Agenda
The Township of Cavan Monaghan
Special Council Meeting

Tuesday, January 26, 2021

1:00 p.m.

The Municipal Office is currently closed to the public and participation in the Council Chambers is not permitted.

The livestream link to our YouTube page can be found on our website.

		Pages
1.	Open Session	
2.	Call to Order	
3.	Approval of the Agenda	
4.	Disclosure of Pecuniary Interest and the General Nature Thereof	
5.	Closed Session	
6.	Water Wastewater Rate Study Presentation - Gary Scandlan and Daryl Abbs, Watson and Associates Economists Ltd.	2 - 73
7.	Confirming By-law	
7.1.	By-law No. 2021-04 being a by-law to confirm the proceedings of the Special Council meeting held January 26, 2021	74 - 74
8.	Adjournment	

Watson & Associates ECONOMISTS LTD.

Township of Cavan Monaghan

Water/Wastewater Rate Study
Council Education Session

January 26, 2021

Agenda

- Review of Study:
  - Legislative Background
  - Inputs
    - Customer and volume forecast
    - Capital budget
    - Operating budget
  - Methodology & Calculations
- Other Matters for Discussion

Note: The calculations presented in this presentation reflect Scenario 2 from the 2020 Rate Study (i.e. 0% increase for 2021 then 2.25% increases thereafter)

Study Purpose

- Identify all current and future water and wastewater system capital needs;
- Identify cost recovery options for capital;
- Estimate future operating costs over the next 10 years; and
- Recommend new rates to recover the cost of the water and wastewater systems.

Legislation for Water and Wastewater

Since Walkerton, new legislation has been passed by the Province to enhance the provision of services. These include the following:

- Safe Drinking Water Act;
- Sustainable Water and Sewage Systems Act;
- O.Reg. 453/07 - Safe Drinking Water Act;
- Clean Water Act; and
- Water Opportunities Act.

Further Requirements:

- Municipal Infrastructure Strategy
- Infrastructure for Jobs and Prosperity Act, 2015

Safe Drinking Water Act

- Passed December 2002
- Provides for 50 of the 93 Walkerton Part II Recommendations
- Act focuses on Administrative and Operational aspects of water service provision
- Implemented in stages and was in full force and effect in 2007

Safe Drinking Water Act

- Mandatory licensing & accreditation of testing labs
- New standards for treatment, distribution quality and testing
- Mandatory operator training and certification
- Mandatory licensing of municipal water providers
- Stronger enforcement and compliance provisions
- “Standard of care” requirements for municipalities

Water Opportunities Act, 2010

- The Act provides for the following elements:
  - Foster innovative water, wastewater and stormwater technologies, services and practices in the private and public sectors;
  - Prepare Water Conservation Plans to attain water conservation targets to be established by regulations; and
  - Prepare Sustainability Plans for Water, Wastewater and Stormwater Services.

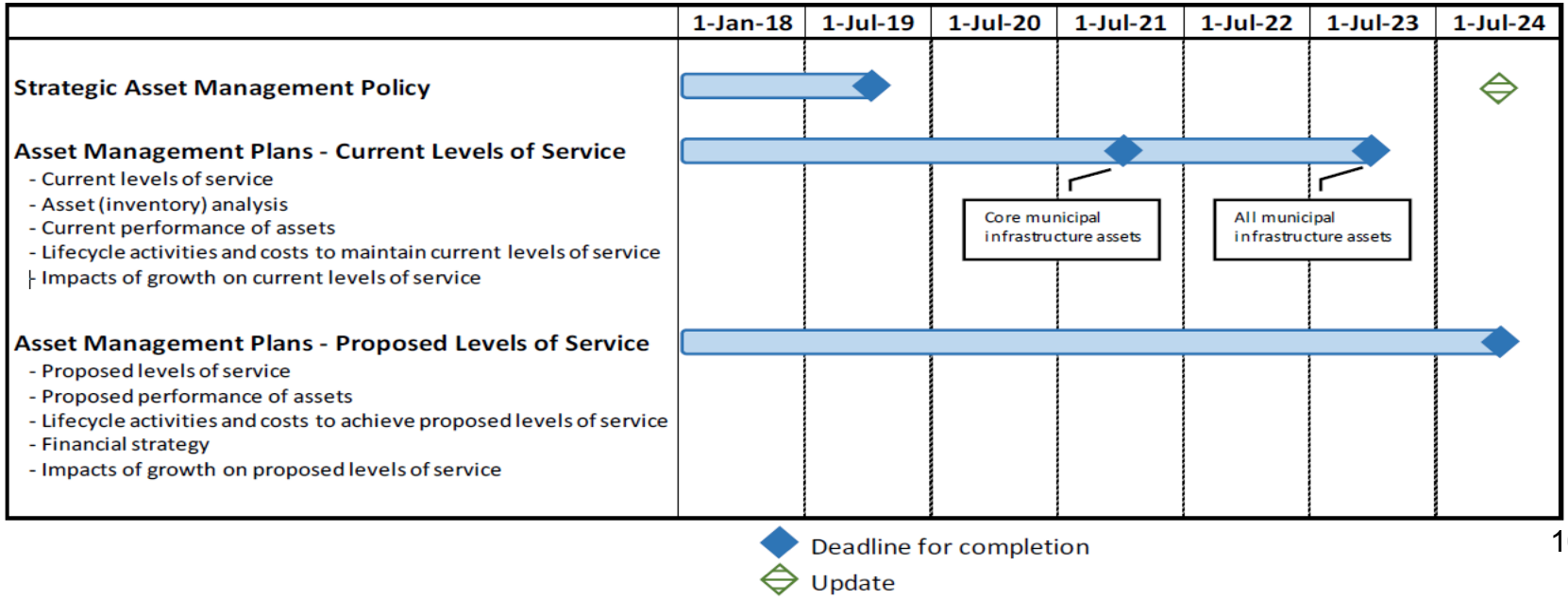
Water Opportunities Act, 2010

- The Financial Plan shall include:
  - An asset management plan for the physical infrastructure;
  - A financial plan;
  - For water, a conservation plan;
  - An assessment of risks that may interfere with the future delivery of the municipal service, including, if required by the regulations, the risks posed by climate change and a plan to deal with those risks; and
  - Strategies for maintaining and improving the municipal service to ensure future demand can be satisfied, consider technologies to improve the service and potential increased co-operation with other municipal service providers.

❖ The rate study would provide inputs required to complete the Financial Plan required for licensing approval

Infrastructure for Jobs and Prosperity Act (IJPA), 2015

- On December 27, 2017, the Province of Ontario released Ontario Regulation 588/17 under IJPA and has 3 phases that municipalities must meet:
  - Every municipality in Ontario will have to prepare a strategic asset management policy by July 1, 2019. Municipalities will be required to review their strategic asset management policies at least every five years, and make updates as necessary;



2020 Volume Rates and Bi-monthly Base Charges

Township of Cavan Monaghan	
2020 - Water Billing Rates	
Millbrook Bi-Monthly Base Charge	
15mm/18mm	65.35
25mm	119.34
40mm	271.48
50mm	632.45
75mm	1,306.04
100mm	2,316.13
Volume Charge	
$ 1.820	per m^3
Bulk Water Rate	
$ 4.260	per m^3

Township of Cavan Monaghan	
2020 - Wastewater Billing Rates	
Millbrook Bi-Monthly Base Charge	
15mm/18mm	120.94
25mm	224.66
40mm	558.63
50mm	1,324.67
75mm	2,747.49
100mm	4,882.50
Volume Charge	
$ 2.490	per m^3

Note:

- 85% of Municipalities in Ontario provide base charges
- Over 60% provide the constant rate structure

Calculation Methodology

High-Level Overview

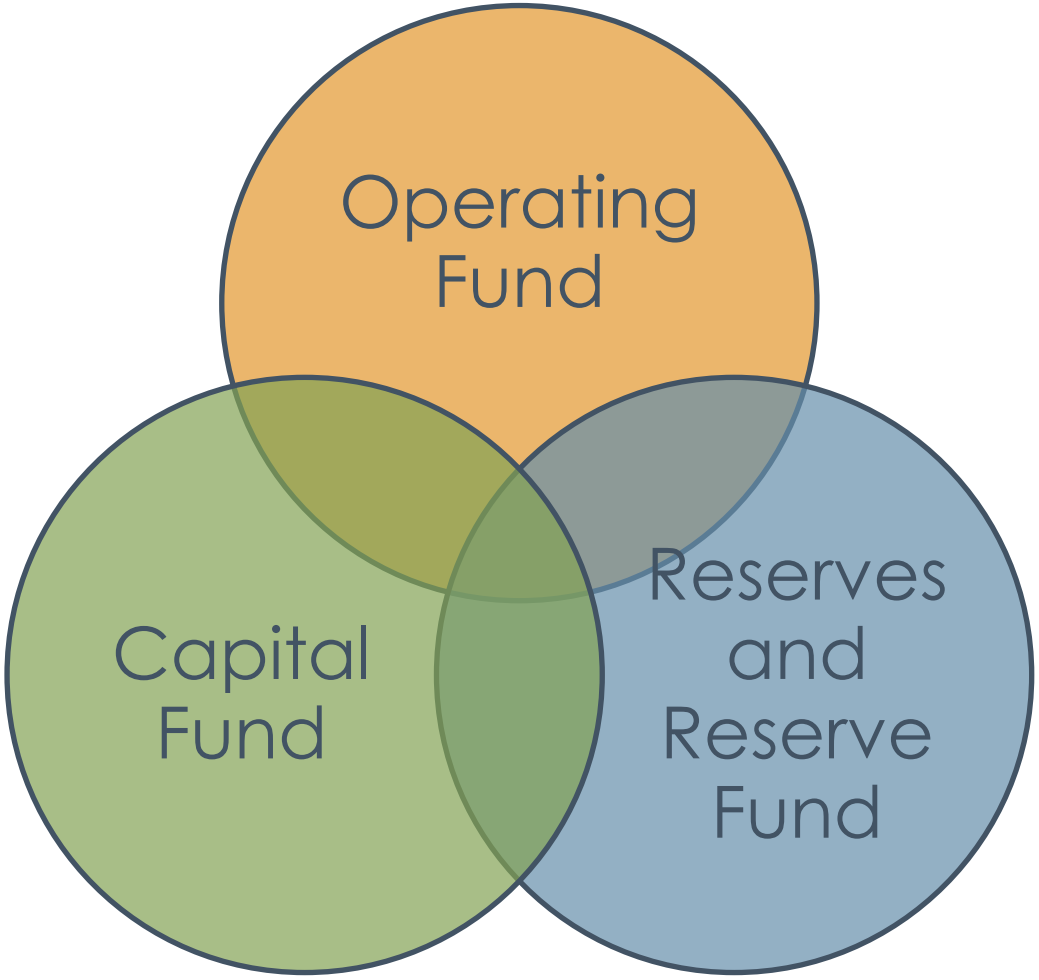
Annual Costs

Operations:
- Staff costs
- Distribution costs
- Maintenance
- Meter Reading & Billing, etc.

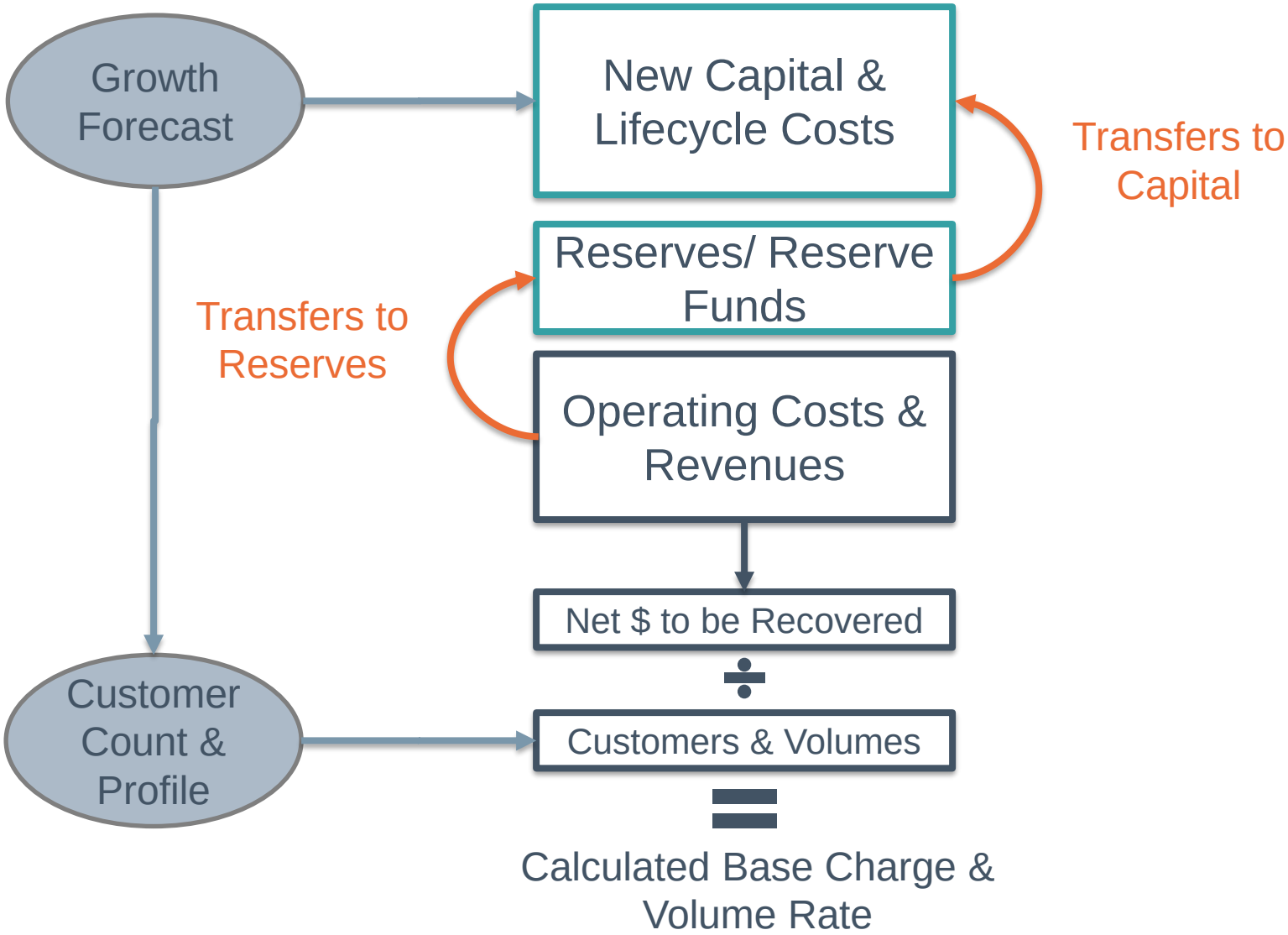
Capital-related:
- Past debt
- Contributions to reserves
- Contribution to capital

$$\frac{\textbf{Total Costs}}{\textbf{Volumes and Customers}}$$

Relationship Between Capital, Operating, Reserves



Simplified Calculation Methodology



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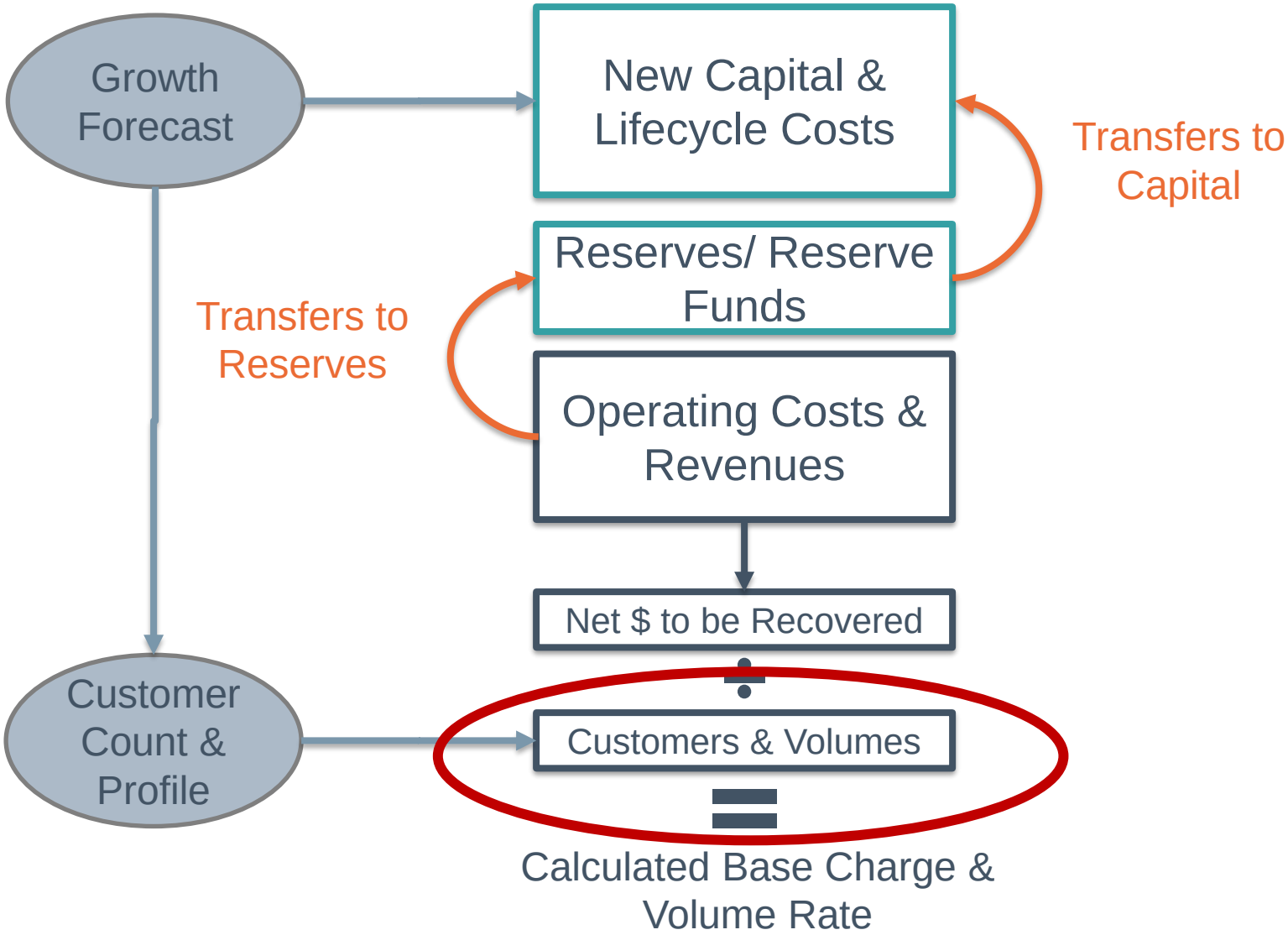


Existing Customer Profile (2020)

Metered	Water	Wastewater
15mm/18mm	818	807
25mm	3	2
40mm	1	1
50mm	3	3
75mm	0	0
100mm	1	1
Total	**826**	**814**

Historical Volumes

Year	Total Billable Volumes (cu.m)	Total Customers*	Total Billable Volumes per Customer (cu.m)
2017	90,015	602	149.53
2018	93,985	653	143.93
2019	105,160	787	133.62

- 2015 rate study assumed 170 cu.m/customer for new users
- 2018 rate study update assumed 150 cu.m/customer
- Average volumes per customer over last three years is 142 cu.m
- The volume per user is trending downwards
- The analysis herein assumes each new customer will generate 140 cu.m in annual volume
- Note: 2020 would not be a representative year due to the increase in residential volumes from residents working from home

Water Forecast Users and Billable Volumes

Assumed an average of 140 cu.m per customer for future flows.

Water Users Forecast

Year	Total Users	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
2020	50	25	50	50	50	50	50	50	50	50	50
2021	60		30	60	60	60	60	60	60	60	60
2022	20			10	20	20	20	20	20	20	20
2023	40				20	40	40	40	40	40	40
2024	40					20	40	40	40	40	40
2025	45						23	45	45	45	45
2026	40							20	40	40	40
2027	55								28	55	55
2028	55									28	55
2029	45										23
Total	**450**	**25**	**80**	**120**	**150**	**190**	**233**	**275**	**323**	**378**	**428**
m^3/user	140	140	140	140	140	140	140	140	140	140	140
Annual Flow		**3,500**	**11,200**	**16,800**	**21,000**	**26,600**	**32,620**	**38,500**	**45,220**	**52,920**	**59,920**

Water Customer Forecast	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Existing	826	826	826	826	826	826	826	826	826	826
New - Growth	25	80	120	150	190	233	275	323	378	428
Total	**851**	**906**	**946**	**976**	**1,016**	**1,059**	**1,101**	**1,149**	**1,204**	**1,254**

Water Volume Forecast (m^3)	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Millbrook										
Existing	110,620	110,620	110,620	110,620	110,620	110,620	110,620	110,620	110,620	110,620
Bulk Water	10,500	10,500	10,500	10,500	10,500	10,500	10,500	10,500	10,500	10,500
New - CMCC	2,438	3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250
New - Growth	3,500	11,200	16,800	21,000	26,600	32,620	38,500	45,220	52,920	59,920
Total	**127,058**	**135,570**	**141,170**	**145,370**	**150,970**	**156,990**	**162,870**	**169,590**	**177,290**	**184,290**

Wastewater Forecast Users and Billable Volumes

Assumed an average of 140 cu.m per customer for future flows.

- All new users are anticipated to be serviced with water and wastewater
- The existing number of wastewater users is 814 vs. 826 for water (difference of 12)

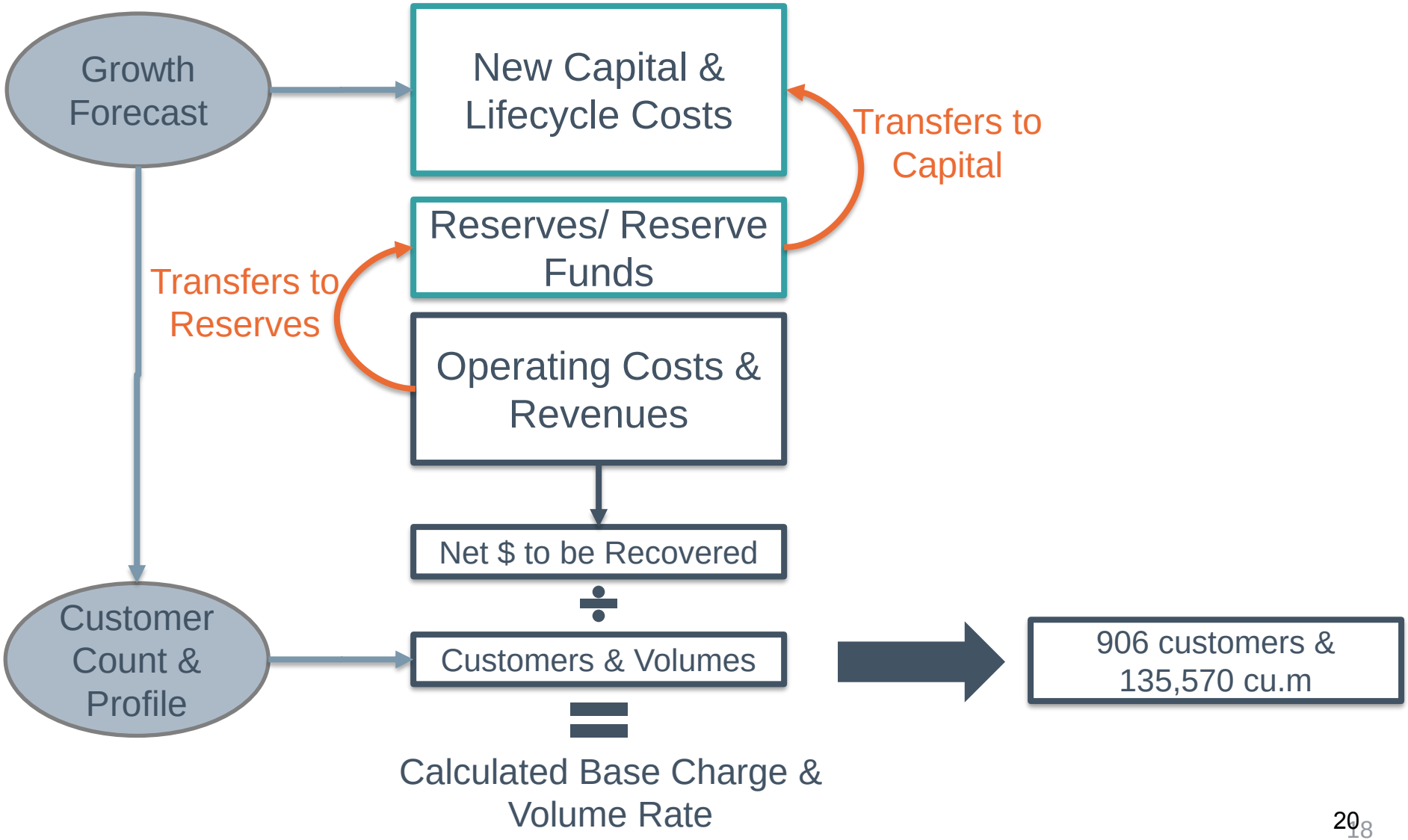
Wastewater Customer Forecast	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Existing	814	814	814	814	814	814	814	814	814	814
New - Growth	25	80	120	150	190	233	275	323	378	428
Total	**839**	**894**	**934**	**964**	**1,004**	**1,047**	**1,089**	**1,137**	**1,192**	**1,242**

Wastewater Flows Forecast (m^3)	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Millbrook										
Existing	108,940	108,940	108,940	108,940	108,940	108,940	108,940	108,940	108,940	108,940
New - CMCC	2,438	3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250
New - Growth	3,500	11,200	16,800	21,000	26,600	32,620	38,500	45,220	52,920	59,920
Total	**114,878**	**123,390**	**128,990**	**133,190**	**138,790**	**144,810**	**150,690**	**157,410**	**165,110**	**172,110**

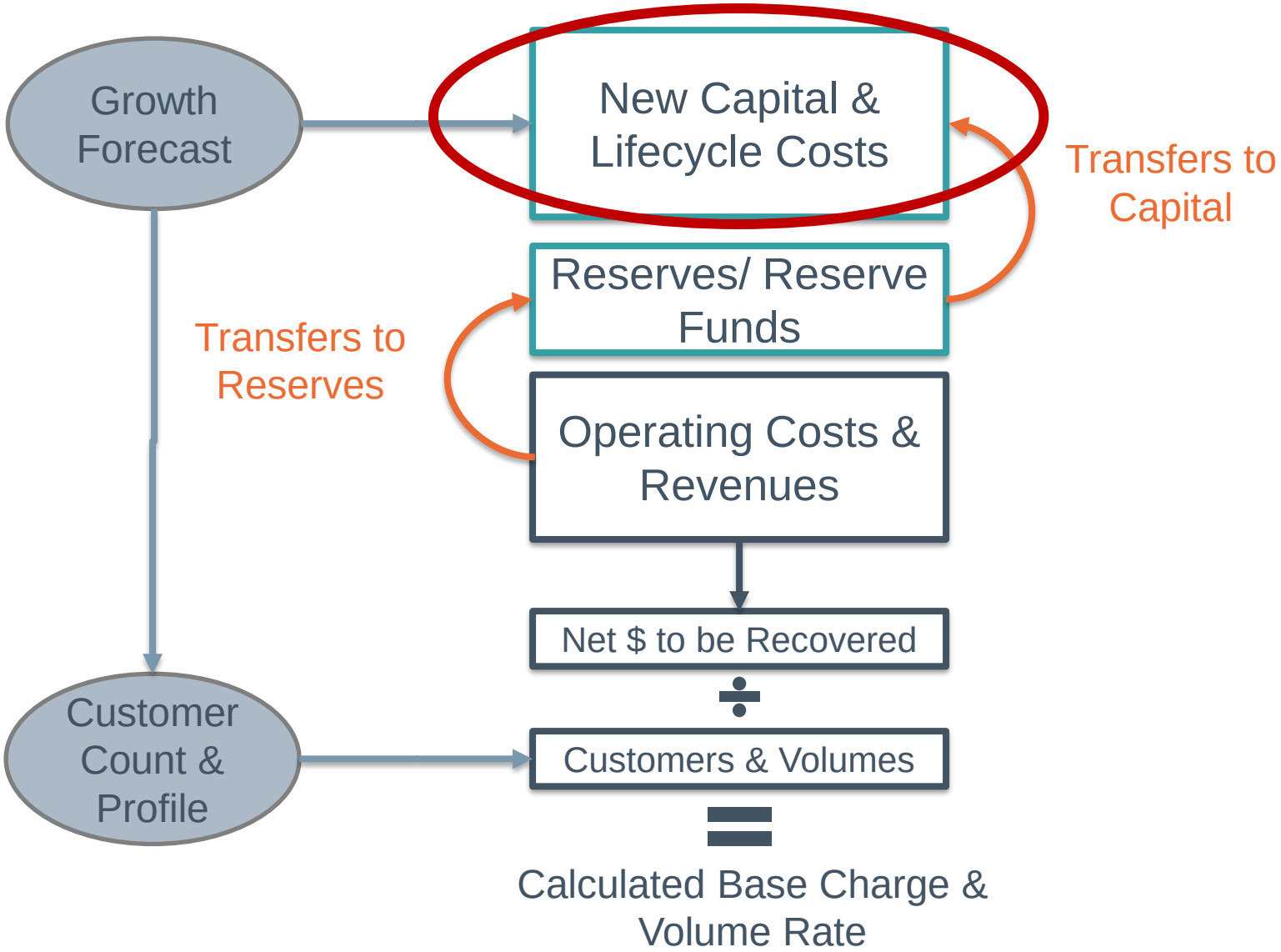
Note: Above flows are water flows on which the wastewater billing will be calculated

Simplified Calculation Methodology

Calculation Summary (2021 Water Rates)



Simplified Calculation Methodology



Lifecycle Infrastructure Costs

- The age of the water system dates back to the mid 1970's;
- The age of the wastewater system dates back to the mid 1970's;
- Total value of existing water infrastructure is $15.53 million;
- Total value of existing wastewater infrastructure is $35.73 million;
  - Recently upgraded wastewater treatment plant in 2016
- This provides for a "per customer" investment by the Township of $16,970 for water and $39,570 for wastewater.

Summary of Water and Wastewater Asset Inventory

Area	Total Replacement Value	Amount included in 10-year forecast	Net Replacement for Future Lifecycle	Annual Lifecycle Replacement
Water				
Water Facilities	2,455,170			156,654
Watermains	10,012,414			284,723
Hydrants	315,562	3,350,000	12,177,357	5,755
Water Meters	185,653			485
Other Inventory	2,558,558			92,735
Total Water	**15,527,357**	**3,350,000**	**12,177,357**	**540,353**
Wastewater				
Wastewater Facilities	20,984,735			559,747
Sewage Pumping Stations	629,943	899,000	34,832,447	7,842
Sewer Mains	13,059,725			437,321
Sewer Other	1,057,044			38,509
Total Wastewater	**35,731,447**	**899,000**	**34,832,447**	**1,043,418**
Total Water & Wastewater	**51,258,804**	**4,249,000**	**47,009,804**	**1,583,771**

Investment per customer is $18,798 for water and $43,896 for wastewater

Future Lifecycle Replacement Costs

Useful Life of Watermains and Link to Capital Program

- Many of the watermains have an identified useful life of 50 years based on material type.
- Newer constructed and replacement watermains that have been installed have an identified useful life of 80 to 100 years.
- Staff have considered an option to reline the mains instead of replacement however, the cost is relatively similar.
- Note however, the watermain under King St. is the only candidate for relining as it would avoid replacing the County Road.

Capital Infrastructure

- Capital needs were developed by Township staff based on Council approved documents such as the Asset Management Plan, Master Plans, and the Development Charges Background Study.
- Works were identified based on the 2020 budget, the 2021 to 2029 capital forecast, and review of capital infrastructure replacement.
- Capital works were identified by
  - Need;
  - Timing; and
  - Costs.

Water Capital System Needs 2021 to 2029

(Uninflated $)

Description	Budget 2020	Total	Forecast								
			2021	2022	2023	2024	2025	2026	2027	2028	2029
Capital Expenditures											
Water Distribution System (4830)		-									
Water Main Replacement Main Street	200,000	-									
Watermain Replacement (various locations)		3,000,000	300,000	300,000	300,000	300,000	300,000	350,000	350,000	400,000	400,000
Replacement of Well and Pump		150,000		150,000							
Studies:		-									
Water Rate Study & Financial Plan	30,000	-									
Growth Related:		-									
Water Master Servicing Study	50,000	20,000	20,000								
Duke Street from King Street Southwards		153,000		153,000							
King Street from Queen Street to IO Property		51,000					51,000				
Water Servicing Studies - Future Development Areas		102,000									102,000
Future Watermain Booster Pumping Station		663,000			663,000						
Future Trunk Watermain Costs (Oversizing)	76,500	-									
Total Capital Expenditures	**356,500**	**4,139,000**	**320,000**	**603,000**	**963,000**	**300,000**	**351,000**	**350,000**	**350,000**	**400,000**	**502,000**

- 2020 Watermain replacement was budgeted at $200,000, however, updated estimated costs are $275,000
- Staff have created a 20-year plan for watermain replacements. This plan averages $300,000 per year
- Growth-related projects are 100% funded by growth (e.g. D.C.s or developer contributions)
- RVA preparing a Master Servicing Plan (to be completed summer 2021). This plan may result in refinements to costing and timing of capital needs

Water Capital System Needs 2021 to 2029

(Inflated $)

Description	Budget 2020	Total	Forecast								
			2021	2022	2023	2024	2025	2026	2027	2028	2029
Capital Expenditures											
Water Distribution System (4830)											
Water Main Replacement Main Street	200,000	-	-	-	-	-	-	-	-	-	-
Watermain Replacement (various locations)	-	3,335,000	306,000	312,000	318,000	325,000	331,000	394,000	402,000	469,000	478,000
Replacement of Well and Pump	-	156,000	-	156,000	-	-	-	-	-	-	-
Studies:	-	-	-	-	-	-	-	-	-	-	-
Water Rate Study & Financial Plan	30,000	-	-	-	-	-	-	-	-	-	-
Growth Related:											
Water Master Servicing Study	50,000	20,000	20,000	-	-	-	-	-	-	-	-
Duke Street from King Street Southwards	-	159,000	-	159,000	-	-	-	-	-	-	-
King Street from Queen Street to IO Property	-	56,000	-	-	-	-	56,000	-	-	-	-
Water Servicing Studies - Future Development Areas	-	122,000	-	-	-	-	-	-	-	-	122,000
Future Watermain Booster Pumping Station	-	704,000	-	-	704,000	-	-	-	-	-	-
Future Trunk Watermain Costs (Oversizing)	76,500	-	-	-	-	-	-	-	-	-	-
Total Capital Expenditures	**356,500**	**4,552,000**	**326,000**	**627,000**	**1,022,000**	**325,000**	**387,000**	**394,000**	**402,000**	**469,000**	**600,000**

Note: growth-related projects are 100% growth-related

Wastewater Capital System Needs 2021 to 2029

(Uninflated $)

Description	Budget 2020	Total	Forecast								
			2021	2022	2023	2024	2025	2026	2027	2028	2029
Capital Expenditures											
Wastewater Collection System(4811)		-									
Sewer Relining	349,000	250,000	250,000	-	-	-	-	-	-	-	-
Various Wastewater Facility Upgrades		300,000		100,000	-	100,000	-	100,000	-	-	-
		-									
Growth Related:		-									
Wastewater Master Servicing Study	90,000	274,000	70,000								204,000
Cambium Studies		80,000	40,000	40,000							
Infiltration Solutions		100,000	50,000	50,000							
Pump Station and Forcemain between property north of Municipal Office and Larmer Line		500,000			500,000						
Duke Street from King Street Southwards		255,000		255,000							
King Street from Queen Street to IO Property		102,000					102,000				
Nina Court Extension Sanitary Sewer Oversizing	112,200	-									
Wastewater Servicing Studies - Future Development Areas	75,000	-									
Future Sanitary Pumping Station - Sewage		1,122,000			1,122,000						
Future Trunk Sanitary Sewer (oversizing)		122,400	122,400								
Total Capital Expenditures	**626,200**	**3,105,400**	**532,400**	**445,000**	**1,622,000**	**100,000**	**102,000**	**100,000**	**-**	**-**	**204,000**

- Growth-related projects are 100% funded by growth (e.g. D.C.s or developer contributions)
- RVA preparing a Master Servicing Plan (to be completed summer 2021). This plan may result in refinements to costing and timing of capital needs

Wastewater Capital System Needs 2021 to 2029

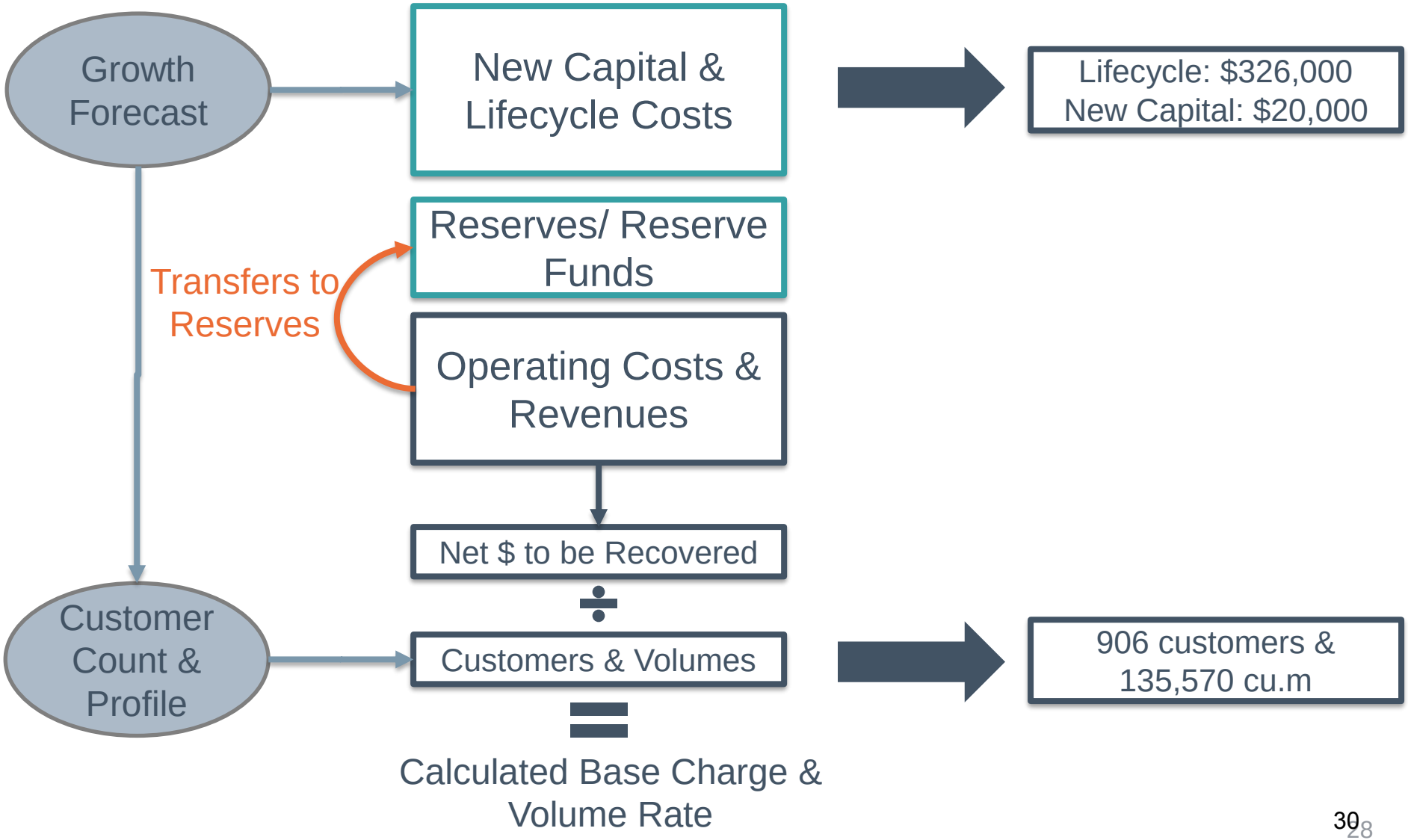
(Inflated $)

Description	Budget 2020	Total	Forecast								
			2021	2022	2023	2024	2025	2026	2027	2028	2029
Capital Expenditures											
	-	-	-	-	-	-	-	-	-	-	-
Wastewater Collection System(4811)	-	-	-	-	-	-	-	-	-	-	-
Sewer Relining	349,000	255,000	255,000	-	-	-	-	-	-	-	-
Various Wastewater Facility Upgrades	-	325,000	-	104,000	-	108,000	-	113,000	-	-	-
0	-	-	-	-	-	-	-	-	-	-	-
Growth Related:		-	-	-	-	-	-	-	-	-	-
Wastewater Master Servicing Study	90,000	315,000	71,000	-	-	-	-	-	-	-	244,000
Cambium Studies	-	83,000	41,000	42,000	-	-	-	-	-	-	-
Infiltration Solutions	-	103,000	51,000	52,000	-	-	-	-	-	-	-
Pump Station and Forcemain between property north of Municipal Office and Larmer Line	-	531,000	-	-	531,000	-	-	-	-	-	-
Duke Street from King Street Southwards	-	265,000	-	265,000	-	-	-	-	-	-	-
King Street from Queen Street to IO Property	-	113,000	-	-	-	-	113,000	-	-	-	-
Nina Court Extension Sanitary Sewer Oversizing	112,200	-	-	-	-	-	-	-	-	-	-
Wastewater Servicing Studies - Future Development Areas	75,000	-	-	-	-	-	-	-	-	-	-
Future Sanitary Pumping Station - Sewage	-	1,191,000	-	-	1,191,000	-	-	-	-	-	-
Future Trunk Sanitary Sewer (oversizing)	-	125,000	125,000	-	-	-	-	-	-	-	-
Total Capital Expenditures	**626,200**	**3,306,000**	**543,000**	**463,000**	**1,722,000**	**108,000**	**113,000**	**113,000**	**-**	**-**	**244,000**

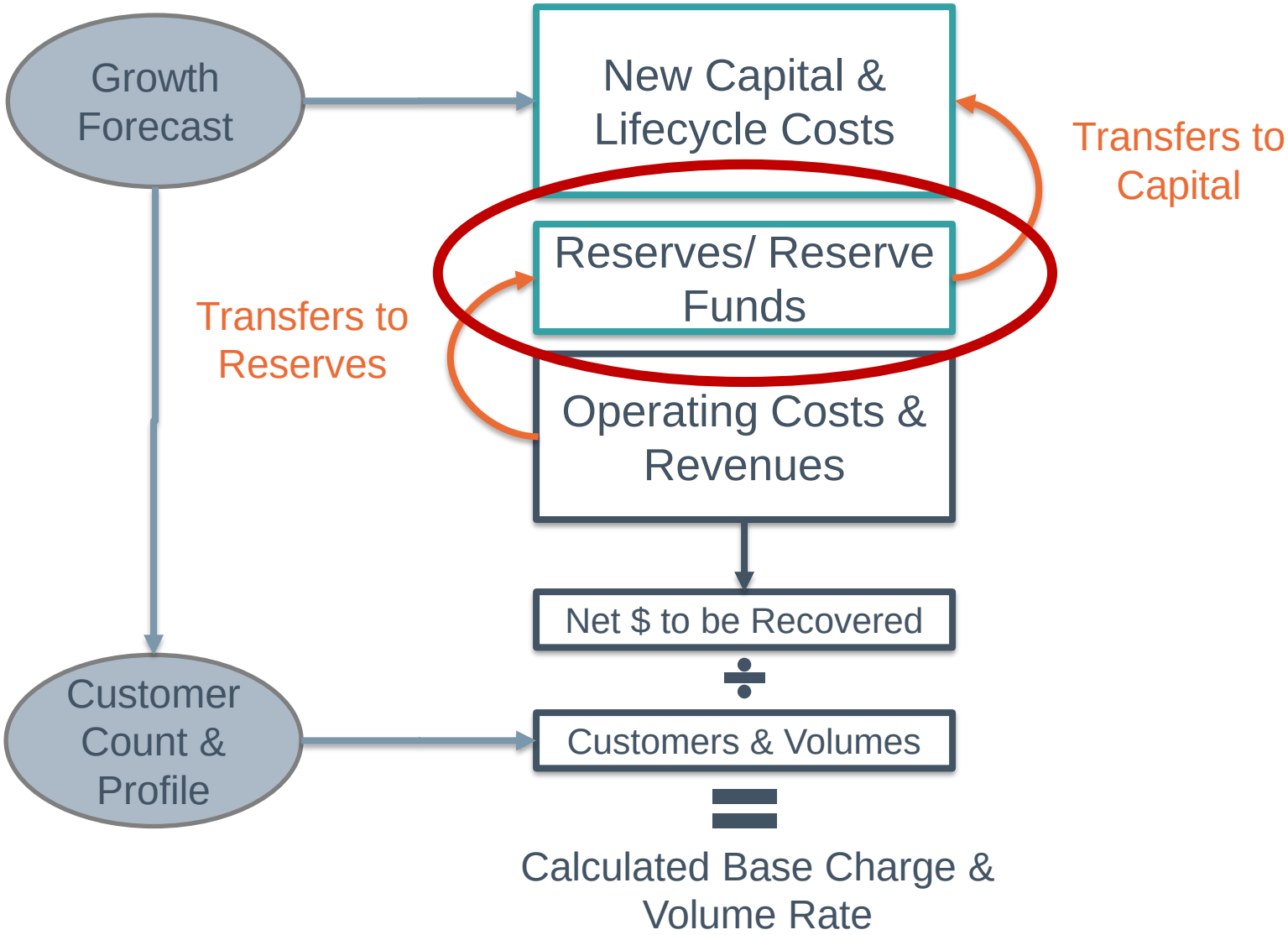
Note: growth-related projects are 100% growth-related

Simplified Calculation Methodology

Calculation Summary (2021 Water Rates)



Simplified Calculation Methodology



Capital Financing Options

For the capital needs from 2021 to 2029

- ✓ Reserves
- ✓ Development Charges
- ✓ Operating Budget Transfers (Funding Reserves)
- Debt
- Grants
- Municipal Act (Part 12)

Proposed Capital Financing Programs 2021 to 2029 - Water

Inflated $

Description	Budget 2020	Total	Forecast								
			2021	2022	2023	2024	2025	2026	2027	2028	2029
Capital Expenditures											
Water Distribution System (4830)											
Water Main Replacement Main Street	200,000	-	-	-	-	-	-	-	-	-	-
Watermain Replacement (various locations)	-	3,335,000	306,000	312,000	318,000	325,000	331,000	394,000	402,000	469,000	478,000
Replacement of Well and Pump	-	156,000	-	156,000	-	-	-	-	-	-	-
Studies:	-	-	-	-	-	-	-	-	-	-	-
Water Rate Study & Financial Plan	30,000	-	-	-	-	-	-	-	-	-	-
Growth Related:											
Water Master Servicing Study	50,000	20,000	20,000	-	-	-	-	-	-	-	-
Duke Street from King Street Southwards	-	159,000	-	159,000	-	-	-	-	-	-	-
King Street from Queen Street to IO Property	-	56,000	-	-	-	-	56,000	-	-	-	-
Water Servicing Studies - Future Development Areas	-	122,000	-	-	-	-	-	-	-	-	122,000
Future Watermain Booster Pumping Station	-	704,000	-	-	704,000	-	-	-	-	-	-
Future Trunk Watermain Costs (Oversizing)	76,500	-	-	-	-	-	-	-	-	-	-
Total Capital Expenditures	**356,500**	**4,552,000**	**326,000**	**627,000**	**1,022,000**	**325,000**	**387,000**	**394,000**	**402,000**	**469,000**	**600,000**
Capital Financing											
Provincial/Federal Grants		-									
Development Charges Reserve Fund	126,500	1,061,000	20,000	159,000	704,000	-	56,000	-	-	-	122,000
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-
Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-
Lifecycle Reserve Fund	-	-	-	-	-	-	-	-	-	-	-
Water Reserve	230,000	3,491,000	306,000	468,000	318,000	325,000	331,000	394,000	402,000	469,000	478,000
Total Capital Financing	**356,500**	**4,552,000**	**326,000**	**627,000**	**1,022,000**	**325,000**	**387,000**	**394,000**	**402,000**	**469,000**	**600,000**

Proposed Capital Financing Programs 2021 to 2029 - Wastewater

Inflated $

Description	Budget 2020	Total	Forecast								
			2021	2022	2023	2024	2025	2026	2027	2028	2029
Capital Expenditures											
	-	-	-	-	-	-	-	-	-	-	-
Wastewater Collection System(4811)	-	-	-	-	-	-	-	-	-	-	-
Sewer Relining	349,000	255,000	255,000	-	-	-	-	-	-	-	-
Various Wastewater Facility Upgrades	-	325,000	-	104,000	-	108,000	-	113,000	-	-	-
0	-	-	-	-	-	-	-	-	-	-	-
Growth Related:		-	-	-	-	-	-	-	-	-	-
Wastewater Master Servicing Study	90,000	315,000	71,000	-	-	-	-	-	-	-	244,000
Cambium Studies	-	83,000	41,000	42,000	-	-	-	-	-	-	-
Infiltration Solutions	-	103,000	51,000	52,000	-	-	-	-	-	-	-
Pump Station and Forcemain between property north of Municipal Office and Larmer Line	-	531,000	-	-	531,000	-	-	-	-	-	-
Duke Street from King Street Southwards	-	265,000	-	265,000	-	-	-	-	-	-	-
King Street from Queen Street to IO Property	-	113,000	-	-	-	-	113,000	-	-	-	-
Nina Court Extension Sanitary Sewer Oversizing	112,200	-	-	-	-	-	-	-	-	-	-
Wastewater Servicing Studies - Future Development Areas	75,000	-	-	-	-	-	-	-	-	-	-
Future Sanitary Pumping Station - Sewage	-	1,191,000	-	-	1,191,000	-	-	-	-	-	-
Future Trunk Sanitary Sewer (oversizing)	-	125,000	125,000	-	-	-	-	-	-	-	-
Total Capital Expenditures	**626,200**	**3,306,000**	**543,000**	**463,000**	**1,722,000**	**108,000**	**113,000**	**113,000**	**-**	**-**	**244,000**
Capital Financing											
Provincial/Federal Grants	117,424	-									
Development Charges Reserve Fund	277,200	2,726,000	288,000	359,000	1,722,000	-	113,000	-	-	-	244,000
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-
Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-
Lifecycle Reserve Fund	-	-	-	-	-	-	-	-	-	-	-
Wastewater Reserve	231,576	580,000	255,000	104,000	-	108,000	-	113,000	-	-	-

Reserve Balances – Estimated December 31, 2020

Reserve / Reserve Fund	Dec. 31 2020
Water	
Capital Reserve	1,391,060
Development Charges Reserve Fund	(358,817)
Wastewater	
Capital Reserve	906,024
Development Charges Reserve Fund	475,372

Reserve/Reserve Fund Balances

Water

Water Reserves/ Reserve Funds Continuity

Inflated $

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Opening Balance	1,244,267	1,391,060	1,480,213	1,433,218	1,573,287	1,748,437	1,965,074	2,164,702	2,413,956	2,657,762
Transfer from Operating	343,925	360,178	387,142	420,894	458,838	501,205	542,480	594,217	650,007	701,634
Transfer to Capital	230,000	306,000	468,000	318,000	325,000	331,000	394,000	402,000	469,000	478,000
Transfer to Operating		-	-	-	-	-	-	-	-	-
Closing Balance	**1,358,192**	**1,445,238**	**1,399,354**	**1,536,113**	**1,707,125**	**1,918,642**	**2,113,554**	**2,356,919**	**2,594,963**	**2,881,395**
Interest	32,868	34,975	33,864	37,174	41,312	46,431	51,148	57,037	62,798	69,730

Water Development Charges Reserve Fund Continuity

Inflated $

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Opening Balance	(307,403)	(358,817)	(401,252)	(588,349)	(1,291,887)	(1,299,715)	(1,357,365)	(1,368,145)	(1,349,631)	(1,326,644)
Development Charge Proceeds	167,466	73,583	75,061	123,051	117,843	128,372	122,583	154,622	161,838	138,918
Transfer to Capital	126,500	20,000	159,000	704,000	-	56,000	-	-	-	122,000
Transfer to Operating (for Debt Charges)	83,901	86,537	89,257	92,064	94,961	97,950	101,035	104,219	107,504	110,895
Closing Balance	**(350,339)**	**(391,771)**	**(574,447)**	**(1,261,362)**	**(1,269,005)**	**(1,325,293)**	**(1,335,818)**	**(1,317,742)**	**(1,295,297)**	**(1,420,621)**
Interest	(8,478)	(9,481)	(13,902)	(30,525)	(30,710)	(32,072)	(32,327)	(31,889)	(31,346)	(34,379)
Required from Development Charges	126,500	20,000	159,000	704,000	-	56,000	-	-	-	122,000

Reserve/Reserve Fund Balances

Wastewater

Wastewater Reserves/ Reserve Funds Continuity

Inflated $

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Opening Balance	772,712	906,024	1,053,072	1,401,071	1,920,567	2,404,851	3,082,093	3,728,021	4,592,074	5,570,036
Transfer from Operating	343,480	377,166	418,894	474,116	535,462	604,417	670,841	755,551	846,352	929,673
Transfer to Capital	231,576	255,000	104,000	-	108,000	-	113,000			
Transfer to Operating	-	-	-	-	-	-	-	-	-	-
Closing Balance	**884,616**	**1,028,190**	**1,367,966**	**1,875,187**	**2,348,029**	**3,009,269**	**3,639,934**	**4,483,572**	**5,438,426**	**6,499,709**
Interest	21,408	24,882	33,105	45,380	56,822	72,824	88,086	108,502	131,610	157,293

Wastewater Development Charges Reserve Fund Continuity

Inflated $

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Opening Balance	678,642	475,372	19,503	(526,886)	(2,377,399)	(2,532,495)	(2,792,934)	(2,969,585)	(3,085,176)	(3,198,586)
Development Charge Proceeds	376,430	154,802	157,893	270,505	257,917	282,389	268,352	343,497	360,074	305,653
Transfer to Capital	277,200	288,000	359,000	1,722,000	-	113,000	-	-	-	244,000
Transfer to Operating (for Debt Charges)	313,732	323,132	332,833	342,844	353,175	363,836	374,837	386,191	397,907	409,997
Closing Balance	**464,140**	**19,042**	**(514,437)**	**(2,321,225)**	**(2,472,657)**	**(2,726,942)**	**(2,899,419)**	**(3,012,279)**	**(3,123,009)**	**(3,546,931)**
Interest	11,232	461	(12,449)	(56,174)	(59,838)	(65,992)	(70,166)	(72,897)	(75,577)	(85,836)
Required from Development Charges	277,200	288,000	359,000	1,722,000	-	113,000	-	-	-	244,000

Reserve Fund Balances

Capital Reserves and D.C. Reserve Funds Combined

Year	2021	2022	2023	2024	2025	2026	2027	2028	2029
Water	1,053,467	824,907	274,751	438,120	593,349	777,736	1,039,177	1,299,666	1,460,775
Wastewater	1,047,232	853,530	(446,038)	(124,628)	282,326	740,515	1,471,292	2,315,417	2,952,779
Total Position	**2,100,699**	**1,678,436**	**(171,287)**	**313,492**	**875,676**	**1,518,251**	**2,510,469**	**3,615,083**	**4,413,553**

Development Charges Reserve Funds

- Negative Reserve Fund Balances for DCs
  - Capital costs for the Township occur prior to receipt of revenue (DCs at building permit)
  - This results in negative Reserve Fund balances and the potential need to cashflow with the capital reserves or fund projects with debt
  - Potential for Township to require DCs be paid at time of agreement; or
  - Potential for Township to enter into front-ending agreements to allow developing landowners to pay for capital project (whereby they are paid back as DC revenue is received)
- Impact of delayed development (e.g. Towerhill North)
  - Delayed receipt of revenue

Debt Capacity and Loan Status

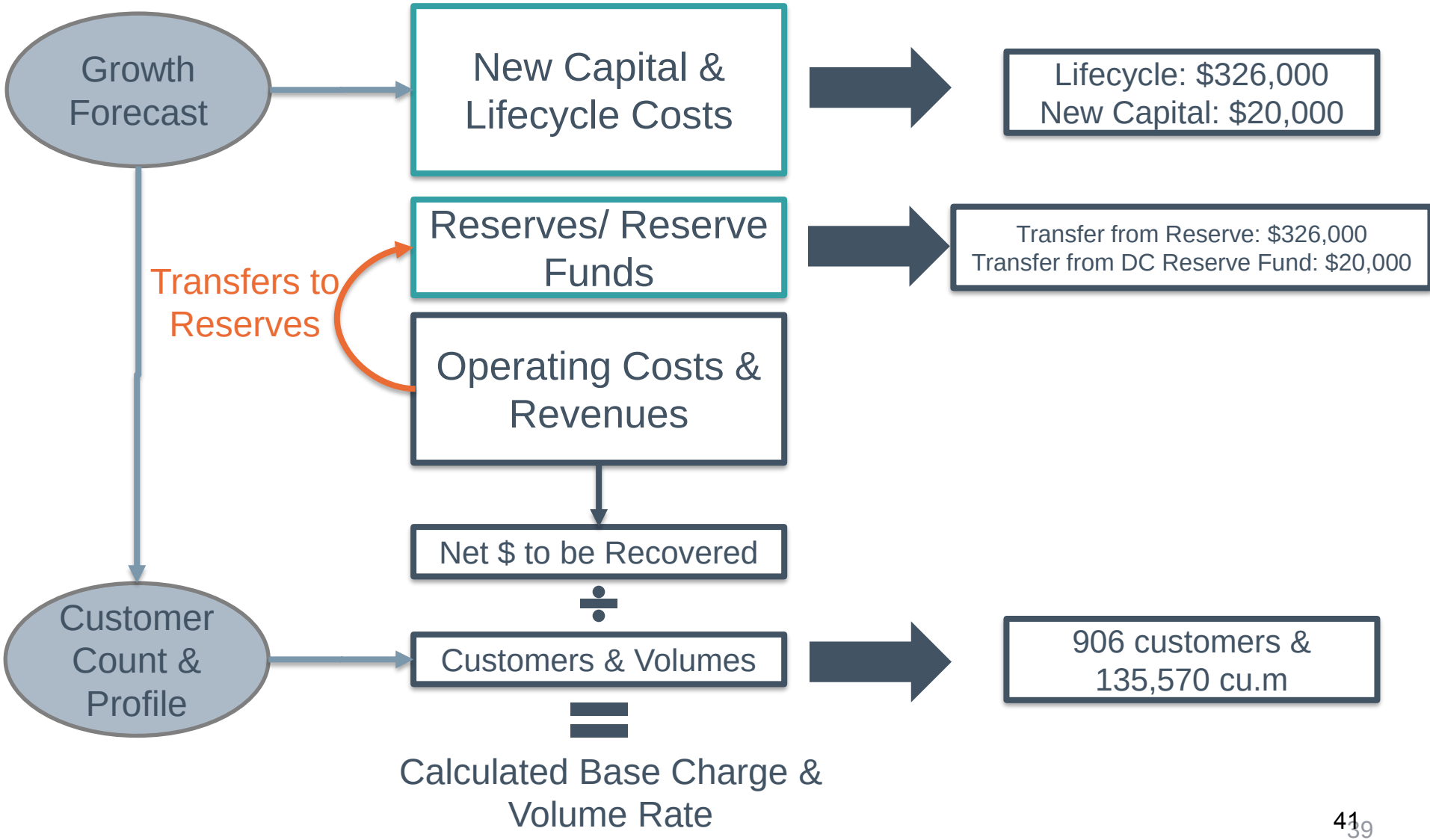
- Currently, debt payments have been issued for water and wastewater projects in Millbrook as follows:

By-law	Total Principal	Annual Payment	Time Period
2017-81	$2,407,995	$127,029	2018-2047
2017-82	$987,515	$52,094	2018-2047
2017-83	$4,847,259	$326,978	2018-2037
Total	**$8,242,769**	**$506,102**	

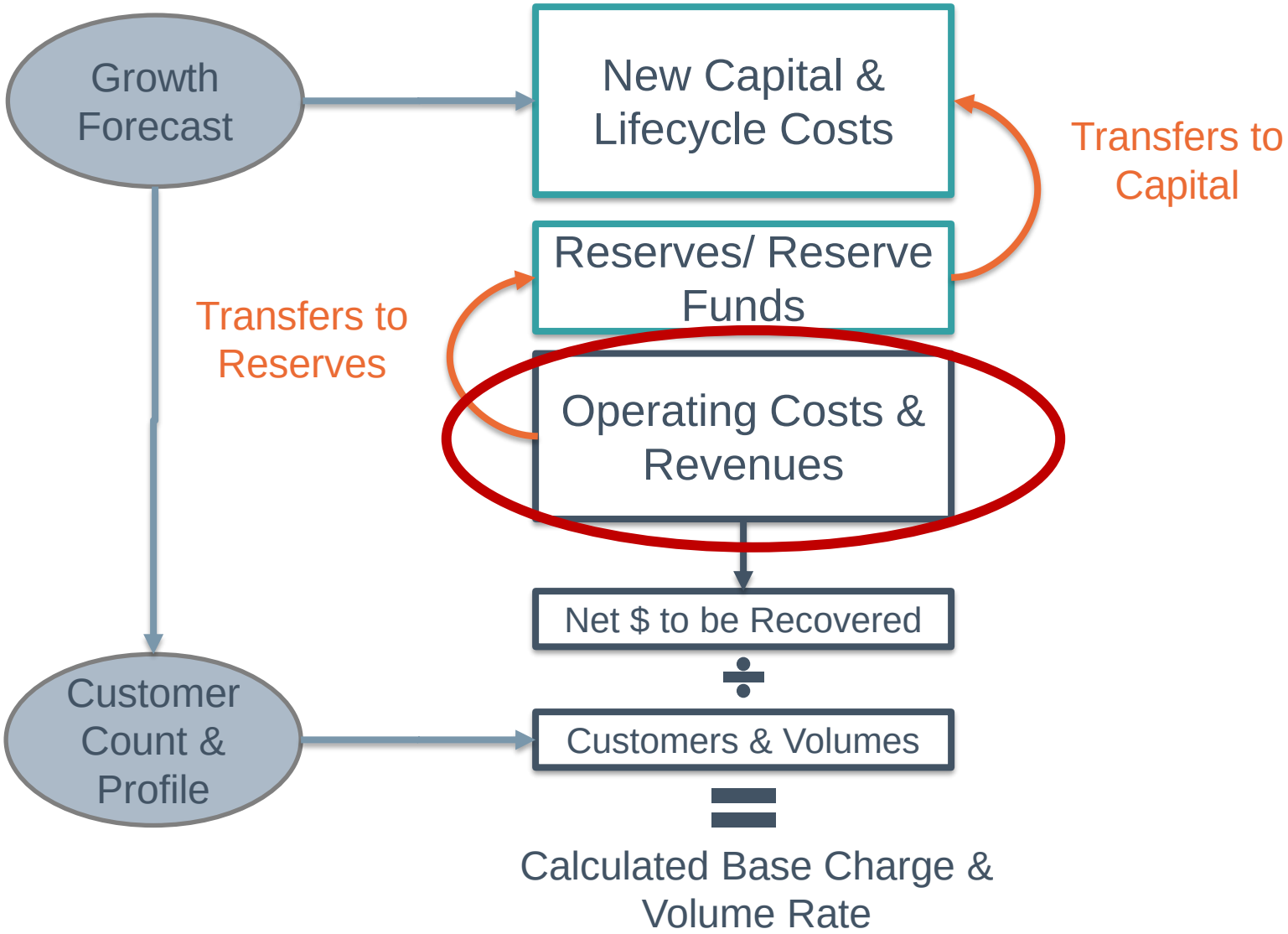
- Current debt capacity allows for the potential of $22 million to $36 million (10 year to 20 year)
- Potential future capital works that may required debt financing (approximately $6 million - $7 million):
  - PW Operations Centre
  - Millbrook Yard
  - Fire Hall Station #1 Replacement

Simplified Calculation Methodology

Calculation Summary (2021 Water Rates)



Simplified Calculation Methodology



Operating Expenditures
Water

- Operating expenditures are increasing over the forecast to recognize:
  - Inflationary Impacts
    - 2% for most operating expenditures
    - 5% for utilities, materials, and supplies

Operating Expenditures
Water

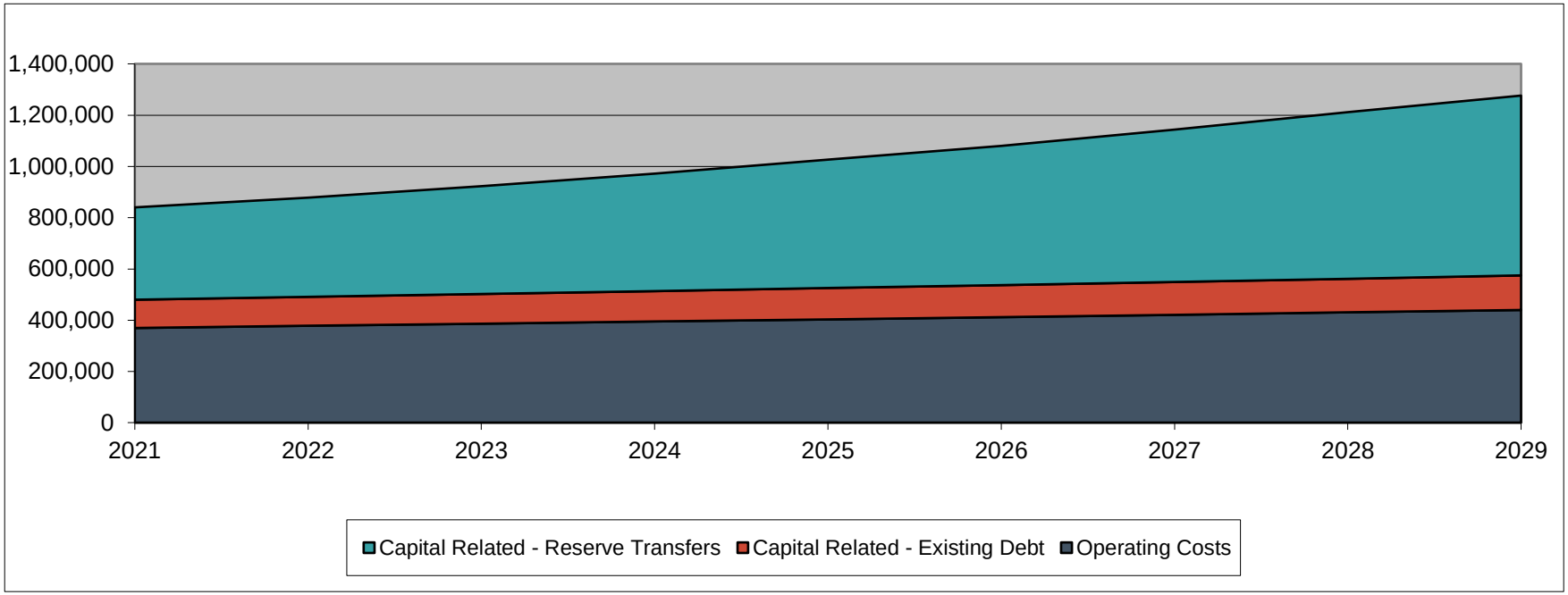
- Operating costs include day to day operations vs. capital related costs
- Day-to-day operating costs:
  - Salaries, wages, and benefits;
  - Administrative expenses;
  - Hydro, utilities, materials and supplies;
  - Operator contract, etc.
- Capital-related operating costs:
  - Existing debt payments
  - Transfers to reserves

Water Operating Expenditures

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Operating Costs										
General Operating Costs	96,193	103,578	105,800	107,800	109,800	111,900	114,000	116,100	118,200	120,300
Millbrook Water Distribution System	55,500	55,500	56,700	57,900	59,100	60,400	61,700	63,000	64,300	65,600
Millbrook Water Treatment & Supply	146,935	150,600	154,000	157,500	161,000	164,700	168,400	172,300	176,200	180,300
Millbrook Water - Standpipe Tower	10,800	14,600	15,200	15,800	16,400	17,000	17,700	18,400	19,100	19,800
Water Capacity Monitoring	20,000	20,000	20,400	20,800	21,200	21,600	22,000	22,400	22,800	23,300
Bulk Water Operating Costs	25,500	25,500	26,110	26,726	27,346	27,973	28,606	29,245	29,890	30,541
Sub Total Operating	**354,928**	**369,778**	**378,210**	**386,526**	**394,846**	**403,573**	**412,406**	**421,445**	**430,490**	**439,841**
Capital-Related										
Existing Debt (Principal) - Growth Related	41,809	43,146	44,526	45,950	47,420	48,936	50,501	52,117	53,784	55,504
Existing Debt (Interest) - Growth Related	42,092	43,391	44,731	46,114	47,541	49,014	50,534	52,102	53,721	55,391
Existing Debt (Principal) - Non-Growth Related	9,560	9,883	10,217	10,563	10,920	11,289	11,671	12,065	12,473	12,895
Existing Debt (Interest) - Non-Growth Related	14,328	14,005	13,671	13,326	12,968	12,599	12,217	11,823	11,415	10,993
Transfer to Capital Reserve	343,925	360,178	387,142	420,894	458,838	501,205	542,480	594,217	650,007	701,634
Sub Total Capital Related	**451,714**	**470,603**	**500,287**	**536,847**	**577,687**	**623,044**	**667,404**	**722,324**	**781,400**	**836,416**
Total Expenditures	**806,642**	**840,381**	**878,497**	**923,373**	**972,533**	**1,026,617**	**1,079,810**	**1,143,769**	**1,211,890**	**1,276,257**

- Note operating costs are based on the 2020 operating budget and forecasted for future years.

Water Operating Budget



Description	2021	2022	2023	2024	2025	2026	2027	2028	2029
Operating Costs	369,778	378,210	386,526	394,846	403,573	412,406	421,445	430,490	439,841
Capital Related - Existing Debt	110,425	113,145	115,952	118,849	121,839	124,924	128,107	131,393	134,783
Capital Related - Reserve Transfers	360,178	387,142	420,894	458,838	501,205	542,480	594,217	650,007	701,634
Total	840,381	878,497	923,373	972,533	1,026,617	1,079,810	1,143,769	1,211,890	1,276,257

Operating Revenues
Water

- Operating revenues are increasing over the forecast at 2% annually to recognize inflationary impacts.
- Operating revenues include:
  - Miscellaneous Revenues
    - Public utility grant program,
    - Rent revenue, and
    - Various user fees and service charges, etc.
  - Transfers from reserve funds for growth-related debt

Miscellaneous Revenues
Water

Description	Budget 2020	Forecast 2021	2022	2023	2024	2025	2026	2027	2028	2029
Revenues										
Misc. Base Charge from New Development	17,448	11,763	4,009	8,199	8,383	9,643	8,765	12,323	12,600	10,541
Public Utility Grant Program (M	18,700	18,700	19,100	19,500	19,900	20,300	20,700	21,100	21,500	21,900
Miscellaneous Revenue - Sysco	2,500	2,500	2,600	2,700	2,800	2,900	3,000	3,100	3,200	3,300
Rent Revenue	4,600	4,600	4,700	4,800	4,900	5,000	5,100	5,200	5,300	5,400
Meter Installation Revenue	10,000	10,000	10,200	10,400	10,600	10,800	11,000	11,200	11,400	11,600
User Fees and Service Charge	8,400	8,400	8,600	8,800	9,000	9,200	9,400	9,600	9,800	10,000
Water Connection /Other Charg	-	-	-	-	-	-	-	-	-	-
Miscellaneous Revenue	-	-	-	-	-	-	-	-	-	-
Water & Sewer Account Set Up	11,750	11,750	12,000	12,200	12,400	12,600	12,900	13,200	13,500	13,800
Locates & User Fees	-	-	-	-	-	-	-	-	-	-
Write off - Contra Revenue Acc	500	500	500	500	500	500	500	500	500	500
Penalty and Interest Income -	13,000	13,000	13,300	13,600	13,900	14,200	14,500	14,800	15,100	15,400
Bulk Water Sale	45,000	44,730	45,736	46,765	47,818	48,894	49,994	51,119	52,269	53,445
Other Revenue		-	-	-	-	-	-	-	-	-
Contributions from Development Charges Reserve Fund	83,901	86,537	89,257	92,064	94,961	97,950	101,035	104,219	107,504	110,895
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-
Total Miscellaneous Revenue	**215,799**	**212,480**	**210,003**	**219,528**	**225,162**	**231,987**	**236,894**	**246,360**	**252,673**	**256,780**

Water Billing Recovery

Water

Description	Budget 2020	Forecast 2021	2022	2023	2024	2025	2026	2027	2028	2029
Sub Total Operating	354,928	369,778	378,210	386,526	394,846	403,573	412,406	421,445	430,490	439,841
Sub Total Capital Related	451,714	470,603	500,287	536,847	577,687	623,044	667,404	722,324	781,400	836,416
Total Expenditures	**806,642**	**840,381**	**878,497**	**923,373**	**972,533**	**1,026,617**	**1,079,810**	**1,143,769**	**1,211,890**	**1,276,257**
Miscellaneous Revenues	**215,799**	**212,480**	**210,003**	**219,528**	**225,162**	**231,987**	**236,894**	**246,360**	**252,673**	**256,780**
Net Expenditures to be recovered through water bill	**590,843**	**627,901**	**668,494**	**703,844**	**747,371**	**794,629**	**842,916**	**897,409**	**959,217**	**1,019,477**

Water Base Charge Revenue

Base Charge Calculation (2021 Water Rates)

- Total amount to be recovered through base charges: $381,164
- Calculations are provided as follows:

Meter Size	Number of Customers	Amount to be Recovered	2021 Rates	
			Bi-Monthly Rate	Annual Rate
15mm/18mm	898	352,106	65.35	392.10
25mm	3	2,148	119.34	716.04
40mm	1	1,629	271.48	1,628.88
50mm	3	11,384	632.45	3,794.70
75mm	-	-	-	-
100mm	1	13,897	2,316.13	13,896.78
Total	**906**	**381,164**		

Water Base Charge Revenue

Water	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Existing	826	826	826	826	826	826	826	826	826	826
New	25	80	120	150	190	233	275	323	378	428
Total Customers	**851**	**906**	**946**	**976**	**1,016**	**1,059**	**1,101**	**1,149**	**1,204**	**1,254**
Total Annual Revenue	**$359,598**	**$381,164**	**$405,777**	**$427,205**	**$453,584**	**$482,219**	**$511,475**	**$544,492**	**$581,944**	**$618,462**

- Note: base charge rates calculated using same rate increases as volume rates (i.e. 0% for 2020 then 2.25% for the remainder of the forecast)
- The following are the number of customers and the amount of the water bill required for the base charge

Water Billing Recovery

Rate Calculations

Description	Budget	Forecast								
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Sub Total Operating	354,928	369,778	378,210	386,526	394,846	403,573	412,406	421,445	430,490	439,841
Sub Total Capital Related	451,714	470,603	500,287	536,847	577,687	623,044	667,404	722,324	781,400	836,416
Total Expenditures	**806,642**	**840,381**	**878,497**	**923,373**	**972,533**	**1,026,617**	**1,079,810**	**1,143,769**	**1,211,890**	**1,276,257**
Miscellaneous Revenues	**215,799**	**212,480**	**210,003**	**219,528**	**225,162**	**231,987**	**236,894**	**246,360**	**252,673**	**256,780**
Net Expenditures to be recovered through water bill	**590,843**	**627,901**	**668,494**	**703,844**	**747,371**	**794,629**	**842,916**	**897,409**	**959,217**	**1,019,477**
Amount to be recovered through base charge	359,598	381,164	405,777	427,205	453,584	482,219	511,475	544,492	581,944	618,462
Amount to be recovered through volume rate	231,245	246,737	262,717	276,639	293,788	312,410	331,440	352,917	377,273	401,015

Amount to be recovered through volume rate	**231,245**	**246,737**	**262,717**	**276,639**	**293,788**	**312,410**	**331,440**	**352,917**	**377,273**	**401,015**
Total Metered Volume (cu.m)	127,058	135,570	141,170	145,370	150,970	156,990	162,870	169,590	177,290	184,290
Calculated Volume Rate ($/cu.m)	**1.82**	**1.82**	**1.861**	**1.903**	**1.946**	**1.99**	**2.035**	**2.081**	**2.128**	**2.176**

Operating Expenditures
Wastewater

- Operating expenditures are increasing over the forecast to recognize:
  - Inflationary Impacts
    - 2% for most operating expenditures
    - 5% for utilities, materials, and supplies

Operating Expenditures
Wastewater

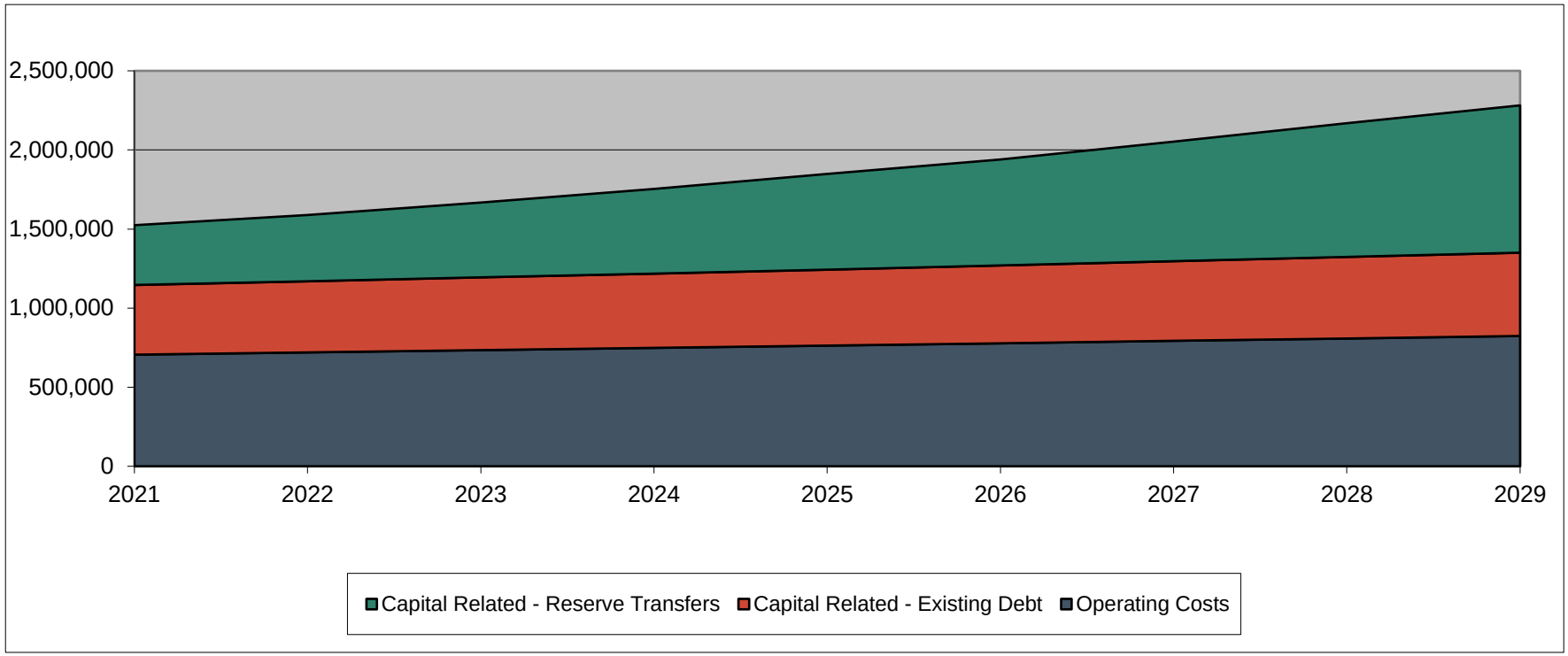
- Operating costs include day to day operations vs. capital related costs
- Day-to-day operating costs:
  - Salaries, wages, and benefits;
  - Administrative expenses;
  - Hydro, utilities, materials and supplies;
  - Operator contract, etc.
- Capital-related operating costs:
  - Existing debt payments
  - Transfers to reserves

Wastewater Operating Expenditures

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Operating Costs										
General Operating Costs	91,193	98,578	100,700	102,600	104,500	106,500	108,500	110,500	112,500	114,500
Pumping Station Expenses	8,700	8,700	8,800	8,900	9,000	9,100	9,200	9,300	9,400	9,500
Millbrook Wastewater Plant	454,987	464,300	473,600	483,100	492,700	502,600	512,600	522,800	533,100	543,800
Wastewater Collection System	2,500	10,500	10,710	10,924	11,142	11,365	11,592	11,824	12,060	12,301
Sysco Oper. Wastewater Agreement	47,000	47,000	47,900	48,800	49,700	50,600	51,600	52,700	53,800	54,900
Sysco Oper. Wastewater Agreement Booster Pumping Station	10,800	10,800	10,900	11,000	11,100	11,300	11,500	11,700	11,900	12,100
Kawartha Downs Wastewater Agreement	52,000	46,000	46,900	47,800	48,700	49,600	50,600	51,600	52,600	53,600
Wastewater Capacity Monitoring	20,000	20,000	20,400	20,800	21,200	21,600	22,000	22,400	22,800	23,300
Sub Total Operating	**687,180**	**705,878**	**719,910**	**733,924**	**748,042**	**762,665**	**777,592**	**792,824**	**808,160**	**824,001**
Capital-Related										
Existing Debt (Principal) - Growth Related	154,911	159,876	165,000	170,289	175,747	181,381	187,195	193,195	199,387	205,779
Existing Debt (Interest) - Growth Related	158,821	163,256	167,833	172,555	177,427	182,455	187,643	192,996	198,519	204,219
Existing Debt (Principal) - Non-Growth Related	46,920	48,507	50,147	51,843	53,595	55,408	57,281	59,218	61,220	63,290
Existing Debt (Interest) - Non-Growth Related	70,325	68,739	67,099	65,403	63,650	61,838	59,964	58,028	56,025	53,955
Transfer to Capital Reserve	343,480	377,166	418,894	474,116	535,462	604,417	670,841	755,551	846,352	929,673
Sub Total Capital Related	**774,457**	**817,544**	**868,973**	**934,206**	**1,005,883**	**1,085,499**	**1,162,924**	**1,258,987**	**1,361,505**	**1,456,916**
Total Expenditures	**1,461,637**	**1,523,422**	**1,588,883**	**1,668,130**	**1,753,925**	**1,848,164**	**1,940,516**	**2,051,811**	**2,169,665**	**2,280,917**

- Note operating costs are based on the 2020 operating budget and forecasted for future years.

Wastewater Operating Budget



Description	2021	2022	2023	2024	2025	2026	2027	2028	2029
Operating Costs	705,878	719,910	733,924	748,042	762,665	777,592	792,824	808,160	824,001
Capital Related - Existing Debt	440,378	450,079	460,090	470,420	481,081	492,083	503,436	515,153	527,243
Capital Related - Reserve Transfers	377,166	418,894	474,116	535,462	604,417	670,841	755,551	846,352	929,673
Total	1,523,422	1,588,883	1,668,130	1,753,925	1,848,164	1,940,516	2,051,811	2,169,665	2,280,917

Operating Revenues
Wastewater

- Operating revenues are increasing over the forecast at 2% annually to recognize inflationary impacts.
- Operating revenues include:
  - Miscellaneous Revenues
    - Public utility grant program,
    - Rent revenue, and
    - Various user fees and service charges, etc.
  - Transfers from reserve funds for growth-related debt

Miscellaneous Revenues

Wastewater

Description	Budget 2020	Forecast 2021	2022	2023	2024	2025	2026	2027	2028	2029
Revenues										
Misc. Base Charge from New Development	32,291	21,769	7,420	15,173	15,515	17,847	16,221	22,805	23,318	19,508
Public Utility Grant Program	18,700	18,700	19,100	19,500	19,900	20,300	20,700	21,100	21,500	21,900
Miscellaneous Revenue - Sysco	2,500	2,500	2,600	2,700	2,800	2,900	3,000	3,100	3,200	3,300
Rent Revenue	4,600	4,600	4,700	4,800	4,900	5,000	5,100	5,200	5,300	5,400
Meter Installation Revenue	10,000	10,000	10,200	10,400	10,600	10,800	11,000	11,200	11,400	11,600
User Fees and Service Charge	8,400	8,400	8,600	8,800	9,000	9,200	9,400	9,600	9,800	10,000
Local Improvements - Water/Se	-	-	-	-	-	-	-	-	-	-
Miscellaneous Revenue	-	-	-	-	-	-	-	-	-	-
Water & Sewer Account Set Up	11,750	11,750	12,000	12,200	12,400	12,600	12,900	13,200	13,500	13,800
Locates & User Fees	-	-	-	-	-	-	-	-	-	-
Write off - Contra Revenue Acc	500	500	500	500	500	500	500	500	500	500
Penalty and Interest Income -	13,000	13,000	13,300	13,600	13,900	14,200	14,500	14,800	15,100	15,400
Miscellaneous Revenue - Sysco Oper. Wastewater Agreement	47,000	47,000	47,900	48,900	49,900	50,900	51,900	52,900	54,000	55,100
Miscellaneous Revenue - Kawartha Downs Wastewater Agreement Revenue	50,200	52,000	53,000	54,100	55,200	56,300	57,400	58,500	59,700	60,900
Other Revenue		-	-	-	-	-	-	-	-	-
Contributions from Development Charges Reserve Fund	313,732	323,132	332,833	342,844	353,175	363,836	374,837	386,191	397,907	409,997
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-
Total Miscellaneous Revenue	**512,673**	**513,351**	**512,153**	**533,517**	**547,789**	**564,382**	**577,458**	**599,096**	**615,225**	**627,405**

Wastewater Billing Recovery

Wastewater

Description	Budget 2020	Forecast								
		2021	2022	2023	2024	2025	2026	2027	2028	2029
Sub Total Operating	687,180	705,878	719,910	733,924	748,042	762,665	777,592	792,824	808,160	824,001
Sub Total Capital Related	774,457	817,544	868,973	934,206	1,005,883	1,085,499	1,162,924	1,258,987	1,361,505	1,456,916
Total Expenditures	**1,461,637**	**1,523,422**	**1,588,883**	**1,668,130**	**1,753,925**	**1,848,164**	**1,940,516**	**2,051,811**	**2,169,665**	**2,280,917**
Miscellaneous Revenues	**512,673**	**513,351**	**512,153**	**533,517**	**547,789**	**564,382**	**577,458**	**599,096**	**615,225**	**627,405**
Net Expenditures to be recovered through wastewater bill	**948,964**	**1,010,071**	**1,076,730**	**1,134,612**	**1,206,135**	**1,283,781**	**1,363,058**	**1,452,715**	**1,554,439**	**1,653,512**

Wastewater Base Charge Revenue

Base Charge Calculation (2021 Wastewater Rates)

- Total amount to be recovered through base charges: $702,829
- Calculations are provided as follows:

Meter Size	Number of Customers	Amount to be Recovered	2021 Rates	
			Bi-Monthly Rate	Annual Rate
15mm/18mm	887	643,643	120.94	725.64
25mm	2	2,696	224.66	1,347.96
40mm	1	3,352	558.63	3,351.78
50mm	3	23,844	1,324.67	7,948.02
75mm	-	-	-	-
100mm	1	29,295	4,882.50	29,295.00
Total	**894**	**702,829**		

Wastewater Base Charge Revenue

Wastewater	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Existing	814	814	814	814	814	814	814	814	814	814
New	25	80	120	150	190	233	275	323	378	428
Subtotal Customers	**839**	**894**	**934**	**964**	**1,004**	**1,047**	**1,089**	**1,137**	**1,192**	**1,242**
Total Annual Revenue	**$662,919**	**$702,829**	**$748,322**	**$787,919**	**$836,676**	**$889,608**	**$943,688**	**$1,004,726**	**$1,073,969**	**$1,141,485**

- Note: base charge rates calculated using same rate increases as volume rates (i.e. 0% for 2020 then 2.25% for the remainder of the forecast)

Wastewater Billing Recovery

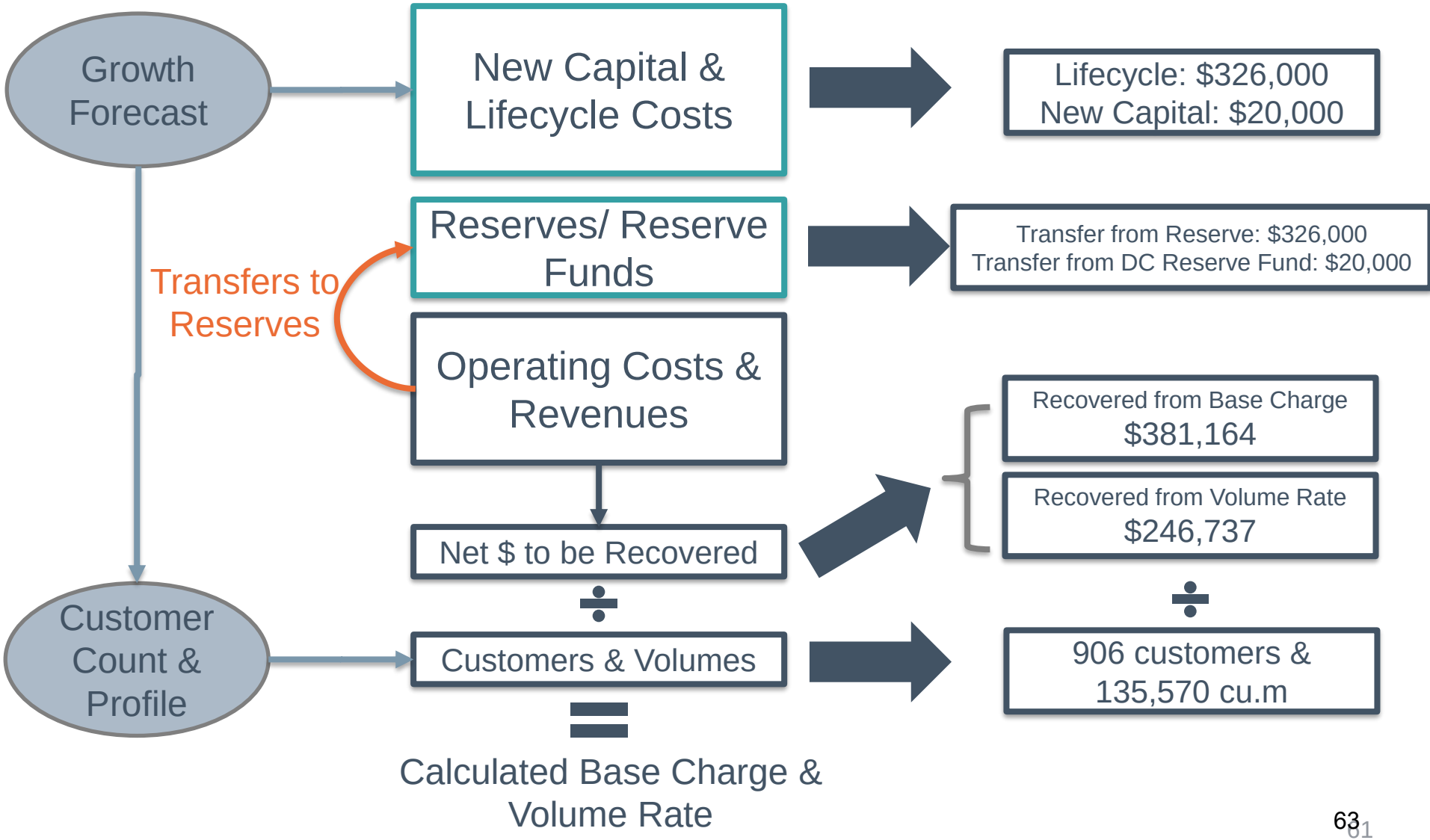
Rate Calculations

Description	Budget	Forecast								
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Sub Total Operating	687,180	705,878	719,910	733,924	748,042	762,665	777,592	792,824	808,160	824,001
Sub Total Capital Related	774,457	817,544	868,973	934,206	1,005,883	1,085,499	1,162,924	1,258,987	1,361,505	1,456,916
Total Expenditures	**1,461,637**	**1,523,422**	**1,588,883**	**1,668,130**	**1,753,925**	**1,848,164**	**1,940,516**	**2,051,811**	**2,169,665**	**2,280,917**
Miscellaneous Revenues	**512,673**	**513,351**	**512,153**	**533,517**	**547,789**	**564,382**	**577,458**	**599,096**	**615,225**	**627,405**
Net Expenditures to be recovered through wastewater bill	**948,964**	**1,010,071**	**1,076,730**	**1,134,612**	**1,206,135**	**1,283,781**	**1,363,058**	**1,452,715**	**1,554,439**	**1,653,512**
Amount to be recovered through base charge	662,919	702,829	748,322	787,919	836,676	889,608	943,688	1,004,726	1,073,969	1,141,485
Amount to be recovered through volume rate	286,045	307,241	328,409	346,694	369,459	394,173	419,370	447,989	480,470	512,027

Amount to be recovered through volume rate	**286,045**	**307,241**	**328,409**	**346,694**	**369,459**	**394,173**	**419,370**	**447,989**	**480,470**	**512,027**
Total Metered Volume (cu.m)	114,878	123,390	128,990	133,190	138,790	144,810	150,690	157,410	165,110	172,110
Calculated Volume Rate ($/cu.m)	**2.49**	**2.49**	**2.546**	**2.603**	**2.662**	**2.722**	**2.783**	**2.846**	**2.910**	**2.975**

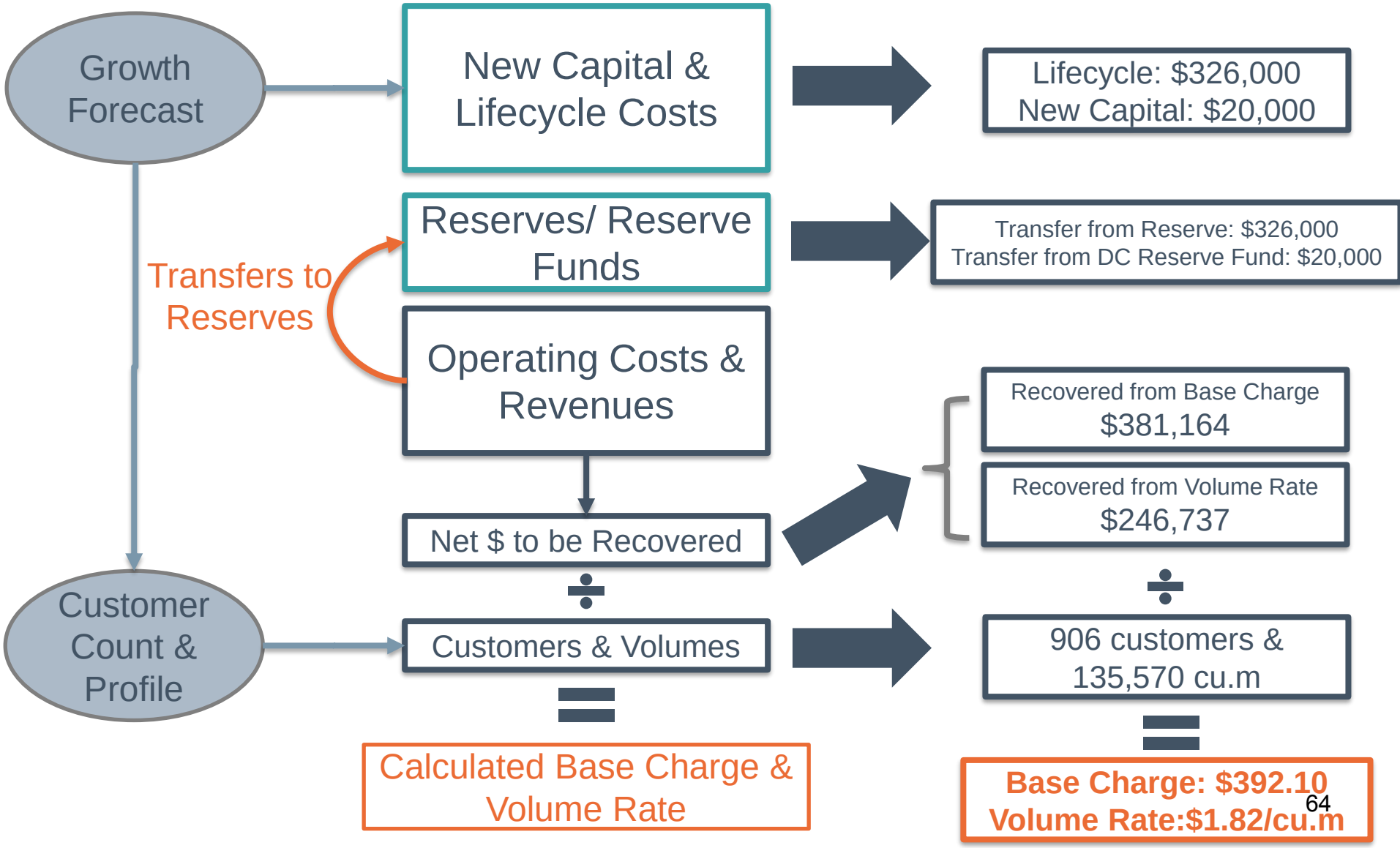
Simplified Calculation Methodology

Calculation Summary (2021 Water Rates)



Simplified Calculation Methodology

Calculation Summary (2021 Water Rates)



Factors Resulting in Calculated Rates

Water

- D.C. reserve fund is currently in a deficit position which is further increased due to large growth-related capital expenditures
- Rates provide the annual total balance in the water capital reserve and water D.C. reserve funds to be positive

Wastewater

- D.C. reserve fund becomes negative due to large growth-related capital expenditures in 2023
- Rates provide the annual total balance in wastewater capital reserve and wastewater D.C. reserve funds to be positive for all years except 2023 and 2024

Factors Resulting in Calculated Rates

Water and Wastewater

- Assumes all capital projects are funded from the reserve and D.C. reserve fund (i.e. no new debt utilized)
- Combined water and wastewater reserves and reserve funds remain in a positive position for all years except 2023

Average Annual Residential Bill (Based on 140 cu.m Annual Volumes) – Water Bill

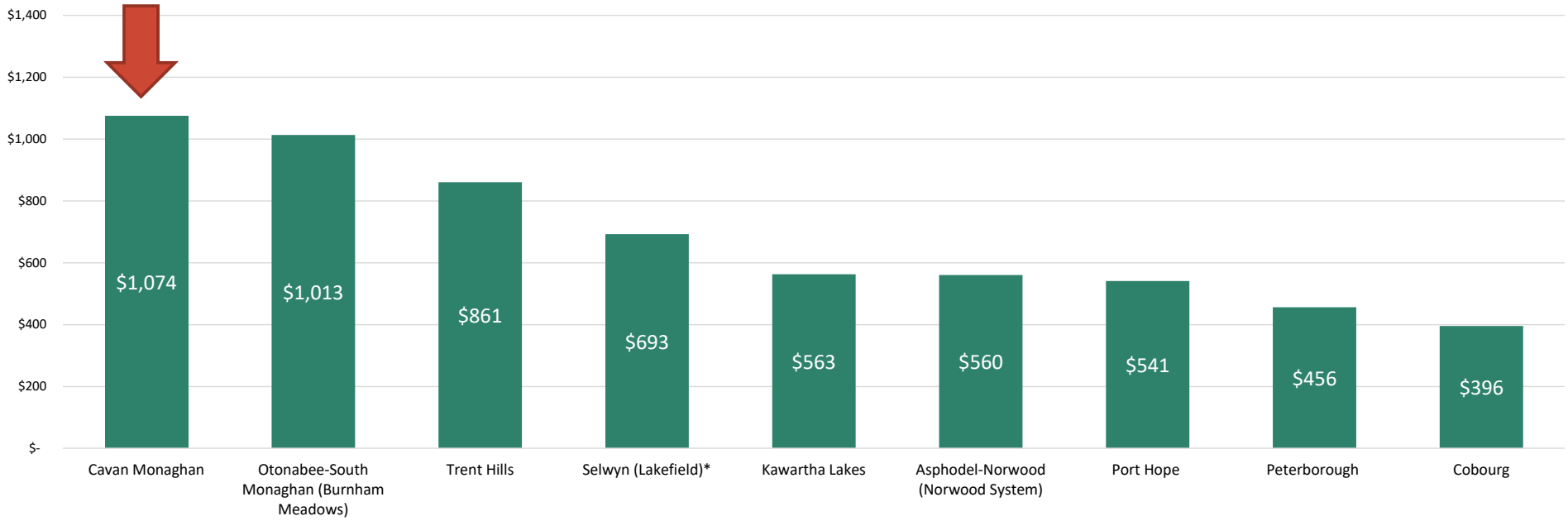
Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Bi-Monthly Base Rate	$65.35	$65.35	$66.82	$68.32	$69.86	$71.43	$73.04	$74.68	$76.36	$78.08
Annual Base Rate Bill	**$392.10**	**$392.10**	**$400.92**	**$409.94**	**$419.17**	**$428.60**	**$438.24**	**$448.10**	**$458.18**	**$468.49**
Volume Rate	$1.82	$1.82	$1.86	$1.90	$1.95	$1.99	$2.04	$2.08	$2.13	$2.18
Volume	140	140	140	140	140	140	140	140	140	140
Annual Volume Bill	**$254.80**	**$254.80**	**$260.54**	**$266.42**	**$272.44**	**$278.60**	**$284.90**	**$291.34**	**$297.92**	**$304.64**
Total Annual Bill	**$646.90**	**$646.90**	**$661.46**	**$676.36**	**$691.61**	**$707.20**	**$723.14**	**$739.44**	**$756.10**	**$773.13**
% Increase - Base Rate		0.0%	2.25%	2.25%	2.25%	2.25%	2.25%	2.25%	2.25%	2.25%
% Increase - Volume Rate		0.0%	2.25%	2.26%	2.26%	2.26%	2.26%	2.26%	2.26%	2.26%
% Increase - Total Annual Bill		0.0%	2.25%	2.25%	2.25%	2.25%	2.25%	2.25%	2.25%	2.25%

Average Annual Residential Bill (Based on 140 cu.m Annual Volumes) – Wastewater Bill

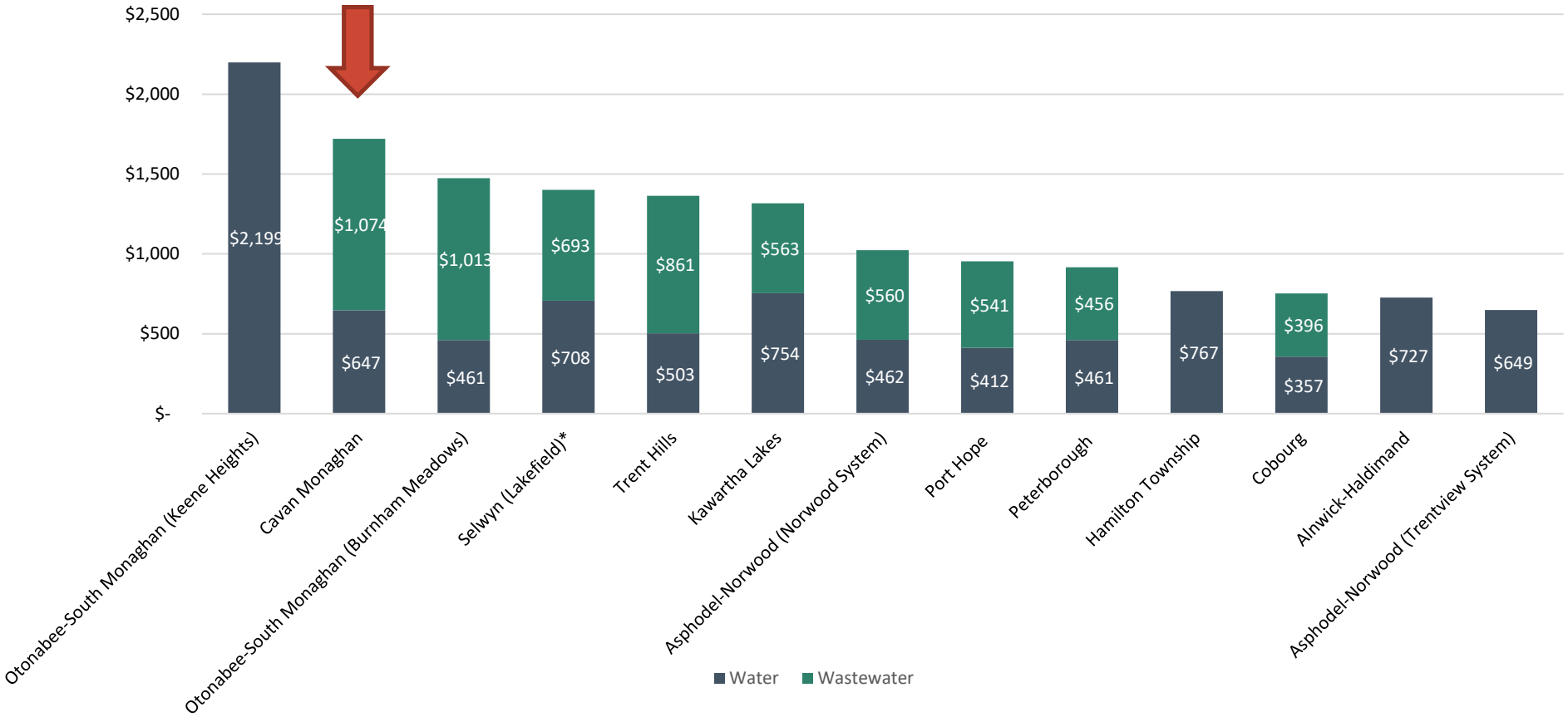
Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Bi-Monthly Base Rate	$120.94	$120.94	$123.66	$126.44	$129.29	$132.20	$135.17	$138.21	$141.32	$144.50
Annual Base Rate Bill	**$725.64**	**$725.64**	**$741.97**	**$758.66**	**$775.73**	**$793.18**	**$811.03**	**$829.28**	**$847.94**	**$867.02**
Volume Rate	$2.49	$2.49	$2.55	$2.60	$2.66	$2.72	$2.78	$2.85	$2.91	$2.98
Volume	140	140	140	140	140	140	140	140	140	140
Annual Volume Bill	**$348.60**	**$348.60**	**$356.44**	**$364.42**	**$372.68**	**$381.08**	**$389.62**	**$398.44**	**$407.40**	**$416.50**
Total Annual Bill	**$1,074.24**	**$1,074.24**	**$1,098.41**	**$1,123.08**	**$1,148.41**	**$1,174.26**	**$1,200.65**	**$1,227.72**	**$1,255.34**	**$1,283.52**
% Increase - Base Rate		0.0%	2.25%	2.25%	2.25%	2.25%	2.25%	2.25%	2.25%	2.25%
% Increase - Volume Rate		0.0%	2.25%	2.24%	2.27%	2.25%	2.24%	2.26%	2.25%	2.23%
% Increase - Total Annual Bill		0.0%	2.25%	2.25%	2.26%	2.25%	2.25%	2.25%	2.25%	2.24%

Comparison of Residential Annual Water Bill (based on 140 cu.m)

Comparison of Residential Annual Wastewater Bills (based on 140 cu.m)



Comparison of Residential Annual Water and Wastewater Combined Bills (based on 140 cu.m)



Sample Water and Wastewater Bill based on Annual Usage of 140 cubic metres

- note that the bill is for <u>two months</u> usage

WATER & SEWER BILLING

Customer Number
0000099999
WATER & SEWER RECEIVABLE

Invoice Number:	085862
Billing Date:	OCT 13,2020
Due Date:	NOV 30,2020
Amount Due:	286.89
Amount Enclosed $_____	

Residential (Example Bill)

123 Street Address
Millbrook, ON
L0A 1G0

Volume Rate
Base Charge

Please detach and return this portion with your payment.

Invoice	Description	Amount

085862 Route # 8 - October 2020 Billing Service
Address: 123 Street Address
Meter: 99999999

	Reading				
Current:	37,978.0	OCT 13,2020	Actual		
Prior:	37,744.0	AUG 13,2020	X Multiplier	0.1000	
Consumption:	23.34 Cubic Metres			Billing Days:	60

Sewer Charges		58.12
23.34 Cubic Metres at 2.49 =	58.12	
Sewer Fixed Charge 15 Mm Meter		120.94
Water Charges		42.48
23.34 Cubic Metres at 1.82 =	42.48	
Water Fixed Charge 15 Mm Meter		65.35
Billing Amount		286.89

Account
0000099999
Residential (Example Bill)

123 Street Address
Millbrook, ON
L0A 1G0

New Charges	286.89
Balance Due	286.89
Due Date	NOV 30,2020
After Due Date	315.58

A finance charge of 10.00% is added to balances not paid before due date.

Township Of Cavan Monaghan

Other Matters for Discussion

1. **New operating contract**
   - Operating contract is up for renewal
   - Contract costs may increase with new contract
2. **Timing of rate study and rate recalculation**
   - Historically, rate study completed every 5-years
   - Staff/Council may review the information between studies and adjust rates as data changes (e.g. growth does not materialize, operating costs change significantly, etc.)
3. **New development vs. existing customers**
   - The costs are recovered based on the number of customers and volumes anticipated. As new development occurs, more customers and volumes are included in the calculations, along with their associated capital needs.
4. **Council Motion from November 16th Meeting (next steps)**
   - That Council selects Scenario 3 (0% increase for 2021, then due to Covid19 pandemic, a volume flow review and September 2021 presentation to Council for Council's consideration of the future annual increases for 2022-2025);

The Township of Cavan Monaghan

By-law No. 2021-04

Being a by-law to confirm the proceedings of the special meeting of the Council of the Township of Cavan Monaghan held on the 26th day of January, 2021.

Whereas the Municipal Act, 2001, S.O., 2001, c.25, S.5, S. 8 and S. 11 authorizes Council to pass by-laws;

Now Therefore the Council of the Township of Cavan Monaghan hereby enacts as follows:

1. That the actions of the Council at its special meeting held on the 26th day of January, 2021. in respect to each recommendation and action by the Council at its said meetings except where prior approval of the Local Planning Appeal Tribunal, or other statutory authority is required are hereby adopted ratified and confirmed.

2. That the Mayor and Clerk of the Township of Cavan Monaghan are hereby authorized and directed to do all things necessary to give effect to the said actions or obtain approvals where required, and to execute all documents as may be necessary in that behalf and the Clerk is hereby authorized and directed to affix the Corporate Seal to all such documents.

   Read a first, second and third time and passed this 26th day of January 2021.

_____	_____
Scott McFadden	**Elana Arthurs**
Mayor	**Clerk**