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# Water & Wastewater Rate Update 2021

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Water & Wastewater  
Operating & Capital Budgets  
March 29, 2021

# Background

- City provides water to approximately 8,400 accounts, including a few accounts outside city limits. (External accounts pay a higher rate).
- Both the water and wastewater treatment plant are operating at approximately 50% capacity.
- Water rates did not increase between 2016 - 2019 inclusive in favour of increasing the wastewater surcharge from 102% in 2016 to 124% in 2019.

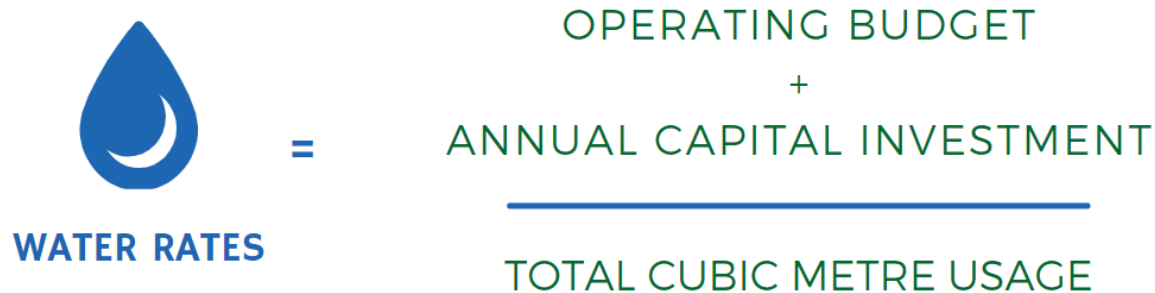
# Background Study

- The comprehensive financial plan updated future funding needs based on several factors
- Established a population and household forecast to determine the demand on a cubic metre (m<sup>3</sup>) basis
- Analyzed planned capital investments for 2021- 2030
- Analyzed stable annual operating costs applying inflation indices based on the nature of the cost
- Determined the annual funding requirement based on asset management obligations (longer time frame than 10-year capital plan)
- Considered alternate funding sources and strategies including development charges, grants & debt financing.

# Recommended Rate Increases

- Consultants recommended an annual water rate increase of 5.95% starting July 2020.
- Due to Covid the decision was made to not adjust water rates in 2020 (a 0% increase) with the caveat that future rates may need to be adjusted to compensate for the “lost” revenues not obtained in 2020.

# Calculating Rates



A diagram illustrating the formula for calculating water rates. On the left, a blue water drop icon with a white crescent inside is positioned above the text 'WATER RATES'. To the right of the drop is an equals sign. Further right, the formula is presented: 'OPERATING BUDGET' followed by a plus sign, then 'ANNUAL CAPITAL INVESTMENT'. A horizontal blue line is drawn under 'ANNUAL CAPITAL INVESTMENT'. Below this line is the text 'TOTAL CUBIC METRE USAGE'.

$$\text{WATER RATES} = \frac{\text{OPERATING BUDGET} + \text{ANNUAL CAPITAL INVESTMENT}}{\text{TOTAL CUBIC METRE USAGE}}$$

- Rates are calculated to ensure a financially sustainable and fully rate-supported water and wastewater service
- Multi year total budgets and usage both go into determining rates (similar to tax levy)

# Study vs Actual – Usage (THE DENOMINATOR)

- Study estimated +50 accounts per year
  - New connections in 2020 = 21
- Study estimated declining usage of 0.25%
  - Actual metered usage in 2020 declined by 5%
- Actual water usage is estimated to be less than the study anticipated.
  - Higher rates are required per m<sup>3</sup> in order to meet investment needs.
- Note that the 2021 rates were not modified to take this variance into account – however if these variances persist in future years, future rates will need to take that into account.

# Study vs Actual – Future Costs (THE NUMERATOR)

- Anticipated annual water operating costs: \$3,877,600
  - Actual 2021 water operating budget: \$3,763,177
- 10-year capital investment requirements: \$34,721,457
  - Updated 10-year capital plan: \$33,833,376
- Anticipated annual wastewater operating costs: \$5,079,800
  - Actual 2021 wastewater operating budget: \$4,821,305
- 10-year capital investment requirements: \$28,504,284
  - Updated 10-year capital plan: \$27,293,429

# Water – Operating Budget

## CITY OF OWEN SOUND WATER DRAFT 2021 OPERATING BUDGET

		2021 DRAFT BUDGET	2020 BUDGET	VARIANCE
<b>10 FTE</b>	Salaries and Benefits	1,232,172	1,293,330	(61,158)
Water Treatment Super	Materials and Supplies	1,419,868	1,419,868	-
Water Dist. Supervisor	Contract Services	190,250	120,250	70,000
9 x Water Cert. Labour	Debt Payments	242,473	181,678	60,796
	<u>Gross Costs</u>	<u>3,084,763</u>	<u>3,015,125</u>	<u>69,638</u>
	Grants	-	-	-
<b>Contracts</b>	Other Revenue	(5,940,104)	(5,926,182)	(13,922)
DWQMS	<u>Revenue</u>	<u>(5,940,104)</u>	<u>(5,926,182)</u>	<u>(13,922)</u>
Testing				
	<u>Net Cost</u>	<u>(2,855,341)</u>	<u>(2,911,057)</u>	<u>55,716</u>
	Reserve Contribution	605,278	1,021,344	(416,066)
	Capital Contribution	1,481,400	1,113,000	368,400
	Internal Cost Allocation	768,664	776,714	(8,050)
	<u>Division Levy Requirement</u>	<u>1</u>	<u>1</u>	<u>(0)</u>



# Water – 10-Year Capital Plan

- The detailed 10-Year Capital Plan is included as an appendix to the report included in tonight's agenda
- The following slides summarize some of the significant planned investments

# Water – Capital Plan

## Cathodic Protection

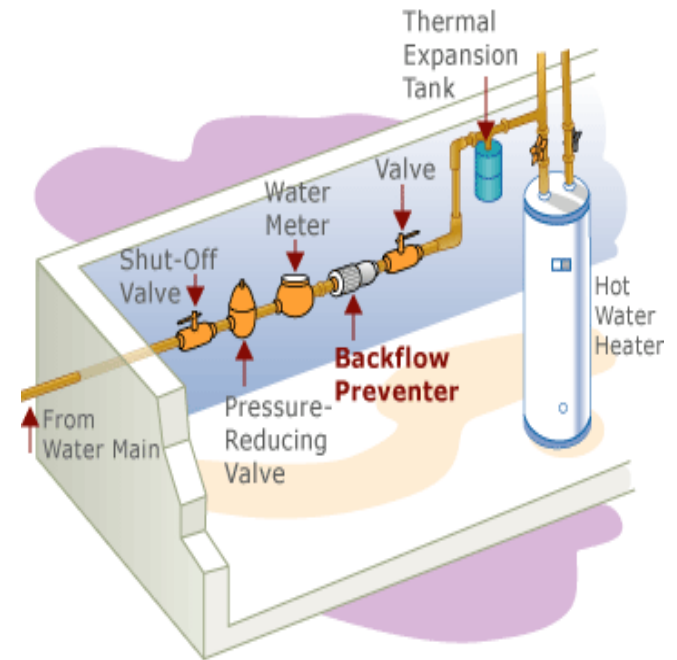
- \$2,845,000 over 10 years
- Plan to protect ductile iron watermains (currently totaling 25 km) on a risk assessment basis
- The City began installing anodes on ductile iron watermains in the early 1990s; anodes typically last about 20-25 years



# Water – Capital Plan

## Cross Connection Control

- \$1,270,000 over 10 years
- In 2021: finalize bylaw and complete hiring of the associated contract employee to provide inspections and coordinate backflow upgrades





# Water – Capital Plan

## Industrial Check Valve

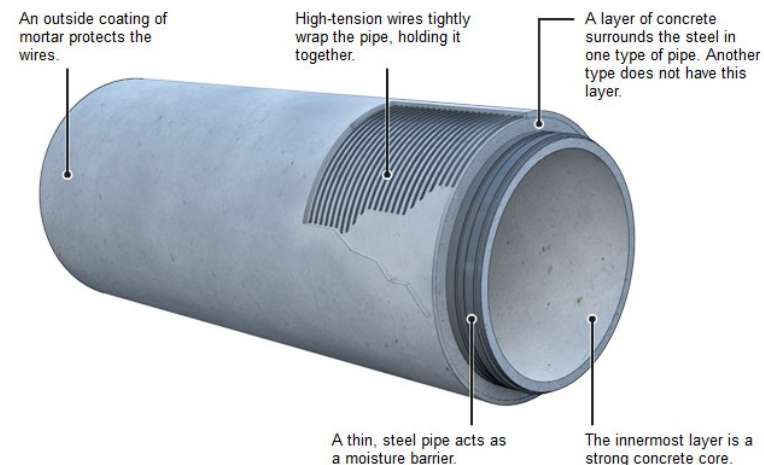
- \$500,000 – completion imminent
- Presence of this valve will mean breaks in the trunk main between the valve location and the plant, will not result in catastrophic depressurization



# Water – Capital Plan

## Large Diameter Trunk Main Assessment

- The City has two separate High Pressure Concrete Pipe (HPCP) Trunk Mains: The Industrial Trunk Main of which 600m is being assessed in 2021, and the Municipal Trunk Main which is a 4 km, older 24” pipe dating from 1965.
- It is proposed as part of the 10-year plan to use insitu methods at a cost of \$300,000 to determine the condition of the Municipal Trunk Watermain.
- Later in the 10-year plan, \$2,000,000 is reserved for work on this watermain, but until the assessment is complete, there is no way of knowing the true timing and cost.





# Water – Capital Plan

## Trunk Main & Valve Chamber Maintenance

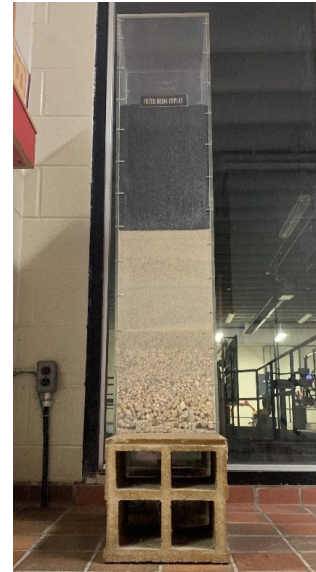
- \$1,150,000 over 10 years
- Large Diameter Butterfly Valves not fully closing
- Identifying and correcting various important large diameter valves and valve chambers



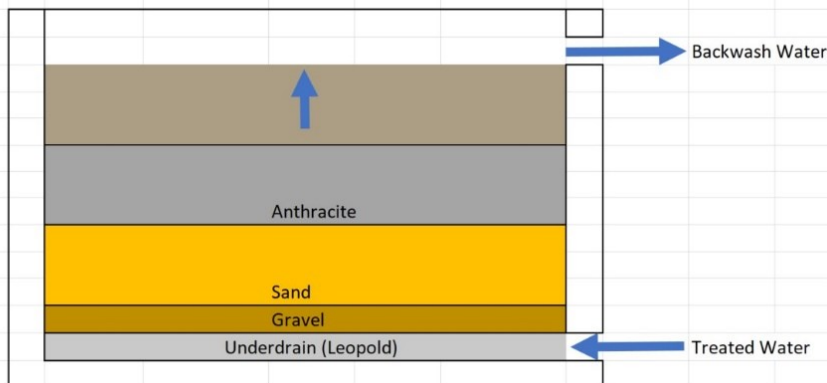
# Water – Capital Plan

## Water Treatment Plant Filter Refurbishment

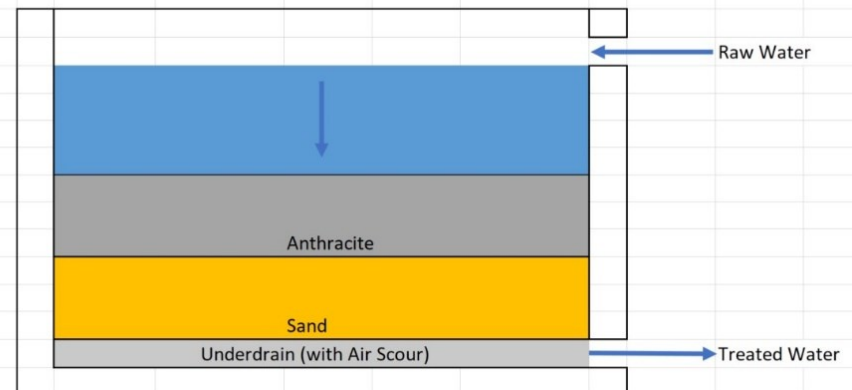
- \$2,450,000 over 3 years (2 phases)
- This project will extend the useful life of the filters and improve the performance in terms of backwash water consumption. This will allow the plant to achieve better capacity in poor raw water conditions (i.e. spring runoff)



Existing Conventional Filter : Backwash Operation



Upgraded Filter



# Wastewater – Operating Budget

## CITY OF OWEN SOUND PWNT WASTE WATER DRAFT 2021 OPERATING BUDGET

		2021 DRAFT BUDGET	2020 BUDGET	VARIANCE
<b>7 FTE</b>	Salaries and Benefits	930,026	922,080	7,946
PW Manager	Materials and Supplies	1,535,374	1,195,024	340,350
Waste Water Super	Contract Services	306,000	306,000	-
5 Certified Labour	Debt Payments	1,648,944	2,275,127	(626,183)
	<b>Gross Costs</b>	<b>4,420,344</b>	<b>4,698,231</b>	<b>(277,887)</b>
<b>Contracts</b>	Grants	-	-	-
Violia	Other Revenue	(6,563,148)	(6,576,719)	13,571
Testing	<b>Revenue</b>	<b>(6,563,148)</b>	<b>(6,576,719)</b>	<b>13,571</b>
	<b>Net Cost</b>	<b>(2,142,804)</b>	<b>(1,878,488)</b>	<b>(264,316)</b>
	Reserve Contribution	(33,157)	144,205	(177,362)
	Capital Contribution	1,494,000	1,046,060	447,940
	Internal Cost Allocation	681,961	688,223	(6,262)
	<b>Division Levy Requirement</b>	<b>1</b>	<b>1</b>	<b>0</b>



# Wastewater Treatment Plant Operational Costs

- Proposed Operational Budget 2021 for WWTP is \$2,150,000
- Largest cost increases:
  - Hydro
  - Dechlorination\*
  - Biosolids Increase
  - Labour
  - Taxes
  - Materials/Supplies

\* Working on a plan to decrease dechlorination costs by increasing onsite storage, decreasing delivery frequency

# Municipal Capital Facility

- Plant upgrades have increased property tax costs
- The Municipal Act provides the authority for a municipality to designate a facility as a municipal capital facility under certain terms and conditions
- Both water and wastewater properties meet the criteria of a municipal capital facility
- The change would exempt assessment on these properties which would not impact the operating levy and shift the taxes otherwise payable to the rest of the tax base. While the total taxes of approximately \$200,000 are significant to water and wastewater budgets, this impact on individual taxpayers will be nil.

# Wastewater – 10-Year Capital Plan

- The detailed 10-Year Capital Plan is included as an appendix to the report included in tonight's agenda
- The following slides summarize some of the significant planned investments

# Wastewater – Capital Plan

## Wastewater Collection Enclosed Trailer

- \$8,000 - \$10,000
- 12' Enclosed Trailer
- Safely transport pressure washer and water tank to wash down remote sewage pump station equipment before maintenance and emergency repairs
- Transport collection system related parts, material, equipment and safety gear, including during manhole rehab
- Reduce reliance on Vactor



# Wastewater – Capital Plan

## Digester Cleanout

- \$150,000 to \$300,000, 3 – 5 years
- Bio solids storage tanks and digester require a cleanout due to the accumulation of materials (rags, etc.)
- Process is very complex and takes about a month
- During that time, bio solids produced by the plant must be hauled to Lystech for treatment, in the absence of a backup digester



# Wastewater – Capital Plan

## Intermediate Bar Screens (Feasibility Study)

- \$25,000 (Study) \$700,000 (Screening), 3 – 5 years
- Screening removes coarse material (rags, debris, grit etc.)
- A fine screening process before the digester could remove more such materials, decreasing their required frequency

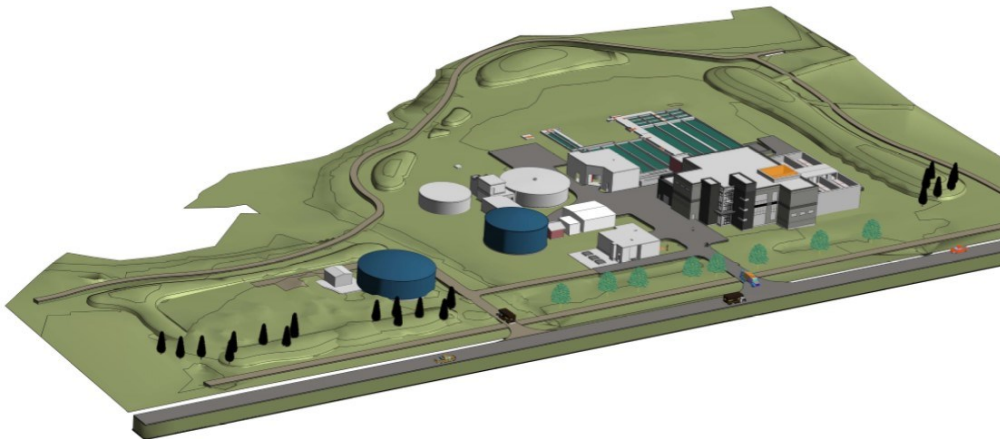




# Wastewater – Capital Plan

## Second Digester (Long Term Plan)

- \$2,500,000 estimated cost
- Originally included in tender documents for the WWTP upgrade.
- A second digester:
  - Provides additional digestion to improve sludge quality and reduce the quantity
  - Greatly reduces cost and complexity of digester tank cleanouts.



SITE PLAN BIRDS-EYE VIEW



# Wastewater – Capital Plan

## Stormwater Separation Program

- \$940,000 over 10 years
- Reduce inflow and infiltration; ultimately eliminating bypassing and those kinds of sewer backups.
- In 2021:
  - Remove some roof area
  - Hire a student to survey the northwest quadrant of the City to account for sources such as sump pumps, foundation tile, roof drains, yard basins





# Wastewater – Capital Plan

## West Side Pumping Station Upgrades

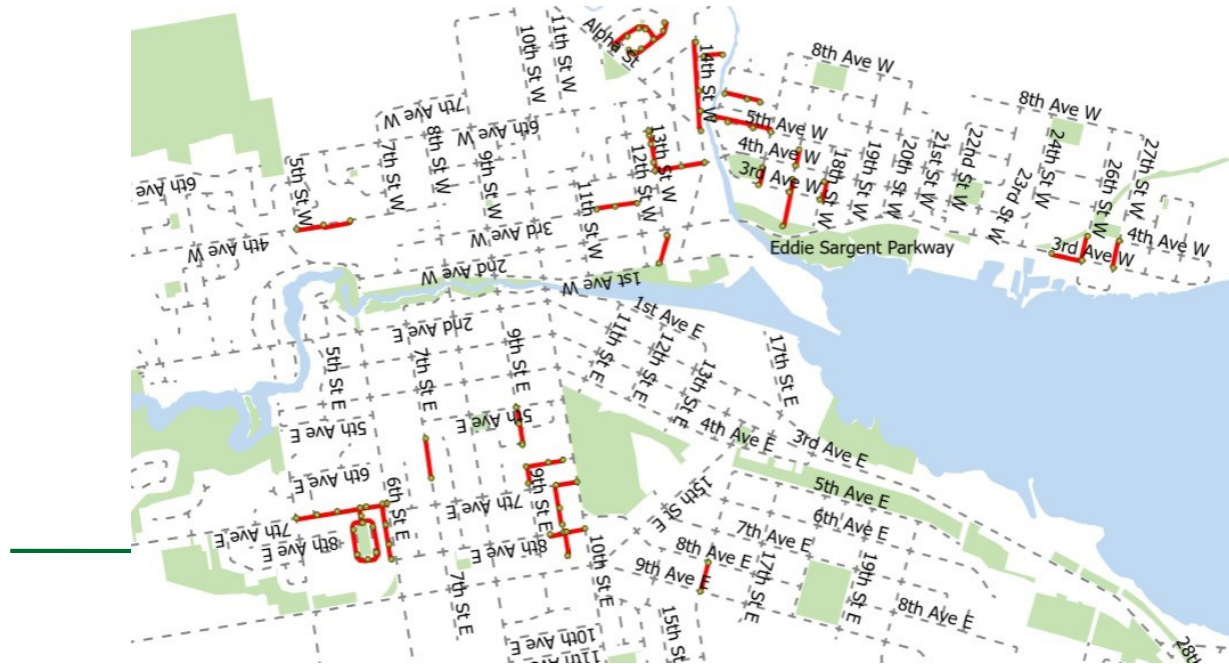
- \$2,100,000
- 2018 study identified three possible pathways to provide a screening upgrade to the West Side Pumping Station
- Concern that the building was settling, which would necessitate a much more significant upgrade.
- Settlement was monitored for two years and it was determined the building was NOT settling
- The “Station Retrofit” is the least expensive alternative



# Wastewater – Capital Plan

## Collection System Capital Reinvestment

- \$3,550,000 over 10 years
- Sewer condition assessed via video, result is multi-year sewer lining program, as well as the rehabilitation of poor-condition manholes
- The 2021 program involves separate sections of sewer in the northwest, and the southeast quadrant of the City



# Wastewater – Capital Plan

## East Bayshore Sewage Pumping Station

- \$2,000,000 – completion Fall 2021
- New construction will replace existing East Bayshore and Goodyear Sewage Pumping Station, both of which are at the end of their useful life and have serious electrical, mechanical, and confined space access issues
- The station construction is being coordinated with the reconstruction of Grey Road 15 in order to install the station force main



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# Water, Wastewater & Engineering Combined Projects

- The detailed 10-Year Capital Plan is included as an appendix to the report included in tonight's agenda
- The following slides summarize some of the significant planned Investments that incorporate water, wastewater and tax-funded road and stormwater work



# Water, Wastewater & Engineering

## Watermain - 9<sup>th</sup> Ave E – Superior St to 10<sup>th</sup> St E

- The watermain on 9<sup>th</sup> Avenue East has exceeded its useful life and requires replacement with addition of a redundant supply to improve supply security to a south-east area of the City.
- \$2,700,000, construction in 2024



# Water, Wastewater & Engineering

## Watermain - 2<sup>nd</sup> Ave E/Grey Road 5

- The watermain on 2<sup>nd</sup> Avenue East has exceeded its useful life and requires replacement.
- \$890,000, construction in 2023





# Watermain & Wastewater Sewer - 16<sup>th</sup> St E

- The watermain on 16<sup>th</sup> Street East has exceeded its useful life, is subject to frequent breaks and is in need of replacement. The wastewater sewer is being upgraded to accommodate development.
- \$430,000, Phase II in 2021 or 2022 (pending Connecting Link funding)
- Phase I Complete in 2020



# Water, Wastewater & Engineering

## Watermain & Wastewater - 3<sup>rd</sup> Ave E/Grey road 15 - 10<sup>th</sup> St E to 18<sup>th</sup> St E

- The infrastructure on 3rd Avenue East has exceeded its useful life and needs replacement.
- The Water - \$700,000, Wastewater – \$660,000 Phase I in 2023
- Water - \$690,000, Wastewater – \$650,000 Phase II in 2024
- Water - \$700,000, Wastewater – \$660,000 Phase III in 2025





# Water, Wastewater & Engineering

## Watermain & Wastewater Sewer - 4<sup>th</sup> Ave W 15<sup>th</sup> St W – 19<sup>th</sup> St W

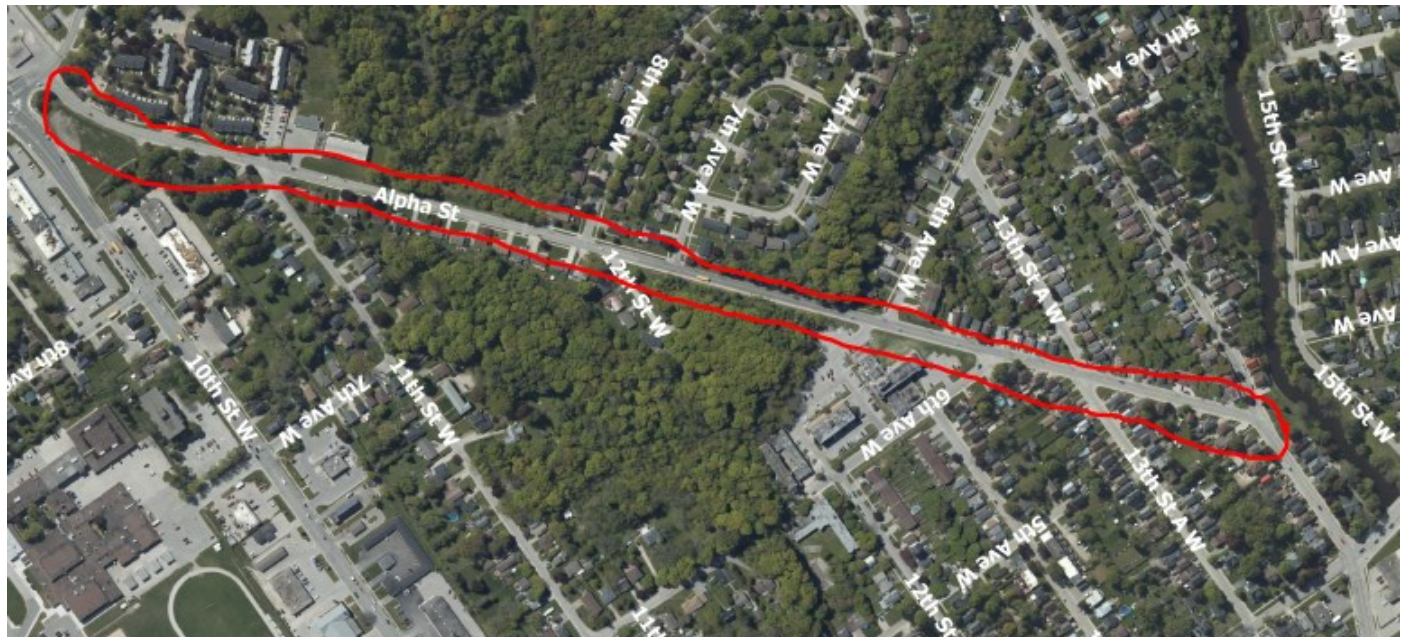
- The infrastructure on 4th Avenue West has exceeded its useful life and needs replacement.
- \$840,000 cost to Water, + \$760,000 cost to Wastewater
- Engineering design in 2024, construction in 2025



# Water, Wastewater & Engineering

## Watermain & Wastewater Sewer - Alpha St 9<sup>th</sup> Ave W – 14<sup>th</sup> St W

- The watermain, sanitary sewer and storm sewer all have reached the end of their useful life and require replacement. Poor soil conditions on Alpha street has caused movement on the roadway that needs to be addressed.
- \$500,000 cost to Water, + \$400,000 cost to Wastewater - Phase I in 2023
- \$700,000 cost to Water, + \$600,000 cost to Wastewater - Phase I in 2024
- \$400,000 cost to Water, + \$350,000 cost to Wastewater - Phase I in 2025



# Water, Wastewater & Engineering

## Watermain & Wastewater Sewer - 2<sup>nd</sup> Ave E 11<sup>th</sup> St E – 18<sup>th</sup> St E

- The infrastructure on 2<sup>nd</sup> Avenue East has exceeded its useful life and needs replacement.
- \$1,300,000 cost to Water, + \$1,300,000 cost to Wastewater - Phase I in 2028
- \$2,000,000 cost to Water, + \$2,000,000 cost to Wastewater - Phase I in 2029



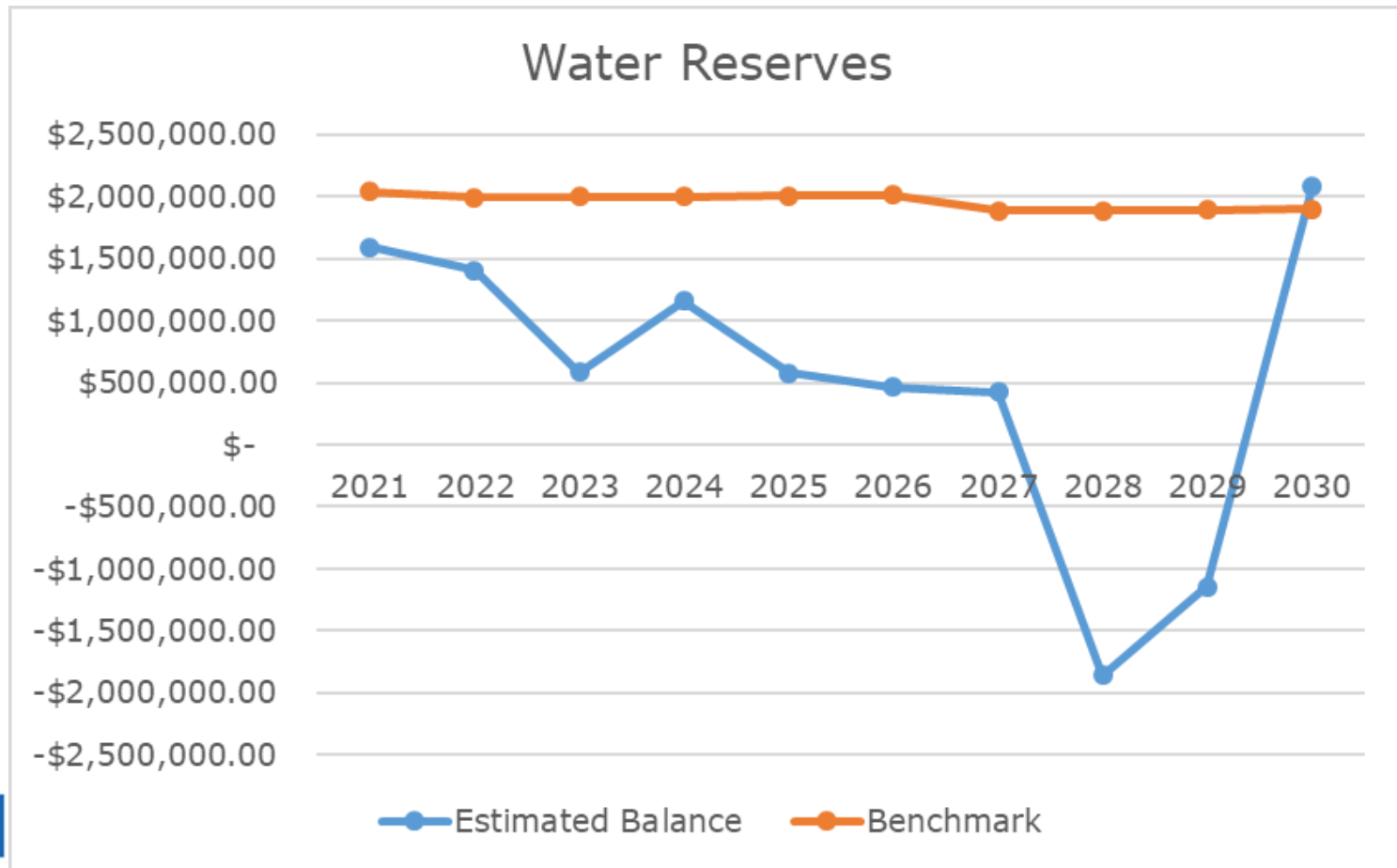


# Future Rate Annual Charges (Estimated)

	2020	2021	2022	2023	2024	NEW STUDY					
						2025	2026	2027	2028	2029	2030
water rate increase	0%	4%	4.5%	5%	5.5%	6%	5%	6%	5%	5%	6%
waste water surcharge	124%	124%	124%	124%	124%	115%	115%	110%	110%	110%	105%
Estimated annual bill 200m <sup>3</sup>	\$1,292.57	\$1,344.27	\$1,404.74	\$1,475.00	\$1,556.15	\$1,583.20	\$1,662.38	\$1,721.15	\$1,807.20	\$1,897.56	\$1,963.53
Monthly increase over prior year		\$ 4.31	\$ 5.04	\$ 5.86	\$ 6.76	\$ 2.25	\$ 6.60	\$ 4.90	\$ 7.17	\$ 7.53	\$ 5.50

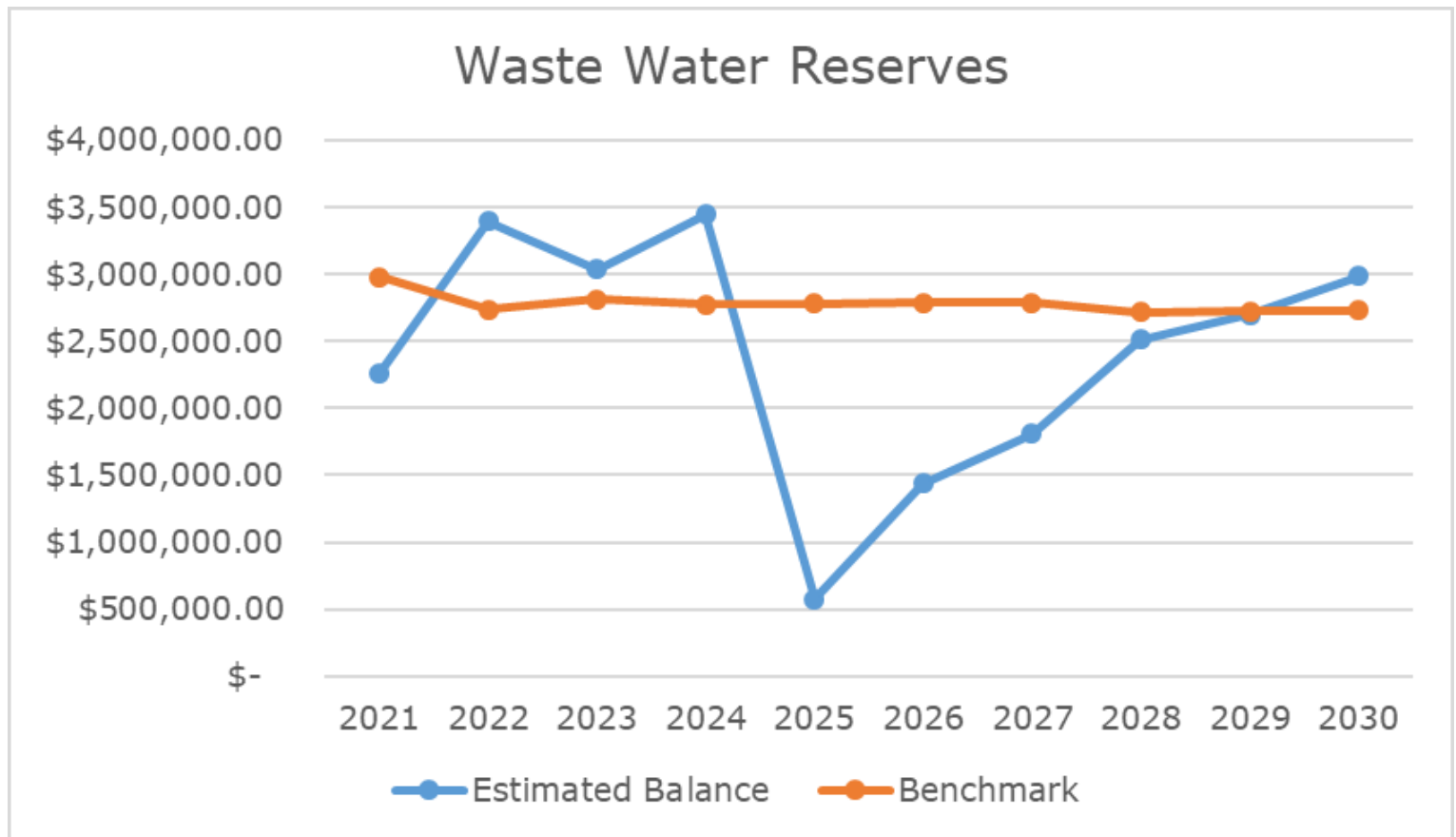
# Estimated Water Reserves

- Reserves dip below zero in 2027 due to major capital investments at Alpha Street and 2<sup>nd</sup> Ave E
- Short term debenture financing will smooth this balance if required

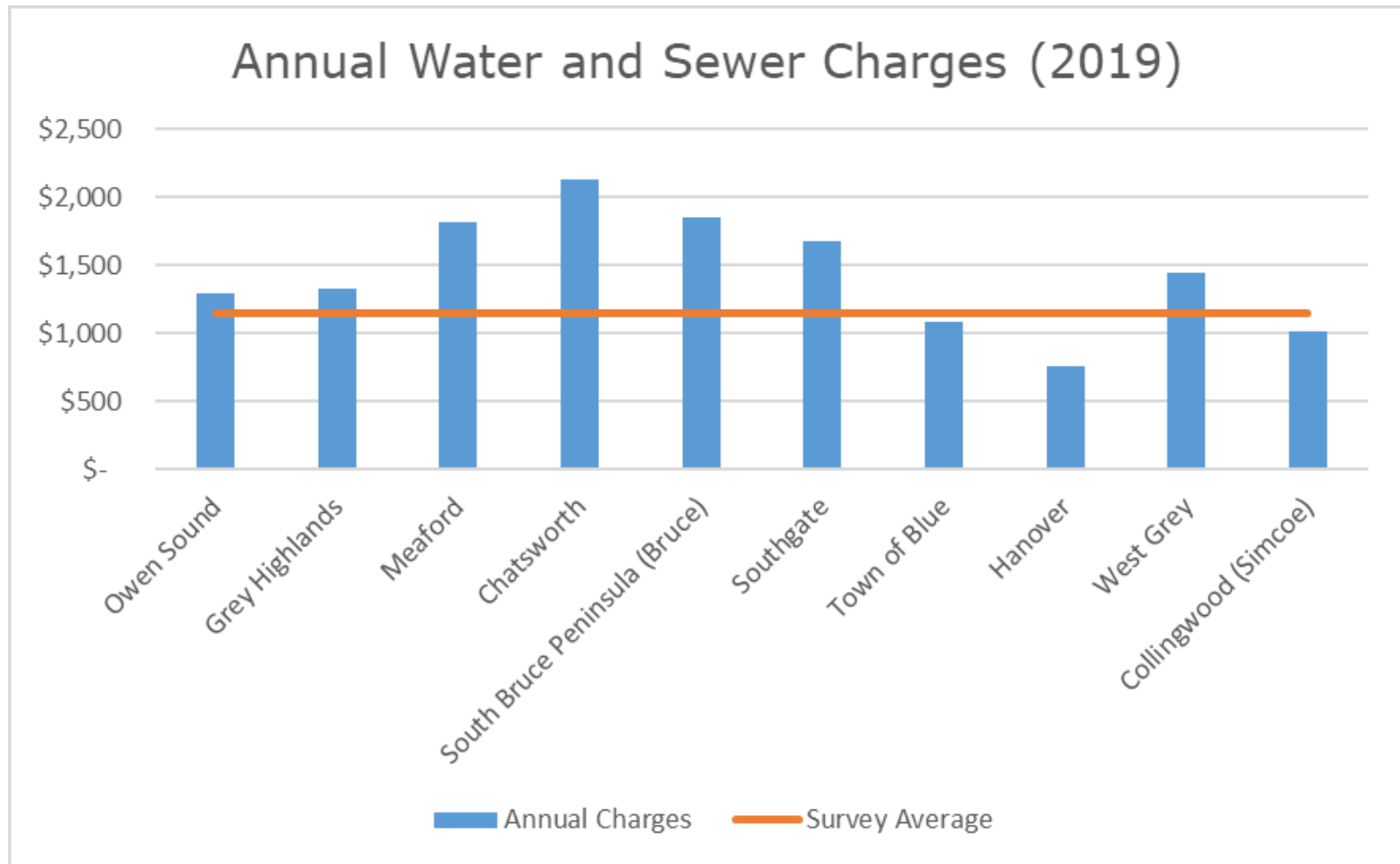


# Estimated Wastewater Reserves

- Reserves dip in 2025 due to capital investment plans at the West Side pumping station

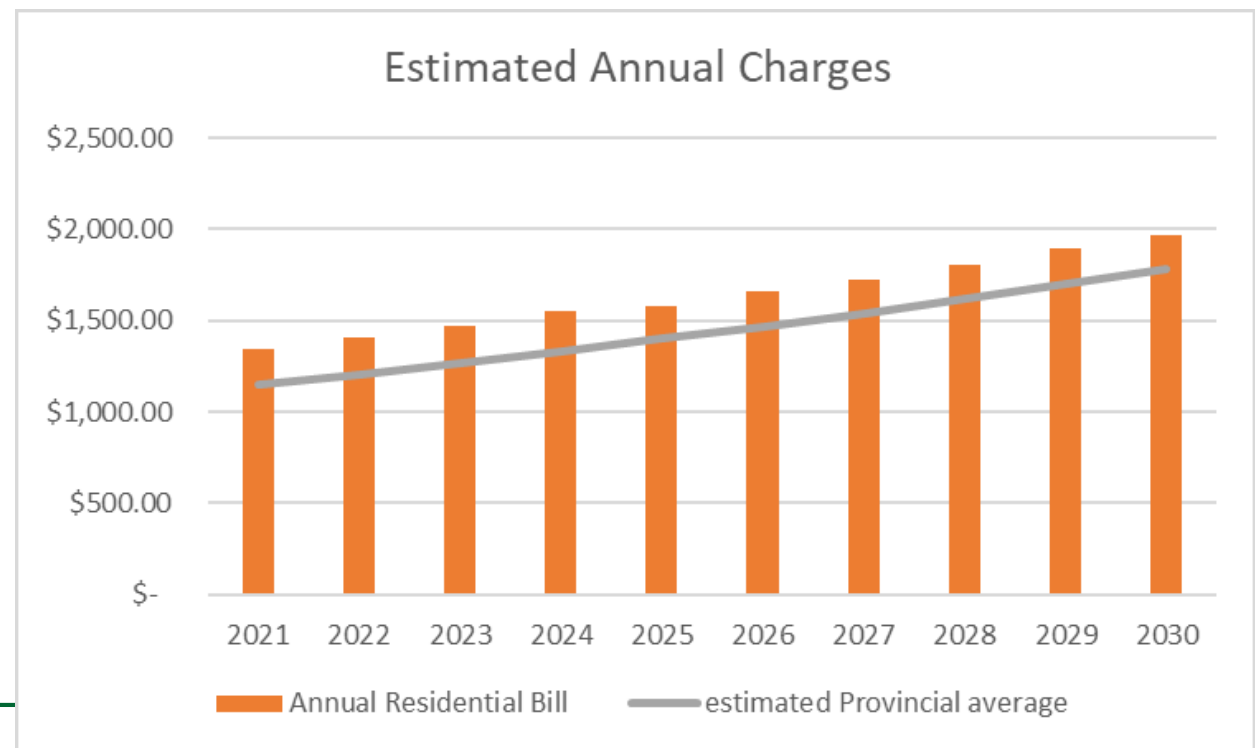


# 2019 Annual Water Bill Charges



# Estimated Future Residential Charges

- The age of infrastructure and capacity of the plants impacts the total charges in relation to survey average
- Larger, newer systems in urban areas inherently have lower user fees as the costs are divided over a greater customer base





# Key Highlights

- Presented model proposes stabilized increases to total annual charges over the forecast period
- Financial plan ensures financial sustainability of the water and wastewater systems
- 4% increase is the lower end of the threshold that will ensure sufficient reserve balances through the forecast

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Questions?

**Thank You**