



City of Oxnard  
Wastewater Division  
**Wastewater Collection System**  
Capital Improvement Projects



# Overview:

Recent condition assessment of the Oxnard Wastewater Treatment Plant (OWTP) have documented 40% of the facility to be in poor or very poor condition, with 72% at a moderate, high or very high risk of experiencing failures. The City's overall objective is to reduce the failure risk of all facilities to low or very low; however, understanding the current funding limitations the City has developed a 10-year rehabilitation program with goal of reducing the highest risk facilities to a moderate or better risk grade. This 10-year program includes:

- Years 1 - 2: Repair high risk facilities which have been identified as a health and safety concern or urgent need to maintain plant functionality.
- Years 3 - 5: Rehabilitation activities necessary to maintain required minimum redundancy and treatment facility.
- Years 6 - 10: Abandonment of older facilities that have reached the end of their useful life (1975 or older), repurposing and renewal of other facilities to provide a modern treatment process (such as membrane bioreactor (MBR) or other technology), and efficiency improvements including reduced pumping and more efficient treatment equipment.

Note: Year 6 – 10 capital improvement costs are not included in the current wastewater rate study.

## *Wastewater Collection System:*

The City's sanitary sewer collection system is typical for communities of Oxnard's size, and includes:

- 407 miles of gravity sewers (6-inch to 66-inch)
- 23 miles of pressurized force mains (4-inch to 20-inch)
- 15 wastewater lift stations

## *Oxnard Wastewater Treatment Plant Process and History:*

The sanitary sewer system conveys residential, commercial, and industrial wastewater to the City's treatment facility which cleans and discharges the treated water in compliance with the Federal and State requirements applicable to the City's system.

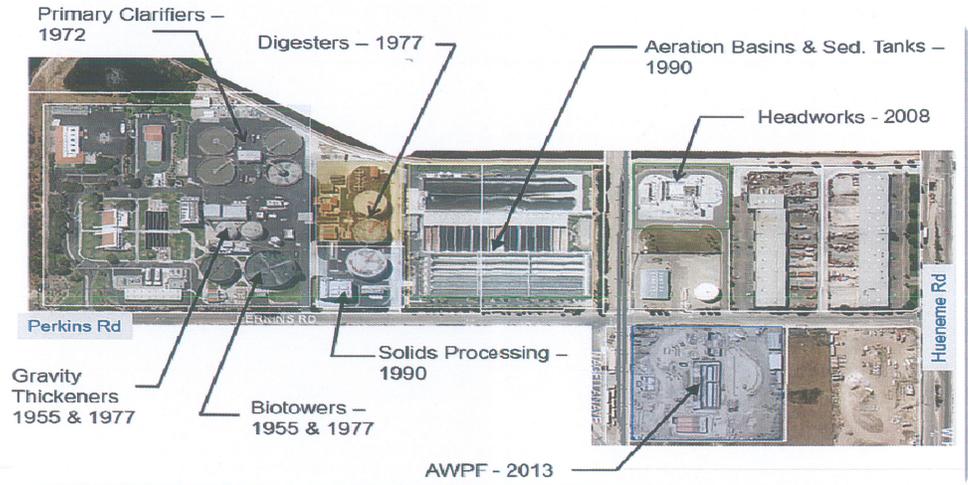
The treatment process at the City's wastewater treatment plant includes:

- Preliminary treatment – screening and grit removal (removal of large inorganic materials)
- Primary treatment – removal of heavy solids and inorganic materials

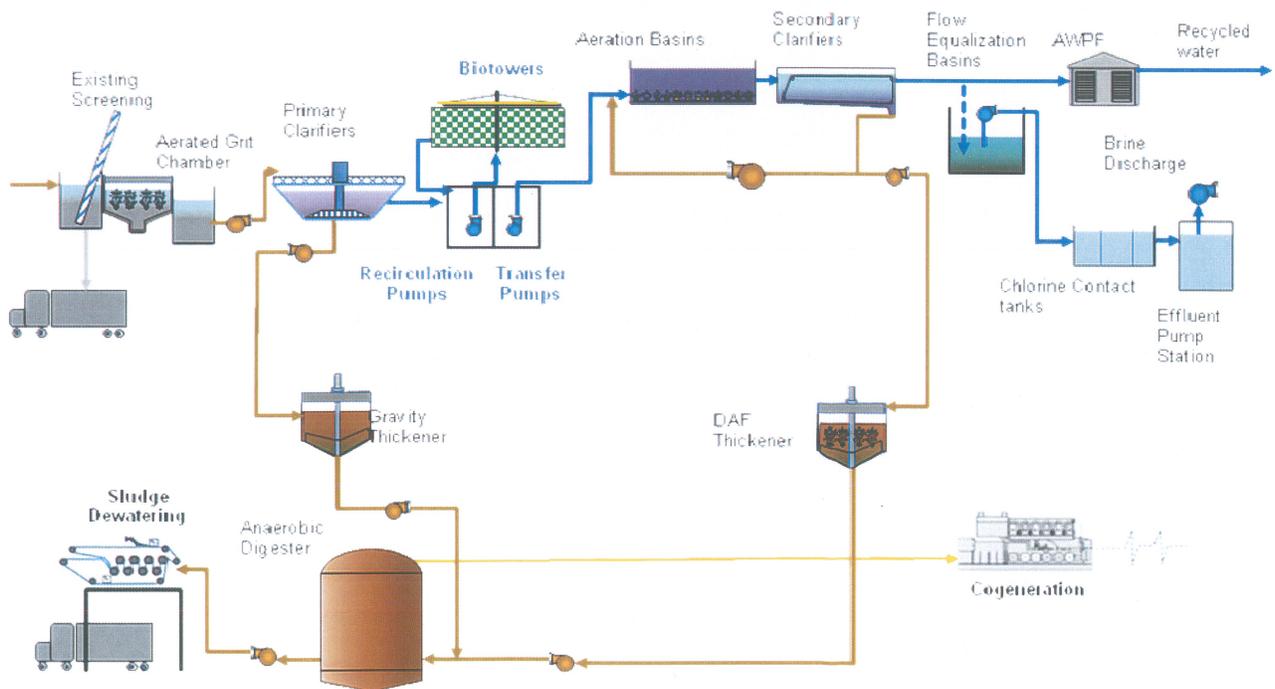
- Secondary treatment – removal of soluble organics through biological treatment

The Oxnard Wastewater Treatment Plant (OWTP) was moved to its current location from the original Durley Park location in the 1950s. Major improvements were completed in the 1970s and 1980s while the most recent plant upgrades were completed in 2006 when the City constructed a new headworks facility to provide reliable preliminary treatment. Currently the OWTP provides

regional wastewater treatment services for the City of Port Hueneme, Channel Islands Beach Community District, United States Navy bases, El Rio, Nyeland Acres, and Las Posas Estates.



The OWTP is permitted to treat approximately 32 million gallons per day of the local communities' wastewater.



Existing Wastewater Treatment Plant Process Flow Diagram

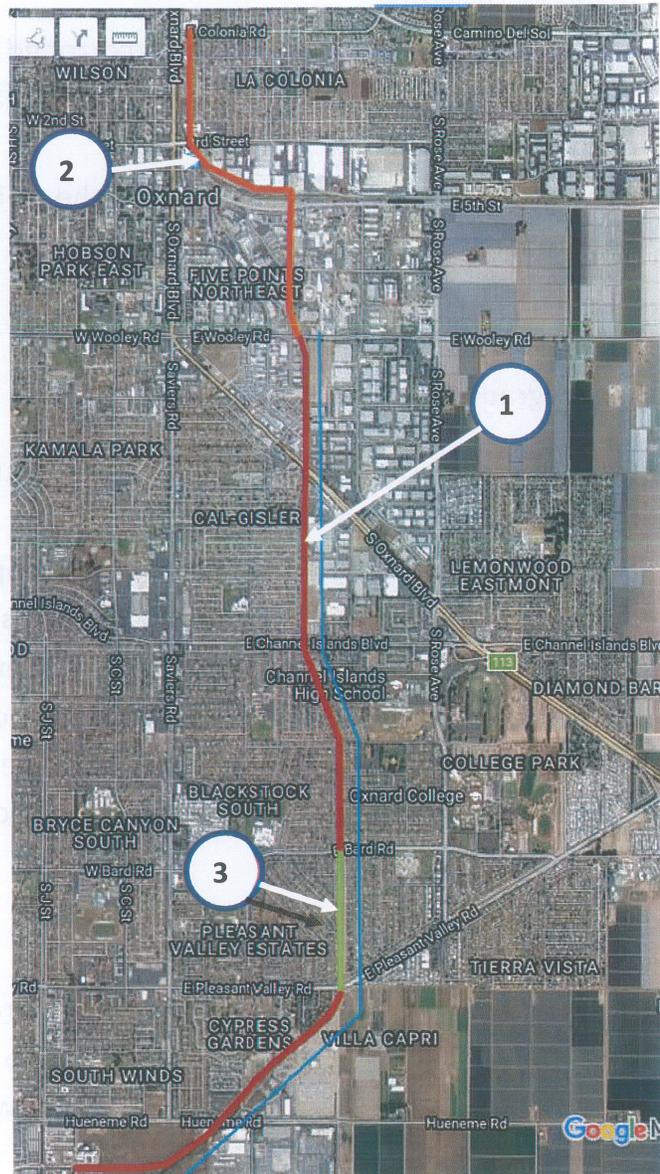


# Central Trunk Sewer Manhole Replacement

## Description, Location and Function:

A sewer manhole is an underground utility vault structure with a circular opening at the surface to allow entry by City personnel. These manholes provide an access point for making connections, inspection, and for performing maintenance of the adjacent sewer lines. The Central Trunk manholes are located parallel to the Ormond Lagoon Waterway from Perkins Road to Colonia Road. The manhole rehabilitation will be divided into two (2) phases.

- ① - Phase 1: Rehabilitate forty-seven (47) manholes along the Ormond Lagoon Waterway between Wooley Road and Perkins Road.
- ② - Phase 2: Rehabilitate twenty-seven (27) manholes along Ormond Lagoon Waterway between Wooley Road and Colonia Road. (Note: ③ - a section along the Phase 2 project was completed in 2007 and is therefore not included under this rehabilitation project)



## Condition and Risk Grading:

Overall the condition of the Central Trunk manholes is considered poor with a risk grading of “critical.” Factors include:

# Central Trunk Sewer Manhole Replacement

- Extensive concrete corrosion of interior of the sewer manhole structure
- Manhole access covers are severely corroded in certain locations and pose a direct safety hazard to maintenance staff
- Concrete structures are degraded to the point where both rebar and aggregate are exposed

		CRITICALITY			
		1	2	3	4
VULNERABILITY	A	1A	2A	3A	4A
	B	1B	2B	3B	4B
	C	1C	2C	3C	4C
	D	1D	2D	3D	4D

■ Maintenance  
■ Priority  
■ Critical

## Reliability:

Reliability grading of “Not Reliable” due to:

- Extensive corrosion of interior concrete structure, which could lead to structural failure and collapse of the manhole.
- Extensive corrosion of access covers and supporting rings could result in severe fall injuries to City staff and unauthorized persons walking on top of the manholes.
- Failure could result in a large Sanitary Sewer Overflow (SSO) spill that would discharge directly into the Ormond Lagoon Waterway as well as Cal-Gisler, Blackstock North, Blackstock South and the College Estates neighborhoods. This would pose both a significant impact to public health as well as regulatory violations and financial penalties.

## Redundancy:



If failure occurs there is not a redundant pipeline within the collection system to divert the flow of wastewater associated with the Central Trunk Sewer. A temporary bypass system would have to be constructed during the emergency repairs of this system. This emergency bypass would not resolve impacts due to initial SSO spills caused by the failure of the Central Trunk Sewer.

# Central Trunk Sewer Manhole Replacement

## Necessary Improvements:

Phase 1	Improvements	Estimated Cost
Emergency (Yrs 1-2)	Replacement of 47 manholes	\$1,410,000
CIP (Yrs 3-5)	Replacement of 27 manholes	\$810,000
CIP (Yrs 6-10)*	None Identified	---

Note: CIP (Yrs 6-10) costs are not included in the current wastewater rate study

## Consequences of Inaction:

Potential consequences if no action is taken to address the identified issues and facility needs include:

- Sewer System Overflows
- Threat to Public Health
- Permit Violations
- Potential of major injuries to City staff because of manhole cover collapse
- Beach Closures
- Fines
- Increased cost of facility operation and repairs





# Sewer Manhole Rehabilitation Projects

## Description, Location and Function:

A sewer manhole is an underground utility vault structure with a circular opening at the surface /top. These manholes are used to house an access point for making connections, inspection, and for performing maintenance of the adjacent sewer lines. There are several manholes in need of rehabilitation that are located near sensitive waterways including the Ormond Lagoon Waterway, Tsumas Creek (formerly J Street Canal), and the Channel Islands Harbor. The manhole rehabilitation work will be divided into three (3) projects.

- ① - Redwood Trunk Tributary Manholes: Rehabilitate thirty eight (38) manholes along Redwood Street and J Street from Redwood Street to Hueneme Road
- ② - Harbor/Mandalay Bay Manholes: Rehabilitate twelve (12) manholes in Mandalay Bay off of Harbor Boulevard
- ③ - Pleasant Valley Manholes: Rehabilitate fourteen (14) manholes on Pleasant Valley Road from Beaumont Avenue to Terrace Avenue

## Sewer Manhole Rehabilitation Projects Map



# Sewer Manhole Rehabilitation Projects

## Condition and Risk Grading:

Overall the condition of these manholes is poor with a risk grading of “critical.” Factors include:

- Extensive concrete corrosion of interior of the sewer manhole structure
- Manhole structures have severe groundwater infiltration causing flow restrictions at the manholes
- Groundwater infiltration results in costly and unnecessary treatment costs as it is combined with the raw wastewater in the collection system and passes through the treatment process at the Wastewater Treatment Plant

		CRITICALITY			
		1	2	3	4
VULNERABILITY	A	1A	2A	3A	4A
	B	1B	2B	3B	4B
	C	1C	2C	3C	4C
	D	1D	2D	3D	4D

Legend:  
Maintenance (Green)  
Priority (Yellow)  
Critical (Red)

## Reliability:

Reliability grading of “Not Reliable” due to:

- Extensive corrosion of interior concrete structure
- Corrosion, if not addressed, will eventually cause structural failure of the manholes
- Failure could result in a Sanitary Sewer Overflow (SSO) that would discharge directly into the Ormond Lagoon Waterway, Tsumas Creek (formerly J Street Canal), Channel Islands Harbor, as well as the neighborhoods of Redwood, Bryce Canyon North, Bryce Canyon South, Pleasant Valley Village, Southwinds, Terrace Estates, Tierra Vista, and Channel Islands.



## Redundancy:

If failure occurs there is not a redundant pipeline nearby to divert the flow of these pipelines that connect to these manhole structures. A temporary bypass system would have to be constructed during the emergency repairs of this system. Should no action be taken, the likelihood of an SSO occurrence still exists during the establishment of temporary bypass systems following failure at the manhole locations identified herein.

# Sewer Manhole Rehabilitation Projects

## Necessary Improvements:

Phase 1	Improvements	Estimated Cost
Emergency (Yrs 1-2)	None Identified	---
CIP (Yrs 3-5)	Rehabilitate 64 manholes	\$600,000
CIP (Yrs 6-10)*	Annual manhole Rehabilitation	\$200,000/yr

Note: CIP (Yrs 6-10) costs are not included in the current wastewater rate study

## Consequences of Inaction:

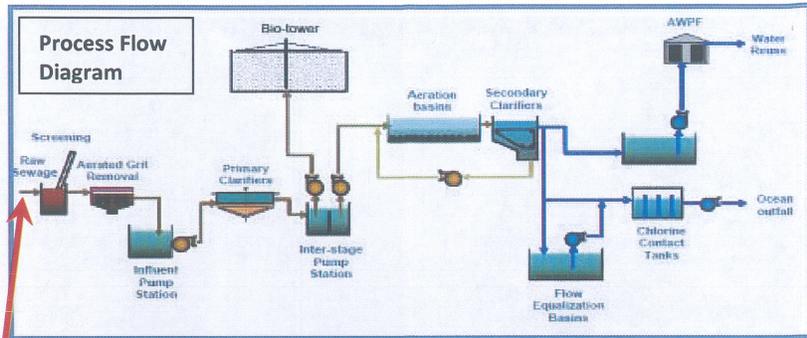
Potential consequences if no action is taken to address the identified issues and facility needs include:

- Sanitary Sewer Overflows
- Threat to Public Health
- Permit Violations
- Beach Closures
- Fines
- Increased cost of wastewater treatment plant operations
- Increased collection system maintenance costs
- Quality of Life Impacts – Odor Complaints



# Headworks Meter Vault/Vortex Structure

## Process Description, Location and Function:



Headworks Meter Vault/Vortex Structure Location



The Headworks Meter Vault/Vortex Structure intercept two major sewer trunk lines (60" & 66") prior to preliminary treatment at the Headworks facilities. The wastewater flow from each of the trunk lines is measured at the Meter Vault and then flows through the Vortex Structure to the Headworks Influent Junction Structure. The location of the Headworks Meter Vault/Vortex Structure is indicated in the graphics above and to the left.

### Condition and Risk Grading:

Overall the condition of the Headworks Meter Vault/Vortex Structure is poor with a risk grading of "critical." Factors include:

- Concrete coating in the Meter Vault/Vortex Structure has failed.

		CRITICALITY			
		1	2	3	4
VULNERABILITY	A	○	2A	3A	4A
	B	1B	2B	3B	4B
	C	1C	2C	3C	4C
	D	1D	2D	3D	4D

Maintenance  
 Priority  
 Critical

# Headworks Meter Vault/Vortex Structure

- Corrosion of the vault is accelerating due to failure of coating.



## Reliability:

Reliability grading of “Not Reliable” due to:

- Concrete coating in the Meter Vault/Vortex Structure has failed and corrosion is accelerating creating conditions for potential structural failure.
- Structural failure of the Meter Vault/Vortex Structure would likely lead to raw wastewater spills, implementation of temporary pumping measures and costly emergency repairs.

## Redundancy:

Redundancy at the Headworks Meter Vault/Vortex Structure is considered “sufficient” with the inclusion of bypass piping.

## Necessary Improvements:

Phase	Improvements	Estimated Cost
Emergency (Yrs 1-2)	Concrete coating repair	\$280,000
CIP (Yrs 3-5)	None Identified	---
CIP (Yrs 6-10)*	None Identified	---

Note: CIP (Yrs 6-10) costs are not included in the current wastewater rate study

## Consequences of Inaction:

Potential consequences if no action is taken to address the identified issues and facility needs include:

# Headworks Meter Vault/Vortex Structure

- Regulatory penalties including damages to environment, base liability, investigation & enforcement costs
- Beach contamination & closure
- More neighborhood sewer odor complaints
- Increased cost of facility operation and repairs



# Capacity Deficient Sewer Main Upgrade Projects

## Description, Location and Function:

A wastewater collection system is an underground conveyance system specifically for transporting wastewater from homes, commercial buildings, and industrial users through pipes to the wastewater treatment plant. These collection system pipelines are designed to provide a certain flow capacity during dry weather and wet weather. The projects listed below are identified to replace pipelines in areas that are currently running above capacity and pose a risk of causing a Sanitary Sewer Overflow (SSO) if not upgraded.

- ① - Rice Avenue Sewer Main: Upgrade 1,900 linear feet of 18-inch pipe to 24-inch on Rice Avenue from Latigo Avenue to Camino del Sol
- ② - Ventura Road Sewer Main: Upgrade 2,420 linear feet of 10-inch pipe to 15-inch on Ventura Road from Doris Avenue to Little Farms Road
- ③ - Third Street and Navarro Street Sewer Main: Upgrade 629 linear feet of 8-inch pipe to 12-inch on Third Street and Navarro Street

**Collection System Capacity Deficient Map**

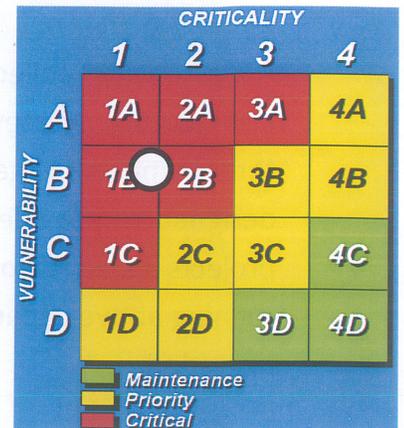


# Capacity Deficient Sewer Main Upgrade Projects

## Reliability:

Reliability grading of “Not Reliable” due to:

- During Peak Wet Weather Flows these pipelines are at risk of exceeding capacity.
- Failure could result in a SSO event that would discharge raw wastewater directly into the storm drain system, Northeast Business Community as well as the Fremont North, Fremont South or La Colonia neighborhoods.



## Redundancy:

If overflows occur because of overcharging these pipelines, there is not a redundant or parallel pipeline nearby to divert the flow from these sewer mains. A temporary bypass system around these impacted areas is not considered a feasible option given that the issue is one of limited capacity and not pipeline failure due to collapse or blockage. Should no action be taken, the likelihood of an SSO occurrence is considered high as there is no alternative bypass around the collection system identified for these replacement projects.

## Necessary Improvements:

Phase 1	Improvements	Estimated Cost
Emergency (Yrs 1-2)	None Identified	---
CIP (Yrs 3-5)	Upgrade Sewer Mains: Rice Avenue Sewer Ventura Road Sewer Third Street Sewer	\$3,420,066
CIP (Yrs 6-10)*	None Identified	---

Note: CIP (Yrs 6-10) costs are not included in the current wastewater rate study

## Consequences of Inaction:

Potential consequences if no action is taken to address the identified issues and facility needs include:

- Sanitary sewer overflows
- Threat to public health

# Capacity Deficient Sewer Main Upgrade Projects

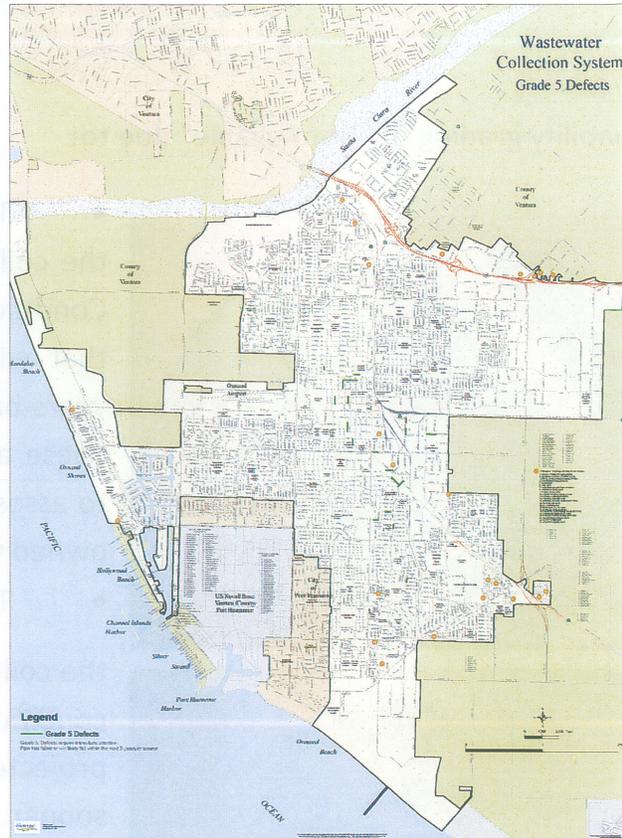
- Regulatory penalties including damages to environment, base liability, investigation & enforcement costs
- More neighborhood sewer odor complaints
- Increased cost of facility operation and repairs



# Miscellaneous Sewer Pipeline Improvement Projects

## Description, Location and Function:

A wastewater collection system is an underground pipeline conveyance system specifically for transporting wastewater from homes, commercial buildings, and industrial users through pipes to the wastewater treatment plant. Approximately eighty percent of the sewer mains in the City's aging sewer collection system are clay pipes. These pipes are fragile and many segments are reaching the end of their life expectancy. The following are Miscellaneous Sewer Pipeline Improvement Projects that have been identified for implementation by the City.

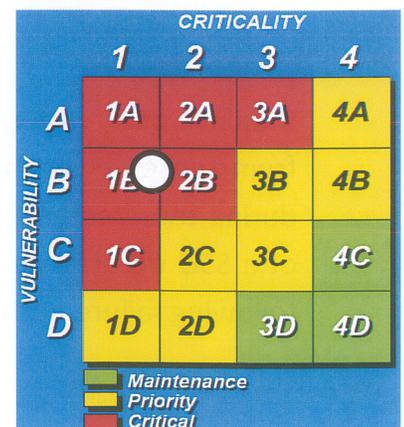


- Annual Pipe Repair: Spot repairs of various wastewater collection system mains
- Concrete Sewer Main Replacement: Replacement of approximately 15,000 linear feet of concrete sewer pipe with PVC pipe

## Condition and Risk Grading:

Overall the condition of the Miscellaneous Sewer Mains is poor with a risk grading of “critical.” Factors include:

- Existing sewer mains that have a poor rating (Grade 4) condition or in need of immediate attention (Grade 5) have been identified for repair or replacement under these projects.

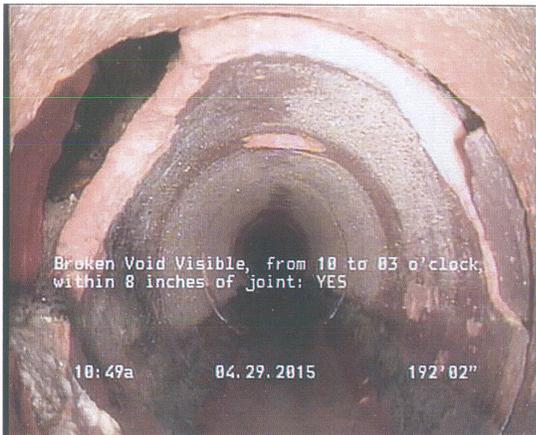


# Miscellaneous Sewer Pipeline Improvement Projects

- Based on the “critical” grade of these facilities, it is projected that Sanitary Sewer Overflow (SSO) may likely occur if these pipes are not repaired

## Reliability:

Reliability grading of “Not Reliable” due to:



- There are 244 pipe repairs identified in the collection system that are assigned a Poor Condition Grade (4) and contain severe defects that will probably cause failures within 5-10 years based on NASSCO PACP rating standards. These are industry wide rating standards used to assess and quantify the condition of publicly owned wastewater collection system assets.
- There are 63 pipes repairs identified in the collection system that are rated a Grade (5) condition, which contain severe defects and are projected to likely fail within the next 5 years or sooner.
- Failure may likely result in a SSO that would discharge directly into the storm drain system
- Failure may result in the creation of a sinkhole causing an immediate hazard to the residents within the community

## Redundancy:

If failure occurs there is not a redundant or parallel pipeline nearby to divert the flow from these sewer mains. A temporary bypass system would have to be constructed during the emergency repairs of this system. Should no action be taken, the likelihood of a SSO occurrence still exists during the establishment of temporary bypass systems following failure at the locations identified for these repairs.

# Miscellaneous Sewer Pipeline Improvement Projects

## Necessary Improvements:

Phase 1	Improvements	Estimated Cost
Emergency (Yrs 1-2)	Annual Pipe Repairs – None Identified	---
	Concrete Sewer Replacement – None Identified	---
CIP (Yrs 3-5)	Annual Pipe Repairs	\$200,000/yr
	Concrete Sewer Replacement	\$500,000/yr
CIP (Yrs 6-10)*	Annual Pipe Repairs	\$200,000/yr
	Concrete Sewer Replacement	\$500,000/yr

Note: CIP (Yrs 6-10) costs are not included in the current wastewater rate study

## Consequences of Inaction:

Potential consequences if no action is taken to address the identified issues and facility needs include:

- Sanitary Sewer Overflows
- Permit Violations
- Fines
- Threat to Public Health
- Increased maintenance costs



# Devco Lift Station

## Process Description, Location and Function:

The purposes of the new sewer lift station are to:

- The new sewer lift station will be designed to accommodate sewer flows from Village (Wagon Wheel), Devco, other future development, and existing wastewater flows that are currently serviced by Lift Station #23.
- The new lift station will allow the City to abandon existing sewer Lift Station #23 located at the intersection of Ventura Road and Vineyard Avenue. The existing lift station was constructed in 1984 to accommodate sewer flow from adjacent neighborhoods. It is in poor condition and is undersized to service new wastewater flows from future planned development.

## Condition and Risk Grading:

Overall the condition of the existing Lift Station #23 is poor with a risk grading of “critical.” Factors include:

- Existing submersible pumps are beyond useful life
- Existing SCADA and MCC panels have significant corrosion
- Existing valve vault is not functional
- Evidence of significant deterioration of concrete in wetwell

		CRITICALITY			
		1	2	3	4
VULNERABILITY	A	●	2A	3A	4A
	B	1B	2B	3B	4B
	C	1C	2C	3C	4C
	D	1D	2D	3D	4D

Legend:  
● Maintenance  
■ Priority  
■ Critical

## Reliability:

Reliability grading of “Not Reliable” due to:

- Existing submersible pumps are beyond useful life and incidents of lift station failure will increase
- Existing SCADA and MCC panels have significant corrosion, which creates conditions for communications and power failure.
- Existing valve vault is not functional and inhibits City personnel from properly maintaining and operating the station

# Devco Lift Station

- Deteriorated concrete in wetwell may lead to structural failure, which would cause Sanitary Sewer Overflows (SSOs) leading to public health hazard and regulatory fines.

## Redundancy:

Redundancy at the Lift Station #23 is considered “not sufficient” because it will not accommodate sewer flows from Village (Wagon Wheel), Devco and other future developments.

## Necessary Improvements:

Phase	Improvements	Estimated Cost
Emergency (Yrs 1-2)	None Identified	---
CIP (Yrs 3-5)	Developers to share cost of new lift station based on service capacity requirements. Reimburse Devco Development for City's share (based on existing flows) of the new sewer lift station capital cost	\$500,000
CIP (Yrs 6-10)*	None Identified	---

Note: CIP (Yrs 6-10) costs are not included in the current wastewater rate study

## Consequences of Inaction:

Potential consequences if no action is taken to address the identified issues and facility needs include:

- Not able to accommodate sewer flow from Village (Wagon Wheel), Devco and other future developments.
- Potential for public health impacts resulting from lift station failure due to SSO events into adjacent neighborhoods and storm water system
- Regulatory penalties including damages to environment, base liability, investigation & enforcement costs
- Significant increase in neighborhood sewer odor complaints due to lift station failure and backup of sewage in the collection system.

# Lift Station #4 (Mandalay & Wooley)

## Process Description, Location and Function:

Existing Lift Station #4 is located Mandalay Beach Road and Wooley Road. The existing lift station was constructed in 1986. The existing lift station accepts sewage flows from the Mandalay Shores neighborhood. The recommended improvements are as follows:

- Replace SCADA (communication) panel
- Replace motor control center (MCC)
- Replace valve vault door
- Repair and coat deteriorated concrete in wet well

## Condition and Risk Grading:

Overall the condition of the existing Lift Station #4 is poor with a risk grading of “critical.” Condition factors include:

- Existing SCADA and MCC panels have significant corrosion. The SCADA communications panel and MCC electrical panel are necessary for lift station operation. Failure of either panel will cause lift station failure. Lift station failure will cause Sanitary Sewer Overflow (SSO) spills into adjacent neighborhoods, storm drains and waterways.
- Existing valve vault is not functional. Access to valve vault is required for proper lift station operation and maintenance.
- Deteriorated concrete in wet well. Continued deterioration could lead to structural failure at lift station.

		CRITICALITY			
		1	2	3	4
VULNERABILITY	A	○	2A	3A	4A
	B	1B	2B	3B	4B
	C	1C	2C	3C	4C
	D	1D	2D	3D	4D

■ Maintenance  
■ Priority  
■ Critical

## Reliability:

Reliability grading of “Not Reliable” due to:

- Existing SCADA and MCC panels have significant corrosion, which failure of either panel would render lift station non-operational.



# Lift Station #4 (Mandalay & Wooley)

- Existing valve vault is not functional. Assess to and proper functionality of valving is required for lift station operation and maintenance.
- Deteriorated concrete in wet well. Continued deterioration of concrete could lead to overall lift station failure.

## Redundancy:

Redundancy at the Lift Station #4 is considered “sufficient” with one duty and one standby submersible pumps. However, failure of the communications panel, electrical panel or concrete would cause overall failure of the lift station causing SSO spills into adjacent neighborhoods, storm drains and waterways. There is no redundancy in the valving system. Inability to access valve vault would limit operational and maintenance capabilities.

## Necessary Improvements:

Phase	Improvements	Estimated Cost
Emergency (Yrs 1-2)	None Identified	---
CIP (Yrs 3-5)	Replace SCADA (communication) panel Replace motor control center (MCC) Replace valve vault door Repair and coat deteriorated concrete in wet well	\$500,000
CIP (Yrs 6-10)*	None Identified	---

Note: CIP (Yrs 6-10) costs are not included in the current wastewater rate study

## Consequences of Inaction:

Potential consequences if no action is taken to address the identified issues and facility needs include:

- Sewer overflow into Mandalay Shores neighborhood, storm water system, and Oxnard Shores beach.
- Significant potential impact to public health
- Regulatory penalties including damages to environment, base liability, investigation & enforcement costs
- Beach contamination & closure
- More neighborhood sewer odor complaints

# Lift Station #6 (Canal)

## Process Description, Location and Function:

Existing Lift Station #6 is located near the intersection of Wooley Road and Canal Street. The existing lift station was constructed in 1984. The station services sewage flows generated from Oxnard Shores and Oxnard Dunes neighborhoods. The recommended improvements are as follows:

- Replace existing submersible pumps.
- Replace motor control center (MCC)
- Install new emergency standby generator.

## Condition and Risk Grading:

Overall the condition of Lift Station #6 is considered poor with a rating of “critical”. Condition factors include:

- Existing submersible pumps are beyond their useful life.
- Existing MCC panel has significant corrosion. The MCC electrical panel is necessary for lift station operation. The lift station will fail should the panel become non-functional. Lift station failure will cause Sanitary Sewer Overflows (SSO) spills into adjacent neighborhoods, storm drains and waterways. There is no emergency backup power in the event of utility failure. Risk of lift station overflows are significant if not addressed quickly with potable pumping equipment.

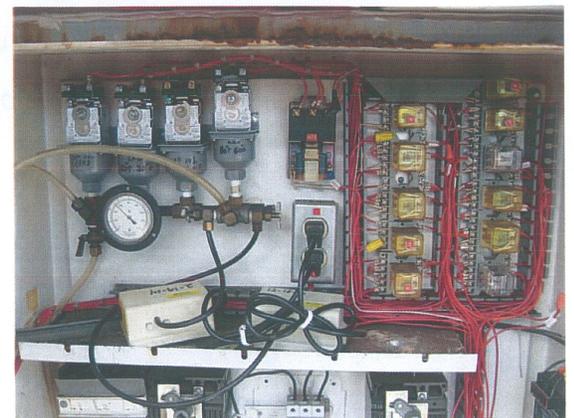
		CRITICALITY			
		1	2	3	4
VULNERABILITY	A	○	2A	3A	4A
	B	1B	2B	3B	4B
	C	1C	2C	3C	4C
	D	1D	2D	3D	4D

■ Maintenance  
■ Priority  
■ Critical

## Reliability:

The lift station is given a reliability grading of “Not Reliable” due to:

- Existing submersible pumps are not considered reliable due to their age, which is beyond the projected useful life of the equipment.
- Existing MCC panel has significant corrosion, which



# Lift Station #6 (Canal)

reduce reliability due to increased incidents of failure.

- No emergency backup power.

## Redundancy:

Redundancy of the equipment at Lift Station #6 is considered “sufficient” with one duty and one standby submersible pumps. There is however, no redundancy in power in the event of utility failure.

## Necessary Improvements:

Phase	Improvements	Estimated Cost
Emergency (Yrs 1-2)	None Identified	---
CIP (Yrs 3-5)	Replace existing submersible pumps Replace motor control center (MCC) Install new emergency standby generator	\$500,000
CIP (Yrs 6-10)*	None Identified	---

Note: CIP (Yrs 6-10) costs are not included in the current wastewater rate study

## Consequences of Inaction:

Potential consequences if no action is taken to address the identified issues and facility needs include:

- SSO spills into Oxnard Shores and Oxnard Dunes neighborhoods and storm water system
- Potential significant impacts to public health
- Regulatory penalties including damages to environment, base liability, investigation & enforcement costs
- Beach contamination & closure
- More neighborhood sewer odor complaints



# Lift Station #20 (Beardsley)

## Process Description, Location and Function:

Existing Lift Station #20 is located near the intersection of Highway 101 and Camino Avenue. The existing lift station was constructed in 1997. The existing lift station services sewage flows from Las Posas Estates, Ventura Youth Correctional Facility, and the California Conservation Corp. The recommended improvements are as follows:

- Replace motor control center (MCC) panel
- Replace MCC panel concrete pad

## Condition and Risk Grading:

Overall the condition of the existing Lift Station #20 is considered poor with a rating of “critical”. Condition factors include:

- The original MCC panel failed in 2016 due to issues associated with the presence of significant corrosion. City staff has installed a temporary panel to maintain the station in operation before permanent improvements can be made.
- The MCC panel concrete pad is severely sloped due to settlement issues. A new pad will be required to properly support the new MCC.

		CRITICALITY			
		1	2	3	4
VULNERABILITY	A	○	2A	3A	4A
	B	1B	2B	3B	4B
	C	1C	2C	3C	4C
	D	1D	2D	3D	4D

Legend:  
Maintenance (Green)  
Priority (Yellow)  
Critical (Red)

## Reliability:

Reliability grading of “Not Reliable” due to:

- The station is not considered reliable following the MCC panel failure in 2016. The temporary panel installed is not considered a reliable long term solution. The lift station will fail should the panel become non-functional. Lift station failure will cause Sanitary Sewer Overflows (SSO) spills into adjacent neighborhoods, storm drains and waterways. There is no emergency backup power in the event of utility failure. Upon a failure event, risk of SSO is significant if not addressed quickly with potable



# Lift Station #20 (Beardsley)

pumping equipment.

- The existing MCC panel concrete pad will not reliably support a new MCC.

## Redundancy:

Redundancy at the Lift Station #20 is considered “sufficient” with one duty and one standby submersible pumps. There is however, no permanent standby power to service the station during utility outages and portable pumping equipment would be required.

## Necessary Improvements:

Phase	Improvements	Estimated Cost
Emergency (Yrs 1-2)	None Identified	---
CIP (Yrs 3-5)	Replace motor control center (MCC) panel which has shown significant corrosion. Replace MCC panel concrete pad which is severely tilted.	\$300,000
CIP (Yrs 6-10)*	None Identified	---

Note: CIP (Yrs 6-10) costs are not included in the current wastewater rate study

## Consequences of Inaction:

Potential consequences if no action is taken to address the identified issues and facility needs include:

- SSO spills into Revolon Slough, Beardsley Wash, and Calleguas Creek.
- Potential significant impact to public health
- Regulatory penalties including damages to environment, base liability, investigation & enforcement costs
- Beach contamination & closure
- More neighborhood sewer odor complaints



# Magnesium Hydroxide Addition Facilities

## Process Description, Location and Function:

In response to public complaints regarding sewer odors, in late 2013 the City implemented an interim program of magnesium hydroxide addition to reduce odors and mitigate odor complaints. High levels of hydrogen sulfide in the collection system also pose a threat of injury or death to workers who mistakenly enter a manhole for inspection or repair work without wearing proper breathing apparatus. The interim program undertaken by the City significantly reduced the release of hydrogen sulfide to the surrounding communities and mitigated odor complaints from the public. A study was then conducted to determine requirements for permanent odor reduction facilities to serve the wastewater collection system. The results of the study yielded the capital improvement recommendations presented herein.

The benefits of the new facilities are not only related to mitigating unacceptable levels of odors within key areas of the collection system, but also projected increases in the life span of the sewers, manholes and pump stations that are most impacted by corrosion due to the presence of high hydrogen sulfide levels. Pilot testing, studies and ongoing chemical addition facility operations conducted by the County Sanitation Districts of Los Angeles County have identified a 50-year cost of magnesium hydroxide treatment to be approximately six percent of infrastructure replacement costs, with a cost effective level of deferred replacement due to a realized increase in useful life of the impacted collection system.

Permanent magnesium hydroxide storage/addition facilities are proposed to be constructed at the following locations:

- Lift Station No. 6 to service the Redwood Trunk Sewer
- The City's Water Yard to service the Central Trunk Sewer
- The City's Material Transfer Facility (MRF) to service the Eastern Trunk Sewer

## Condition and Risk Grading:

Current conditions within impacted areas of the City's major sewer trunk lines is considered poor. Condition factors include:

		CRITICALITY			
		1	2	3	4
VULNERABILITY	A	1A	2A	3A	4A
	B	1B	2B	3B	4B
	C	1C	2C	3C	4C
	D	1D	2D	3D	4D

Maintenance  
 Priority  
 Critical

# Magnesium Hydroxide Addition Facilities

- Excessive hydrogen sulfide levels that create odors within surrounding neighborhoods and businesses.
- Overall the condition of select manholes and pipelines within impacted areas of the City's trunk lines is poor with a risk grading of "critical."
- Continued progress of corrosion within selected areas of the City's trunk lines could lead to premature failure of facilities with the potential for Sewer System Overflow (SSO) spills and unsafe conditions for workers.

## Reliability:

Reliability grading of "Not Reliable" in select areas of the City's major sewer trunk lines due to:

- Deteriorated manholes and pipelines within affected areas of the City's three major collection system trunk lines. Continued deterioration of concrete could lead to premature failure of facilities and major capital replacement expenditures.
- Reliability of odor containment within select areas of the City's three major collection system trunk lines of poor without the inclusion of recommended chemical addition systems.

## Redundancy:

Redundancy at the proposed magnesium hydroxide addition facilities is considered "sufficient" with one duty and one standby chemical addition pump. Redundant storage facilities are not considered necessary, although chemical containment will be provided for the magnesium hydroxide storage tanks.

## Necessary Improvements:

Phase	Improvements	Estimated Cost
Emergency (Yrs 1-2)	None Identified	---
CIP (Yrs 3-5)	Construct 3 new magnesium hydroxide addition facilities to reduce odors and protect sewer infrastructure	\$4,400,000
CIP (Yrs 6-10)*	None Identified	---

Note: CIP (Yrs 6-10) costs are not included in the current wastewater rate study

# Magnesium Hydroxide Addition Facilities

## Consequences of Inaction:

Potential consequences if no action is taken to address the identified issues and facility needs include:

- Continuing neighborhood sewer odor complaints
- Increasing levels of corrosion to wastewater collection facilities that will reduce useful life and increase capital repair and replacement costs
- Increase risk to workers due to potential exposure to high levels of hydrogen sulfide

