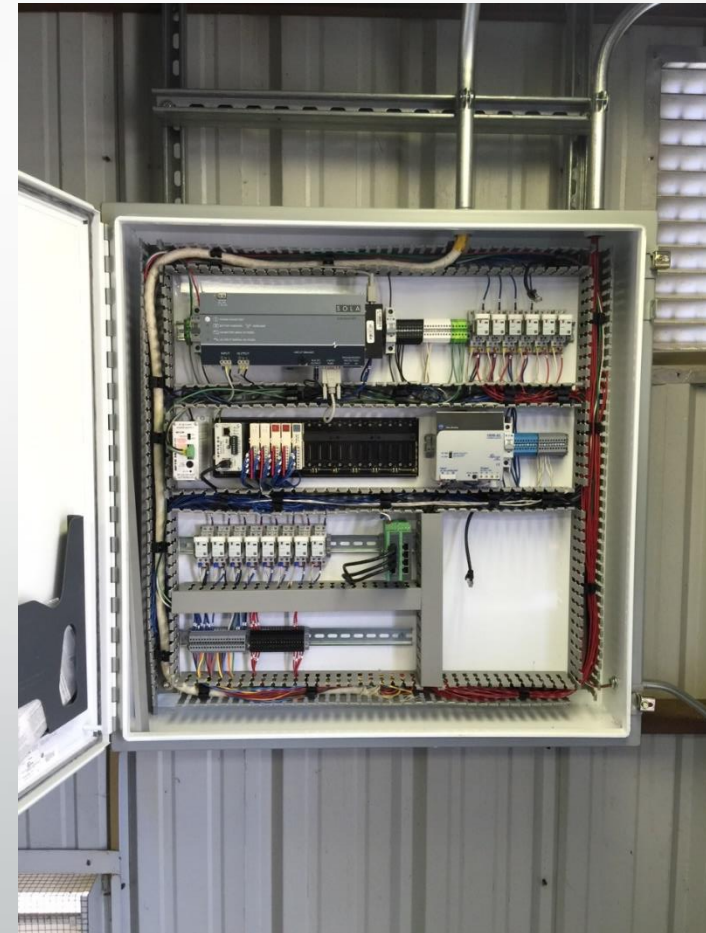
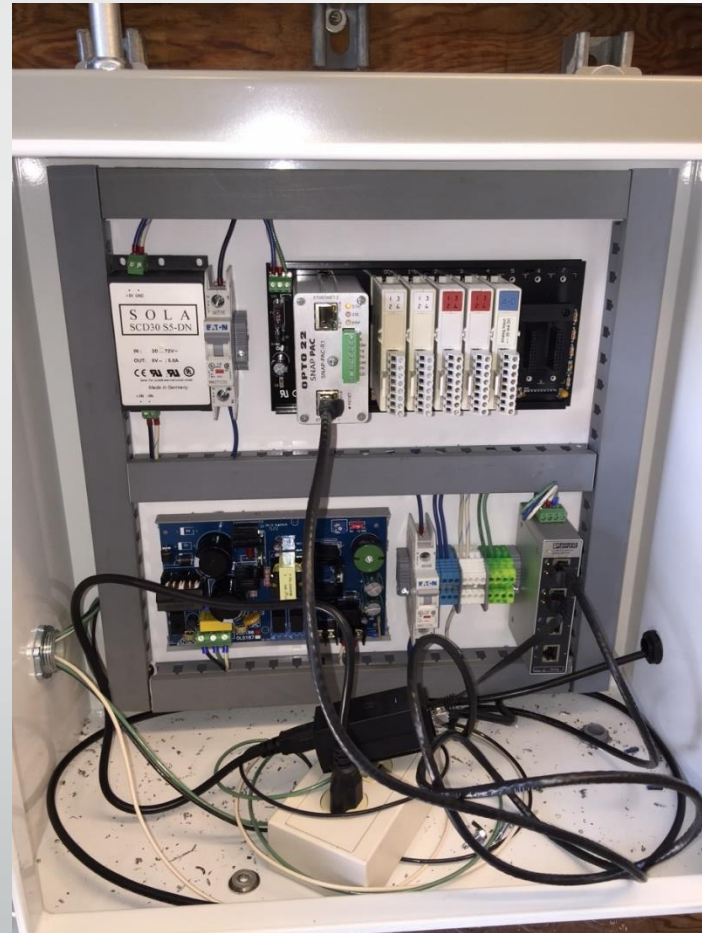
Completely rebuilt SR<sub>4</sub> well and fully automated with fail safe capability. They also painted the SR<sub>4</sub> building



Wastewater Treatment & Collection System Plant Improvements  
September 2016  
They painted the SR<sub>4</sub> well tanks



# Wastewater Treatment & Collection System Plant Improvements October 2016 Improvements to the control panels before and after pictures





# Wastewater Treatment & Collection System Plant Improvements October 2016

At least 45 manholes have been repaired and replaced  
Twenty manhole inserts have been installed, thus reducing intrusion and  
infiltration



This hole represents 5 gallons  
per  
minute of flow  
or  
7200 gallons per day  
from one manhole

# Wastewater Treatment & Collection System Plant Improvements October 2016

The staff identified manholes that needed access



# Wastewater Treatment & Collection System Plant Improvements

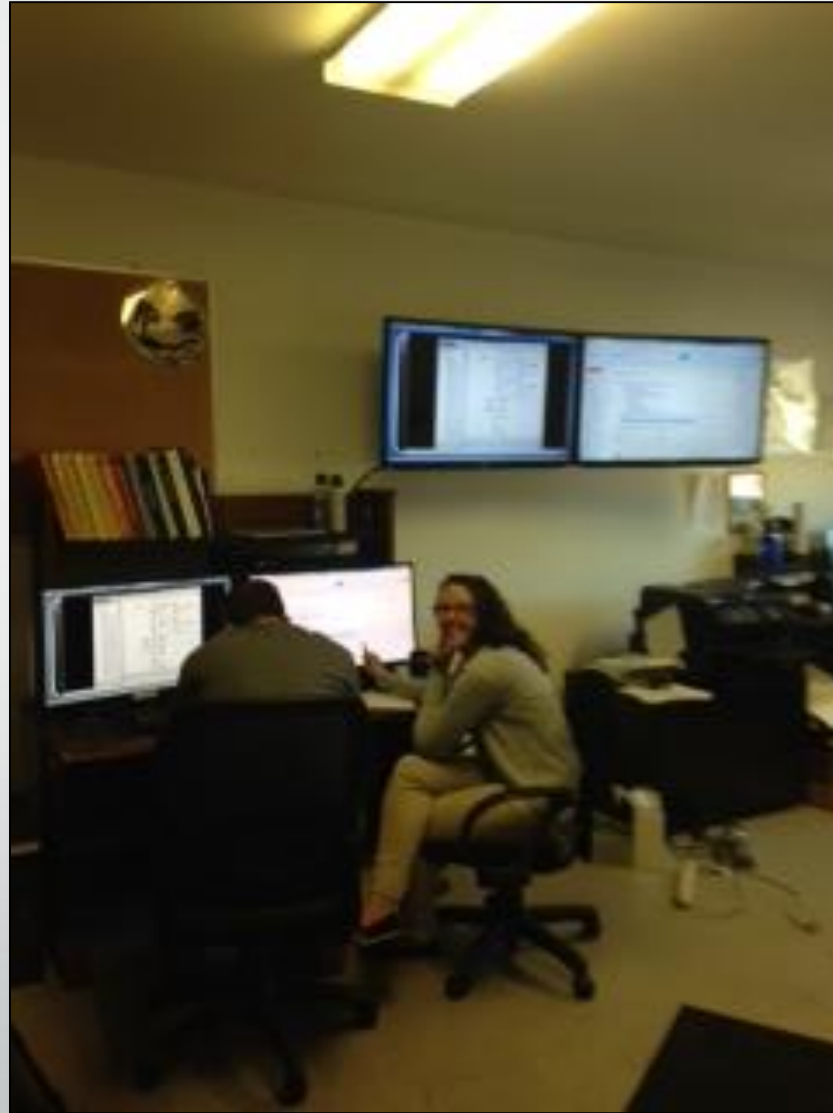
## November 2016

The 2" abandoned pipe on Pineridge was repaired on November 2, 2016  
Ongoing repairs to the distribution system continue



# Wastewater Treatment & Collection System Plant Improvements November 2016

New SCADA and Programming was installed



# Wastewater Treatment & Collection System Plant Improvements November 2016

Both drive motors were replaced for clarifiers 1 and 2  
Both waste activated sludge pumps were replaced



# Wastewater Treatment & Collection System Plant Improvements

November 2016

New handrails were installed



# Wastewater Treatment & Collection System Plant Improvements December 2016

Sludge was collected in the new trailer and the digestors are functioning properly for the first time in many years  
It also reduced plant odor



# Wastewater Treatment & Collection System Plant Improvements

December 2016

The old lift station panel 9 was replaced





# Wastewater Treatment & Collection System Plant Improvements

December 2016

All handrails have been completely painted



# Wastewater Treatment & Collection System Plant Improvements December 2016

Lift station 8 went live on SCADA and they are continuing upgrades to the lift stations



# Wastewater Treatment & Collection System Plant Improvements March 2017

VFD's are on both effluent pumps and they are programmed to handle flow direct from the clarifiers



# Wastewater Treatment & Collection System Plant Improvements

March 2017

The generator block heater was replaced and they serviced all of the above ground generators



# Wastewater Treatment & Collection System Plant Improvements

March 2017

Effluent pump #1 had a new discharge and was rebuilt

Both pumps had new 95% efficient motors installed

The old Miltonic's level control along with the rusted control panels was replaced with a transducer and a small junction box





## Wastewater Treatment & Collection System Plant Improvements March 2017

The rotating assembly was replaced in the pump that used to send sludge from the south tank to the north tank

We had replacement motors in stock for all motors on the screw press  
The Allen Bradley controls have been backed up for the screw press and the VFD was replaced

An extension for the discharge was installed on the screw press to allow the filling of the trailers

The trailers are now picked up when full

The plant doesn't stockpile the sludge

# Wastewater Treatment & Collection System Plant Improvements March 2017

The aeration basin recirculation pumps were hard lined in

New davit cranes were installed to remove both RAS and WAS pumps

The hand rails on both the aeration basin and the clarifiers have been painted with a 25 year two part epoxy

The stairs and supports have been painted

RAS flow meter has been replaced and the second flow meter was installed

Both RAS and WAS are now controlled with SCADA

WAS pump #2 has been replaced along with the VFD



# Wastewater Treatment & Collection System Plant Improvements

March 2017

Blower #4 has been installed and the bearings on the two blowers have been replaced

The alarms have also been connected to SCADA





# Wastewater Treatment & Collection System Plant Improvements

May 2017

Staff has continued to fix leaks

This leak was fixed at Kent Street (behind the Shell station)



This leak was fixed at Kent Street (behind the Shell station)



# Wastewater Treatment & Collection System Plant Improvements

May 2017

Twenty five new PamRex water proof manhole covers were replaced on the 25 most needed manhole lids in the collection system



# Wastewater Treatment & Collection System Plant Improvements

May 2017

Staff replaced old valves



# Wastewater Treatment & Collection System Plant Improvements

May 2017

Lift station 9 was approved for an electrical upgrade

The SCDA panel was moved to a safer location above ground and replaced with efficient controls



# Wastewater Treatment & Collection System Plant Improvements

June 2017

The department was unable to remove this welded manhole cover, so they replaced it with a water tight cover



# Wastewater Treatment & Collection System Plant Improvements

June 2017

Staff replaced the digester walkways



# Wastewater Treatment & Collection System Plant Improvements

June 2017

The lid was not attached to the lift station and the rings broke off, making it inaccessible

The department installed a new water tight lid



# Wastewater Treatment & Collection System Plant Improvements

July 2017

Both lids are in a wetland and were weeping water months after the rains stopped  
They both have 4 holes in the top that allow water into the system with the smallest of rains

Manholes like this are big contributors to the heavy flows during winter rains

These are also very hard to access due to the wet ground

Now that we have a new lid and ring we will remove the tree that is working its way into the manhole.





# Wastewater Treatment & Collection System Plant Improvements July 2017

During heavy rains the manhole was underwater and not sealed  
A water tight lid and ring was installed



# Wastewater Treatment & Collection System Plant Improvements July 2017

A new panel was installed and is being used as a pull box  
All the breakers are now in the panel, outside the pump house



Before



After

# Wastewater Treatment & Collection System Plant Improvements

July 2017

The first suction line was replaced at lift station B-3



# Wastewater Treatment & Collection System Plant Improvements

July 2017

This is a section of the suction line that failed  
FRM was the contractor that installed the stainless steel suction line at the lift station  
CCSD staff replaced the 4 inch cast iron piping with PVC  
Holes had to be bored around the old piping to remove it



# Wastewater Treatment & Collection System Plant Improvements

## July 2017



The new electrical panel that was installed outside the pump house with SCADA

Staff can track this lift station from the WWTP or any remote location



This is accessible to the operator without the need of entering the pump house

This removed the old out-of-date electronics and replaced them with state of the art communications

This lift station was the first to have remote SCADA controls added along with backup controls for redundancy

In the future, all lift stations will be brought to this level of communication and capabilities

# Wastewater Treatment & Collection System Plant Improvements July 2017

The new clarifier drive was installed by FRM  
Before and after pictures



# Wastewater Treatment & Collection System Plant Improvements

July 2017

The new suction line was installed



# Wastewater Treatment & Collection System Plant Improvements July 2017

The lift station 8 guide rails were replaced with stainless guide rails





# Water Department Improvements

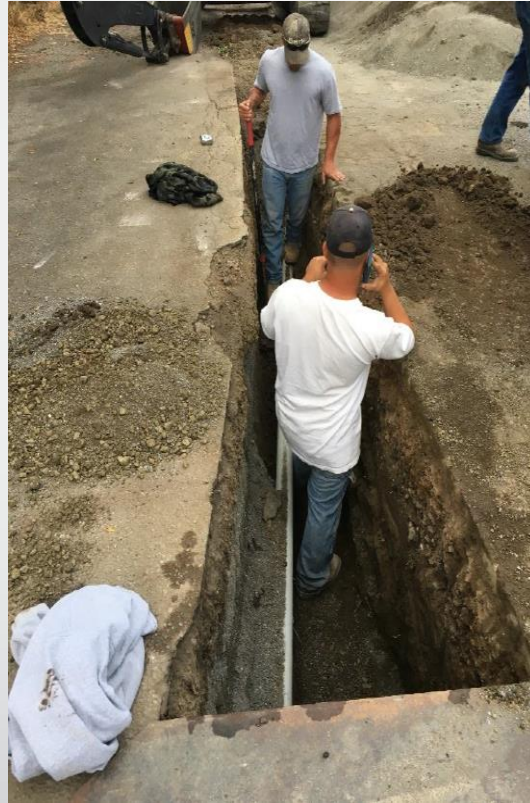
July 2017

This is manhole cover was lifted 8 inches and the lid was replaced

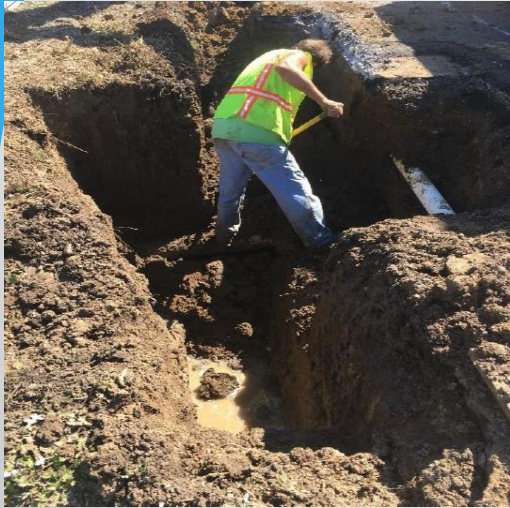


# Water Department Improvements October 2017

Work was done in the alley that runs parallel with Burton Drive



# Water Department Improvements October 2017 A leak was repaired on the Pembroke



# Wastewater Treatment & Collection System Plant Improvements November 2017

United Rentals delivered the new 6 inch pump and staff installed and tested it



# Wastewater Treatment & Collection System Plant Improvements November 2017

West Coast Trees cut down three pine trees at the WWTP and spread the chips around the plant entrance



# Wastewater Treatment & Collection System Plant Improvements

December 2017

The pressure relief valve was purchased and used on the non-potable water system



# Wastewater Treatment & Collection System Plant Improvements December 2017

This is a snapshot of the GIS map for the collection system

The program was added to the collection system

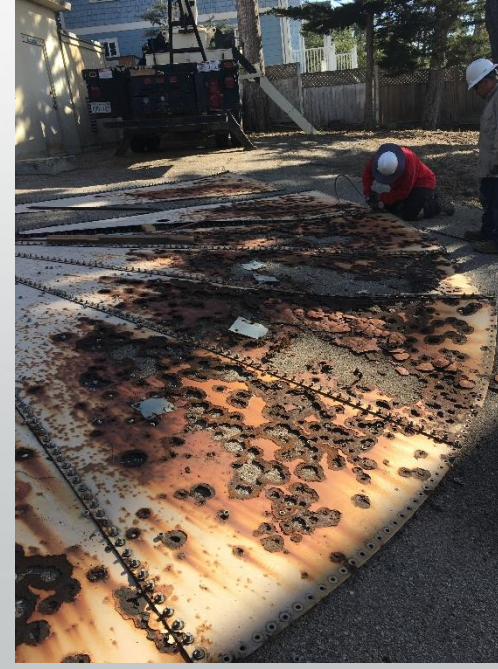
The department can step onto a manhole and find out what needs to be done and what has been done over the last year



# Water Department - Stuart Street Tank Project

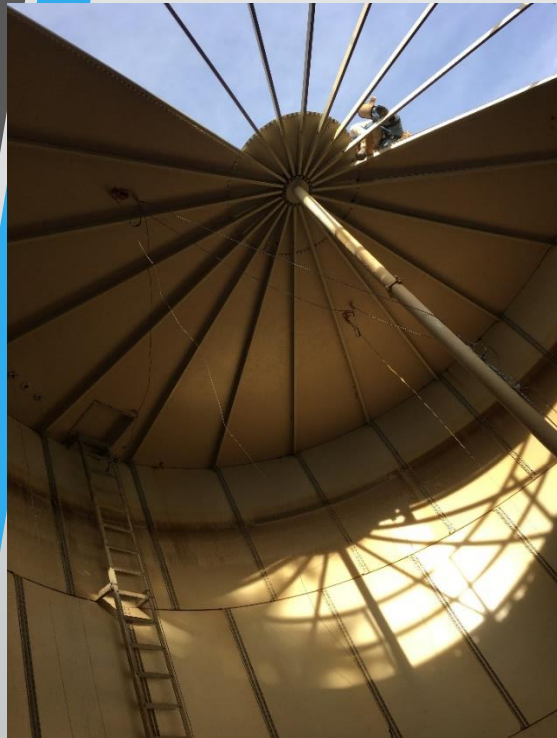
## January 2018

Superior Tank removed the most severely corroded roofing in January 2018. After removal of the roof and rust scale, it was determined that 3 shell panels were too far gone to bolt to. Everyone agreed that changing the contract to add the replacement of those shell panels would increase the likelihood that this tank can stay in service for the desired five more years. The cost and schedule to change out the panels while Superior was on site, with the adjacent roof off, is significantly lower than having them come back later.



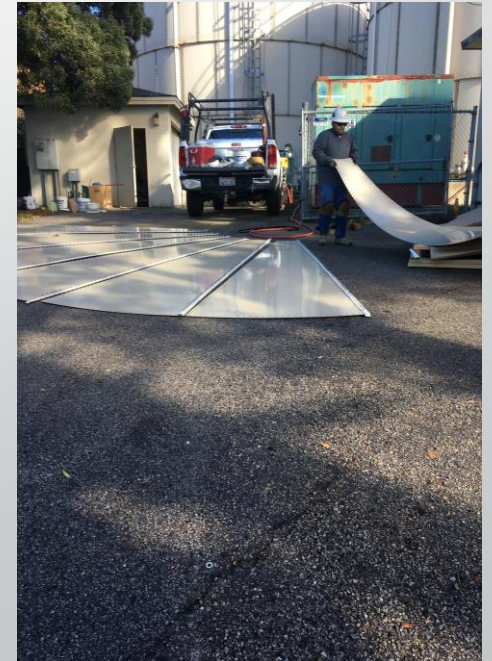


# Water Department - Stuart Street Tank Project January 2018



# Water Department - Stuart Street Tank Project

## January 2018



# Water Department – Stuart Street Tank Project January 2018



# Water Department Improvements January 2018

The water that goes through the regulator is for the chlorine analyzer and the turbidimeter for the entire SS wellfield  
This pressure regulator is located at SS3

