



*A Service of The City of Cincinnati*

**GREATER CINCINNATI  
WATER WORKS**

# Cincinnati Lead Line Replacement Project

## Operator Training Committee of Ohio- Water Dist. Workshop

*November 6, 2024*





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leading  
*the way*

**Kevin Kappers**

Lead Program Manager

513-591-5057

[Kevin.Kappers@gcww.Cincinnati-oh.gov](mailto:Kevin.Kappers@gcww.Cincinnati-oh.gov)

**Rico Cosby**

Assistant Treatment Superintendent

513-591-5020

[Rico.Cosby@gcww.Cincinnati-oh.gov](mailto:Rico.Cosby@gcww.Cincinnati-oh.gov)

# Lead Program Beginnings

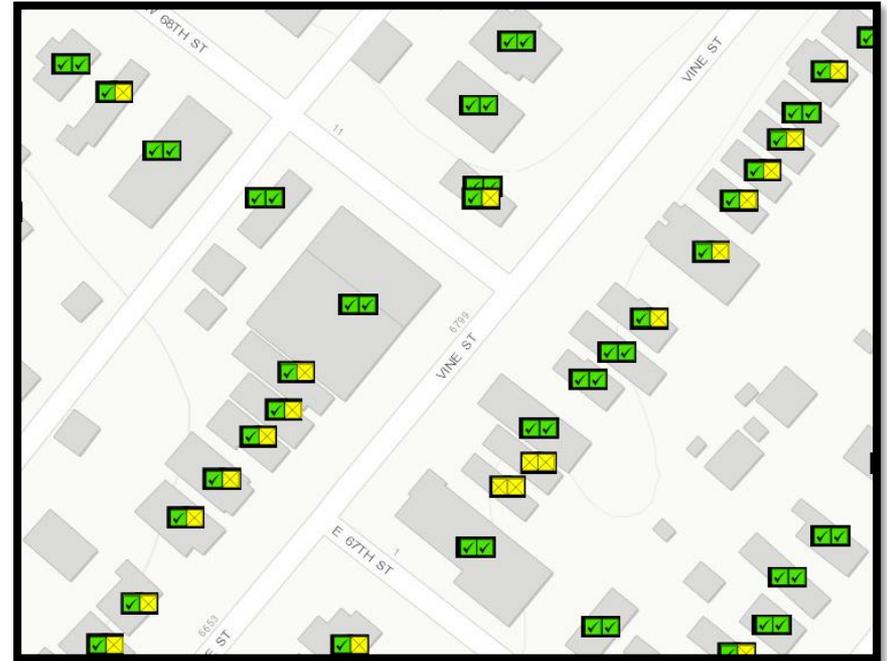
2016-2017 Legislative Steps to Begin Replacement Program:

- Declared lead lines as public health/safety risk
- Declared private LSL replacement costs as a public purpose
- Prohibits LSLs (enforcement grace period)
- Requires replacement on repair and disturbance



# Lead Inventory- Where to Start?

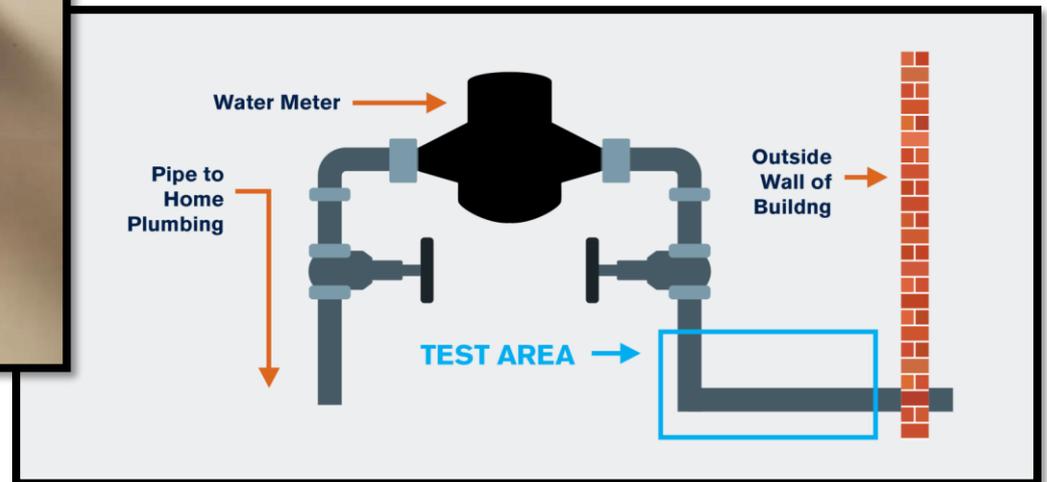
- Did not track customer material until 2016
- What did we know/what info did we have?
  - Discontinued use of lead in 1927
  - Watermain replacement project inspection records
  - Inspection reports of customer-initiated replacements
  - Work orders from CMMS
- Results: 35,000 LSLs remaining in system as of 2024



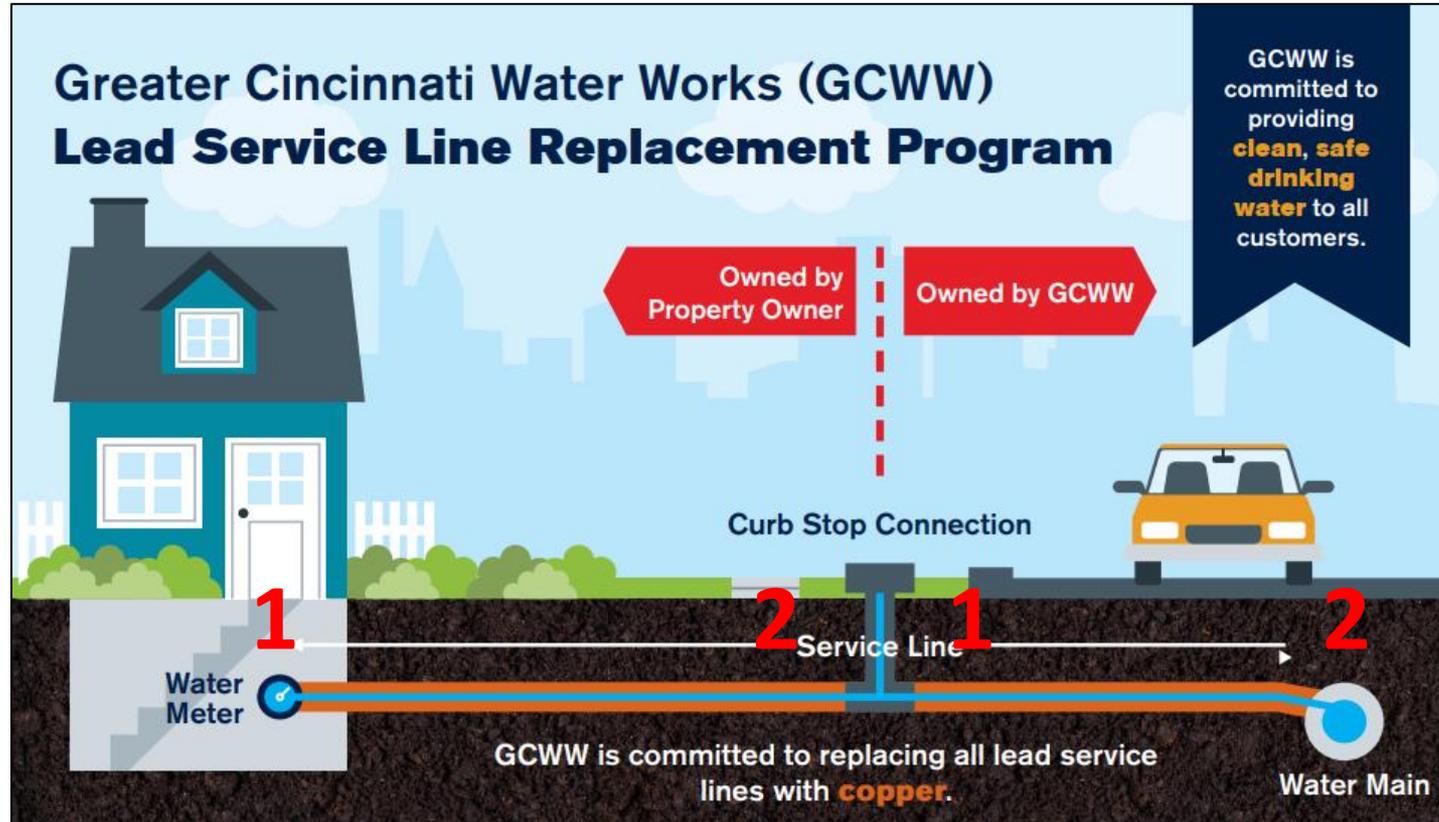
Customer Look-up Map  
<https://la.mygcww.org/>

# Allow Customers to Help

- Our inventory assumptions are conservative
- Need to have a way for customers to help improve



# Allow Customers to Help



# Lead Service Line Replacements

1. Water Main Replacements

2. One-Offs

- Leaks
- High lead tests

3. Targeted Areas for Service Line Only Work



# Replacement Cost



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- Began offering cost-sharing replacement program in 2016; GCWW paid 40% of cost (up to \$1,500), with more assistance for eligible low-income customers. **Outcome: Options were confusing, large potential upfront cost. Customer participation rate was 35%**
- In late 2021, changed to pay for full cost of replacement for everyone. **Outcome: Some mistrust, “too good to be true” Customer participation rate was 50%**
- During past year, revised program documents to make them simpler and clearer, increased outreach **Outcome: More interest. Customer participation rate is 80%**



# Communications/ Customer Contracts

1. Water Main Replacements
2. One-Offs
  - Minimal outreach needed, send contract via docusign, mail, or email
3. Targeted Areas for Service Line Only Work

## Outreach Process

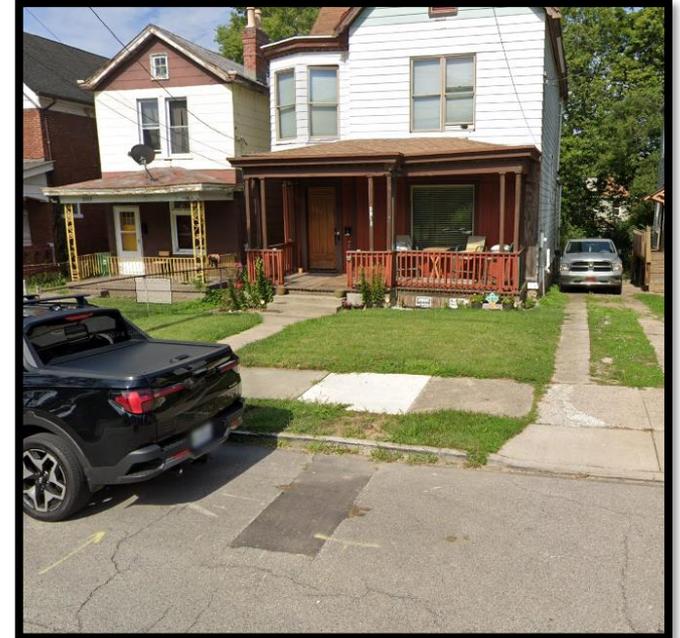


**10 or more  
attempts by end of  
project**

# Replacement Process



What many customers imagine



Reality



## GCWW/Distribution/Division Lead Line Crews Replacement Overview



# Scheduling the work

## November 2024



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
27	28	29	30	31	1 Regular Schedule shift	2
3	4 Regular Schedule shift	5 Regular Schedule shift	6 Regular Schedule shift	7 Regular Schedule shift	8 Regular Schedule shift	9
10	11 Holiday	12 Regular Schedule shift	13 Regular Schedule shift	14 Regular Schedule shift	15 Regular Schedule shift	16
17	18 Regular Schedule shift	19 Regular Schedule shift	20 Regular Schedule shift	21 Regular Schedule shift	22 Regular Schedule shift	23
24	25 Regular Schedule shift	26 Regular Schedule shift	27 Regular Schedule shift	28 Holiday	29 Holiday	30

# Lead Safety for our Crews



NIOSH Link



## JHA's created from the NIOSH study

- ❑ Wearing a TYVEK Suite
- ❑ Disposal of a LSL
- ❑ Cutting Lead
- ❑ Lead to copper compression fitting
- ❑ Pulling lead line (LSLR)

## Additional Safety Measures



## HEPA Vacuums



HEPA filter recommended every 6 months.

# Tool and Equipment Cleaning



## Uniform Rentals

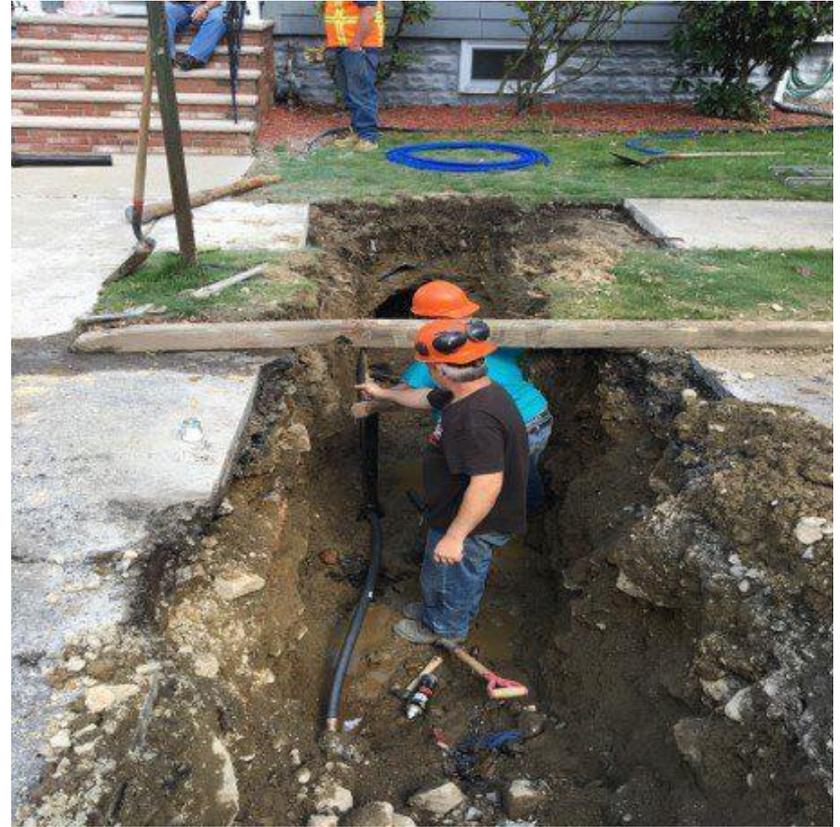


## Crew Structure

- **Crew Leader-** This person directs the crew, delegates the work and helps in the installation process.
- **Maintenance Worker-** Complete the pipework or installation of the LSLR.
- **Motor Equipment Operator-** Primary function is to Operate the backhoe, jack hammer the roadway and sidewalk, load the spoils in the dump truck and assist the crew.
- **Truck Driver-** Primary function is to transport loads of spoil and backfill. In addition, saw cut the street, hand excavated to expose utilities in the excavation.
- **Valve Operator-** Primary Function such as posting “Post No Parking” signs, operating valves, interacting with customers, collecting samples, and conducting inspections and a host of other duties.
- **Asst. Supervisor-** Oversees the entire group’s activities and schedules the work.



# Excavation/Trench Safety



# Daily Trench Inspection form

## Daily Trench Inspection Form

### Competent Person

Date \*

Employee ID # \*

Employee Name

Work Order No \*

Did employees enter the excavation on this work order today? \*

Yes  No

## Attach Photos of Excavation (0)

Required \*

Attach Photos

Photo Library



fety

Take Photo or Video



Choose Files



### Excavation Safety

**Weather \***

**Previous Rain/Snow? \***  
 Yes  No

**Soil Classification \***

**Length of Excavation? (Feet) \***

**Width of Excavation? (Feet) \***

**Depth of Excavation? (Inches) \***

**What Type of Protection Shoring System is being used? \***

Describe

Attach Photos

Red	Electric
Yellow	Gas-Oil-Steam
Orange	Communications - CATV
Blue	Water
Green	Sewer
Pink	Temporary Survey Marking
White	Proposed Excavation
Purple	Reclaimed Water

**Is the trench secure for employee to work in safely? \***  
 Yes  No

Submit

### Hazards

Proper barricades, cones, warning vests or other devices in use when needed? \*

Yes  No  N/A

All underground utilities located and marked? \*

Yes  No  N/A

Trenches  $\geq 4'$  in depth have ladders at no more than 25' travel distance? \*

Yes  No  N/A

Trenches  $\geq 5'$  in depth have protective system in place (sloping, benching, shoring, shielding, trench boxes)? \*

Yes  No  N/A

If sloped, are sides at proper angle for soil class and conditions (horizontal; vertical)? \*

Yes  No  N/A

If sloped, are sides at proper angle for soil class and conditions (horizontal; vertical)? \*

Yes  No  N/A

All spoils at least 2' from edge of trench? \*

Yes  No  N/A

If water is accumulating in the trench, is it being removed? (N/A for no water accumulating) \*

Yes  No  N/A

### Comments

Add additional comments here:

## Attach Photos of Excavation (0)

Required \*

Attach Photos

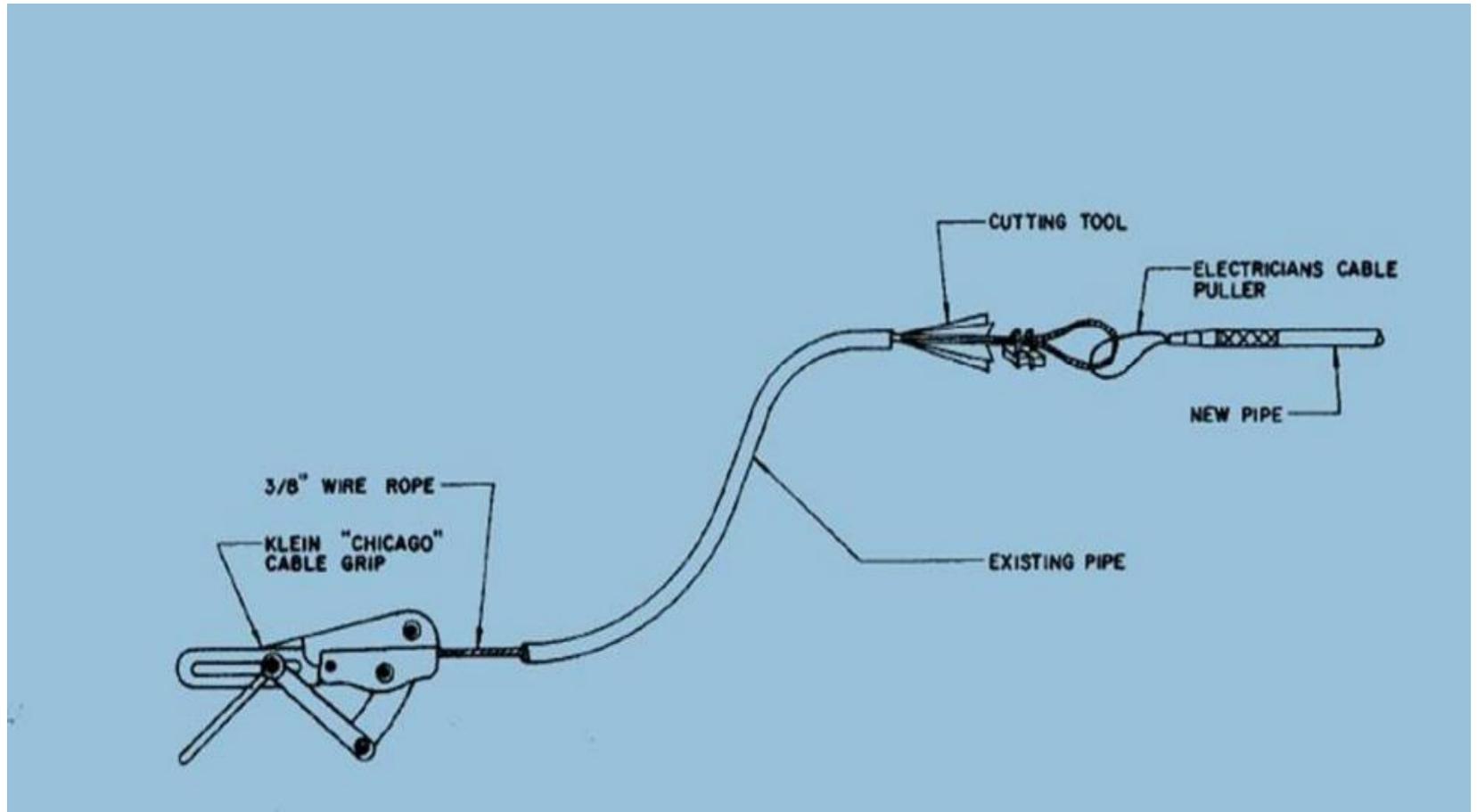
# Shoring Excavations



# Equipment



# Tools



# Lead Line Replacement Process



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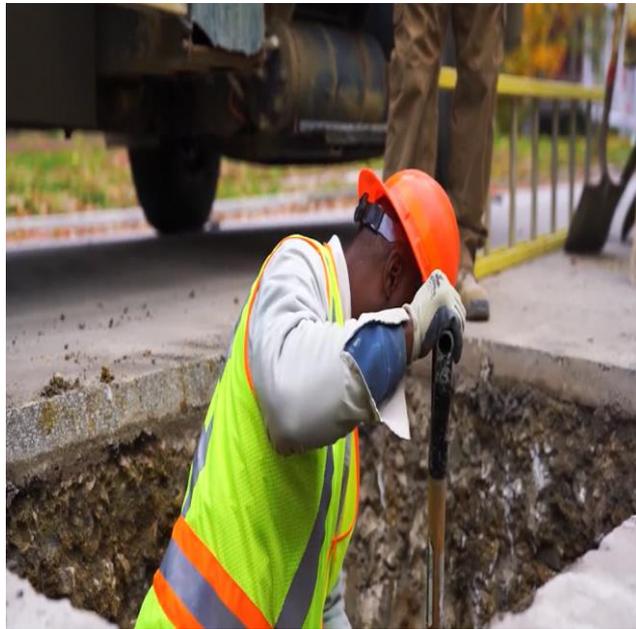


## Step-by-Step Process to Replace a Lead Service Line (LSLR)

1. Upon arrival
2. Locate watermain and curb stop
3. Jackhammer the roadway and sidewalk
4. Excavate
5. Expose the lead line and connections
6. Pulling the cutting tool through the lead
7. Installation of the new copper line running through lead
8. Using the backhoe to pull the line.
9. Long stretches needing to use the mole.
10. Connecting to the watermain and curb stop
11. Checking for leaks/secure the excavation
12. Flushing out the system
13. Leaving a lead kit with the property owner
14. Take pictures of the work completed



# Step-by-Step Process to Replace a Lead Service Line (LSLR)



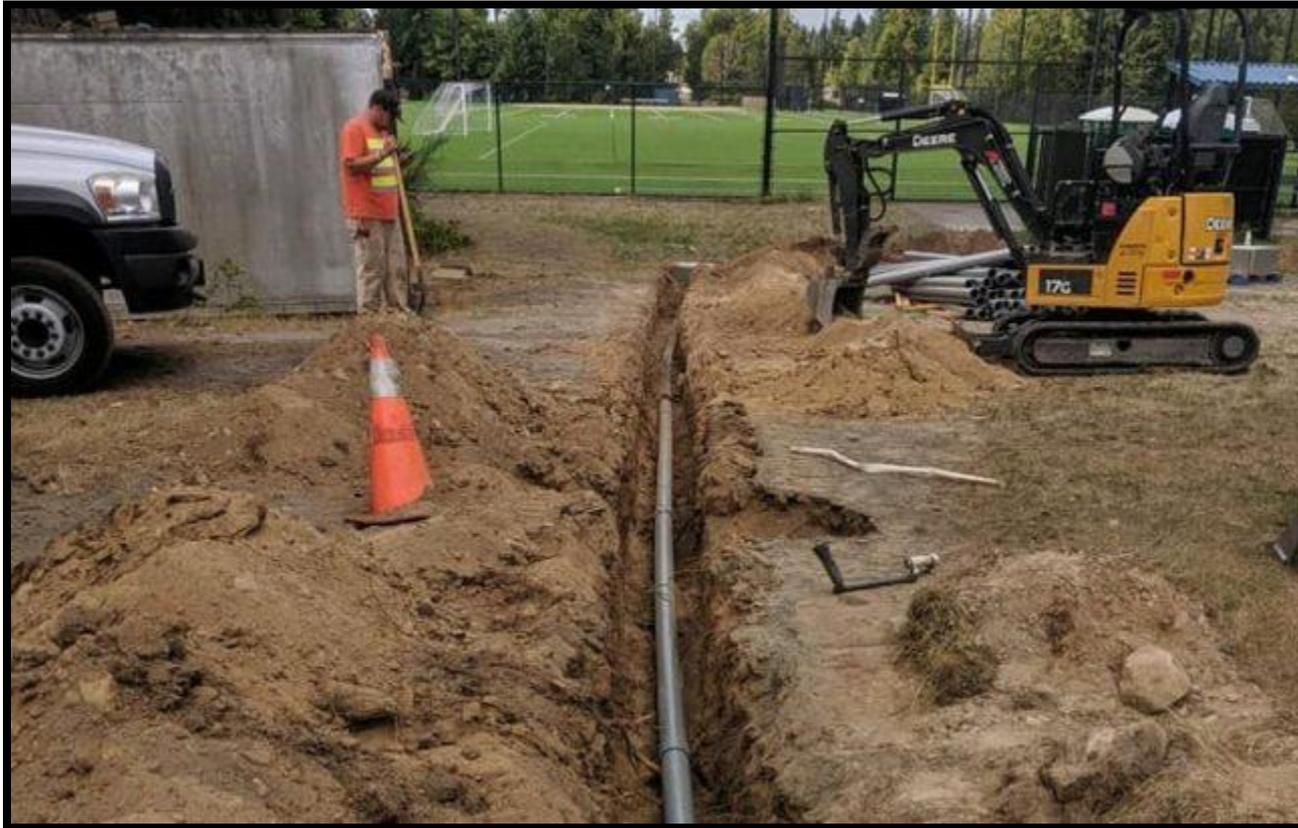
This concludes the Internal LSLR Crews replacement process any questions or comments?



# Hammer Head/Mole



# Open Trench



# After Replacement

- Flush and clean aerators
- Use filter kit
- Test
- 1-yr Warranty



# *Questions?*



*[Website: lead.mygcww.org](http://lead.mygcww.org)*

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