



**VILAGE OF BURR RIDGE  
WATER COMMITTEE  
BURR RIDGE VILLAGE HALL – BOARD ROOM  
WEDNESDAY, NOVEMBER 17, 2021 – 5:30 PM**

- 1. CALL TO ORDER**
- 2. ROLL CALL**
- 3. APPROVAL OF MINUTES OF FEBRUARY 22, 2021 MEETING**
- 4. CONSIDERATION OF HYDRAULIC WATER MODEL STUDY**
- 5. CONSIDERATION OF WATER FUND FINANCIAL ASSESSMENT STUDY**
- 6. CONSIDERATION OF PROPOSAL BY ILLINOIS STATE TOLL HIGHWAY  
AUTHORITY FOR COST PARTICIPATION IN WATER TRANSMISSION MAIN  
INTERCONNECT WITH JUSTICE-WILLOW SPRINGS WATER COMMISSION**
- 7. OTHER CONSIDERATIONS**
- 8. PUBLIC COMMENT**
- 9. ADJOURNMENT**

**MINUTES  
WATER COMMITTEE MEETING  
Monday, February 22, 2021**

**CALL TO ORDER**

The meeting was called to order by Trustee Al Paveza at 5:00 p.m.

**ROLL CALL**

Present: Trustees Al Paveza and Joe Snyder participated in the Board Room while Trustee Guy Franzese participated remotely via Zoom.

Absent: None

Also Present: Interim Village Administrator Evan Walter, Public Works Director David Preissig, and Acting Finance Director Amy Nelson

**APPROVAL OF MINUTES OF DECEMBER 16, 2020 MEETING**

A **motion** was made by Trustee Snyder to approve the minutes of the December 16, 2020 meetings. The motion was **seconded** by Trustee Franzese and approved by a vote of 3-0.

**CONSIDERATION OF FISCAL YEARS 2020-21 AND 2021-22 WATER FUND BUDGET**

Acting Finance Director Nelson provided an overview of the proposed FY21 and FY22 Water Fund budgets. Ms. Nelson said that an 8% minus any Bedford Park rate increase had already been programmed in for the next two budget years. Ms. Nelson noted that due to higher-than-expected costs related to capital projects, generally referring to the tower water painting projects, that staff had proposed splitting these projects into the next two fiscal years to ensure positive cash flow in each fiscal year. Trustee Franzese asked about the status of the Carriage Way subdivision project. Ms. Nelson said that staff had deferred the project to FY25 to permit enough time for the water rate model study to be completed and for its recommendations to be implemented. Ms. Nelson noted that the project costs were estimated to be approaching \$3 million, nearly double its expected costs from three years prior. Ms. Nelson closed by stating that the Village was experiencing an slightly better-than-expected FY21 fund performance due to the dry summer and the amount of residents being home through the COVID-19 pandemic.

A **motion** was made by Trustee Snyder to recommend adoption of the FY22 Water Fund budget as proposed by staff. The motion was **seconded** by Trustee Paveza and **approved** by a vote of 3-0.

**CONSIDERATION OF FISCAL YEARS 2020-21 AND 2021-22 SEWER FUND BUDGET**

Acting Finance Director Amy Nelson provided an overview of the proposed FY21 and FY22 Sewer Fund budgets. Ms. Nelson noted that this fund had very strong cash reserves and typically runs a small surplus, as the fund's revenue exists only via fixed charges and very little change is ever noted in this fund. One capital project was included in the proposed FY22 budget; the Chasemoor lift station replacement. Trustee Snyder asked if the fund had sufficient reserves to handle such a project. Mr. Walter said that the fund had over \$1.5

million in reserve funding, while the project was scheduled to cost about \$500,000, meaning that the fund had more than enough cash on hand to complete the necessary investment.

A **motion** was made by Trustee Snyder to recommend adoption of the FY22 Sewer Fund budget as proposed by staff. The motion was **seconded** by Trustee Franzese and **approved** by a vote of 3-0.

#### **CONSIDERATION OF UPDATES REGARDING WATER STUDIES**

Public Works Director Preissig provided a brief update regarding both the hydraulic water model study as well as the rate study, noting that both were progressing but were taking a significant amount of time due to the amount of information needed from both consultants both in the field and in the office. Mr. Preissig projected that both studies would be completed sometime in 2021 for final presentation to the Committee at said juncture.

#### **CONSIDERATION OF CUSTOMER SERVICE DELIVERY UPGRADES**

Mr. Walter provided a brief follow up to the previous presentation made by the Finance Department related to customer service delivery upgrades. After some discussion, the Committee requested that consideration of such upgrades be tabled until after the water studies were completed.

#### **ADJOURNMENT**

A **motion** was made by Trustee Snyder to adjourn the meeting. The motion was **seconded** by Trustee Franzese and **approved** by a vote of 3-0. The meeting was adjourned at 8:26 p.m.

Respectively submitted,

Evan Walter  
Village Administrator



Crawford, Murphy & Tilly

Village of Burr Ridge



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Water System Operations and  
Sustainability Study

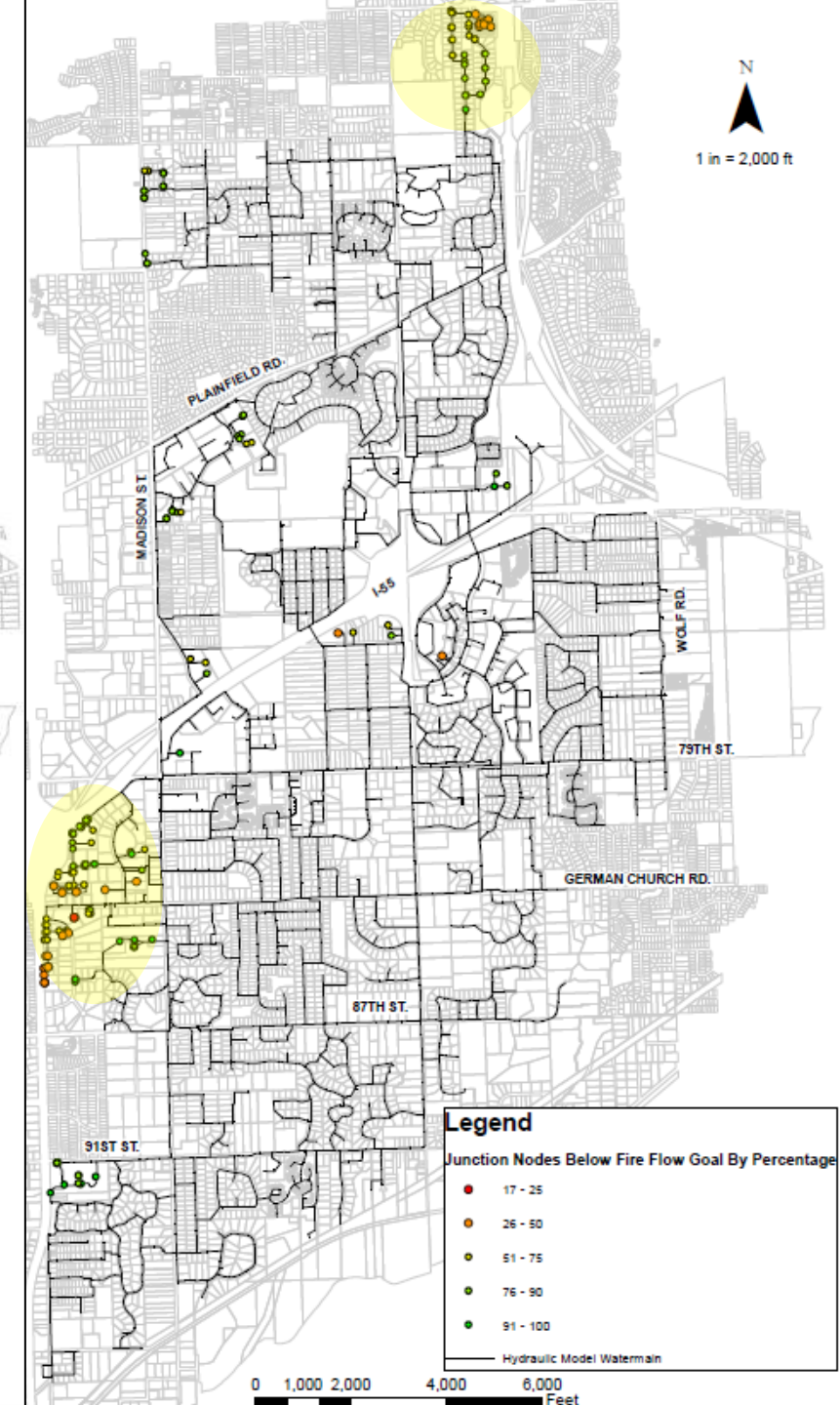
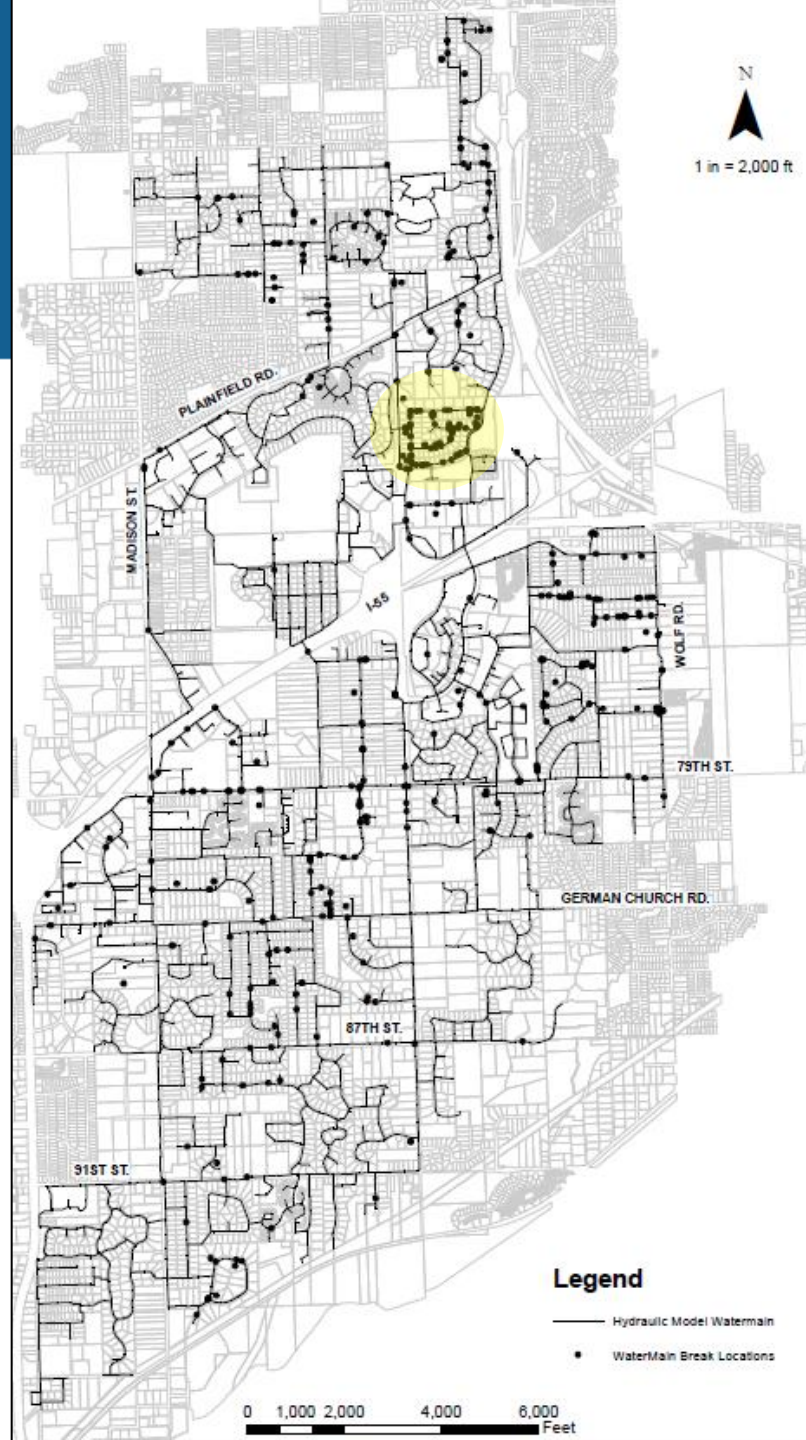
Water Committee Presentation  
November 17, 2021

# Water System Operations and Sustainability Study

- **Hydraulic Model**
- **Water Rate Study**
- Risk and Resilience Assessment/Emergency Response Plan
- Project Plan

# Previous Meeting Recap

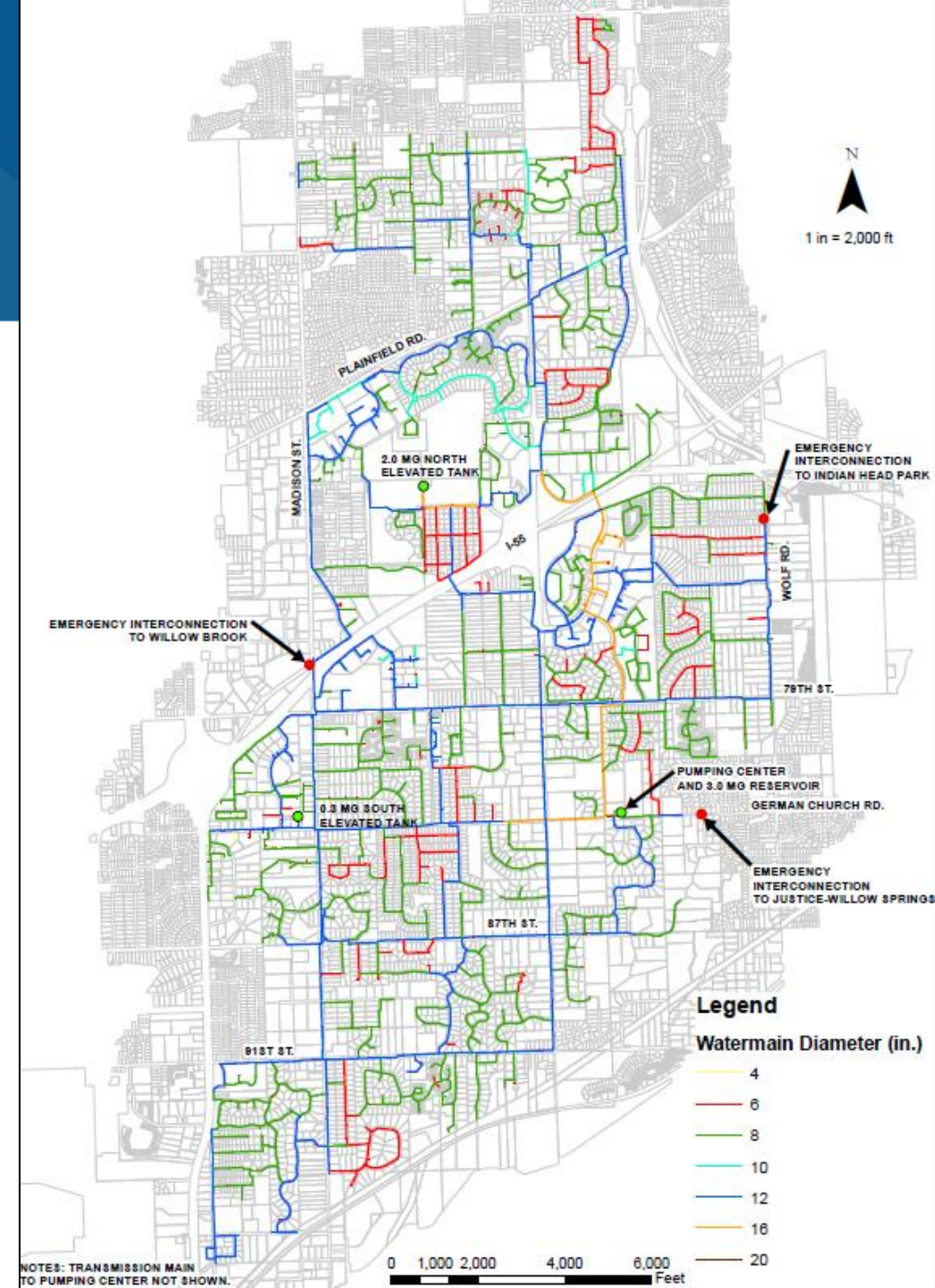
- Hydraulic Model Development
- Hydraulic Model Calibration
- Watermain Break Summary
- Available Fire Flow Results
- Water System Summary





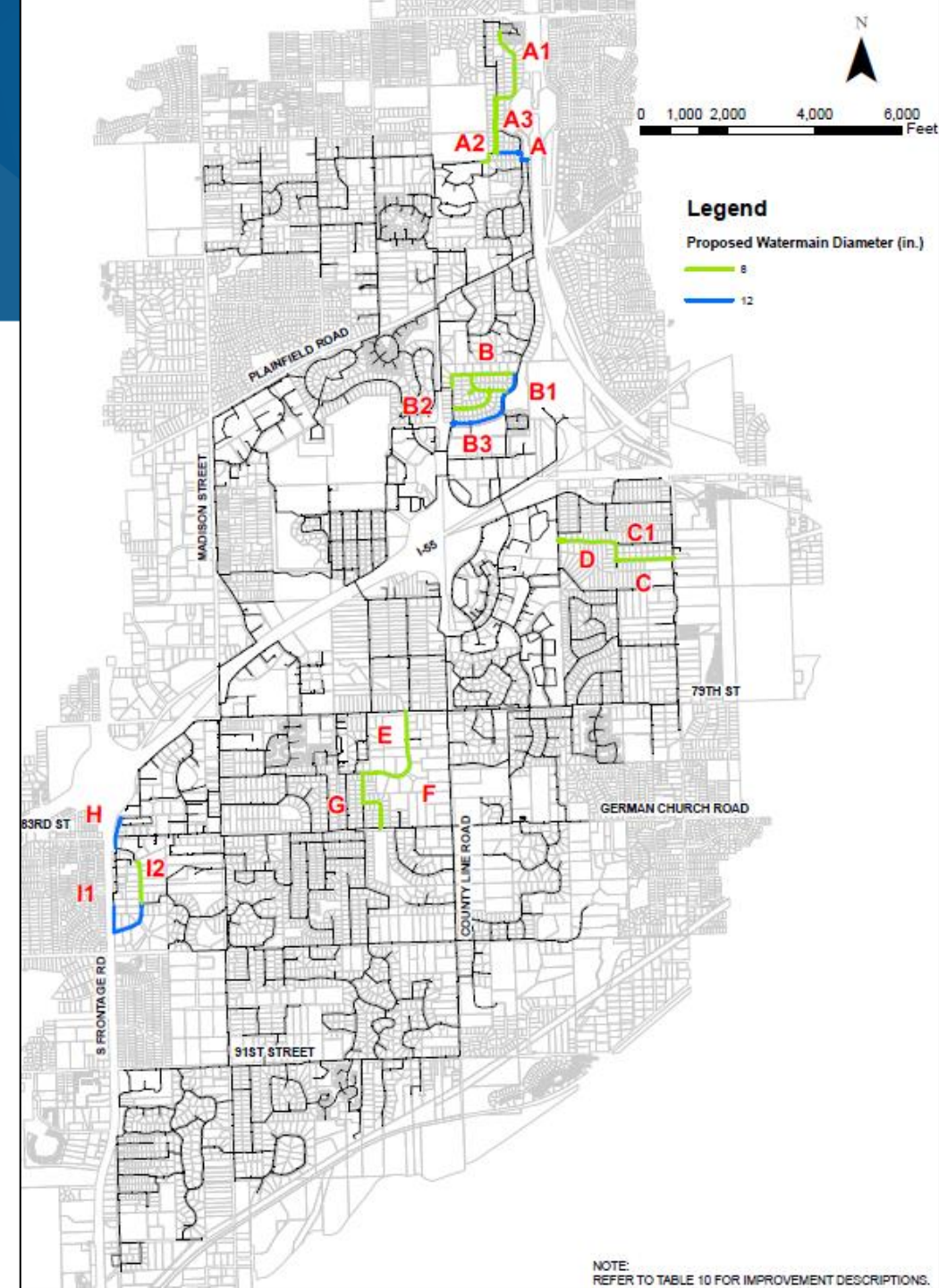
# Report Summary

- Overall, the Village has a robust and redundant water system that provides excellent drinking water and fire protection to residents and businesses.
- Hydraulic Model Results:
  - Pressure – 48 to 103 psi
  - Headloss – No high headloss locations
  - Available fire flow – Some areas are unable to meet goals → **Recommended Watermain Improvements**
  - Watermain condition – Some areas are experiencing excessive watermain breaks → **Recommended Watermain Improvements**
  - Water age – Some areas within the water system have higher than average water age → **Recommended Mixing System for North Elevated Tank**



# Recommended Watermain Improvements

- **Laurie Lane/Woodview Lane/South Drive** (A, A1, A2, A3)
  - Lacks redundancy
  - Low available fire flow for single family residence and townhomes (700 – 800 gpm < 50 - 70% of goal)
  - Watermain condition
- **Carriage Way** (B, B1, B2, B3)
  - Watermain condition (highest watermain break location)
- **73<sup>rd</sup> Place /74<sup>th</sup> Street** (C, C1, D)
  - Watermain condition
- **Drew Avenue/81<sup>st</sup> Street/Park Avenue/Kathryn Court** (E, F, G)
  - Watermain condition
- **Frontage Road/Meadowbrook Drive** (I1, I2, H)
  - Lacks redundancy
  - Low available fire flow for commercial (1200 – 1600 gpm < 40 - 50% of goal)





# Watermain Project Cost

	Total Cost
Laurie Lane/Woodview Lane/South Drive	\$ 2,470,000
Carriage Way	\$ 2,810,000
73 <sup>rd</sup> Place/74 <sup>th</sup> Street	\$ 1,390,000
Drew Avenue/81 <sup>st</sup> Street/Park Avenue/Kathryn Court	\$1,840,000
Frontage Road/Meadowbrook Drive	\$ 1,500,000
<b>Total</b>	<b>\$10,010,000</b>

Includes base construction cost in addition to engineering and contingency.

# Watermain Project Prioritization

	Available Fire Flow	Condition	Redundancy	IEPA Funding	Total Score	Ranking
Laurie Lane/Woodview Lane/South Drive	7	6	10	7	30	1
Carriage Way	0	10	0	10	20	2
73 <sup>rd</sup> Place/74 <sup>th</sup> Street	0	8	0	10	18	3
Drew Avenue/81 <sup>st</sup> Street/Park Avenue/Kathryn Court	0	7	0	10	17	5
Frontage Road/Meadowbrook Drive	9	0	8	0	17	4

CMT recommends the top three watermain improvements (Laurie Lane, Carriage Way, 73<sup>rd</sup> Place/74<sup>th</sup> Street) to be included in the Village's 5-year Capital Improvement Plan.

# Capital Improvement Plan

		FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
<b>Source Improvements (Transmission Main and Back-up Shallow Wells)</b>							
N/A							
Subtotal	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Supply Improvements (Pumping Center)</b>							
Pumping Center Pump 4 Replacement <sup>5</sup>	\$160,000				\$160,000		
Subtotal	\$160,000	\$0	\$0	\$0	\$160,000	\$0	\$0
<b>Storage Improvements (Reservoir and Elevated Storage Tanks)</b>							
Pump Center Reservoir Hatches <sup>5</sup>	\$22,000	\$22,000					
Water Tower Interior and Exterior Coating (North)	\$1,410,000			\$1,410,000			
Water Tower Interior and Exterior Coating (South)	\$646,000		\$646,000				
Subtotal	\$2,078,000	\$22,000	\$646,000	\$1,410,000	\$0	\$0	\$0
<b>Distribution System Improvements<sup>2,3</sup></b>							
County Line Road and Carriage Way (B, B1, B2, B3)	\$2,810,000					\$ 2,810,000	
Laurie Lane and Gregford Road (A, A1, A2, A3)	\$2,470,000			\$2,470,000			
73rd Place/74th Street (C, C1, D)	\$1,390,000						\$1,390,000
Subtotal	\$5,280,000	\$0	\$0	\$2,470,000	\$0	\$2,810,000	\$0
<b>Interconnection Improvements</b>							
Transmission Main Interconnect with JWS <sup>5</sup>	\$55,000		\$55,000				
Hinsdale Interconnection <sup>5</sup>	\$100,000				\$100,000		
Subtotal	\$155,000	\$0	\$55,000	\$0	\$100,000	\$0	\$0
TOTAL	\$7,673,000	\$22,000	\$701,000	\$3,880,000	\$260,000	\$2,810,000	\$0

Questions?



# Village of Burr Ridge, IL

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## Water Rate Study

November 2021





# Historical Funding Approach

- Village traditionally funds Water Fund projects on a PAYGO basis
  - › Definition: current projects are paid for with current funds; “cash” basis
  - › Exception: Village used debt to bring Lake Michigan water to the community in 1996, which were refinanced in 2003 and retired in 2016
- As capital needs in the Water Fund grow as infrastructure ages, reliable methods of funding capital projects must be identified
- Note: project analysis assumes that property tax levy approach similar to previous bond issuance is not under consideration.



# Financial Plan Options

- \$10 million in priority capital improvement needs have been identified by CMT
  - › Woodview Estates (Laurie Lane)
  - › Carriage Way
  - › Forest Hill (73<sup>rd</sup>/74<sup>th</sup>)
  - › Other known maintenance needs i.e. two water tower painting projects
- Two basic financing approaches: PAYGO and partial debt funding
  - › PAYGO - requires large rate adjustments in the next 5 years that are not likely to be needed beyond this time horizon
    - \$10 million in cash
  - › Partial debt funding of certain projects allow for more modest and smooth rate increases in the five-year forecast
    - \$6 million in debt + \$4 million in cash
    - Allows for future customers to share in the cost of paying for these improvements they will benefit from at historically low interest rates through established programs



# Financial Plan Assumptions

- *O&M – Operations and Maintenance*
- Inflationary adjustment of 5.0% to O&M costs in FY2023 (excluding purchased water).
- Inflationary adjustment of 2.5% to O&M costs in FY2024 and beyond (4.0% personnel cost growth).
- Additional increases will be needed to reflect increases in purchased water costs.
- Establish a Water Fund balance target of 180 days of O&M and debt service from recent levels of approximately 90 days.



# Rate Structure

- Fixed Charges
- Current State
  - › 2 different fixed charges (residential and non-residential)
  - › Charged bi-monthly
  - › \$10.00 for residential and \$20.00 for non-residential
- Evaluation
  - › Current fixed charge is consistent with other communities in region that have fixed charges
  - › Minority of communities have no fixed charges

## Fixed Charges

- Stable Revenue
- Impacts lower volume users
- May discourage conservation
- System is available regardless of use.

# Rate Structure

- Volume Charges
- Current State
  - › Inclining block water rate for residential customers
    - Tier 1 0-70,000 gallons
    - Tier 2 70,001-90,000 gallons
    - Tier 3 90,001+ gallons
  - › Single volume charge for non-residential customers
- Evaluation
  - › Tiers should be adjusted to better align with intent, charge more to those who peak and promote conservation

## Volume Charges

- Less Stable Revenue
- Impacts higher volume users
- May encourage conservation
- Customers who use more should pay more.



# Tier Reorganization

- The range in Tier 2 of the water rates, usage of 70,000 gallons to 90,000 gallons in a bi-monthly period, is narrower than what is typical for this type of rate structure
- Entry into Tier 2 should better reflect discretionary usage of water outdoors that contributes to system peaks, with phased-in lowering of the cut-off over time by 10,000 gallons in a bi-monthly period for four years
- Table below shows proposed usage per bi-monthly period by tier (gallons)

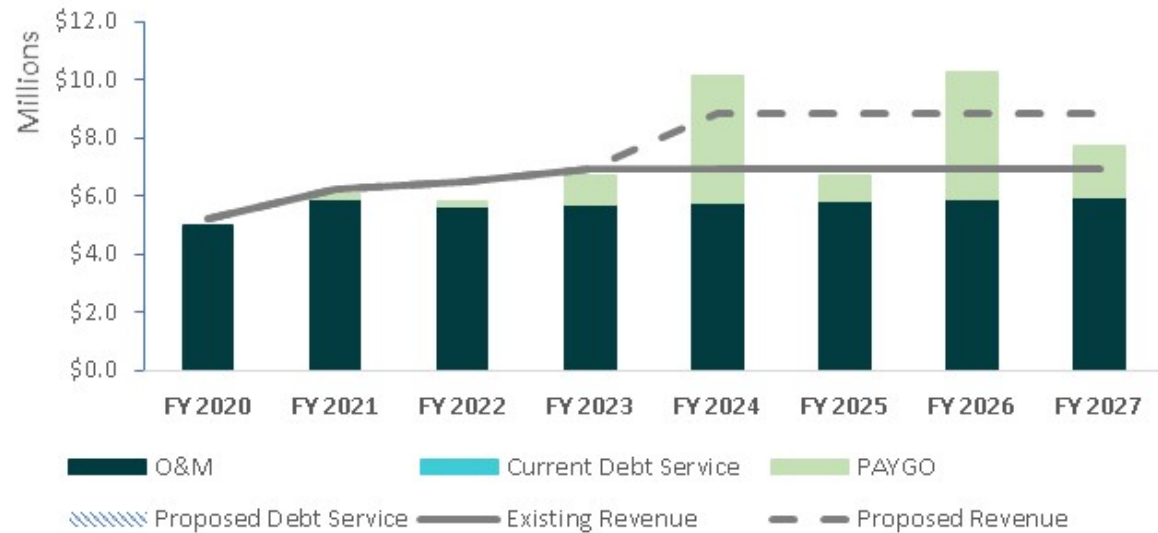
	Current	FY 2024	FY 2025	FY 2026	FY 2027
Tier 1	<70,000	<60,000	<50,000	<40,000	<30,000
Tier 2	70,000-90,000	60,000-90,000	50,000-90,000	40,000-90,000	30,000-90,000
Tier 3	>90,000	>90,000	>90,000	>90,000	>90,000



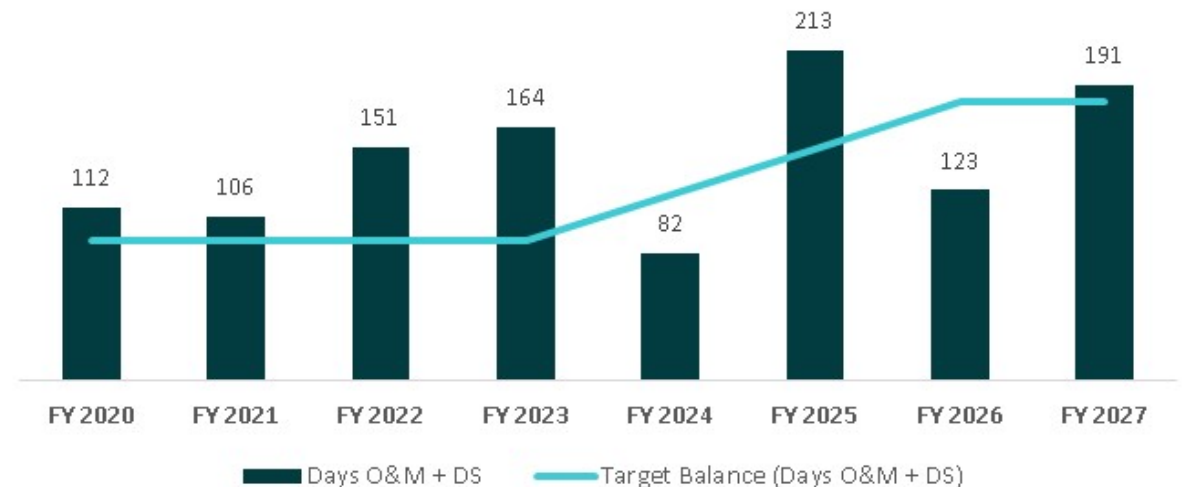
# PAYGO (Cash)

- One-time 28% increase in FY 2024 would fund five-year project costs; no other increases in the forecasted period.
- Results in lower than desired fund balances in FY 2024 and FY 2026. Rates in FY 2027 and beyond would be higher than needed for several years, but would generate an additional \$1.1 million in annual PAYGO funding for capital reinvestment.

## WATER FINANCIAL PLAN



## FUND BALANCE



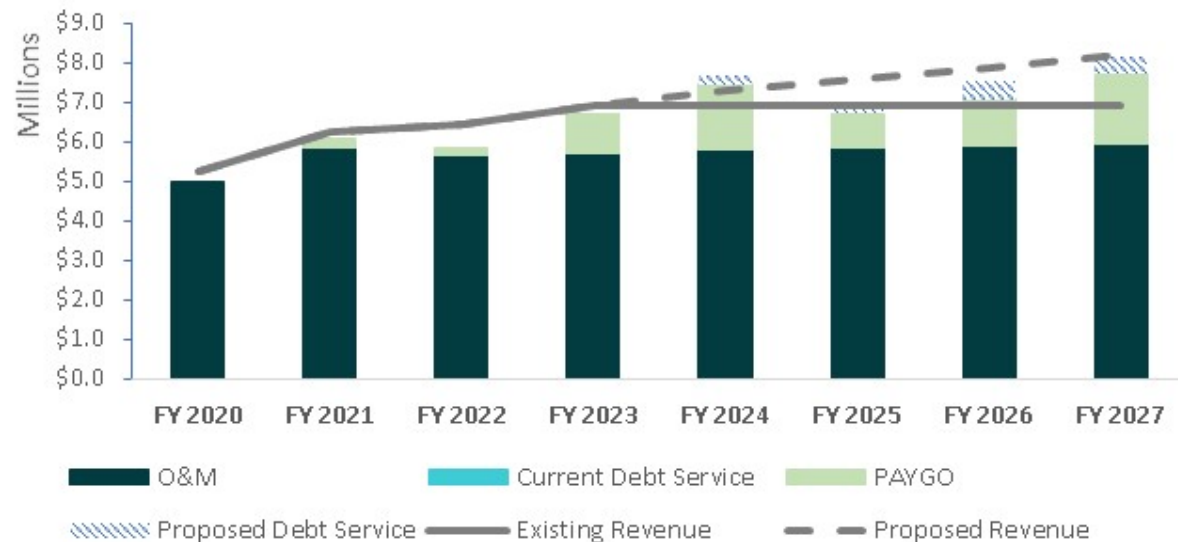




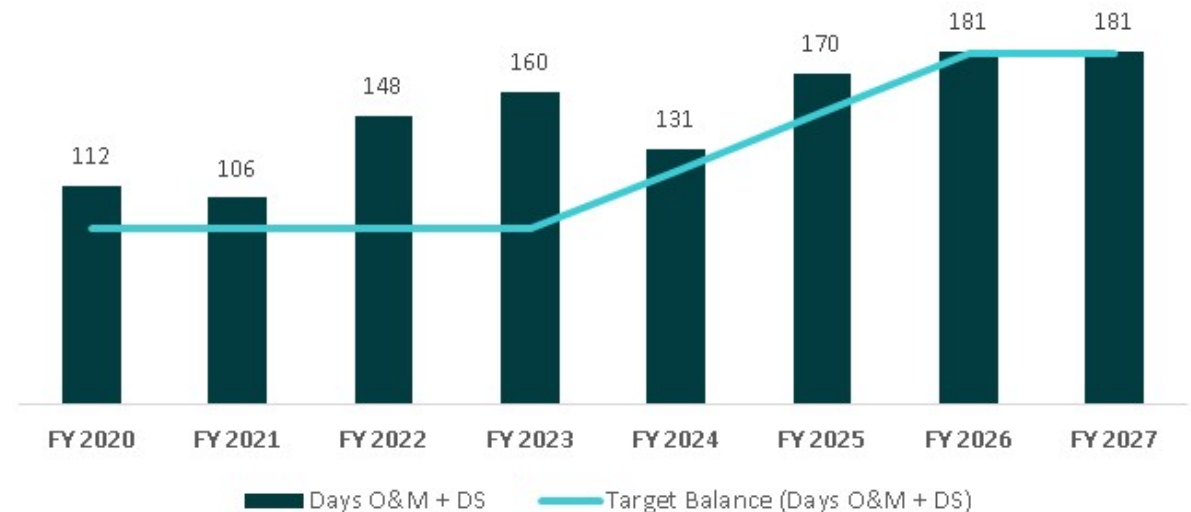
# Debt

- Acquire \$6 million in debt to fund two largest capital projects in FY 2024 and 2026
- FY2024 5.7% + Bedford Park rate increase / FY2025-27 3.5% + Bedford Park increase
- 16% Village-side smoothed cumulative increase through FY2027

## WATER FINANCIAL PLAN



## FUND BALANCE





# Rate Comparison

- Lowest impact on customers who stay in Tier 1
- Customers who have usage move from Tier 1 to Tier 2 will be most impacted each year

PAYGO Funding						
Residential	FY22 - Current	FY23 - Approved	FY24 - Proposed	FY25 - Proposed	FY26 - Proposed	FY27 - Proposed
9000 Gal	\$ 181.36	\$ 195.04	\$ 248.60	\$ 248.60	\$ 248.60	\$ 248.60
		7.5%	27.5%	0.0%	0.0%	0.0%
20000 Gal	\$ 390.80	\$ 421.20	\$ 539.20	\$ 539.20	\$ 539.20	\$ 539.20
		7.8%	28.0%	0.0%	0.0%	0.0%
50000 Gal	\$ 1,146.10	\$ 1,236.90	\$ 1,583.50	\$ 1,583.50	\$ 1,583.50	\$ 1,583.50
		7.9%	28.0%	0.0%	0.0%	0.0%
Debt Funding						
Residential	FY22 - Current	FY23 - Approved	FY24 - Proposed	FY25 - Proposed	FY26 - Proposed	FY27 - Proposed
9000 Gal	\$ 181.36	\$ 195.04	\$ 205.90	\$ 213.17	\$ 220.63	\$ 228.29
		7.5%	5.6%	3.5%	3.5%	3.5%
20000 Gal	\$ 390.80	\$ 421.20	\$ 444.60	\$ 460.23	\$ 476.27	\$ 492.73
		7.5%	5.6%	3.5%	3.5%	3.5%
50000 Gal	\$ 1,146.10	\$ 1,236.90	\$ 1,307.90	\$ 1,356.43	\$ 1,406.57	\$ 1,458.33
		7.9%	5.7%	3.7%	3.7%	3.7%



# Regional Rate Comparison

- Assumes 5% annual rate growth for other communities

Town	FY22	FY23	FY24	FY25	FY26	FY27
Lisle	\$127.82	\$134.21	\$140.92	\$147.97	\$155.37	\$163.13
Countryside	\$138.70	\$145.64	\$152.92	\$160.56	\$168.59	\$177.02
Wheaton	\$148.68	\$156.11	\$163.92	\$172.12	\$180.72	\$189.76
Bloomington	\$149.63	\$157.11	\$164.97	\$173.22	\$181.88	\$190.97
Hickory Hills	\$150.37	\$157.89	\$165.78	\$174.07	\$182.78	\$191.91
Naperville	\$153.86	\$161.55	\$169.63	\$178.11	\$187.02	\$196.37
Lombard	\$158.62	\$166.55	\$174.88	\$183.62	\$192.80	\$202.44
Downers Grove	\$166.05	\$174.35	\$183.07	\$192.22	\$201.83	\$211.93
Willowbrook	\$174.06	\$182.76	\$191.90	\$201.50	\$211.57	\$222.15
Glen Ellyn	\$178.74	\$187.68	\$197.06	\$206.91	\$217.26	\$228.12
Oakbrook Terrace	\$179.46	\$188.43	\$197.85	\$207.75	\$218.13	\$229.04
<b>AVERAGE</b>	<b>\$185.60</b>	<b>\$194.85</b>	<b>\$206.64</b>	<b>\$216.43</b>	<b>\$226.71</b>	<b>\$237.21</b>
<b>Burr Ridge</b>	<b>\$186.36</b>	<b>\$195.04</b>				
Woodridge	\$187.30	\$196.67	\$206.50	\$216.82	\$227.66	\$239.05
<b>BR DEBT</b>			<b>\$206.80</b>	<b>\$217.14</b>	<b>\$228.00</b>	<b>\$232.61</b>
Plainfield	\$191.55	\$201.13	\$211.18	\$221.74	\$232.83	\$244.47
Hinsdale	\$192.51	\$202.14	\$212.24	\$222.85	\$234.00	\$245.70
Darien	\$195.50	\$205.28	\$215.54	\$226.32	\$237.63	\$249.51
Bensenville	\$195.70	\$205.49	\$215.76	\$226.55	\$237.87	\$249.77
Willow Springs	\$213.12	\$223.78	\$234.96	\$246.71	\$259.05	\$272.00
Elmhurst	\$219.56	\$230.54	\$242.06	\$254.17	\$266.88	\$280.22
<b>BR PAYGO</b>			<b>\$249.68</b>	<b>\$249.68</b>	<b>\$249.68</b>	<b>\$249.68</b>
Oak Brook	\$230.41	\$241.93	\$254.03	\$266.73	\$280.06	\$294.07
Clarendon Hills	\$271.46	\$285.03	\$299.28	\$314.25	\$329.96	\$346.46
Indian Head Park	\$273.72	\$287.41	\$301.78	\$316.87	\$332.71	\$349.34

# Thank you!

**Contact:**

**Tom Beckley**

**[tbeckley@raftelis.com](mailto:tbeckley@raftelis.com)**







## M E M O

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**To:** Evan Walter, Village Administrator  
**From:** David Preissig, P.E., Director of Public Works & Village Engineer  
**Date:** November 12, 2021  
**Subject:** Recommendation to Enter into Agreement with Tollway for JWSWC Interconnect

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The Village currently receives its water from Bedford Park via a 4-mile-long, 36-inch-diameter transmission main. This pipeline lies under major bridges and roadways, parallels high-pressure gas and high-voltage electric transmission lines, and is bored for a length of nearly 900 feet in the riverbed of the Des Plaines River and the Chicago Sanitary & Shipping Canal system.

In the event of a disruption to this water supply, the Village has emergency reserves in its reservoirs and elevated storage tanks, interconnections with Willowbrook, Indian Head Park, and Justice-Willow Springs Water Commission, and three standby wells. The Willowbrook interconnect has inadequate pressure to keep a minimum pipe pressure on the north end of the Village, while the Indian Head Park interconnect cannot provide any pressure or flow into our Village system to be considered a supply line. Three existing wells do not have an operating capacity to be considered adequate for a minimum daily use.

The existing interconnect with Justice-Willow Springs Water Commission (JWSWC) on German Church Road is the primary supply to the Village's pumping station when the Bedford Park transmission main is disrupted; however, this source has become inadequate to meet an average daily demand of the Village as the community has grown in service level. This connection has existed since the 1980's when the Village purchased directly from the Commission for its Lake Michigan water. As noted in the early 1990's, and the reason for constructing the Bedford Park transmission main, JWSWC interconnection is inadequate for the Village's daily demand. The Village's average daily demand is 1200 gallons per minute (gpm) and peak demand is 3000 gpm; however, the JWSWC interconnect at German Church Road can provide only 1000 gpm to the Village. This shortfall is quantified in the hydraulic modeling report by Crawford, Murphy & Tilly, Inc, but was also evident in December 2016 during a pipeline repair on the Bedford Park transmission main that required the Village to utilize this interconnection.

A new interconnect with JWSWC is possible that would provide the Village with adequate water supply for most cases, and at a minimum, provide our average daily demand. The location of the new interconnect is adjacent to the I-294 Mile-Long Bridge, where the Village's 36-inch transmission main crosses over a JWSWC 20-inch transmission main. This location would also afford a redundant canal crossing for both the Village and the JWSWC systems; thereby enhancing

resiliency of both systems in the event of a pipe failure beneath the canal system. Lastly, the interconnects with JWSWC provide another source to Chicago water, if the Bedford Park pumping station suffers a catastrophic failure.

This additional interconnect concept was developed in 2019 when the Village received a grant from the Cook County Department of Homeland Security and Emergency Management through its Urban Area Security Initiative. Through this grant, Cook County is reimbursing the Village for the design engineering performed by our consultant. A preliminary cost estimate for the project was \$403,000, which exceeded the Village's budget estimates; therefore, Village staff deferred the project until additional grant funding could be obtained.

The Illinois State Toll Highway Authority has recently recognized that this interconnect could provide savings in both cost and time to future projects related to reconstructing the I-294 Central Tri-State Corridor. JWSWC also realized the benefits to their water distribution system when future Tollway projects would affect its system; therefore, the Commission has funded an engineering consultant to update the Village's 2019 design plans.

For the Village, the proposed interconnect would provide a resilient water supply if a mechanical failure, negligence, or criminal activity compromises our transmission main or Bedford Park water supply. For the Justice-Willow Springs Water Commission, the proposed interconnect will enhance its reliability in providing water to Willow Springs, Justice, and Hickory Hills. JWSWC is currently unable to maintain minimum-required pressure in various pipe segments when fed through our German Church Road interconnect; however, the new interconnect would allow the system pressures to stabilize and storage tank levels to be safely maintained. As the current interconnect on German Church Road cannot provide adequate flow and pressure into either water system, the proposed, additional interconnect at the Mile-Long Bridge would provide the pressure increases needed to operate adequately in an emergency.

A proposal by the Tollway has been developed to address this issue. The total cost estimate is approximately \$690,000, which includes a two-way metered connection in a secure vault, electric service, and a wireless monitoring system connected to the Village's network that would allow real-time adjustments to flow and pressure in both the Village and JWSWC transmission mains. The Tollway has agreed to fund 50%, or \$345,000, with the remaining balance to be shared between Burr Ridge and the Justice-Willow Springs Water Commission, each for \$172,500. The Water Commission executive staff will be recommending approval of this proposal at its December board meeting.

It should be noted that the Tollway has funded 100% of the construction costs for relocating Village water mains as part of the I-294 Central Tri-State Corridor reconstruction. These costs to-date total over \$2.5M, which include \$2.2M for the 36-inch transmission main beneath the Mile-Long Bridge and \$330,000 for a 12-inch main under Plainfield Road.

#### **Recommendation:**

**It is staff's recommendation: that the agreement with the Illinois State Toll Highway Authority be executed in the amount of \$172,500.**

