



# Village of Northbrook

## Board of Trustees

### PUBLIC WORKS AND FACILITIES COMMITTEE AGENDA

**TERRACE ROOM  
VILLAGE HALL, 1225 CEDAR LANE  
TUESDAY, JULY 11, 2023**

**6:00 PM**

#### **1. CALL TO ORDER**

#### **2. PUBLIC COMMENT TIME**

Please Note - Members of the public wishing to respectfully share thoughts about any matter concerning the Northbrook Board of Trustees may do so by coming to a meeting and speaking during the "Public Comment" time on general matters, or by speaking if and when comment is called during debate on a specific matter that is listed on the agenda. Members of the public can also submit a written comment via the Village's website. Each written comment submitted on the website will be delivered to each member of the Village Board prior to the meeting, but will not be read out loud at the meeting. Please note that while the Village Board will not immediately respond to public comments at the meeting, or engage in a back and forth discussion during the meeting, we are of course actively listening to all comments, thoughts and suggestions. Thank you for your understanding and taking the time to contribute to the success of our community.

#### **4. DISCUSSION TOPICS**

- A. Continued Utility Rate Discussion
- B. Lead Service Line Update
- C. Water Meter Conversion Project Updates

#### **5. ADJOURN**

The Village of Northbrook is subject to the requirements of the Americans with Disabilities Act of 1990. Individuals with disabilities who plan to attend this meeting and who require certain accommodations in order to allow them to observe and/or participate in this meeting, or who have questions regarding the accessibility of this meeting or the facilities, are requested to contact Debbie Ford (847-664-4013) promptly to allow the Village of Northbrook to make reasonable accommodations for those persons. Hearing impaired individuals may call the TDD number, 847-564-8645, for more information.

**Johannah Hebl, Chair**  
Public Works and Facilities Committee

**Members:**      Trustee Israel  
                            Trustee Pepoon

VILLAGE OF NORTHBROOK  
COOK COUNTY, ILLINOIS  
Tuesday, July 11, 2023

July 11, 2023

# **Public Works and Facilities Committee**

# Agenda

- Automated Water Meter Project Update
- Lead Service Line Replacement Program Update
- Utility Rate Study Update and Recommendations



# Automated Water Meter Project Update

# Automated Metering Project Update

- The Automated Metering Project Team (AMPT) is a staff committee made up of representatives of Finance, Information Technology, Public Works, and the Village Manager's Office.
- The AMPT met with water meter vendors in the area and communities that have implemented automated metering projects, and have made recommendations on how to move forward with key points on the project.

# Summary of Recommendations

- **AMR vs. AMI System** – Move forward with Advanced Metering Infrastructure (AMI, aka radio read systems).
- **Meter Reading Software Systems** - No preference amongst the various meter reading software systems.
- **Customer Portal** – Recommendation to include a customer portal in the scope of work for the project.
- **Unified Brand Equipment or Best of Breed** – Proceed with the best meter, radio/meter reading software, and customer portal rather than committing to one vendor who provides all components.

# Summary of Recommendations

- **Cloud Based (Off-Premises)** – Utilize a cloud-based water meter software to reduce reliance on on-premises servers and security.
- **Radio Portion of Automated Metering Project (Lease vs. Own)** – Rent/lease a radio communication solution with a professional services contract for managing the service in lieu of owning, maintaining, and replacing the equipment.
- **Mechanical Meters vs. Ultrasonic Meters** – Proceed with ultrasonic meters but obtain pricing for mechanical meters for comparison purposes.

# Summary of Recommendations

- **Water Meters with Remote Connect/Disconnect Features** – Do not install water meters with remote connect/disconnect features.
- **Replacement of Faulty Internal Valves** – Obtain pricing and provide a future recommendation to the Village Manager regarding a policy for the replacement of shut-off valves at the meter inside of the home.

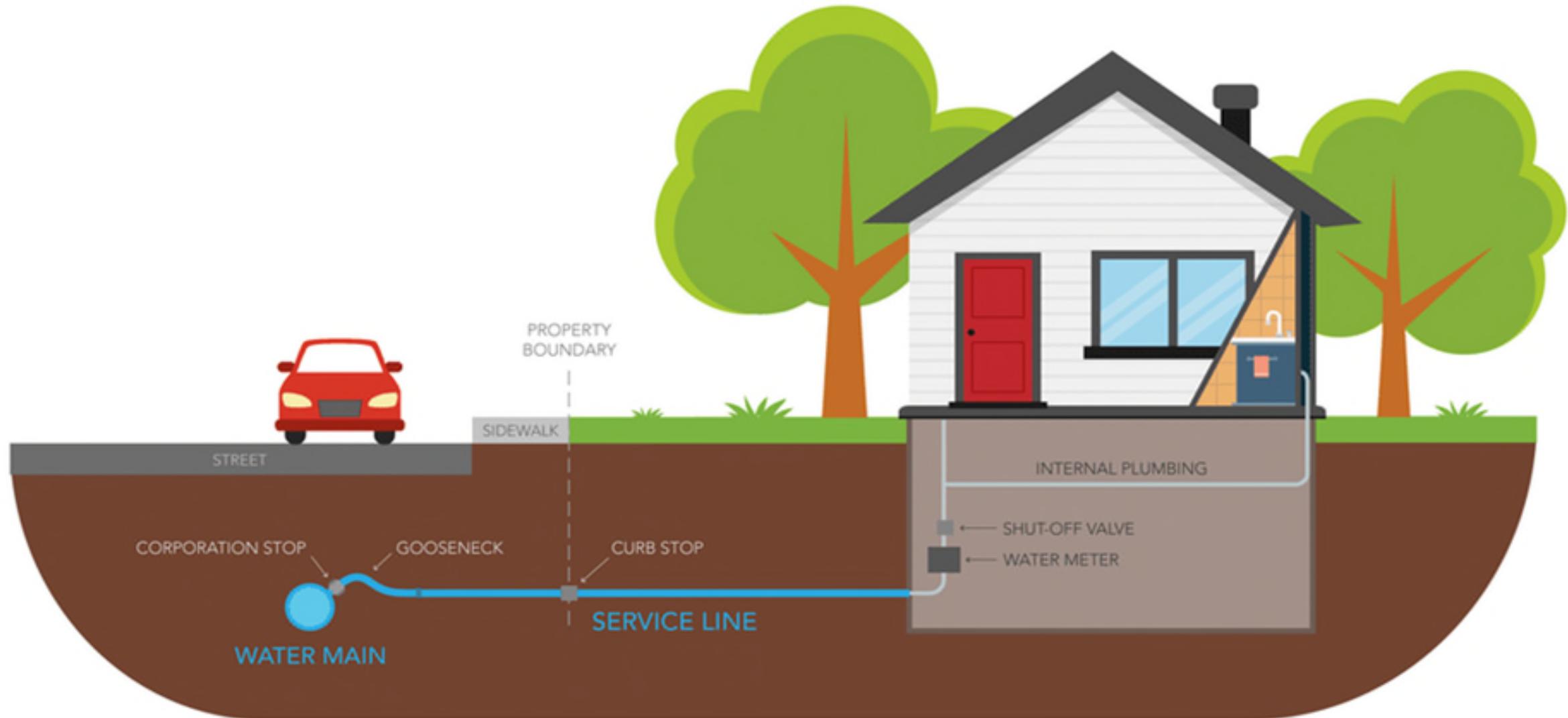
# Timeline

- The automated water meter project is on schedule:
  - 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.

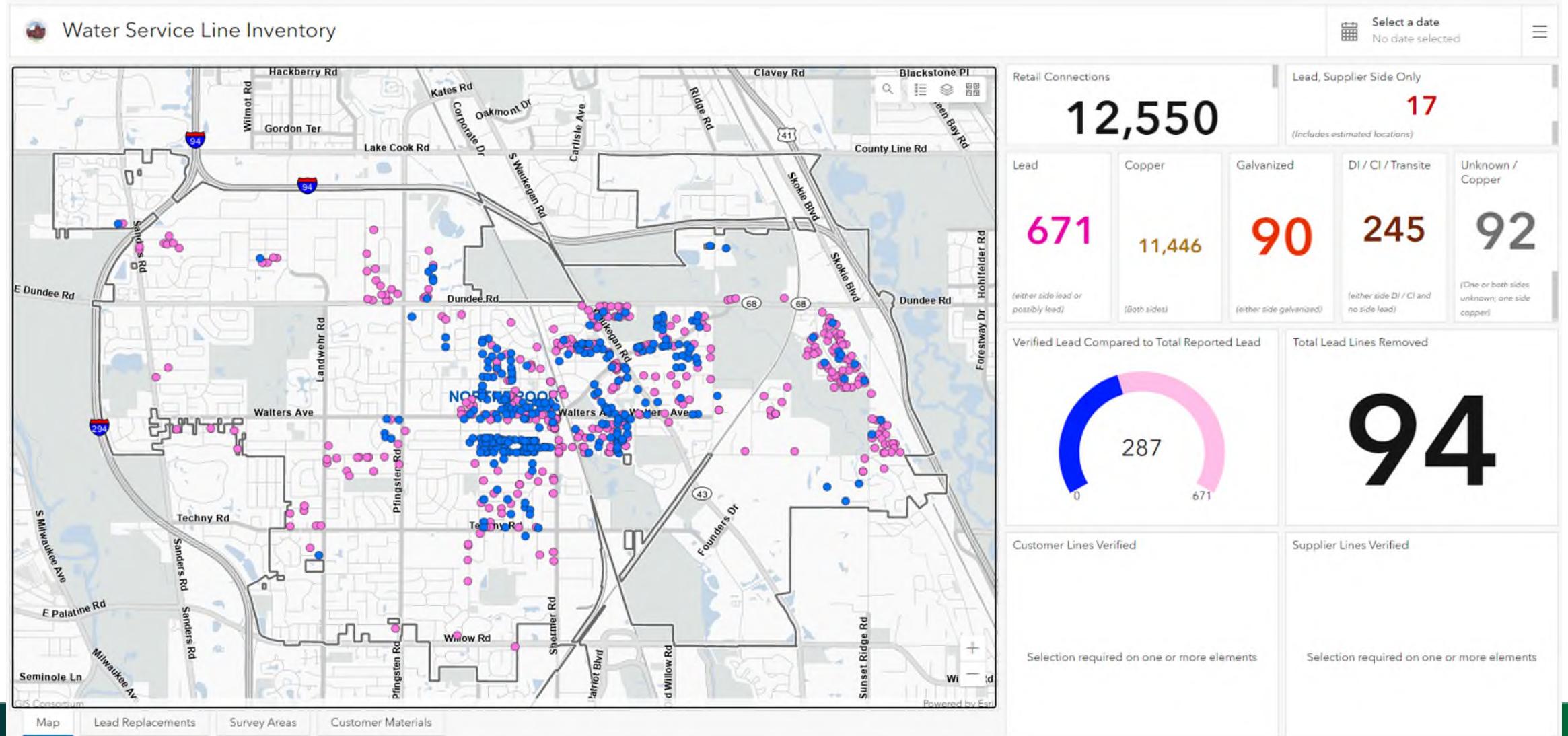
# Questions?



# Lead Service Line Update

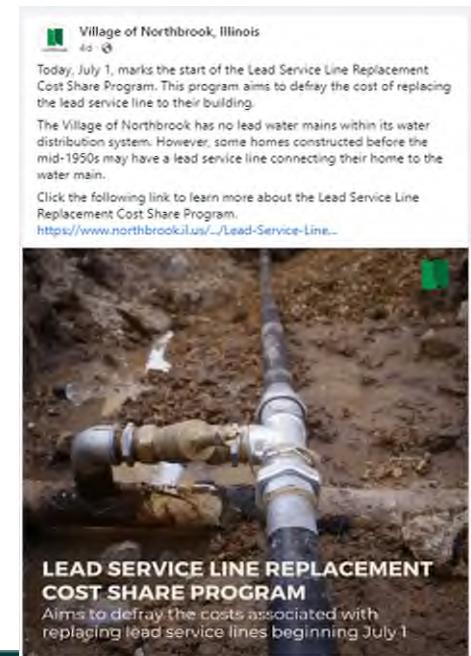


# Village of Northbrook Lead Service Line Inventory



# Lead Service Line Replacement Program Communication Plan

- Village Voice Newsletter – July/August
- Utility Bills – Water Bill Inserts – 7/28, 8/29, and 9/28
- E-Newsletter – Beginning with July 6 E-Newsletter
- Social Media – Posts through July through November
- Website – Dedicated webpage



# Questions?



# Utility Rate Study Update and Recommendations

# Utility Rate Study Background

- Draft Utility Rate Study (URS) was prepared by NewGen Strategies and Solutions.
- November 8, 2022 Committee of the Whole review and discussion of the draft URS.
- Draft URS was referred to the Public Works and Facilities Committee on December 13, 2023 with Resolution 2022-126.
- With the feedback provided, the draft URS was updated with the following changes.

# Utility Rate Study Updates

- **Usage Assumptions** – Based on the new meters that will accurately measure the amount of water being used, usage has been increased 3% a year during the meter project, then held flat.
- **Fund Reserve Policy** - A modest goal of a Fund Reserve of 30 Days Operation and Maintenance within 5 years and 90 days Operating and Maintenance within 10 years.
  - 30 Days - Roughly \$700,143 in the Water Fund and \$167,363 in the Sanitary Sewer Fund.
  - 90 Days - A balance of \$2,464,225 in the Water Fund and \$581,897 in the Sanitary Sewer Fund.

# Utility Rate Study Updates (Continued)

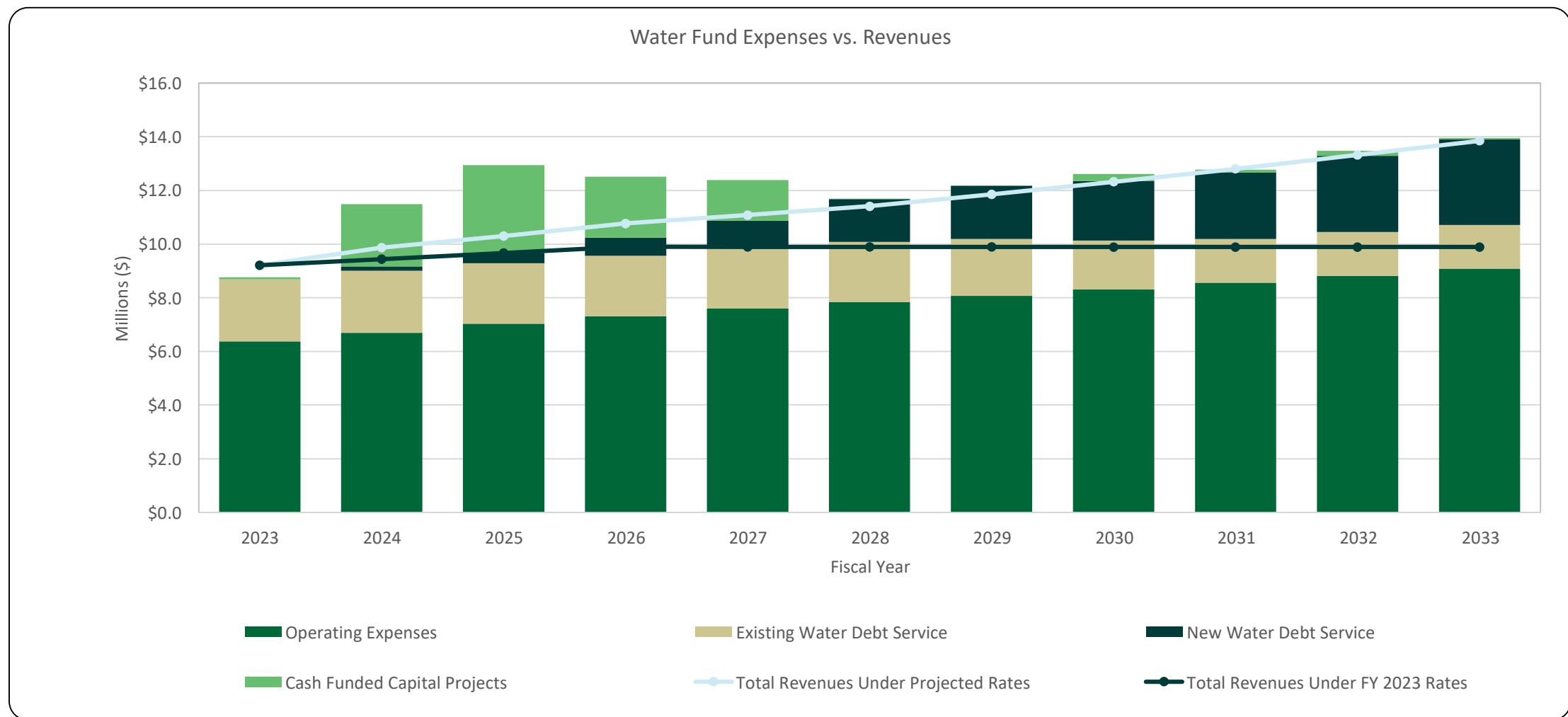
- **Rate Structure** – The current rate structure has been retained and is proposed to remain the same until the meter replacement project has been completed.
- **Rate Increases** – Smaller more frequent water rate increases have been incorporated in order to meet the proposed 30 day and 90 fund reserves.

# Utility Rate Study – Recommended Water Rates



FY	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
<b><u>Consumption (\$/kGal)</u></b>											
<b>Incorporated</b>											
All Volume	\$ 5.88	\$ 6.15	\$ 6.27	\$ 6.40	\$ 6.59	\$ 6.79	\$ 7.06	\$ 7.34	\$ 7.63	\$ 7.94	\$ 8.26
<b>Mission Brook Sanitary District</b>											
All Volume	\$ 5.29	\$ 5.54	\$ 5.64	\$ 5.76	\$ 5.93	\$ 6.11	\$ 6.35	\$ 6.61	\$ 6.87	\$ 7.15	\$ 7.43
<b>Village of Riverwoods</b>											
All Volume	\$ 5.29	\$ 5.54	\$ 5.64	\$ 5.76	\$ 5.93	\$ 6.11	\$ 6.35	\$ 6.61	\$ 6.87	\$ 7.15	\$ 7.43

# Utility Rate Study – Recommended Water Rates



# Utility Rate Study – Recommended Sanitary Sewer Rates

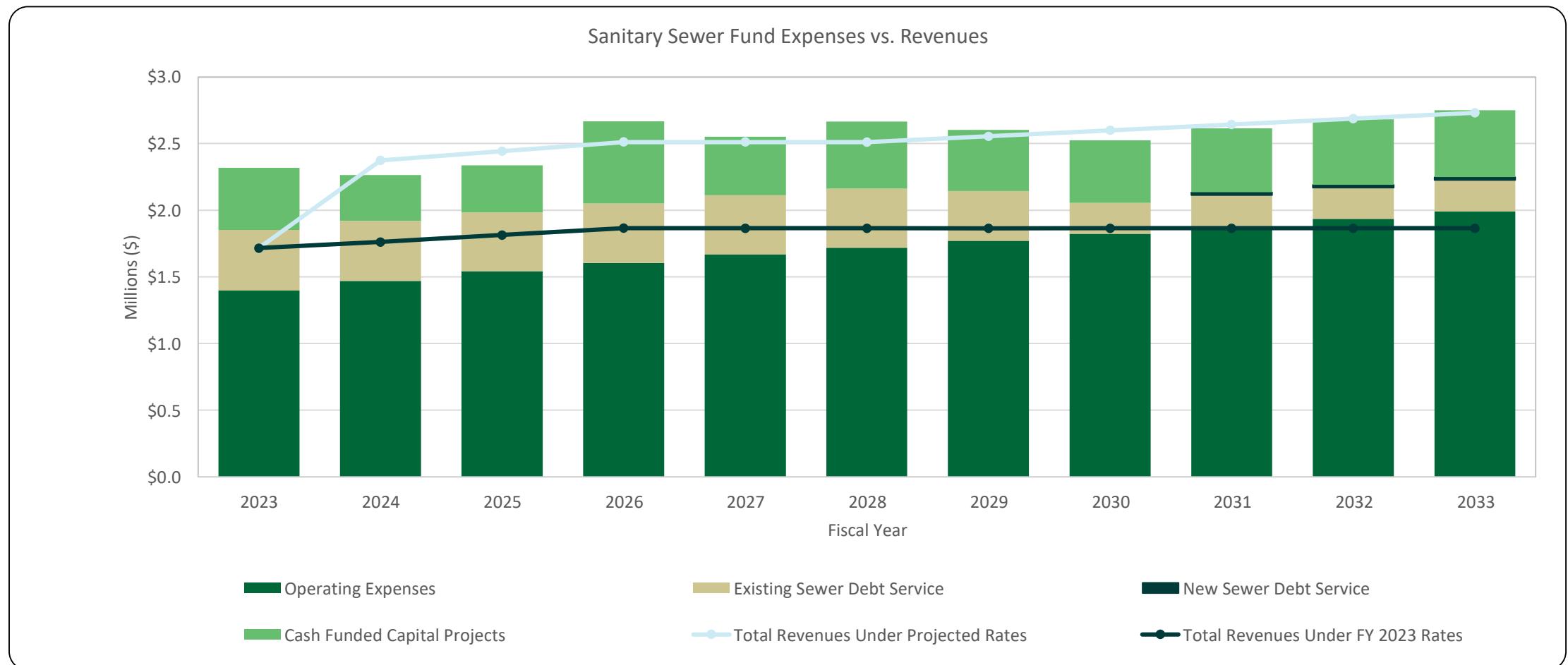


**northbrook**

## Projected Wastewater Rates Summary

FY	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
<b><u>Consumption (\$/kGal)</u></b>											
<b>Incorporated</b>											
All Volume	\$ 1.26	\$ 1.70	\$ 1.70	\$ 1.70	\$ 1.70	\$ 1.70	\$ 1.73	\$ 1.76	\$ 1.79	\$ 1.82	\$ 1.85

# Utility Rate Study – Recommended Sanitary Sewer Rates



# Utility Rate Study – Regional Bill Comparison

## Regional Bill Comparison

Quarterly Water and Sewer Cost - Residential, 5/8" Meter, 15,000 Gallons per Quarter

Average (excluding

Northbrook)

\$152.23



# Utility Rate Study Recommendations

- Staff recommends the Public Works and Facilities Committee make a motion with the following recommendations to the Village Board:
  - **Fund Reserve Policy** – Implement fund balance policy of 30 days operating and maintenance expenditure in the Water and Sanitary Sewer Funds to be reached in the next 5 years and a goal of 90 days to be reached in the following 5 years.
  - **Rate Structure** – Maintain the current rate structure until the completion of the water meter replacement program, then review other rate structures for the Water and Sanitary Sewer Fund.
  - **Rates and Rate Approvals** – Approve a two-year rate plan for FYs 2024/25 and 2025/26 at the rates outlined in the URS.

# Questions?



## MEMORANDUM

---

**To:** Cara Pavlicek, Village Manager  
**From:** Matt Morrison, Deputy Public Works Director  
**Cc:** Public Works and Facilities Committee  
**Date:** July 11, 2023  
**Subject:** Automated Water Meter Project Update

Staff will provide a brief presentation and update to the Public Works and Facilities Committee on the Automated Metering Project and the staff committee's recommendations. A summary of the staff committee's recommendations is attached to this memo.

## MEMORANDUM

---

**To:** Cara Pavlicek, Village Manager  
**From:** Automated Metering Project Team  
**Cc:** Kelly Hamill, Director of Public Works  
**Date:** July 11, 2023  
**Subject:** Automated Water Meter Project Update

The Automated Metering Project Team (AMPT) consists of representatives of the Village Manager's Office, Finance Department, IT Department, and Public Works Department. A kickoff meeting was held in February 2023 before Public Works staff set up presentations with three vendors that most commonly provide meters in the area: Neptune, Sensus, and Badger. These meetings were held on April 3, April 4, and May 15 respectively. The AMPT also met with Itron and ComEd on May 19 to learn about the opportunity to utilize the ComEd radio network for reading of water meters. Lastly, the team met with the Village of Wheeling on June 1 to see how they utilize their water meter software and third party customer portal (AquaHawk), and to learn from their experience installing and utilizing an automated metering infrastructure.

On Friday, June 9, 2023 the AMPT met to review the various presentations and information gathered. The AMPT reached consensus on a number of recommendations that will guide the development of the purchasing documents (RFP or RFQ) for the automated metering project. Consensus was reached on the following topics:

1. **AMR vs. AMI Systems** – The AMPT's consensus is to pursue an Advanced Metering Infrastructure (AMI) system. While Automated Meter Reading (AMR, aka drive-by read systems) is a proven system with radios that have a long battery life, the technology is a generation behind the state of the industry and does not give access to more current information like an AMI system does. Advanced Metering Infrastructure (AMI, aka radio read systems) are the current state of the industry and would provide the Village and its customers current information on water usage to identify issues such as leaks or potential high bills. AMI systems are reliant on the batteries in the radio equipment and the meters, and as such the Village would need to plan for their replacement as the batteries fade in 15-20 years.
2. **Meter Reading Software Systems** – The AMPT had no preference amongst the various meter reading software systems reviewed during the presentations. All vendors indicated that they work with BS&A financial software through the importing/exporting of meter reading data. It should be noted that the software systems are not specific to the meters but to the radio systems communicating with the meters.
3. **Customer Portal** – The AMPT recommends that the Village include a customer portal in the scope of work for the automated metering project. These portals allow customers to see their usage as the meters are read by the system and setup a variety of alerts such as constant high usage that may indicate a leak. While the portals do not provide real-time data, they offer the customer an opportunity to review their usage in between billing cycles and, depending on the meter system, within just a few hours of real-time. The customer portal, whether it is from the meter software vendor or a third party, is important for customers to manage their usage and great tool for those customers interested in sustainability. The AMPT learned that utilization rates of these portals are not high – often 500 to 1,500 customers sign-up for an account in communities similarly sized.
4. **Unified Brand Equipment or Best of Breed (Meter, Radio/Software, Customer Portal)** – The AMPT recommends proceeding with a best of breed approach, utilizing the best meter,

radio/software, and customer portal rather than committing to one brand or provider.

5. **Cloud Based (Off-Premises)** - The AMPT recommends utilizing a cloud-based water meter software to reduce reliance on on-premises servers and security.
6. **Radio Portion of Automated Metering Project (Lease or Own)** – The AMPT recommends renting/leasing a radio communication solution with a professional services contract for managing the service in lieu of owning, maintaining, and replacing the equipment. Several vendors offer a leased radio option.
7. **Mechanical Meters vs. Ultrasonic Meters** – The AMPT recommends proceeding with ultrasonic meters however the team also recommends obtaining pricing for mechanical meters for comparison purposes. Ultrasonic meters offer improved accuracy and do not have moving parts which can become stuck and prevent the meter from reading correctly. Unlike a mechanical meter, an ultrasonic meter has a finite life of 15-20 years due to the useful life of their battery.
8. **Water Meters with Remote Connect/Disconnect Features** – The AMPT does not recommend installing water meters with remote connect/disconnect features. These meters generally run 3-5 times the cost of an average ultrasonic meter. The Village has a low rate of turn-offs which can continue to be managed by Finance and Public Works staff.
9. **Replacement of Faulty Internal Valves** – The AMPT would like to obtain pricing and provide a future recommendation to the Village Manager regarding a policy for the replacement of shut-off valves at the meter inside of the home. Inevitably, as meters are installed the contracted installer will come across shut-off valves that will not function and need to be replaced. In accordance with Section 27-48 of the Municipal Code, these valves are the responsibility of the property owner, however this same section gives the Village the opportunity to repair plumbing systems on private property in cases of emergency. Depending on the cost, staff will make a future recommendation as to whether this cost should be included in the Village's scope of work or left for the homeowner to complete.

The AMPT also discussed the current account structure for utility billing accounts (which is tied to the current meter reading books) as well as advanced data that some vendors offer with their meters that may or may not be needed. These topics will continue to be reviewed by the team as the purchasing documents are prepared and staff moves forward with this project.

The AMPT and automated water meter project is on schedule. As previously shared, the overall schedule for the automated metering project is below is:

- 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.

Staff will provide a brief presentation on the AMPT's findings at the July 11, 2023 Public Works and Facilities Committee meeting.

## **MEMORANDUM**

---

**To:** Cara Pavlicek, Village Manager  
**From:** Matt Morrison, Deputy Public Works Director  
**CC:** Public Works and Facilities Committee  
**Date:** July 11, 2023  
**Subject:** Lead Service Lines Update

The Public Works and Facilities Committee of the Village Board discussed the topic of lead service lines at their meeting on February 7, 2023. At that meeting an overview on the State of Illinois' Lead Service Line Replacement and Notification Act (Public Act 102-0613) and the status of the inventory of lead service lines in Northbrook were provided. The Committee further reviewed how other communities are incentivizing property owners to replace lead service lines and provided a recommendation for a policy on lead service line replacement cost sharing. The Village Board considered the recommendation from the Public Works and Facilities Committee on April 11, 2023 and approved Resolution 2023-67 approving a policy and next steps for a Lead Service Line Replacement Cost Sharing Program that was set to take effect on July 1, 2023.

Since that time the Public Works Department has completed the standard operating procedure (SOP – 81-054), which is included as Exhibit A, for the Lead Service Line Replacement Cost Sharing Program and the associated materials for property owners to participate in the program. The Public Works Department has also worked with the Village Managers Office to prepare a communication plan for the Lead Service Line Replacement Cost Sharing Program. This communication plan is included as Exhibit B. This includes a webpage on the Village's website dedicated to information on the program, including it in weekly Thursday E-Newsletters, in social media posts, and news articles in the bi-monthly Village Newsletter.

Public Works has continued to reach out to property owners of properties with potential lead service lines with mailings in order to further refine the actual number of lead service lines within the community. Letters asking property owners to confirm their service line material have been sent out in December 2022, February 2023, and in May 2023. Additionally, Public Works has made staff available to assist residents in determining their service line materials. Through this process the Village has reduced the number of suspected lead service lines from approximately 1,900 in December 2022 to 287 confirmed properties with lead service lines and 383 properties remaining to confirm.

Staff will continue to work with property owners who potentially have a lead service line until the inventory is completed. The Village must submit a final inventory of lead service lines to the Illinois Environmental Protection Agency by April 15, 2024 and provide an initial Lead Service Line Replacement Plan to the agency by April 15, 2025, with a final plan submitted by April 15, 2027. Depending on the final number of lead service lines identified in the inventory, the Village will be required to ensure that all lead services are replaced by 2042 but at a rate of no less than 7% per year.

Staff will provide a brief update on lead service lines at the July 11, 2023 Public Works and Facilities Committee meeting.

**Communication Plan Memo**

**Date:** **June 23, 2023**

**Subject:** **Lead Service Line Communication Plan - Phase 1 (July-November 2023)**

**Summary**

The Village Manager's Office will promote messages to Northbrook residents related to Lead Service Line Replacement, as well as the new Lead Service Line Replacement Cost Share Program, which will provide property owners with an opportunity to defray the cost of replacing the lead service line to their building.

**Objective 1:**

Fulfill all internal and regulatory requirements for communications related to Lead Service Line Replacement and Notification as needed.

**Objective 2:**

Drive public exposure of the Lead Service Line Replacement Cost Sharing Program, inventory information, and other related topics. This communication push will aim to reach \*5,000 media impressions and more than 200 webpage visits by November 30, 2023.

**Strategy Overview:**

Conduct an integrated marketing campaign that includes outreach via social media, direct mail, e-news, and cable access tv, among other communication modes. The communication tactics will drive the public to a landing page for information and resources.

**Evaluation:**

Evaluation of the project will be ongoing throughout the campaign. However, Phase 1 will end in November 2023, and a complete assessment will take place to report final campaign metrics and will determine the next steps with a likely Phase 2 effort.

**Tactics:**

***Direct Mail***

Water Bill Inserts - Residents will receive inserts with campaign information with their water bills. The inserts will be mailed with water bills sent on 7/28, 8/29, and 9/28.

Village Voice July-August Newsletter - Campaign information was included in this **issue** of the newsletter. (550 words. Page 11). Campaign information will also be included in some way in the September-October newsletter..

***E-news***

The program and related information will be featured repeatedly in the Village's e-news

communication. This will start with a News You Can Use story on July 6, this will be followed by a main story on July 13. The main story will be very similar to the print newsletter story.

### **Social Media**

Beginning July 2023 through November 2023, The Communications Department will feature more than six social media posts planned out regarding Lead Service Line Replacement and the new cost-saving program. Below you'll find the breakdown of the posts by the month they're scheduled for:

#### **July:**

- For the first week of July, the first post will be in the form of an FAQ (Frequently Asked Questions).
- For the last week of July, there will be an animated video consisting of graphics & texts that will give Northbrook residents a more in-depth look at the program.

#### **August:**

- For the third week of August, there will be multiple 'Did You Know?' posts consisting of text & photos/graphics that are informative to Northbrook residents.

#### **September:**

- For the first week of September, there will be a Public Service Announcement (PSA) style video that will be featured on all social media platforms as well as on Northbrook Cable Channel 17 for the duration of the campaign.

#### **October:**

- For the second week of October, there will be a flowchart type of graphic that residents can follow to see if they need to have their pipes replaced or where they can learn more about it leading them to the website.

#### **November:**

- For the first week of November, there will be another quick reminder in the form of a photo/graphic with words serving as a reminder to Northbrook residents of all the content they've seen months prior.

### **Video**

Video PSA that will be featured on digital platforms as well as on Northbrook Cable Channel 17 for the duration of the campaign by September 2023. The video will have a voiceover that explores general Northbrook water distribution info, graphics explaining Village vs. owner responsibility, and how to check their pipes, and how to enroll in the program.

### **Webpage**

The [webpage](#) will act as the landing page and hub for the campaign.

*\*Media impressions will be measured by unique impressions for social media posts, youtube/FB video views, and website analytics. Direct mail impressions (viewership) will be counted at 10% of the mailers sent. Example: if 1000 print materials are sent, we will count 100 individuals were reached. Northbrook TV will not be counted.*

## MEMORANDUM

---

**To:** Cara Pavlicek, Village Manager  
**From:** Matt Morrison, Deputy Public Works Director  
**CC:** Public Works and Facilities Committee  
**Date:** July 11, 2023  
**Subject:** Utility Rate Study Update

The Village Board acting as a Committee of a Whole reviewed the draft Utility Rate Study (URS) prepared by NewGen Strategies and Solutions (NewGen) on November 8, 2022. At that meeting the Committee of the Whole provided feedback on the draft URS and recommended referring the URS and associated topics to the Public Works and Facilities Committee. The Village Board formally referred the URS to the Public Works and Facilities Committee on December 13, 2022 with Resolution 2022-126.

At the initial meeting of the Public Works and Facilities Committee on February 7, 2023, staff solicited further comments on the URS. Using the feedback from the Committee of the Whole and Public Works and Facilities Committee meetings, staff worked with NewGen to further refine the draft URS. A summary of the significant changes is included below.

- **Usage Assumptions** – With the planned automated metering project and the accuracy test results of the meters provided at the February Public Works and Facilities Committee meeting, assumptions for billed water have been updated. The replacement of all meters in the water distribution system should bring a slight increase in usage as the program is implemented. In working with NewGen, the URS estimates a 3% increase in billable water in each year that new meters are installed. Following the completion of the installation of the meters, usage has been held constant. An assumption of increased water usage has a corresponding positive effect on the Sanitary Sewer Fund and its revenues as well.
- **Fund Reserve Policy** – The feedback from the November Committee of the Whole meeting was that the initial fund reserve policy assumptions for the Water and Sanitary Sewer Funds resulted in balances that were too high. The policy of 1 billing cycle or 90 days operating and maintenance costs + the average of pay as you go capital for the Water and Sewer Funds would have respectively resulted in fund balances of \$1,696,000 and \$369,000.

The URS now establishes a more modest goal of reaching a fund balance of 30 Days Operation and Maintenance within 5 years (a balance of roughly \$700,000 in the Water Fund and \$167,000 in the Sanitary Sewer Fund) and 90 days Operating and Maintenance within 10 years (a balance of \$2,464,000 in the Water Fund and \$582,000 in the Sanitary Sewer Fund based on years 6-10 of the URS). Utilizing these fund balance policies will result in more stable rates and provide sufficient contingency should costs in capital projects fluctuate dramatically from year to year. Staff will prepare and bring forward a Board action to adopt a policy in line with this recommendation concurrent with future rate actions. These policies are in line with professional organizations such as Water Environment Foundation (WEF), the International City/County Managers Association (ICMA), and the Government Finance Officers Association (GFOA).

- **Rate Structure** – Another topic of discussion Committee of the Whole meeting was the structure of the rates. At the time, no consensus was reached on the topic of rate structures, however some interest was expressed in establishing rates that encouraged conservation as well as assessing costs based on impact/usage of the system. Given the results of water meter tests that were shared with the Public Works and Facilities Committee in February and the planned water meter

replacement program, revisiting the rate structure after the replacement of meters is a prudent course of action. Doing so will allow customers to observe a more accurate picture of their water usage and alter their usage as needed before a new rate structure is in place.

- **Rate Increases** – The consensus amongst the Committee of the Whole was to have smaller more frequent rate increases in the Water Fund and the smallest most stable increases in the Sanitary Sewer to minimize disruption to the Village's customers and financially support the utility funds.

## Results

In working with NewGen Strategies and Solutions, the Utility Rate Study has been updated and the resulting rates are below. These rates reflect the building to the fund balance levels outlined previously and stable, smaller rate increases.

Table 1. Summary of Proposed Water Rates in Utility Rate Study					
	Fiscal Year				
	2023/24*	2024/25	2025/26	2026/27	2027/28
Percent Increase	-	2%	2%	3%	3%
Monetary Increase (per 1,000)	-	\$0.12	\$0.13	\$0.19	\$0.20
Customer Rate (per 1,000)	\$6.15	\$6.27	\$6.40	\$6.59	\$6.79
Wholesale Rate (per 1,000)	\$5.54	\$5.64	\$5.76	\$5.93	\$6.11

\*Current Rate

Table 2. Summary of Proposed Sanitary Rates in Utility Rate Study					
	Fiscal Year				
	2023/24*	2024/25	2025/26	2026/27	2027/28
Percent Increase	-	0%	0%	0%	0%
Monetary Increase (per 1,000)	-	\$0.00	\$0.00	\$0.00	\$0.00
Rate (per 1,000)	\$1.70	\$1.70	\$1.70	\$1.70	\$1.70

\*Current Rate

## Recommendation

Understanding the priorities discussed by the Village Board at the Committee of the Whole meeting and those of the Public Works and Facilities Committee, staff has summarized its recommended actions for the Public Works and Facilities Committee to take:

- **Fund Reserve Policy** – Implementing a 30 days of expenses (excluding capital) fund reserve balance over an initial 5 year period while building to a 90 day of expenses over years six – ten, the Village will provide itself with a contingency in cases where capital projects come in over a budgeted amount or there is an unplanned emergency expense in these funds.
- **Rate Structure** – Implementing a new rate structure is important but should be done with the best information available. The Village will have more accurate usage information after replacement of the meter stock and residents will have better methods for monitoring their usage with a customer portal. Implementing a new rate structure following the installation of new meters is the recommended course of action.
- **Rates and Rate Approvals** – Approving a two year rate plan for FYs 2024/25 and 2025/26 as outlined above will provide certainty for budgeting purposes and customers. Additionally, it will allow for the initial phases of the meter project to be implemented before any significant rate increases are made in the future. Alternatively, the Board could opt to approve rates for a longer period of time understanding that the rates could be adjusted upward or downward depending on the support needed for the health of the funds.

## Conclusion

Staff recommends that the Public Works and Facilities Committee make a motion recommending that the Village Board accept the Utility Rate Study in its final form, recommend building to a 30 day fund reserve policy in these two funds in the next five years as well as reaching 90 days of expenses in 10 years, approve a two year rate plan for FYs 2024/25 and 2025/26 as presented above, and recommend that discussions regarding the rate structure begin in FY 2027/28 following the installation of the automated meters within the system.



**northbrook**  
Projected Water Rates Summary

FY	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
<b><u>Consumption (\$/kGal)</u></b>											
<b>Incorporated</b>											
All Volume	\$ 5.88	\$ 6.15	\$ 6.27	\$ 6.40	\$ 6.59	\$ 6.79	\$ 7.06	\$ 7.34	\$ 7.63	\$ 7.94	\$ 8.26
<b>Mission Brook Sanitary District</b>											
All Volume	\$ 5.29	\$ 5.54	\$ 5.64	\$ 5.76	\$ 5.93	\$ 6.11	\$ 6.35	\$ 6.61	\$ 6.87	\$ 7.15	\$ 7.43
<b>Village of Riverwoods</b>											
All Volume	\$ 5.29	\$ 5.54	\$ 5.64	\$ 5.76	\$ 5.93	\$ 6.11	\$ 6.35	\$ 6.61	\$ 6.87	\$ 7.15	\$ 7.43



### Water Fund Balance Summary under Projected Rates

Beginning Unrestricted Fund Balance \$ 8,301,063  
 Beginning Restricted Fund Balance \$ 2,295,160

Financial Summary	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
<b>REVENUES</b>											
Water Revenue											
Rate Revenue	\$ 9,066,022	\$ 9,726,637	\$ 10,170,091	\$ 10,649,800	\$ 10,965,780	\$ 11,298,586	\$ 11,747,316	\$ 12,214,733	\$ 12,697,116	\$ 13,213,152	\$ 13,744,154
Non-Rate Revenue	148,000	142,121	128,891	120,181	113,641	112,233	110,589	109,143	109,329	108,560	108,042
<b>Total Revenue</b>	<b>\$ 9,214,022</b>	<b>\$ 9,868,758</b>	<b>\$ 10,298,981</b>	<b>\$ 10,769,981</b>	<b>\$ 11,079,421</b>	<b>\$ 11,410,819</b>	<b>\$ 11,857,905</b>	<b>\$ 12,323,877</b>	<b>\$ 12,806,445</b>	<b>\$ 13,321,712</b>	<b>\$ 13,852,196</b>
<b>OPERATING EXPENSES</b>											
Water O&M Expense	\$ 6,375,945	\$ 6,694,742	\$ 7,029,479	\$ 7,310,659	\$ 7,603,085	\$ 7,831,177	\$ 8,066,113	\$ 8,308,096	\$ 8,557,339	\$ 8,814,059	\$ 9,078,481
Existing Water Debt Service	2,311,851	2,307,934	2,258,280	2,258,367	2,255,588	2,256,203	2,124,230	1,822,976	1,639,560	1,642,079	1,639,279
New Water Debt Service	-	164,272	392,307	677,955	1,017,924	1,590,167	1,981,396	2,221,068	2,473,471	2,835,402	3,184,010
<b>Total Operating Expenses</b>	<b>\$ 8,687,796</b>	<b>\$ 9,166,949</b>	<b>\$ 9,680,066</b>	<b>\$ 10,246,980</b>	<b>\$ 10,876,597</b>	<b>\$ 11,677,548</b>	<b>\$ 12,171,738</b>	<b>\$ 12,352,140</b>	<b>\$ 12,670,370</b>	<b>\$ 13,291,540</b>	<b>\$ 13,901,770</b>
<b>Net Operating Gain/Loss</b>	<b>\$ 526,226</b>	<b>\$ 701,810</b>	<b>\$ 618,915</b>	<b>\$ 523,001</b>	<b>\$ 202,824</b>	<b>\$ (266,729)</b>	<b>\$ (313,833)</b>	<b>\$ (28,264)</b>	<b>\$ 136,075</b>	<b>\$ 30,171</b>	<b>\$ (49,574)</b>
Cash Funded Capital Improvement Plan	\$ 75,000	\$ 2,325,000	\$ 3,265,000	\$ 2,265,000	\$ 1,510,700	\$ 15,000	\$ 15,000	\$ 260,810	\$ 99,000	\$ 184,000	\$ 54,000
<b>Net Total Gain/Loss</b>	<b>\$ 451,226</b>	<b>\$ (1,623,190)</b>	<b>\$ (2,646,085)</b>	<b>\$ (1,741,999)</b>	<b>\$ (1,307,876)</b>	<b>\$ (281,729)</b>	<b>\$ (328,833)</b>	<b>\$ (289,074)</b>	<b>\$ 37,075</b>	<b>\$ (153,829)</b>	<b>\$ (103,574)</b>
<b>Cash Flow</b>											
Beginning Restricted Fund Balance	\$ 2,295,160	\$ 2,295,160	\$ 671,970	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Use of Restricted Funds	\$ -	\$ (1,623,190)	\$ (2,646,085)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Ending Restricted Fund Balance</b>	<b>\$ 2,295,160</b>	<b>\$ 671,970</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
Transfer to Unrestricted Reserves	\$ -	\$ -	\$ (1,974,115)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Beginning Unrestricted Fund Balance	\$ 8,301,063	\$ 8,752,289	\$ 8,752,289	\$ 6,778,174	\$ 5,036,175	\$ 3,728,299	\$ 3,446,570	\$ 3,117,736	\$ 2,828,663	\$ 2,865,737	\$ 2,711,909
Change in Unrestricted Fund Balance	\$ 451,226	\$ -	\$ (1,974,115)	\$ (1,741,999)	\$ (1,307,876)	\$ (281,729)	\$ (328,833)	\$ (289,074)	\$ 37,075	\$ (153,829)	\$ (103,574)
<b>Ending Unrestricted Fund Balance</b>	<b>\$ 8,752,289</b>	<b>\$ 8,752,289</b>	<b>\$ 6,778,174</b>	<b>\$ 5,036,175</b>	<b>\$ 3,728,299</b>	<b>\$ 3,446,570</b>	<b>\$ 3,117,736</b>	<b>\$ 2,828,663</b>	<b>\$ 2,865,737</b>	<b>\$ 2,711,909</b>	<b>\$ 2,608,335</b>
<b>Total Ending Fund Balance</b>	<b>\$ 11,047,449</b>	<b>\$ 9,424,259</b>	<b>\$ 6,778,174</b>	<b>\$ 5,036,175</b>	<b>\$ 3,728,299</b>	<b>\$ 3,446,570</b>	<b>\$ 3,117,736</b>	<b>\$ 2,828,663</b>	<b>\$ 2,865,737</b>	<b>\$ 2,711,909</b>	<b>\$ 2,608,335</b>
KEY FINANCIAL STATISTICS	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
<b>Debt Service Coverage:</b>											
Total Revenues	\$ 9,214,022	\$ 9,868,758	\$ 10,298,981	\$ 10,769,981	\$ 11,079,421	\$ 11,410,819	\$ 11,857,905	\$ 12,323,877	\$ 12,806,445	\$ 13,321,712	\$ 13,852,196
Less: O&M Expense	6,375,945	6,694,742	7,029,479	7,310,659	7,603,085	7,831,177	8,066,113	8,308,096	8,557,339	8,814,059	9,078,481
<b>Available for Debt Service Requirements</b>	<b>\$ 2,838,077</b>	<b>\$ 3,174,016</b>	<b>\$ 3,269,502</b>	<b>\$ 3,459,322</b>	<b>\$ 3,476,336</b>	<b>\$ 3,579,641</b>	<b>\$ 3,791,792</b>	<b>\$ 4,015,780</b>	<b>\$ 4,249,106</b>	<b>\$ 4,507,652</b>	<b>\$ 4,773,715</b>
Total Debt Service Requirements	2,311,851	2,472,206	2,650,587	2,936,322	3,273,512	3,846,370	4,105,626	4,044,044	4,113,031	4,477,481	4,823,289
Actual Debt Service Coverage	1.23	1.28	1.23	1.18	1.06	0.93	0.92	0.99	1.03	1.01	0.99
<b>Days O&amp;M Cash on Hand</b>											
Operating Expenditures	\$ 6,375,945	\$ 6,694,742	\$ 7,029,479	\$ 7,310,659	\$ 7,603,085	\$ 7,831,177	\$ 8,066,113	\$ 8,308,096	\$ 8,557,339	\$ 8,814,059	\$ 9,078,481
Daily O&M Requirement	17,468	18,342	19,259	20,029	20,830	21,455	22,099	22,762	23,445	24,148	24,873
<b>Ending Fund Balance</b>	<b>\$ 8,752,289</b>	<b>\$ 8,752,289</b>	<b>\$ 6,778,174</b>	<b>\$ 5,036,175</b>	<b>\$ 3,728,299</b>	<b>\$ 3,446,570</b>	<b>\$ 3,117,736</b>	<b>\$ 2,828,663</b>	<b>\$ 2,865,737</b>	<b>\$ 2,711,909</b>	<b>\$ 2,608,335</b>
Days of Operating Expenses	501	477	352	251	179	161	141	124	122	112	105
<b>Fund Balance / Revenue</b>											
Total Revenues	\$ 9,214,022	\$ 9,868,758	\$ 10,298,981	\$ 10,769,981	\$ 11,079,421	\$ 11,410,819	\$ 11,857,905	\$ 12,323,877	\$ 12,806,445	\$ 13,321,712	\$ 13,852,196
Ending Fund Balance	\$ 11,047,449	\$ 9,424,259	\$ 6,778,174	\$ 5,036,175	\$ 3,728,299	\$ 3,446,570	\$ 3,117,736	\$ 2,828,663	\$ 2,865,737	\$ 2,711,909	\$ 2,608,335
Fund Balance Requirement (\$)	\$ 599,282	\$ 625,484	\$ 652,997	\$ 676,108	\$ 700,143	\$ 958,520	\$ 1,230,333	\$ 1,516,178	\$ 1,816,674	\$ 2,132,466	\$ 2,464,225
Over (Short of) Requirement	\$ 10,448,167	\$ 8,798,774	\$ 6,125,177	\$ 4,360,067	\$ 3,028,156	\$ 2,488,049	\$ 1,887,403	\$ 1,312,485	\$ 1,049,063	\$ 579,442	\$ 144,110



FY	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
<b><u>Consumption (\$/kGal)</u></b>											
<b>Incorporated</b>											
All Volume	\$ 1.26	\$ 1.70	\$ 1.70	\$ 1.70	\$ 1.70	\$ 1.70	\$ 1.73	\$ 1.76	\$ 1.79	\$ 1.82	\$ 1.85



northbrook

## Wastewater Fund Balance Summary under Projected Rates

Beginning Unrestricted Fund Balance	\$ 427,713
Beginning Restricted Fund Balance	\$ 327,265

Financial Summary	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
<b>REVENUES</b>											
Wastewater Revenue											
Rate Revenue	\$ 1,700,863	\$ 2,360,731	\$ 2,428,624	\$ 2,498,553	\$ 2,498,553	\$ 2,498,553	\$ 2,542,646	\$ 2,586,738	\$ 2,630,830	\$ 2,674,922	\$ 2,719,014
Non- Rate Revenue	16,000	12,793	14,839	14,067	13,873	13,108	12,878	13,256	13,402	13,436	13,349
<b>Total Revenue</b>	<b>\$ 1,716,863</b>	<b>\$ 2,373,523</b>	<b>\$ 2,443,462</b>	<b>\$ 2,512,621</b>	<b>\$ 2,512,426</b>	<b>\$ 2,511,662</b>	<b>\$ 2,555,523</b>	<b>\$ 2,599,993</b>	<b>\$ 2,644,232</b>	<b>\$ 2,688,358</b>	<b>\$ 2,732,363</b>
<b>OPERATING EXPENSES</b>											
Wastewater O&M Expense											
Existing Wastewater Debt Service	\$ 1,398,715	\$ 1,468,651	\$ 1,542,083	\$ 1,603,767	\$ 1,667,917	\$ 1,717,955	\$ 1,769,493	\$ 1,822,578	\$ 1,877,256	\$ 1,933,573	\$ 1,991,580
New Wastewater Debt Service	453,173	450,305	442,131	447,413	445,542	445,060	374,151	233,370	236,894	236,305	235,438
<b>Total Operating Expenses</b>	<b>\$ 1,851,888</b>	<b>\$ 1,918,956</b>	<b>\$ 1,984,214</b>	<b>\$ 2,051,180</b>	<b>\$ 2,113,459</b>	<b>\$ 2,163,015</b>	<b>\$ 2,143,644</b>	<b>\$ 2,055,948</b>	<b>\$ 2,135,903</b>	<b>\$ 2,191,632</b>	<b>\$ 2,248,772</b>
<b>Net Operating Gain/Loss</b>	<b>\$ (135,025)</b>	<b>\$ 454,567</b>	<b>\$ 459,248</b>	<b>\$ 461,441</b>	<b>\$ 398,967</b>	<b>\$ 348,647</b>	<b>\$ 411,879</b>	<b>\$ 544,045</b>	<b>\$ 508,329</b>	<b>\$ 496,726</b>	<b>\$ 483,591</b>
Cash Funded Capital Improvement Plan	\$ 466,000	\$ 50,000	\$ 50,000	\$ 615,750	\$ 437,915	\$ 501,480	\$ 458,055	\$ 468,446	\$ 479,070	\$ 489,925	\$ 501,050
<b>Net Total Gain/Loss</b>	<b>\$ (601,025)</b>	<b>\$ 404,567</b>	<b>\$ 409,248</b>	<b>\$ (154,309)</b>	<b>\$ (38,948)</b>	<b>\$ (152,833)</b>	<b>\$ (46,176)</b>	<b>\$ 75,599</b>	<b>\$ 29,259</b>	<b>\$ 6,801</b>	<b>\$ (17,459)</b>
<b>Cash Flow</b>											
Beginning Restricted Fund Balance	\$ 327,265	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Use of Restricted Funds	\$ (601,025)	\$ (295,690)	\$ (301,910)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Ending Restricted Fund Balance</b>	<b>\$ -</b>										
Transfer to Unrestricted Reserves	\$ (273,760)	\$ (295,690)	\$ (301,910)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Beginning Unrestricted Fund Balance	\$ 427,713	\$ 153,953	\$ 558,520	\$ 967,768	\$ 813,460	\$ 774,511	\$ 621,678	\$ 575,502	\$ 651,101	\$ 680,360	\$ 687,161
Change in Unrestricted Fund Balance	\$ (273,760)	\$ 404,567	\$ 409,248	\$ (154,309)	\$ (38,948)	\$ (152,833)	\$ (46,176)	\$ 75,599	\$ 29,259	\$ 6,801	\$ (17,459)
<b>Ending Fund Balance</b>	<b>\$ 153,953</b>	<b>\$ 558,520</b>	<b>\$ 967,768</b>	<b>\$ 813,460</b>	<b>\$ 774,511</b>	<b>\$ 621,678</b>	<b>\$ 575,502</b>	<b>\$ 651,101</b>	<b>\$ 680,360</b>	<b>\$ 687,161</b>	<b>\$ 669,702</b>
<b>Total Ending Fund Balance</b>	<b>\$ 153,953</b>	<b>\$ 558,520</b>	<b>\$ 967,768</b>	<b>\$ 813,460</b>	<b>\$ 774,511</b>	<b>\$ 621,678</b>	<b>\$ 575,502</b>	<b>\$ 651,101</b>	<b>\$ 680,360</b>	<b>\$ 687,161</b>	<b>\$ 669,702</b>
<b>KEY FINANCIAL STATISTICS</b>											
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
<b>Debt Service Coverage:</b>											
Total Revenues	\$ 1,716,863	\$ 2,373,523	\$ 2,443,462	\$ 2,512,621	\$ 2,512,426	\$ 2,511,662	\$ 2,555,523	\$ 2,599,993	\$ 2,644,232	\$ 2,688,358	\$ 2,732,363
Less: O&M Expense	1,398,715	1,468,651	1,542,083	1,603,767	1,667,917	1,717,955	1,769,493	1,822,578	1,877,256	1,933,573	1,991,580
<b>Available for Debt Service Requirements</b>	<b>\$ 318,148</b>	<b>\$ 904,872</b>	<b>\$ 901,379</b>	<b>\$ 908,854</b>	<b>\$ 844,509</b>	<b>\$ 793,707</b>	<b>\$ 786,030</b>	<b>\$ 777,415</b>	<b>\$ 766,976</b>	<b>\$ 754,785</b>	<b>\$ 740,782</b>
Total Debt Service Requirements	453,173	450,305	442,131	447,413	445,542	445,060	374,151	233,370	258,647	258,058	257,191
Actual Debt Service Coverage	0.70	2.01	2.04	2.03	1.90	1.78	2.10	3.33	2.97	2.92	2.88
<b>Days O&amp;M Cash on Hand</b>											
Operating Expenditures	\$ 1,398,715	\$ 1,468,651	\$ 1,542,083	\$ 1,603,767	\$ 1,667,917	\$ 1,717,955	\$ 1,769,493	\$ 1,822,578	\$ 1,877,256	\$ 1,933,573	\$ 1,991,580
Daily O&M Requirement	3,832	4,024	4,225	4,394	4,570	4,707	4,848	4,993	5,143	5,297	5,456
<b>Ending Fund Balance</b>	<b>\$ 153,953</b>	<b>\$ 558,520</b>	<b>\$ 967,768</b>	<b>\$ 813,460</b>	<b>\$ 774,511</b>	<b>\$ 621,678</b>	<b>\$ 575,502</b>	<b>\$ 651,101</b>	<b>\$ 680,360</b>	<b>\$ 687,161</b>	<b>\$ 669,702</b>
Days of Operating Expenses	40	139	229	185	169	132	119	130	132	130	123
<b>Fund Balance / Revenue</b>											
Total Revenues	\$ 1,716,863	\$ 2,373,523	\$ 2,443,462	\$ 2,512,621	\$ 2,512,426	\$ 2,511,662	\$ 2,555,523	\$ 2,599,993	\$ 2,644,232	\$ 2,688,358	\$ 2,732,363
Ending Fund Balance	\$ 153,953	\$ 558,520	\$ 967,768	\$ 813,460	\$ 774,511	\$ 621,678	\$ 575,502	\$ 651,101	\$ 680,360	\$ 687,161	\$ 669,702
Fund Balance Requirement (\$)	\$ 148,719	\$ 154,467	\$ 160,503	\$ 165,573	\$ 170,845	\$ 233,277	\$ 298,657	\$ 367,114	\$ 438,786	\$ 513,813	\$ 592,343
Over (Short of) Requirement	\$ 5,234	\$ 404,053	\$ 807,266	\$ 647,887	\$ 603,666	\$ 388,401	\$ 276,846	\$ 283,987	\$ 241,574	\$ 173,348	\$ 77,359

## Regional Bill Comparison

### Quarterly Water and Sewer Cost - Residential, 5/8" Meter, 15,000 Gallons per Quarter

Average (excluding

Northbrook)

\$152.23

