



FOCUSING ON OUR FUTURE

Naperville's Water Utilities

Public Utilities Advisory Board – Feb. 28, 2024



An aerial photograph of a utility facility, likely a water treatment plant. The facility consists of several large, rectangular concrete structures with various pipes and equipment on top. To the left of the main facility is a smaller, single-story building with a parking lot. In the foreground, there is a large, open field with a mix of green grass and dry, yellowish-brown patches. The background shows more trees and a clear sky.

What we'll focus on tonight

- How we serve the Naperville community
- Recent operational trends in the utility
- The utility's needs moving forward
- Next steps: 2025-2027 rate study

WHAT'S TONIGHT'S ASK?

An aerial photograph of a wastewater treatment plant. In the upper left, there is a tall white water tower with a logo on top. The plant itself consists of several large rectangular and circular tanks, some with blue roofs, and various smaller buildings. The facility is surrounded by green grass and trees. In the foreground, there are large green agricultural fields with a road running through them. The sky is clear and blue.

Do you support staff's service level recommendations and associated priorities to inform the 2025-2027 rate study?

Over 85 employees serve over 40K customers' water & wastewater treatment needs.



Water Supply, Distribution & Metering

- Purchases water through the DuPage Water Commission
- Installs, maintains & replaces equipment (water meters, water mains, etc.) as needed to provide clean & reliable water service to customers



Wastewater Collections & Pumping

- Installs, maintains, rehabilitates & replaces sanitary sewer mains & other equipment
- Performs storm water pumping operations



Wastewater Treatment

- Operates the Springbrook Water Reclamation Center to treat Naperville & Warrenville wastewater

Also provides or coordinates with others in the City for ancillary services like lab work, customer service & billing, etc.

RECENT OPERATIONAL TRENDS





The utility increased **WATER MAIN REPLACEMENT** to address the historical under-replacement of this asset.

An asset condition assessment revealed that major increases to the utility's water main replacement schedule were necessary to **maintain service levels**.

The utility developed a **stairstep approach** to increasing replacement due to funding & human resource constraints.

The utility is currently **50 miles behind** on replacements and currently at approximately 3 miles of replacement/year.

Water Main Replacement





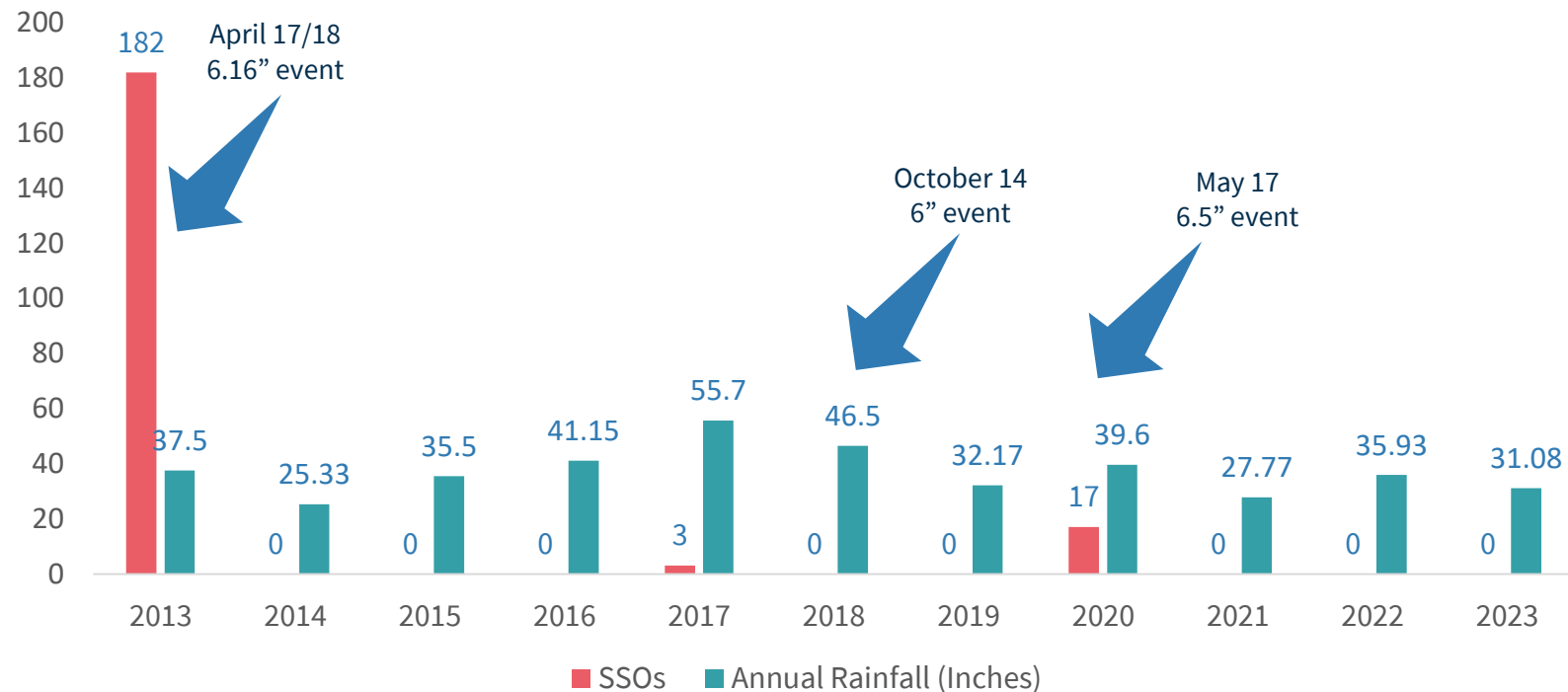
To help prevent costly & disruptive sewer backups into homes, the utility increased **PREVENTATIVE WORK**.

Less intrusive methods are used to rehabilitate sanitary sewer mains, manholes & the lateral lines that carry wastewater from customer property to the public main.

After a flood in 2013, the utility **increased investment** in projects to prevent excess groundwater & stormwater from flowing into sewer pipes & causing backups in homes.

Bonus: This work can reduce the amount of stormwater & groundwater going into Springbrook.

Sanitary Sewer Overflows (SSO) by Year





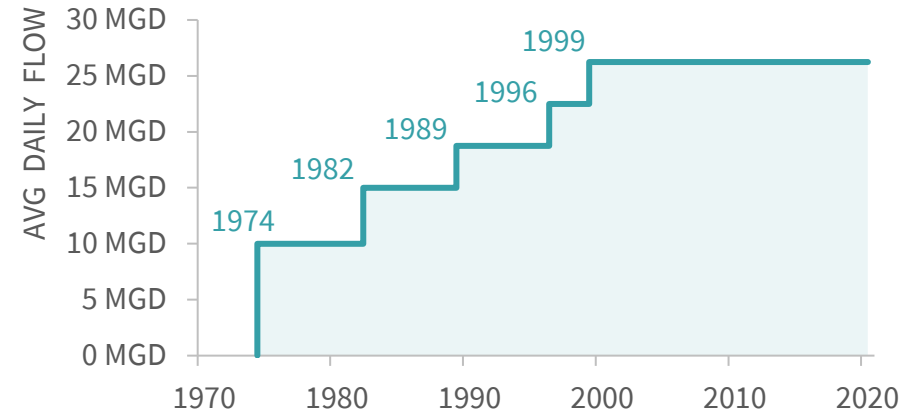
The utility is implementing **UPGRADES TO SPRINGBROOK** to address overcapacity.

The treatment plant **opened in 1974** with a capacity of 10 Million Gallons per Day (MGD) when Naperville's population was ~30,000.

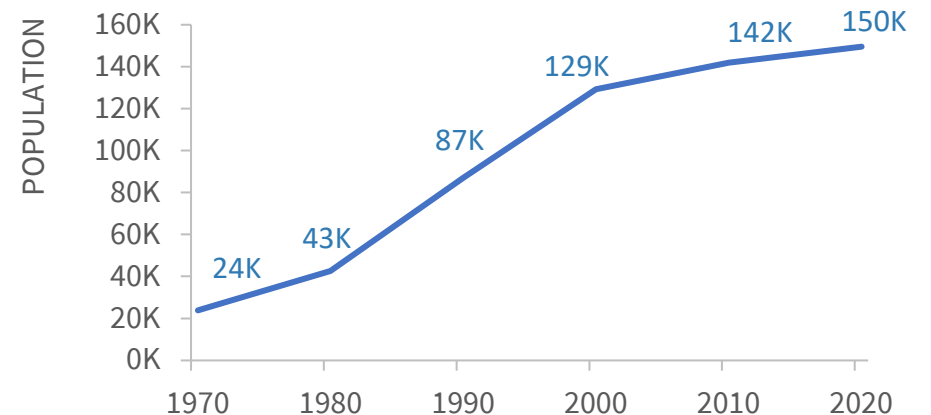
Four expansions were completed between 1982 and 1999 to handle the increasing wastewater volume from a booming population.

The population has grown 16% since the last expansion, over 24 years ago.

Treatment Plant Capacity



Population Growth





3 factors are forcing upgrades to Springbrook.



Increasing Demand

The treatment plant is currently over capacity and further strain is expected as the population grows.



Aging Infrastructure

A facility assessment revealed major repairs necessary to maintain service.



Regulatory Changes

Upcoming changes to phosphorus limits require new infrastructure to maintain compliance.

The Springbrook Facilities Plan was developed in 2021 (after the last rate study) to evaluate the best methods to solve these issues.

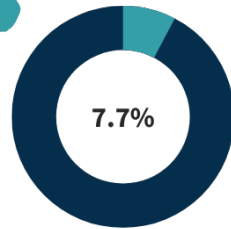
NEEDS
MOVING
FORWARD





Aging assets & new regulations now require **ADDITIONAL INVESTMENT.**

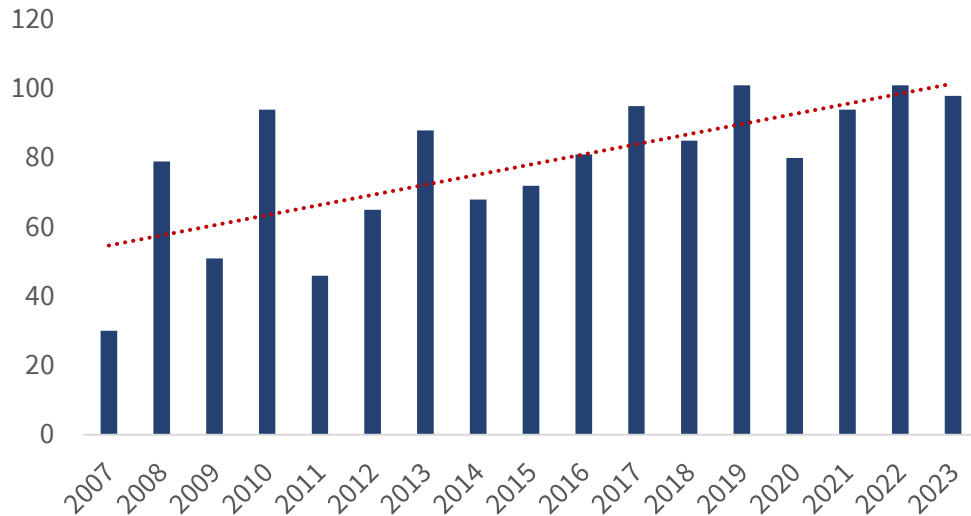
Almost 54 miles of Naperville's 695 miles of water main is at the end of its useful life.



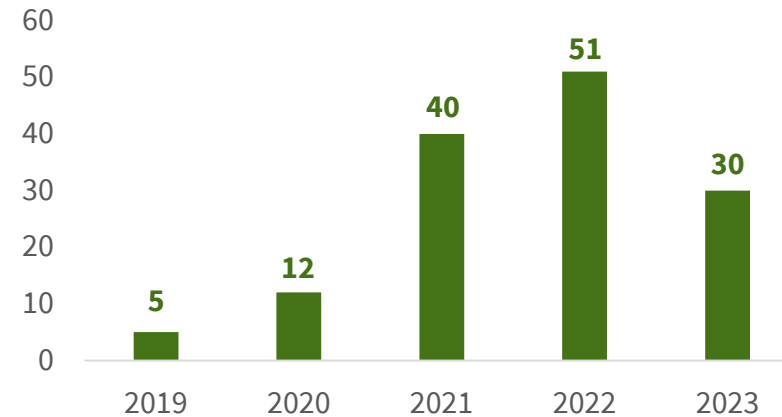
State law now requires utilities to develop a **lead service replacement plan** and complete it within 15 years.

334 (<1%) lead lines remain

Water Main Breaks



Lead Service Line Replacements



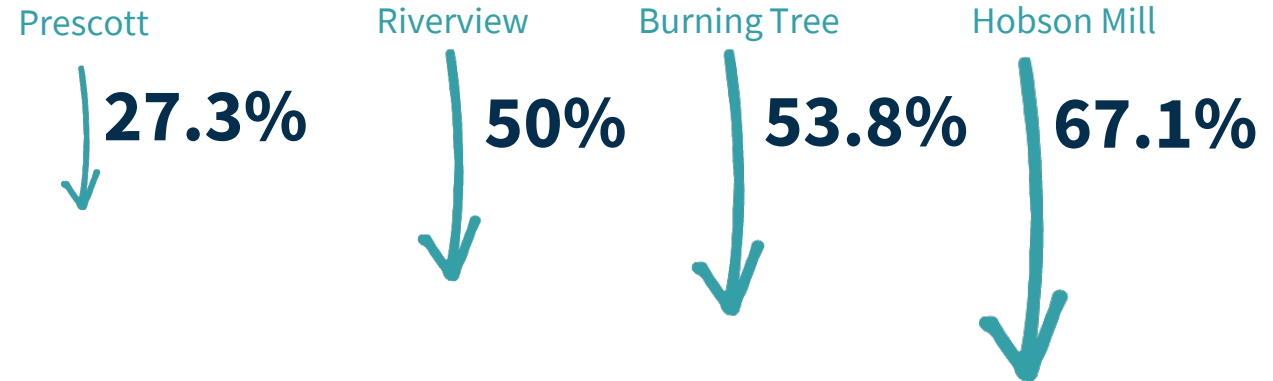


CONSTANT REHABILITATION is necessary to prevent backups & meet requirements.

Aging sewer mains, manholes & pumping stations require **constant maintenance & investment** to ensure service levels are maintained.

The utility's regulatory agency (IEPA) requires sanitary sewer overflows to be reported, AND a document to be submitted with **projects the utility will perform proactively** to prevent these problems from happening.

4 NEIGHBORHOODS SINCE 2013



All four neighborhoods had **60-70% of backup** coming from **private lateral lines**



The **REQUIRED REVITALIZATION** of Springbrook is multi-year process.

UV Disinfection



Influent Pump Stations



South Plant Grit and RAS



South Plant Capacity Upgrades



Nutrient Removal & North Plant Aeration



Cloth Media Disc Filters



\$179.8M

Total Investment
2021-2030

Tied to NPDES
permit renewal



Rate Study Period

IMPACT
ON THE
'25-'27 RATE STUDY



SERVICE LEVEL RECOMMENDATION



- **INCREASE WATER MAIN REPLACEMENT** in line with operational and financial capacity
- Pursue an **AGGRESSIVE LEAD SERVICE LINE REPLACEMENT SCHEDULE** ahead of state requirements



- Build on the success of the past decade's preventative maintenance efforts by **CONTINUING LATERAL LINING** on the customer side (pipe from customer property to public main)



- Meet required mandates and capacity needs by **CONTINUING SPRINGBROOK UPGRADES** through 2030

PRIORITIZATION will help the utility achieve its service goals while providing flexibility.

The rate study's goal is to determine a model that sufficiently supports operating & capital costs.

Because of numerous variables (e.g. market forces, inflation, etc.), capital project costs may shift throughout the study's lifespan.

The ability to adjust dollars and scope of work to timely and appropriately respond to these shifts is critical.



If Springbrook costs come in higher than anticipated in a given year, there could be a shifting of dollars in these capital spaces to accommodate Springbrook work.

TONIGHT'S ASK

Do you support staff's service level recommendations and associated priorities to inform the 2025-2027 rate study ?



Increase water main replacement in line with operational and financial capacity

Pursue an aggressive lead service line replacement schedule ahead of state requirements

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Continue to fund lining in privately (customer) owned pipes

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Highest priority: fund and carry out required upgrades at Springbrook

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NEXT STEPS

SPRING 2024

- Water staff provides consultant with scenarios
- Electric Utility presentation to PUAB

SUMMER 2024

- Consultant report
- Financial Advisory Board input
- City Manager & Council discussions

FALL 2024

- Ongoing rate discussions as part of budget process
- Rate ordinance passage

NEW RATES WOULD BEGIN JAN. 1, 2025



THANK YOU

