Continued Utility Rate Study Discussion

VILLAGE OF NORTHBROOK

PUBLIC WORKS AND FACILITIES COMMITTEE

FEBRUARY 7, 2023

Meeting Agenda

- Introduction of Automated Metering Project
- Lead Service Line Regulations
- Draft Schedule of Future Meetings and Topics
- Additional Comments/Discussion on Utility Rate Study (If Any)

Automated Metering Project

Automated Metering Project

- Water Meters are an important part of the Village of Northbrook's water distribution system.
  - Water meters measure the amount of water being used at a property.
  - Water usage information is used for billing of water, sewer, and stormwater services.
  - Meters also play an important part in regulatory reporting, specifically in determining unaccounted for water, aka "water loss" which impacts the Village's allocation of Lake Michigan water.
- Northbrook has approximately 14,140 water meters within the distribution system ranging from 1/2 inch to 6 inches.

Automated Metering Project

- Current Meter Reading Process:
  - The Village's water meters are read by a contractor using a variety of methods including:
    - In-person inside reads (meters that cannot be read from the exterior of a home);
    - Through glass blocks;
    - From an external register attached to a water meter;
    - Through an electronic touch pad and the use of handheld reading device.

  - Water usage information is then entered into meter books by meter readers. Meter books are turned into Finance Department and information is hand entered into BS&A for each account.

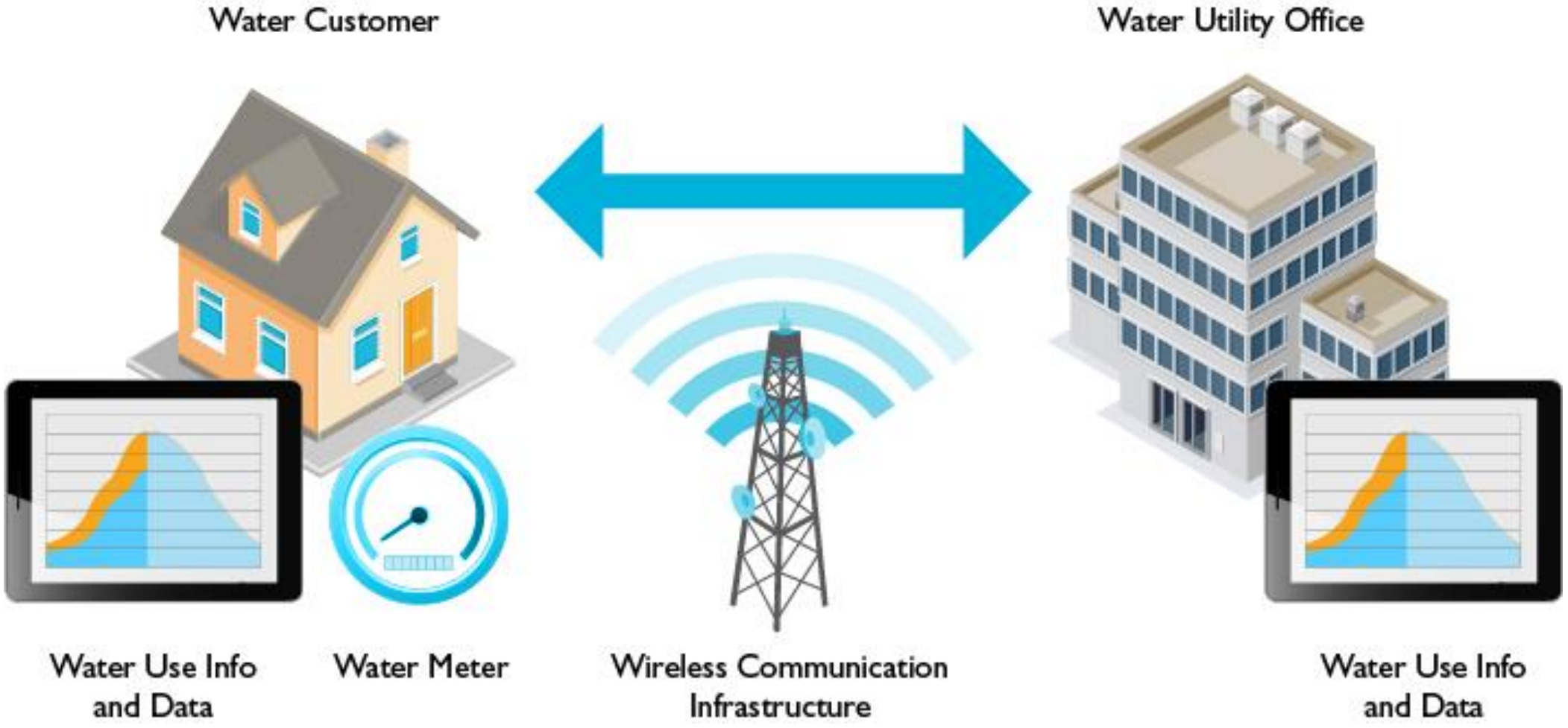
Automated Metering Project

- Water meters have an expected accuracy life of approximately 20 years. In particular, as mechanical meters age, they will slow down.
- Majority of meters in the Village's inventory are mechanical meters.
- Average age of Village's water meters is 29.5 years old with 49% more than 30 years old.
  - 12% of meter inventory is between 31 and 40 years old.
  - 29% of meter inventory is between 41 and 50 years old.
  - 8 % of meter inventory is older than 50 years.

Automated Metering Project

- As Village has replaced meters, a sample of those replaced have been sent for testing to gauge accuracy of meters within the system.
  - 527 meters have been tested, of those 125 have passed (24%) and 402 have failed (76%).
  - AWWA standard (industry standard) for accuracy is +/- 1.5% or 98.5% to 101.5%.
  - Average Accuracy of Meters Tested That Were Installed for:
    - 0 - 5 Years = 44% (18/22 Meters Failed Test)
    - 6 - 10 Years = 49% (9/15 Meters Failed Test)
    - 11 - 15 Years = 63% (19/29 Meters Failed Test)
    - 16 - 20 Years = 62% (14/20 Meters Failed Test)
    - 21 - 30 Years = 72% (45/85 Meters Failed Test)
    - 31 - 40 Years = 73% (76/96 Meters Failed Test)
    - 41- 50 Years = 65% (172/200 Meters Failed Test)
    - More Than 50 Years = 69% (49/60 Meters Failed Test)

Automated Meter Infrastructure and Smart Water Metering



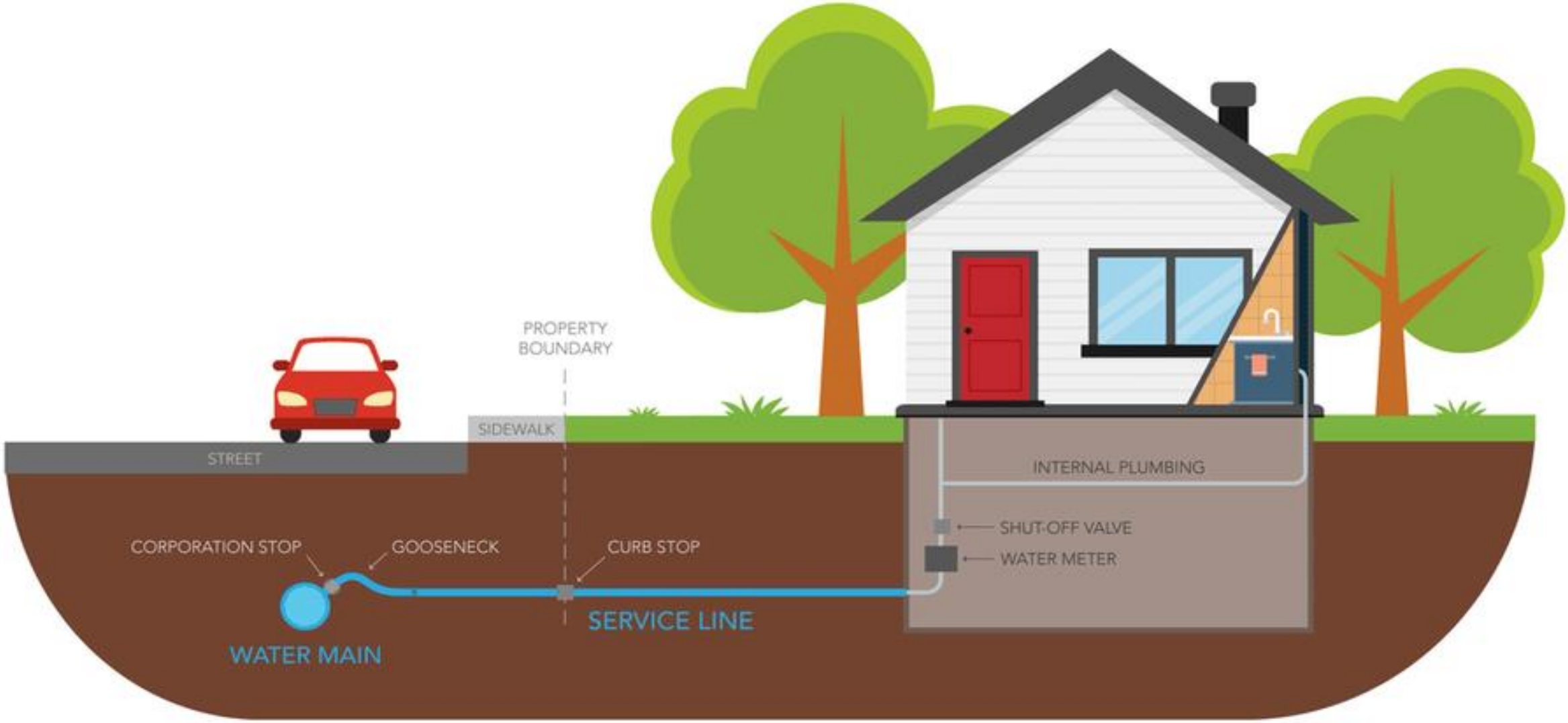
Automated Metering Project

- Included in the Capital Improvement Plan and Utility Rate Study is the implementation of an automated meter reading system. The project will be a joint endeavor amongst the Finance, Public Works, and IT Departments.
- An estimated schedule for the project is as follows:
  - January 2023 – August 2023 – Meter and software research
  - September 2023 – November 2023– RFQ/RFP documents prepared for procurement process
  - December 2023 – March 2024 – Procurement process
  - April 2024 – October 2024 – Meter material ordered and delivery begins, Communications with customers
  - November 2024 – Meter installation begins
  - September 2024 – April 2027 – Meter installation completed
- The estimated cost of the project is $4.5 million.

Automated Metering Project

- Why is the Village undertaking this project?
  - New meters will accurately accounting for water being used by customers.
  - Meters also play an important part in regulatory reporting, specifically in determining unaccounted for water, aka “water loss” which impacts the Village’s allocation of Lake Michigan water.
  - Accurately metering water usage impacts revenues of the Water, Sanitary Sewer, and Stormwater Funds.
- At the next meeting of the Public Works and Facilities Committee, the Committee will be asked to consider policy recommendations such as:
  - What ramifications if any will there be for residents that do not allow for a remote radio read capable meter?
  - What costs will the Village be responsible for if shut off valves within a home do not work and need to be replaced?
  - What costs will the Village be responsible for if residents have blocked access to the meter (i.e. sealed meters in ceilings or constructed walls over them)?

Lead Service Line Regulations


PROPERTY
BOUNDARY
SIDEWALK
STREET
INTERNAL PLUMBING
SHUT-OFF VALVE
WATER METER
CORPORATION STOP
GOOSENECK
CURB STOP
SERVICE LINE
WATER MAIN

Lead Service Line Regulations

- The State of Illinois passed Public Act 102-0613 known as the **Lead Service Line Replacement and Notification Act**.
- Legislation requires an inventory of lead service lines be completed, a replacement plan for public and private portion of lead service lines.
- Partial lead service line (i.e. only the Village's portion of the service line) is not permitted unless there is an emergency repair such as a water main break.
- Legislation allows for assessing costs of private service line replacement to property owners or occupants if using Village funds. If using State of Federal Grants, customers will not be charged.
- Water system owners and operators, such as the Village of Northbrook, are given broad liability protection for damage to private property in conjunction with the replacement of lead service lines.

Lead Service Line Regulations

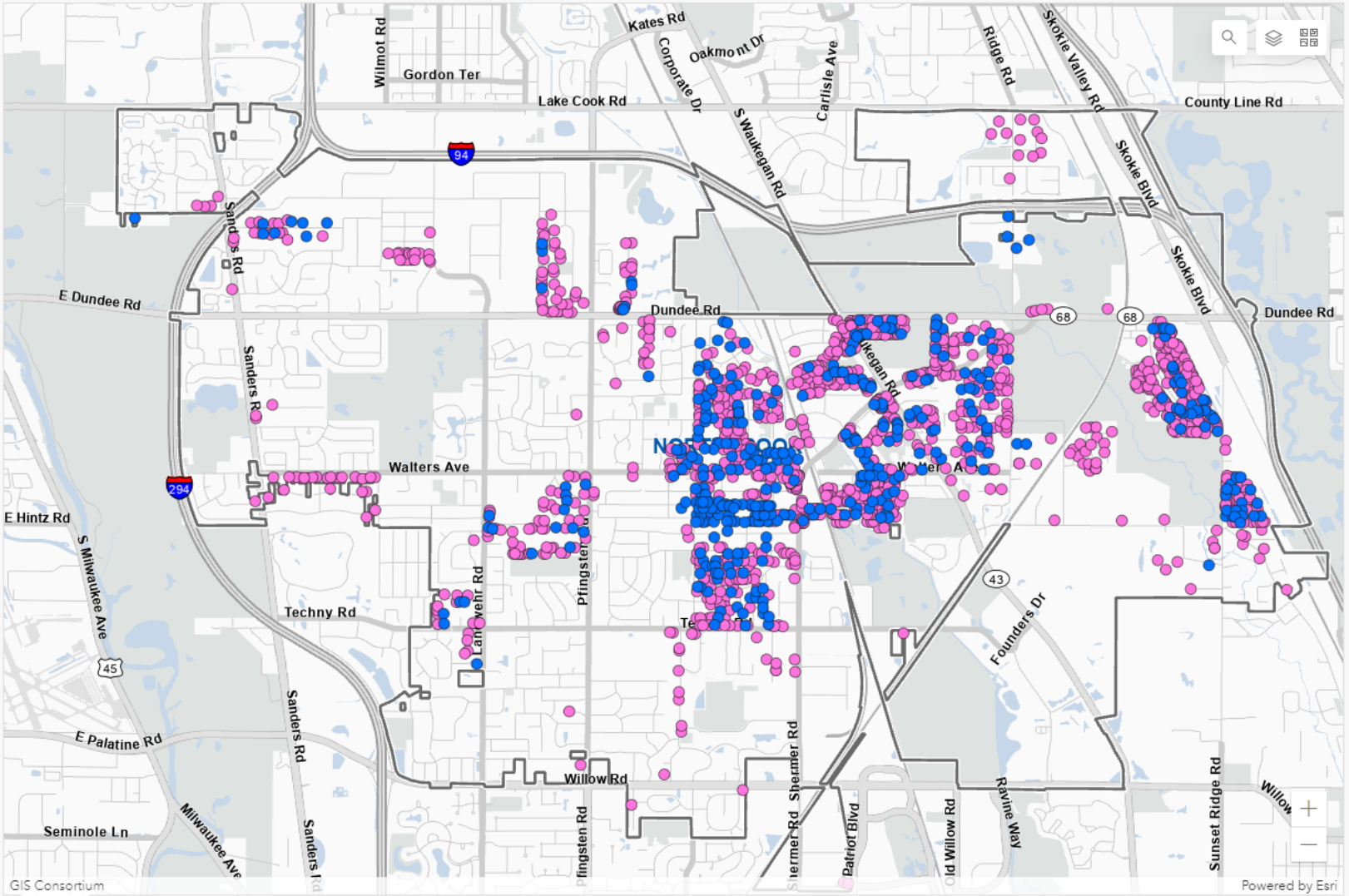
- Regulatory Timelines Water System Owners Must Meet:
  - Initial Lead Service Line Inventory (Preliminary) – April 15, 2022
  - **Updated Lead Service Line Inventory Filed with IEPA – April 15, 2023**
  - Final Service Line Inventory Filed with IEPA – April 15, 2024
  - Initial Service Line Replacement Plan Filed with IEPA – April 15, 2025
  - Updated Service Line Replacement Plan Filed with IEPA – April 15, 2026
  - Final Service Line Replacement Plan Filed with IEPA – April 15, 2027
  - Completion of Service Line Replacement – April 2044 (with minimum of 6% of lines addressed per year)
- Other timelines:
  - Emergency Service Line Replacement (i.e. Water Main Break) – Must notify owner or occupant of the building affected and schedule private portion of service line replacement with in 30 days.
  - Repair may be scheduled up to 120 days out in the event of weather or other circumstances beyond reasonable control that would prohibit replacement of the line.
    - Village must provide water filters during the 30 day or 120 day periods.

Lead Service Line Regulations

- Northbrook's Past Approach to Lead Service Lines
  - Village of Northbrook has no lead water mains.
  - Mid-1950's – Use of lead for service lines no longer allowed in the Village of Northbrook.
  - 1990 – Required replacement of lead service lines for properties being demolished.
  - 1995 – Required replacement of lead service lines for properties being remodeled.
  - 1988 – Village's policy is to replace all service lines between the water main and b-box in conjunction with water main project.
- Using the dates above as well as building permit data and home construction dates, an initial inventory of service lines that are in part or wholly lead was built out in GIS.
- Initial inventory yielded approximately 1,800 possible properties with lead service lines.
- Those properties have received letters asking property owners to verify their service line materials. Residents and businesses are also able to make appointments for Public Works staff to come out and assist in verifying the material as well.

Water Service Line Inventory

Select a date
No date selected



Map | Lead Lines Removed List | Survey Areas

Retail Connections
12,636

Lead, Supplier Side Only
205
(Includes estimated locations)

Lead
1,680
(either side lead or possibly lead)

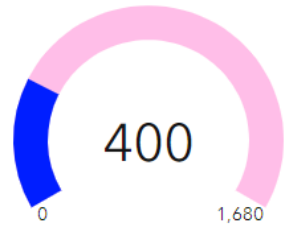
Copper
10,212
(Both sides)

Galvanized
41
(either side galvanized)

DI / CI / Transite
25
(either side DI / CI and no side lead)

Unknown / Copper
668
(One or both sides unknown; one side copper)

Verified Lead Compared to Total Reported Lead



Lead Lines Removed
Selection required on one or more elements

Customer Lines Verified
Selection required on one or more elements

Supplier Lines Verified
Selection required on one or more elements

Lead Service Line Regulations

Summary of Neighboring Communities' Lead Service Line Programs

Community	Number of Lead Service Lines	Lead Service Line Program Cost Share	Maximum Property Reimbursement	Waive Permit Fees
Deerfield	650	50%	$5,000	No
Glenview	3,500	50%	No Cap	No
Highland Park	1,800	20%	$3,000-$5,000	No
Lake Forest	300	None	N/A	Yes
Libertyville	700	50%	$2,500 - $5,000	No
Palatine	1,500	66%	$10,000	No
Winnetka	450	50%	$5,000	No

2023 Water Main Projects

FY 2023/24 Water Main Projects

- Water main replacement projects scheduled for FY 2023/24 have been surveyed and found 8 confirmed lead service lines.
- Estimated cost to replace the 8 lead service lines from the b-box into the home is $7,000 each or $56,000.
- This cost is currently incorporated in the project budget and represents approximately 1.5% of the estimated water main replacement cost identified in the CIP.
- **Should the Village cover the cost of these initial service line replacements to establish a benchmark for costs of future service line replacements or should the property owners be responsible for this cost?**
- With the completion of the service line survey this year, additional policy questions for the Public Works and Facilities Committee will be brought back in conjunction with the development of the comprehensive lead service line replacement program.

Proposed Structure of Future PW&F Committee Meetings

Proposed Structure of Future PW&F Committee Meetings

Proposed Schedule and Structure of Utility Rate Study Meetings			
Meeting	Meeting Number	Meeting Topics	Date of Meeting
Public Works and Facilities Committee	2	Water Meter Project Update Fund Reserve Policy Additional Rate Study Comments Lead Service Lines	June
Public Works and Facilities Committee	3	Rate Structure (Mechanics) Rate Plan Length Water Meter Project Update	TBD
Public Works and Facilities Committee	4	Rate Structure (Mechanics and Numbers) Rate Plan Length Recommendation to Village Board of Trustees Water Meter Project Update	TBD
Board of Trustees	N/A	Consideration of Public Works and Facilities Committee Recommendations Consideration of Multi-Year Rate Plan	TBD

Additional Comments/Discussion of Utility Rate Study