

# 2023 Sewer Point Repairs and Improvements

(City Project #22-0006-UT,  
Council Item #22-0732)

September 2022



**CLEARWATER**  
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SYSTEMS OVERVIEW**
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**INSHORE AND  
OFFSHORE FISHING**

# 1 – PUBLIC UTILITIES SYSTEMS

## Public Utilities Operates & Maintains These Systems:

- Raw water (44 supply wells)
- Water treatment (3 treatment plants)
- Water distribution (585 miles of water mains)
- **Wastewater collection system (WWCS, next slide)**
- Wastewater treatment (3 water reclamation facilities)
- Reclaimed water distribution (140 miles)

## 2 – WWCS BACKGROUND

### Wastewater Collection System Consists of:

- 8,300 manholes
- 370 miles of gravity sewer
- 73 lift stations
- 38 miles of force main
- Sub-divided into 3 service basins:
  - East Water Reclamation Facility (WRF)
  - Marshall Street WRF
  - Northeast WRF

# 3 – WWCS MASTER PLAN



## City of Clearwater

### Wastewater Collection System Master Plan

City Project Number 17-0006-UT

**PRESENTED TO**

**City of Clearwater**  
100 S. Myrtle Avenue  
Clearwater, FL 33756

**PRESENTED BY**

**Tetra Tech**  
201 E. Pine Street, # 1000  
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#200-41125-18003  
December 2021

# 3 – WWCS MASTER PLAN

Table 8-7. Summary of Collection System Opinion of Probable Cost

	To 2030	2031 to 2050
<b><i>Renewal and Replacement Projects</i></b>		
Marshall Street WRF	\$88,154,000	\$108,812,000
East WRF	\$48,420,000	\$110,474,000
Northeast WRF	\$24,046,000	\$107,825,000
<b>Total Renewal and Replacement Project Cost</b>	<b>\$160,621,000</b>	<b>\$327,111,000</b>



### 3 – WWCS MASTER PLAN

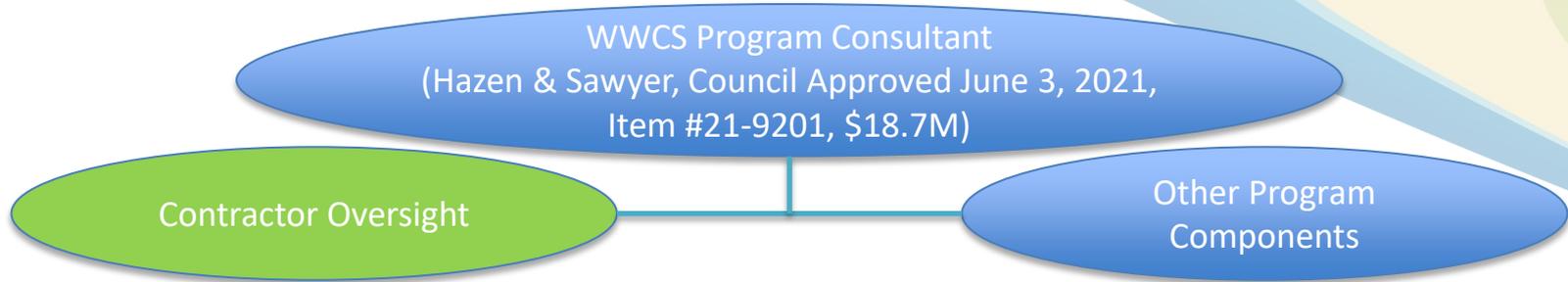
Table 8-6. Summary of **Renewal and Replacement** Annual Investment

	To 2030	2031 to 2050
Gravity Mains <sup>1</sup>	\$102,207,000	\$222,200,000
Manholes <sup>2</sup>	\$36,638,000	\$73,276,000
Lift Stations <sup>3</sup>	\$10,630,000	\$28,000,000
Force Mains <sup>4</sup>	\$11,146,000	\$3,636,000
<b>Total</b>	<b>\$160,621,000</b>	<b>\$327,112,000</b>

Notes:

1. Based on an annual expenditure of \$10.22 million per year from 2021 to 2030 and \$11.11 million per year from 2031 to 2050.
2. Based on an annual expenditure of \$3.66 million per year through 2050.
3. Based on prioritized lift stations from Table 8-4 plus a \$1.4 million investment over 5 years from 2021 to 2030 and \$1.40 million per year thereafter.
4. Based on prioritized projects.

# 4 – WWCS PROGRAM OVERVIEW



- WWCS Flow Monitoring
- Sewer Point Repairs Contracts (As-Needed)
  - Group A – Sanitary Sewer Trenchless Reconstruction
  - Group B – Sewer Cleaning and Televising Inspections
  - Group C – Emergency/Non-Emergency Repairs/ Improvements of Sewer, Force Main, and Manholes
  - Group D – Sanitary Cleanouts and Laterals
  - Group E – Manhole Surfacing
  - Group F – Smoke and Dye Testing
- WWCS Program Prioritization and Tracking
- Lift Station Rehabilitations
- Hydraulic Modeling
- Designs:
  - New Pipelines
  - Capacity Increases

\$32 M

# GROUP A - SANITARY SEWER TRENCHLESS RECONSTRUCTION

1

## Pipes Inside Pipes

Cured-in-place pipe, also known as CIPP, is one of several conduit repair technologies that are considered “trenchless” — that is, they don’t require that old pipes be dug up and replaced. In CIPP, liners made of felt, fiberglass, or other composite tubes embedded with resin are inserted into the damaged pipes. Hot water or steam hardens, or “cures,” the liner into a plastic conduit. During curing, plumes of materials can escape to the surface and into the air.

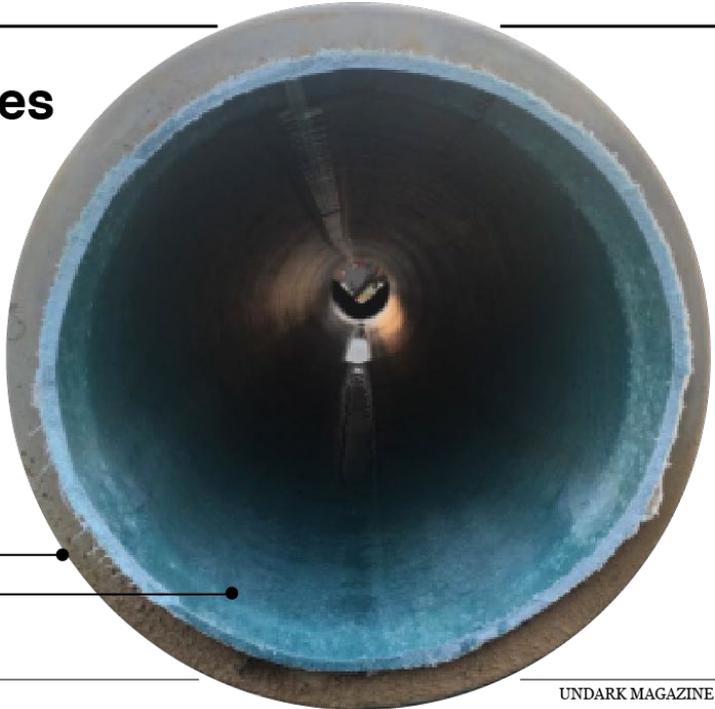
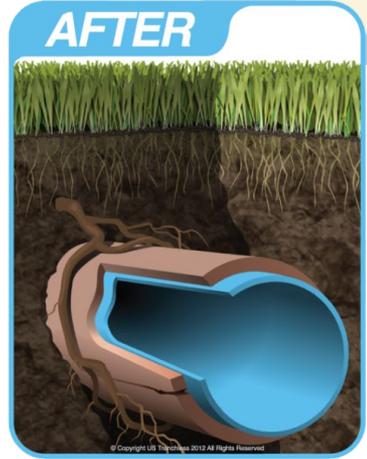


Image courtesy Purdue University

UNDARK MAGAZINE

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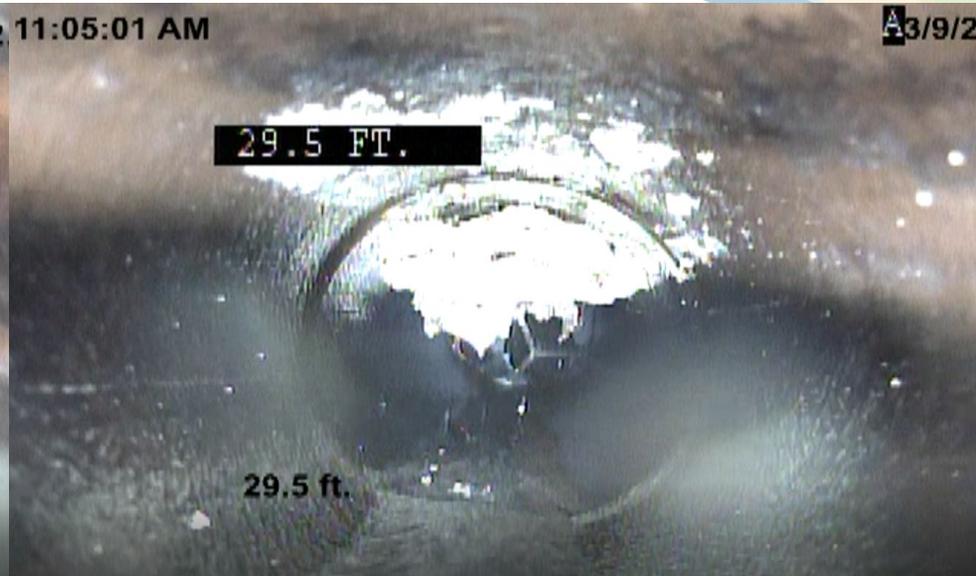
- 1. <https://www.compositesone.com/process/cured-in-place-pipe/>
- 2. <https://ustrenchless.com/services/pipe-lining/>

# GROUP B – SEWER CLEANING & TELEVISION INSPECTIONS

Before Cleaning



During Cleaning



\*2433 Gulf to Bay Blvd

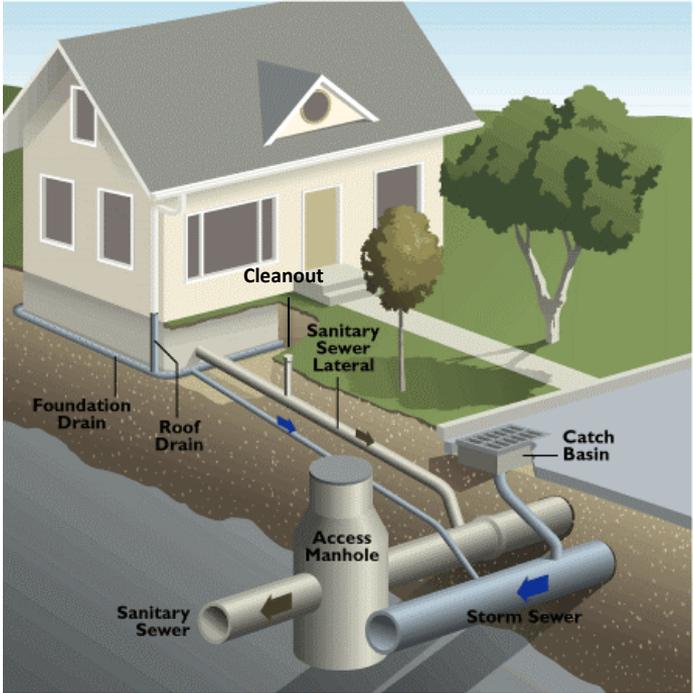
# GROUP C - EMERGENCY/NON-EMERGENCY REPAIRS & IMPROVEMENTS



# GROUP D - CLEANOUTS & SEWER LATERALS



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1. <https://www.cityofnoblesville.org/topic/subtopic.php?topicid=269&structureid=16>

# GROUP E - MANHOLE SURFACING

MH 234A2100



# GROUP F - SMOKE & DYE TESTING



# 5 – SUMMARY

## WWCS On-Call Contractors

- Total for 6 Contracts: \$32,000,000\*
- Providing emergency and proactive preventive maintenance work to be renewed each year for up to 4 years.
- Each year approved by Council.
- Contractor bids for capital projects will still be brought to City Council for approval.

\*Total annual not to exceed. Unused funds revert to Public Utilities



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