



THE CORPORATION OF THE TOWNSHIP OF MAPLETON

SPECIAL MEETING COUNCIL AGENDA

THURSDAY, JULY 30, 2020 AT 7:00 P.M.

PMD ARENA, 68 MAIN STREET W., DRAYTON

- 1. Call to Order**

- 2. Declaration of Pecuniary Interest**

- 3. Reports and Updates from Staff**
 - 3.1 CAO Clerk's Report CL2020-12
Re: Mapleton Water/Wastewater RFP

- 4. Confirmatory By-law Number 2020-051**

- 5. Adjournment**

PLEASE NOTE: Alternate Formats and Communication Support

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THE CORPORATION OF THE TOWNSHIP OF MAPLETON

CAO CLERK'S REPORT CL2020-12

TO: Mayor Davidson and Members of Council

FROM: Manny Baron, CAO

RE: Mapleton Water/Wastewater RFP

DATE: July 30, 2020

RECOMMENDATION:

THAT CAO's Report CL2020-12, dated July 30, 2020 with regards to the Mapleton Water/Wastewater RFP be received and that council direct staff to inform Mark Rodger, Borden Ladner Gervais of the direction it wishes to take.

AND THAT Council direct staff to present, at the August 11, 2020 council meeting, their recommended path forward regarding Mapleton's water/wastewater upgrades.

BACKGROUND:

In April of 2019, Mark Rodger from Borden Ladner Gervais sent a Request for Qualification based on a regulated model dealing specifically with Municipal Water/wastewater systems in Ontario. This was a very interested concept as it shifted the financial risk on to proponents and also created a way for Mapleton to finance the infrastructure needed to help Drayton and Moorefield meet the current upgrade demands and help plan for future growth. On July 15th, 2019 BLG, on behalf of the Township of Mapleton, sent out a request for proposal to 6 qualifying proponents. The RFP process was on an invite only basis to proponents that were approved by council pursuant to the evaluation and scoring criteria set out in the RFQ. Proponents were asked to submit proposals based on the following criteria:

- I. the provision of water and wastewater services that are currently performed by, or on behalf of Mapleton, excluding rate-setting and rate-making functions.*
- II. the design, construction and financing of new water and wastewater infrastructure for Mapleton, the aggregate estimated capital requirements of which range between \$15,000,000 and \$30,000,000 throughout the concession term.*
- III. The provision of operation and maintenance services for existing water and wastewater infrastructure and New Infrastructure, including the financing costs associated with such O&M Services for a period of time that will commence upon the expiration or*

earlier termination of the existing services agreement between OCWA and Mapleton dated January 1, 2014.

Three proponents responded to the RFP, the bids were evaluated internally and discussed at length. We asked for an external technical review of the bids to ensure the proposed technology would meet Mapleton's needs. (Report attached). It was made clear that 2 of the 3 potential models would meet the Township's need but one OUC's was preferred.

There were some legal issues contained in the RFP that could potentially place Mapleton at risk, with the advice of our legal council we decided to go ahead and look at negotiating one bidder.

There were clarifying questions going back and forth and once we received their answers it became evident we needed a financial analysis. John Morrison, Director of Finance, did the financial analysis and reported his findings at the education session held on July 14th.

With the accumulated technical and financial analysis, it is clear an open and honest discussion regarding the next steps Mapleton needs to happen. We have the information needed to make an informed decision and staff are eager to start addressing the servicing needs.

CONSULTATION:

RJ Burnside
Senior Management Team

Attachments:

Burnside Technical Review
Water Wastewater Service Review

COMMUNICATION:

Once approved by Council the revised procedures will be distributed in final form to all staff and discussions will be held to ensure understanding of the changes.

STRATEGIC PLAN:

Municipal Infrastructure: N/A

The Local Economy: N/A.

Recreation: N/A

Municipal Administration: Our employees are extremely important to us and we need to ensure their health and safety is a priority. We also want to ensure we are available to our ratepayers to offer the best services possible.

Financial Responsibility: N/A

Prepared by
Manny Baron
CAO

Attach:

- i) Technical Evaluation
- ii) Director of Finance Presentation



March 19, 2020

Via: Email

Manny Baron
CAO
Township of Mapleton
7275 Sideroad 16
Drayton, ON N0G 1P0

Dear Mr. Baron:

**Re: Technical Evaluation - Water & Wastewater Services
Township of Mapleton
Project No.: 300051277.0000**

1.0 Introduction

The Township of Mapleton (Township) has requested R.J. Burnside & Associates Limited (Burnside) complete a technical evaluation of the three bids received in response to the Request for Proposals (RFP) – The Provision of Water and Wastewater Services with the Township of Mapleton, Ontario AND Design, Build, Finance, and, if Applicable, Operate and Maintain New and Existing Water and Wastewater Infrastructure Servicing the Township of Mapleton Under a Regulated Utility Model dated July 15, 2019.

1.1 Bids Received

The Township received the following three bids in response to the RFP:

1. Helios Group (Helios)
2. Mapleton Water Resource Partners (MWRP)
3. Ontario Utility Commission (OUC)

The technical portion of the bids are summarized in Section 2.0, 3.0, and 4.0 for the respective bidders.

2.0 Helios

In order to service the future demands of the Drayton water and wastewater systems, Helios recommended completing continuous improvements and upgrades through an incremental approach. Rather than constructing long-term solutions initially, Helios recommended completing projects addressing short to mid-term needs while re-evaluating progress every five years. The proposed water and wastewater system upgrades are summarized below.

2.1 Water System

Helios identified various issues with the existing system including that the peak hourly demand is close to the capacity of the Drayton Water Treatment Plant (WTP), the maximum day demand will surpass the WTP capacity in the next 20 years, the fire flow requires increasing, and the distribution pressures should be adjusted. Helios noted that the existing WTP can be upgraded to meet the needs for the next five years rather than constructing the proposed water tower.

Based on the challenges with the current system, Helios recommends increasing the pumping capacity by initially upgrading one pump (Pump 1) to meet the peak hour demands and installing a variable frequency drive (VFD) to optimize energy and capital costs. As the demand grows over time, a second pump (Pump 2) will be upgraded when required. The maximum day demand and fire flow requirement issues are proposed to be solved by refurbishing or replacing a fire pump (Pump 5) and installing another well (Well 3) to utilize the aquifer as underground storage. Due to the upgrades associated with the pumping system, Helios noted that a new standby generator would likely be required.

Additionally, Helios proposes completing a survey of pressure ratings at critical points in the distribution system. Based on the results of the survey, pressure reducing valves may be installed where the pressure is above 70 psi. Helios noted that the Industrial Park may not require different pressure zones based on the elevation data, but an online booster station may be added to increase pressures in conjunction with a bypass for fire flows.

Helios estimated that the capital expenditure to complete the above noted water system upgrades in the next five years would be approximately \$700,000. In addition to the cost estimates provided for new infrastructure, Helios estimated the capital expenditures for the existing water system rehabilitation would be \$161,686.

2.2 Technical Feasibility of Proposed Water Storage Upgrades

Utilizing the aquifer to satisfy the future fire flow demands for the Township does not meet the Ministry of the Environment, Conservation and Parks (MECP) recommended guidelines. Typically, additional capacity or surplus capacity of the aquifer can be used to supplement a small deficiency in storage, not utilize the aquifer for the entire fire flow demand and/or storage. An aquifer investigation would have to be completed to confirm if there is enough capacity to even consider using the aquifer for fire flow and storage for the Drayton Water Supply System. A Permit to Take Water (PTTW) and a long-term pumping test would also be required. This method does not provide redundancy and therefore does not meet the standard of servicing for the Township.

2.3 Wastewater System

2.3.1 Wastewater Collection and Pumping

Helios noted that there are concerns of infiltration in the wastewater collection system based on the available flow data. Additionally, the pump capacity in the Drayton Sewage Pumping Station (SPS) cannot meet the current peak hour flow.

A thorough investigation and rehabilitation is proposed for the existing wastewater collection network to reduce the flow at the SPS. This will include using a zoom camera at each manhole to locate areas where further investigation by closed circuit television video (CCTV) is required. Once the potential causes of infiltration are identified, Helios will implement remediation techniques accordingly.

Once this is completed in the first two years, the pumping station's increased capacity will be reassessed to ensure the pumps are sized correctly. Helios indicated that a new standby generator would likely be required at the Drayton SPS to accommodate the new pumps.

Helios estimated that the capital expenditure to complete the above noted wastewater pumping system upgrades to meet the demands in the next five years would be approximately \$1,050,000.

2.3.2 Technical Feasibility of Proposed Upgrades to the Wastewater Collection and Pumping

The proposed method of investigating and eliminating infiltration and inflow entering the collection system does not address immediate or future capacity concerns at the existing Drayton SPS.

2.3.3 Wastewater Treatment

Helios noted that the existing wastewater treatment system requires upgrades due to various issues including nitrification in cold weather, storage capacity of the lagoons, and the existing aeration system for the lagoons.

Based on the various wastewater treatment options reviewed in the Class Environmental Assessment (EA) report, Helios recommended a Submerged Attached Growth Reactor (SAGR) system to provide nitrification in cold climates. The SAGR system would use the two existing lagoon cells following the storage cells to treat all effluent prior to discharge. The proposed system would include recycling from the SAGR to storage Cells 3, 4A and 4B from May to September, utilizing sidestream alum addition in the SAGR effluent storage cells, and replacing diffusers in primary Cell 2.

Helios estimated that the capital expenditure to complete the above noted wastewater treatment system upgrades to meet the demands in the next five years would be approximately \$3,500,000.

2.3.4 Sludge Removal

Helios indicated that the existing lagoons have not been de-sludged in over 30 years and a significant storage volume is likely being taken up by sludge accumulation. Helios indicated a study of the quantity and quality of the sludge in the older cells (Cells 1, 2, and 3) will be required.

Once the assessment is completed, the sludge will be removed by vacuum trucks for disposal. Helios noted that Geotube® sludge dewatering can be used for large quantities of sludge where a flocculating agent is added prior to entering a dewatering tube. It was noted that sludge removal will be more important moving forward to ensure Cells 1 and 2 are to prevent solids from entering the SAGR beds.

Helios estimated that the capital expenditure to complete the sludge removal at the existing lagoon to be \$265,302.

2.3.5 Technical Feasibility of Proposed Wastewater Treatment Upgrades

The proposed SAGR system upgrade at the existing Drayton WWTP will adequately address the wastewater treatment servicing requirements for the Township's future demands.

3.0 Mapleton Water Resource Partners (MWRP)

MWRP provided alternative water and wastewater solutions than what was outlined in the RFP for the Township of Mapleton. The proposed upgrades are summarized below.

3.1 Water System

MWRP recommended constructing a standpipe as the preferred water storage solution rather than a water tower to supplement the existing water storage at the Drayton WTP. The standpipe is proposed to start construction in 2020 and would have a volume of 2,781 m³ which would be able to service the projected population in 2040. The standpipe would have an above-ground valve building with space available to install an additional fire pump to service the community beyond 20 years.

MWRP provided a cost estimate of approximately \$4,109,000 to complete the above noted water system upgrades.

3.2 Technical Feasibility of Proposed Water Storage Upgrades

MWRP's proposed standpipe and associated upgrades described above will adequately satisfy the future water storage demands in the Township. It should be noted, however, that the Township has already completed a Schedule B Municipal Class EA where Mayor, Council and Public Consultation was completed where an elevated water storage option was selected as the preferred water storage alternative. If this proposed alternative was to be completed an amendment to the existing EA would be required.

3.3 Wastewater System

3.3.1 Wastewater Collection and Pumping

Based on the capacity of the existing Drayton SPS, MWRP noted they did not agree that a new upstream pumping station would be the best option. It was noted the existing forcemain cannot handle the projected flow rate based on the pipe's pressure rating.

After considering various alternatives, MWRP recommended that the existing forcemain be twinned immediately and the two existing pumps be replaced by three larger pumps with VFDs to be able to handle the flows from the Drayton population until 2041. In addition to the forcemain and replacement of the pumps, MWRP indicated a new standby generator would be required at the SPS.

MWRP also noted that the Township of Mapleton may prefer to convert the Moorefield wastewater collection system from a low-pressure sewer system to a gravity sewer system.

MWRP also indicated they did not expect the Moorfield sewage pumping station to require upgrades within the next 20 years. If the collection system will be maintained as a low-pressure sewer system in the future, a large-scale servicing plan will be required prior to future development. To convert to a gravity system, a more comprehensive study will be required. MWRP suggested a new central SPS and a forcemain extension.

MWRP provided a cost estimate of approximately \$3,457,900 to complete the above noted wastewater upgrades.

3.3.2 Technical Feasibility of Proposed Upgrades to the Wastewater Collection and Pumping

The proposed method of twinning the existing forcemain as well as upgrading the pumps in the existing wet well will adequately address immediate and future capacity concerns at the existing Drayton SPS.

3.3.3 Wastewater Treatment

While the existing lagoon system needs desludging and some minor upgrades, MWRP noted that additional treatment capacity will not be required until approximately 2028 based on the current flows and population growth rate.

MWRP indicated that a SAGR system is proposed rather than the moving bed biofilm reactor (MBBR) proposed in the Class EA. Accounting for Total Kjeldahl Nitrogen (TKN) removal in the first two cells, MWRP believes the SAGR cells could be much smaller and projects the net present value (NPV) of a SAGR system to be lower than an MBBR. MWRP proposes that the SAGR system would be located in two newly constructed cells with provisions for a third cell to be constructed long-term. Blowers would be added for the SAGR system and to improve the existing aeration system, a new lift station would be constructed to replace the existing Filter Feed Pump Station.

Due to the increased operating costs associated with the SAGR system, MWRP recommends waiting for construction until the additional treatment is required. A cost estimate of approximately \$6,119,900 was provided to complete the upgrades.

3.3.4 Sludge Removal

MWRP recommended that approximately 26,350 m³ of sludge and 659 metric tonnes of dry solids be removed to increase retention time, improve aeration and improve the overall treatment in the lagoons. MWRP also noted the Geotube® system could be used for dewatering. This would be completed with minor upgrades including additional piping and valves to create a bypass for sampling in the winter as well as removing the alum mixer in the filter building to increase capacity.

The sludge removal and other minor upgrades would be scheduled for 2020. It was estimated this would cost approximately \$1,146,600.

3.3.5 Technical Feasibility of Proposed Wastewater Treatment Upgrades

The proposed SAGR system upgrade at the existing Drayton WWTP will adequately address the wastewater treatment servicing requirements for the Township's future demands.

4.0 Ontario Utility Commission (OUC)

OUC proposed the infrastructure upgrades that were outlined in the RFP. It was noted that the Moorefield gravity sewer and Alma water and wastewater servicing projects are speculative and have a possibility of not proceeding during the lifetime of the agreement.

4.1 Water System

OUC indicated that the proposed water tower project would proceed in the next three years and included an estimated cost of approximately \$3,000,000.

The existing water pumping system in Drayton was reviewed and it was noted that the assets are currently in good condition but may be approaching the end of their initial service life near the end of the agreement. OUC may perform an assessment of the system to review recommendations to extend the service life beyond hand-back of the system.

The Moorefield water system was also reviewed, and it was determined that there would likely be no major capital expenses required. The only item noted was that the pressure tanks may require replacement or reconditioning.

4.2 Technical Feasibility of Proposed Water Storage Upgrades

OUC's proposed water tower and associated upgrades described above will adequately satisfy the future water storage demands in the Township and is consistent with the preferred solution in the Township's Schedule B Water Storage EA.

4.3 Wastewater System

4.3.1 Wastewater Collection and Pumping

After the evaluation of various options for the Drayton wastewater collection system, the recommended option included constructing a new SPS on the north side of the Conestogo River and connecting to the existing forcemain. OUC noted this project would also proceed in the next three years, with a planned timeline to begin at the end of the first year. This project was estimated to cost approximately \$1,800,000.

Similar to the Moorefield water system, OUC noted that there are no significant capital expenditures expected for the Moorefield sewage pumping facilities.

4.3.2 Technical Feasibility of Proposed Upgrades to the Wastewater Collection and Pumping

The proposed upgrades consisting of constructing a new SPS at the north end of Drayton and connecting to the existing forcemain as well as upgrading the pumps in the existing wet well will adequately address immediate capacity concerns at the existing Drayton SPS. OUC did not confirm that the future projected flows for the new SPS could be accommodated by the existing forcemain. This will need to be confirmed as this will add a significant cost to their proposed capital estimate.

4.3.3 Wastewater Treatment

Based on the existing wastewater treatment system, OUC indicated that the MBBR system is recommended for the future as the technology was successfully shown to provide effective treatment through the pilot project. This project is planned to proceed at the end of the fifth year and OUC provided a cost estimate of \$3,800,000.

4.3.4 Technical Feasibility of Proposed Wastewater Treatment Upgrades

The proposed MBBR system upgrade at the existing Drayton WWTP will adequately address the wastewater treatment servicing requirements for the Township's future demands. This treatment option has already proven successful with a pilot project.




5.0 Bid Evaluation

An evaluation of the bids provided by Helios, MWRP, and OUC was completed to review the proposed water and wastewater technical servicing for the Township of Mapleton and is summarized in Table 1.

Table 1: Evaluation of Bidders' Proposed Water/Wastewater Servicing

		Helios	MWRP	OUC
A – Water System				
Description of Proposed Upgrades	<ul style="list-style-type: none"> Addition of new well and pumps at Drayton WTP to meet demands. Utilize aquifer as fire storage and supply. Rehabilitation of existing infrastructure. Potential construction of booster pumping station and pressure reducing valves. 	<ul style="list-style-type: none"> Construction of standpipe in Drayton with potential for fire pump to service beyond 20 years. 	<ul style="list-style-type: none"> Construction of water tower in Drayton. 	
Technical Feasibility	<ul style="list-style-type: none"> Does not provide additional treated storage and assumes the aquifer can supply the required 'underground storage'. Does not meet MECP Guidelines. Does not provide redundancy. Does not adequately meet the standard of servicing for the Township. 	<ul style="list-style-type: none"> Will provide the required storage and assist with maintaining pressures. Amendment to existing EA required. Will adequately satisfy the future water storage demands in the Township. 	<ul style="list-style-type: none"> Will provide the required storage and assist with maintaining pressures. Will adequately satisfy the future water storage demands in the Township. 	
Financial Estimates	\$965,302	\$4,109,000	\$3,000,000	
Comment on Financial Estimates	<ul style="list-style-type: none"> Costs appear reasonably accurate for proposed infrastructure. 	<ul style="list-style-type: none"> Costs appear reasonably accurate for proposed infrastructure. 	<ul style="list-style-type: none"> Costs for water tower likely underestimated. Cost does not include construction inspection and contract administration. Estimated cost to be approximately \$4,300,000. 	
Evaluation	Least Preferred ○	Partially Preferred ◐	Most Preferred ●	

		Helios	MWRP	OUC
B – Wastewater System				
B1 – Collection Systems				
Description of Proposed Upgrades	<ul style="list-style-type: none"> Completion of study to identify and repair sources of infiltration and inflow. 	<ul style="list-style-type: none"> Addition of extra pump at existing Drayton SPS. Twin existing sewage forcemain. 	<ul style="list-style-type: none"> Construction of new Drayton SPS on north side of river. 	
Technical Feasibility	<ul style="list-style-type: none"> Does not address immediate or future capacity concerns at existing Drayton SPS. 	<ul style="list-style-type: none"> Assumes the existing wet well can be reused to service future demands Will adequately address immediate and future capacity concerns at the existing Drayton SPS. 	<ul style="list-style-type: none"> Assumes existing forcemain can handle future peak flows, but the pressure rating of the existing pipe needs to be confirmed to ensure it is not exceeded. Will adequately address immediate and future capacity concerns at the existing Drayton SPS. 	
Financial Estimates	\$1,050,000	\$3,457,900	\$1,800,000	
Comment on Financial Estimates	<ul style="list-style-type: none"> Costs appear reasonably accurate for proposed study and remedial activities. 	<ul style="list-style-type: none"> Costs appear reasonably accurate for proposed infrastructure. 	<ul style="list-style-type: none"> Costs do not account for constructing new forcemain to the WWTP which would be required. Approximate expected cost for entire project including new forcemain is \$4,000,000. 	
Evaluation	Least Preferred ○	Partially Preferred ◐	Most Preferred ●	

		Helios	MWRP	OUC
B2 – Treatment System				
Description of Proposed Upgrades	<ul style="list-style-type: none"> Construction of SAGR system in two existing cells. Sludge removal in existing lagoons. Will adequately address the wastewater treatment servicing requirements for the Township's future demands. 	<ul style="list-style-type: none"> Construction of SAGR system in two new cells. Sludge removal in existing lagoons. Will adequately address the wastewater treatment servicing requirements for the Township's future demands 	<ul style="list-style-type: none"> Construction of MBBR treatment system. Will adequately address the wastewater treatment servicing requirements for the Township's future demands. 	
Technical Feasibility	<p>SAGR Wastewater Treatment System: \$3,500,000.</p> <p>Existing Sludge Removal: \$265,302.</p> <ul style="list-style-type: none"> Costs appear low for proposed upgrades. Total estimated project cost for both treatment and sludge removal would be approximately \$6,000,000. 	<p>SAGR Wastewater Treatment System: \$6,119,900</p> <p>Existing Sludge Removal: \$1,146,600</p> <ul style="list-style-type: none"> Costs appear reasonably accurate for proposed infrastructure. 	<p>MBBR Wastewater Treatment System: \$3,800,000.</p> <ul style="list-style-type: none"> Costs appear reasonably accurate for proposed infrastructure. This cost may not include engineering fees including construction inspection and contract administration which could add approximately \$1,000,000 to capital cost. Costs for decommissioning existing lagoon and sludge removal will be incurred once MBBR system is commissioned and not included in the capital cost. 	
Financial Estimates	<p>SAGR Wastewater Treatment System: \$3,500,000.</p> <p>Existing Sludge Removal: \$265,302.</p>	<p>SAGR Wastewater Treatment System: \$6,119,900</p> <p>Existing Sludge Removal: \$1,146,600</p>	<p>MBBR Wastewater Treatment System: \$3,800,000.</p>	
Comment on Financial Estimates	<ul style="list-style-type: none"> Costs appear low for proposed upgrades. Total estimated project cost for both treatment and sludge removal would be approximately \$6,000,000. 	<ul style="list-style-type: none"> Costs appear reasonably accurate for proposed infrastructure. 	<ul style="list-style-type: none"> Costs appear reasonably accurate for proposed infrastructure. This cost may not include engineering fees including construction inspection and contract administration which could add approximately \$1,000,000 to capital cost. Costs for decommissioning existing lagoon and sludge removal will be incurred once MBBR system is commissioned and not included in the capital cost. 	
Evaluation	Partially Preferred 	Partially Preferred 	Most Preferred 	
Recommended for Consideration	No	Yes	Yes	

6.0 Recommendation

The upgrades proposed by Helios do not meet the infrastructure requirements for the Township to service the water and wastewater pumping station servicing needs for the next 20 years.

MWRP's proposed upgrades will adequately satisfy the Township's infrastructure requirements for both the immediate and future demands. It should be noted that their proposed standpipe alternative was not chosen as the preferred alternative in the Schedule B Class EA the Township completed where Township Council, Mayor, and public were consulted. The estimated CAPEX of \$20,500,000 is reasonable for their proposed upgrades.

OUC's proposed upgrades will adequately satisfy the Township's infrastructure requirements for both the immediate and future demands. Additional upgrades will be required in the future to the existing forcemain from the Drayton SPS to the WWTP which were not accounted for. The estimated CAPEX of \$8,600,000 is reasonably low.

Burnside recommends that either MWRP or OUC be considered to complete the work on the Township's water and wastewater systems. Overall, both party's solutions will meet the infrastructure needs for the Township's immediate and future demands.

Yours truly,

R.J. Burnside & Associates Limited



Jeff Paznar, P.Eng., EP
Project Engineer
JP:sd

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Water & Wastewater Service Review

Exploring internal financing for
required Water & Wastewater
Infrastructure & assessing
Opportunity Costs.

Tuesday July 14 , 2020
Educational Session

Agenda

1. Review the current Environmental plan
2. Review the Water & Wastewater infrastructure needs
3. Review the 10-year Capital plan
4. Discuss inter-fund financing & the Development Community's contributions
5. Review the to impact to the tax base
6. Review the capital reserve funding levels
7. Review the impacts on the water & wastewater rates
8. Discuss the Opportunity costs





The Current Environmental Plan Key Points

- Council approved a 10-year capital budget of \$11,992,200
- Committed infrastructure spending within the next 5-years is \$8,867,400
- The Budget assumed interfund borrowing from the Capital reserves of \$6 million dollars would be required for financing – 25 year loans @ 2.26%
 1. 2020 - \$2,000,000 to upgrade the pumping station
 2. 2023 - \$2,500,000 to upgrade the wastewater capacity rating to 1300 m³/day
 3. 2028 - \$1,500,000 to upgrade Drayton's water pressure
- The Utility Rates would increase by 16.23% - effective April 1st 2020



Review the Water & Wastewater infrastructure needs

Based on the Technical Evaluation by R J Burnside & Associate for Water & Wastewater infrastructure needs the proposed changes for the 10-year Capital Budget would be required.

	Mapleton	EPCOR
Five Years	\$10,184,400	\$10,595,000
Ten Years	\$13,992,200	\$19,193,000
Twenty Years	na	\$20,492,000



The 10-year Capital plan

Project	Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Ten Year Total
18025	Rate Study and Financial Plan				20,000					20,000		40,000
18026	Wastewater Capacity Increase to 1300m3/day - reactor							3,800,000				3,800,000
18062	Waterworks - Service Breaks Program	27,300	40,000		40,000		40,000		50,000		50,000	247,300
18063	Contingency for - Drayton & Moorefield Water Mains & Facilities	88,100	53,500	30,000	37,500	34,500	33,000	22,500	22,500	27,500	52,500	401,600
18065	Water Tower			4,234,000								4,234,000
18068	Contingency for - Drayton & Moorefield Wastewater Mains & Facilities	146,500	38,500	91,300	13,300	31,300	13,300	17,500	117,000	48,500	33,500	550,700
18070	Storm water Infiltration, (I&I)	55,000	55,000					80,000	80,000		50,000	320,000
18071	Sludge Removal									200,000		200,000
18073	Growth Projects, (special studies)	38,600					40,000					78,600
19001	Wastewater - Pumping Station and Forcemain		4,100,000	5,000		5,000		5,000		5,000		4,120,000
Environment Services		355,500	4,287,000	4,360,300	110,800	70,800	126,300	3,925,000	269,500	301,000	186,000	13,992,200



The Revised Environmental Plan Key Points

- The Council approved a revised 10-year capital budget for \$13,992,200
- That committed infrastructure spending within the next 5-years be \$10,184,400
- That the revised Budget requires that interfund borrowing from the Capital reserves of \$4.7 million dollars be used financing & repaid by the ratepayers – 25 year loans @ 2.26%
 1. 2022 - \$2,000,000 to upgrade the pumping station
 2. 2026 - \$2,700,000 to upgrade the wastewater capacity rating to 1300 m³/day
- The Utility Rates would increase by 16.23% - effective July 31st 2020
- DC revenue of \$3,474,118 is used for funding. A bridging loan of \$1,700,000 from the Capital reserves would be required until DC revenue can be collected. Staff assumed that DC revenues will refund the capital reserve in full over a 8-year period. An interest rate of 2.26% would be charged (interest portion only paid by the ratepayers)
- No Impact on the Township's Debt Repayment Limit



Environmental Reserve Funds

	Environment Services Discretionary Reserve Fund									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Opening Balance	\$2,576,781	\$2,464,506	\$1,525,310	\$559,870	\$535,612	\$625,407	\$701,103	\$42,085	\$47,548	\$160,516
Revenues										
Transfers from Operating	\$221,000	\$368,284	\$387,987	\$261,184	\$326,480	\$359,128	\$490,041	\$588,049	\$705,659	\$811,508
Transfers from Capital Reserve			\$2,000,000				\$2,700,000			
Subtotal	\$2,797,781	\$2,832,790	\$3,913,297	\$821,054	\$862,092	\$984,535	\$3,891,144	\$630,134	\$753,207	\$972,024
Expenditures										
Debt Charges		\$38,420	\$187,299	\$179,472	\$171,525	\$163,454	\$324,279	\$313,515	\$293,138	\$274,242
Capital Expenditures	\$355,500	\$1,282,815	\$3,171,177	\$110,800	\$70,800	\$126,300	\$3,525,160	\$269,500	\$301,000	\$186,000
Subtotal	\$355,500	\$1,321,235	\$3,358,476	\$290,272	\$242,325	\$289,754	\$3,849,439	\$583,015	\$594,138	\$460,242
Subtotal	\$2,442,281	\$1,511,555	\$554,821	\$530,782	\$619,767	\$694,781	\$41,705	\$47,119	\$159,069	\$511,783
Interest Allocation	\$22,225	\$13,755	\$5,049	\$4,830	\$5,640	\$6,323	\$380	\$429	\$1,448	\$4,657
Closing Balance	\$2,464,506	\$1,525,310	\$559,870	\$535,612	\$625,407	\$701,103	\$42,085	\$47,548	\$160,516	\$516,440



The 10-year Capital plan

	Capital Expenditures										
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	
General Government	\$136,600	\$40,000	\$10,000	\$15,000	\$25,000	\$40,000	\$5,000	\$10,000	\$22,000	\$25,000	\$328,600
Protective Services	\$37,500	\$44,000	\$306,000	\$4,000	\$13,000	\$815,000	\$9,000	\$6,000	\$369,000	\$13,000	\$1,616,500
Transportation Services	\$3,344,500	\$3,010,090	\$3,272,060	\$3,136,800	\$3,515,000	\$3,853,800	\$3,660,700	\$3,780,000	\$2,710,800	\$3,988,410	\$34,272,160
Environment Services	\$355,500	\$4,287,000	\$4,360,300	\$110,800	\$70,800	\$126,300	\$3,925,000	\$269,500	\$301,000	\$186,000	\$13,992,200
Health Services	\$0	\$0	\$0	\$0	\$80,000	\$0	\$0	\$0	\$0	\$0	\$80,000
Recreation & Culture	\$267,000	\$135,000	\$140,000	\$160,000	\$90,500	\$120,000	\$1,115,000	\$655,000	\$40,000	\$20,000	\$2,742,500
Planning & Development	\$0	\$240,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$240,000
Subtotal	\$4,141,100	\$7,756,090	\$8,088,360	\$3,426,600	\$3,794,300	\$4,955,100	\$8,714,700	\$4,720,500	\$3,442,800	\$4,232,410	\$53,271,960

	Funding Sources										
Capital Reserve	(\$1,795,265)	(\$2,525,090)	(\$1,788,355)	(\$1,663,579)	(\$1,982,279)	(\$2,365,579)	(\$3,532,319)	(\$2,796,779)	(\$1,124,579)	(\$2,385,189)	(\$21,959,013)
Protective Services Reserve	(\$37,500)	(\$44,000)	(\$306,000)	(\$4,000)	(\$13,000)	(\$815,000)	(\$9,000)	(\$6,000)	(\$369,000)	(\$13,000)	(\$1,616,500)
Cemetery Reserve	\$0	\$0	\$0	\$0	(\$80,000)	\$0	\$0	\$0	\$0	\$0	(\$80,000)
Current Revenue	(\$900,000)	(\$900,000)	(\$900,000)	(\$900,000)	(\$900,000)	(\$900,000)	(\$900,000)	(\$900,000)	(\$900,000)	(\$900,000)	(\$9,000,000)
Environment Service Reserve Fund	(\$355,500)	(\$1,282,815)	(\$3,171,177)	(\$110,800)	(\$70,800)	(\$126,300)	(\$3,525,160)	(\$269,500)	(\$301,000)	(\$186,000)	(\$9,399,052)
Gas Tax	(\$652,995)	(\$319,350)	(\$333,865)	(\$348,381)	(\$348,381)	(\$348,381)	(\$348,381)	(\$348,381)	(\$348,381)	(\$348,381)	(\$3,744,877)
Building Reserve Fund	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Development Charges	\$0	(\$2,284,995)	(\$1,189,123)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$3,474,118)
Conditional Grants		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unconditional Grants	(\$399,840)	(\$399,840)	(\$399,840)	(\$399,840)	(\$399,840)	(\$399,840)	(\$399,840)	(\$399,840)	(\$399,840)	(\$399,840)	(\$3,998,400)
Debtenture needs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal	(\$4,141,100)	(\$7,756,090)	(\$8,088,360)	(\$3,426,600)	(\$3,794,300)	(\$4,955,100)	(\$8,714,700)	(\$4,720,500)	(\$3,442,800)	(\$4,232,410)	(\$53,271,960)



Development Charge Funding

DC Background Study	EPCOR	Mapleton
\$7,841,984	\$5,504,000	\$3,474,118

- EPCOR assumes that the Development Community will contribute \$5.5 million funding 26.86% of its total investment of \$20,492,000
- EPCOR assumes that \$902 thousand will be collected in the first five years of the term
- The Township's wastewater capacity rating limits the building allocations to the Development Community. Based on allocation the Development Communities contribution is limited \$3,474 million
- The Township's DC collection in the first five years is assumed to be \$767 thousand



DC Reserve Funds

	Consolidated Development Charges (Reserve Funds)									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Opening Balance	\$774,300	\$952,346	\$791,006	\$32,369	\$316,893	\$609,691	\$910,951	\$1,220,867	\$2,169,685	\$3,145,892
Revenues										
Transfers in		\$1,700,000								
Estimated DC Charges	\$171,000	\$414,989	\$423,288	\$431,754	\$440,389	\$449,197	\$458,181	\$1,097,393	\$1,119,341	\$1,141,728
Subtotal	\$945,300	\$3,067,335	\$1,214,294	\$464,123	\$757,282	\$1,058,888	\$1,369,132	\$2,318,261	\$3,289,027	\$4,287,620
Expenditures										
Transfers out				\$147,525	\$150,475	\$153,485	\$156,554	\$159,685	\$162,879	\$403,213
Capital Expenditures	\$0	\$2,284,995	\$1,189,123		\$0	\$0	\$0	\$0	\$0	\$0
Subtotal	\$945,300	\$782,340	\$25,171	\$316,599	\$606,807	\$905,403	\$1,212,578	\$2,158,575	\$3,126,148	\$3,884,407
Interest Allocation	\$7,046	\$8,666	\$7,198	\$295	\$2,884	\$5,548	\$8,290	\$11,110	\$19,744	\$28,628
Closing Balance	\$952,346	\$791,006	\$32,369	\$316,893	\$609,691	\$910,951	\$1,220,867	\$2,169,685	\$3,145,892	\$3,913,035



DC Reserve Funds

DC Revenue Projection	<i>Factor rate increase 2% per Year</i>												
	1	2	3	4	5	6	7	8	9	10	11	12	
Roads	219,938	224,336	228,823	233,400	238,068	242,829	558,381	569,549	580,940	592,558	604,409	616,498	4,909,727
Fire	1,599	1,631	1,663	1,697	1,731	1,765	3,565	3,636	3,709	3,783	3,859	3,936	32,574
Park	32,066	32,708	33,362	34,029	34,709	35,404	97,006	98,946	100,925	102,943	105,002	107,102	814,203
Administration	13,861	14,138	14,421	14,710	15,004	15,304	35,229	35,934	36,652	37,385	38,133	38,896	309,667
Wastewater services	95,724	97,639	99,591	101,583	103,615	105,687	266,507	271,837	277,273	282,819	288,475	294,245	2,284,995
Water services	51,801	52,837	53,893	54,971	56,071	57,192	136,706	139,440	142,229	145,074	147,975	150,935	1,189,123
Total	414,989	423,288	431,754	440,389	449,197	458,181	1,097,393	1,119,341	1,141,728	1,164,563	1,187,854	1,211,611	9,540,289
Environmental DC	147,525	150,475	153,485	156,554	159,685	162,879	403,213	411,277	419,502	427,892	436,450	445,179	3,474,118



Impact on Assessment Growth

Anticipated Tax Revenues from new Assessment

Building Type	Increase sq ft	Number of Units	cva	ASSESSMENT GROWTH	Municiple tax at current Tax Rate	
Single Family Unit		296	520,000	153,920,000	0.476387%	\$ 733,255
Semi		38	345,000	13,110,000	0.476387%	\$ 62,454
Multiples		38	276,000	10,488,000	0.905135%	\$ 94,931
Apt Units		373	314,000	117,122,000	0.905135%	\$ 1,060,112
Non Res (sq ft)	91,960		2,175	200,013,000	0.00710293	\$ 1,420,678
				Total Growth		\$ 3,371,430
				Average per year		\$ 280,953

This represents a 40% increase to the tax base over a 12-year period

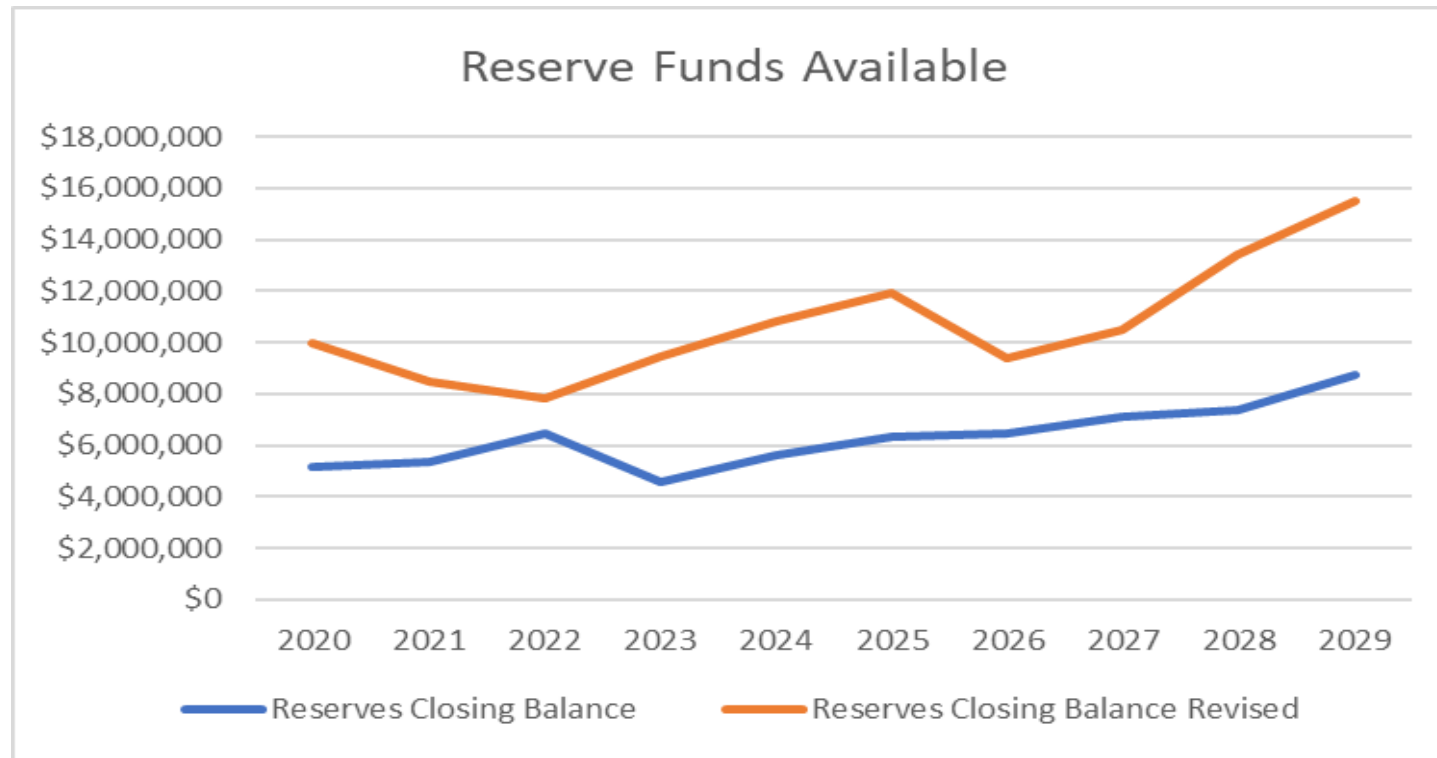


Capital Reserves

	Capital Reserve									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Opening Balance	\$9,262,672	\$9,957,321	\$8,488,224	\$7,811,383	\$9,461,266	\$10,847,181	\$11,905,659	\$9,416,648	\$10,518,667	\$13,446,983
Revenues										
Transfer from Operating	\$2,489,914	\$2,717,573	\$2,924,215	\$2,986,465	\$3,046,194	\$3,107,118	\$3,262,474	\$3,425,598	\$3,596,878	\$3,776,722
Recovery from DC	\$0	\$0	\$0	\$147,525	\$150,475	\$153,485	\$156,554	\$159,685	\$162,879	\$403,213
Recovery from Envir Reserve Fund	\$0	\$38,420	\$187,299	\$179,472	\$171,525	\$163,454	\$324,279	\$313,515	\$293,138	\$274,242
Subtotal	\$11,752,586	\$12,713,314	\$11,599,738	\$11,124,845	\$12,829,460	\$14,271,238	\$15,648,967	\$13,315,446	\$14,571,562	\$17,901,158
Expenditures										
Transfers		\$1,700,000	\$2,000,000				\$2,700,000			
Capital Expenditures	\$1,795,265	\$2,525,090	\$1,788,355	\$1,663,579	\$1,982,279	\$2,365,579	\$3,532,319	\$2,796,779	\$1,124,579	\$2,385,189
Subtotal	\$1,795,265	\$4,225,090	\$3,788,355	\$1,663,579	\$1,982,279	\$2,365,579	\$6,232,319	\$2,796,779	\$1,124,579	\$2,385,189
Closing Balance	\$9,957,321	\$8,488,224	\$7,811,383	\$9,461,266	\$10,847,181	\$11,905,659	\$9,416,648	\$10,518,667	\$13,446,983	\$15,515,969

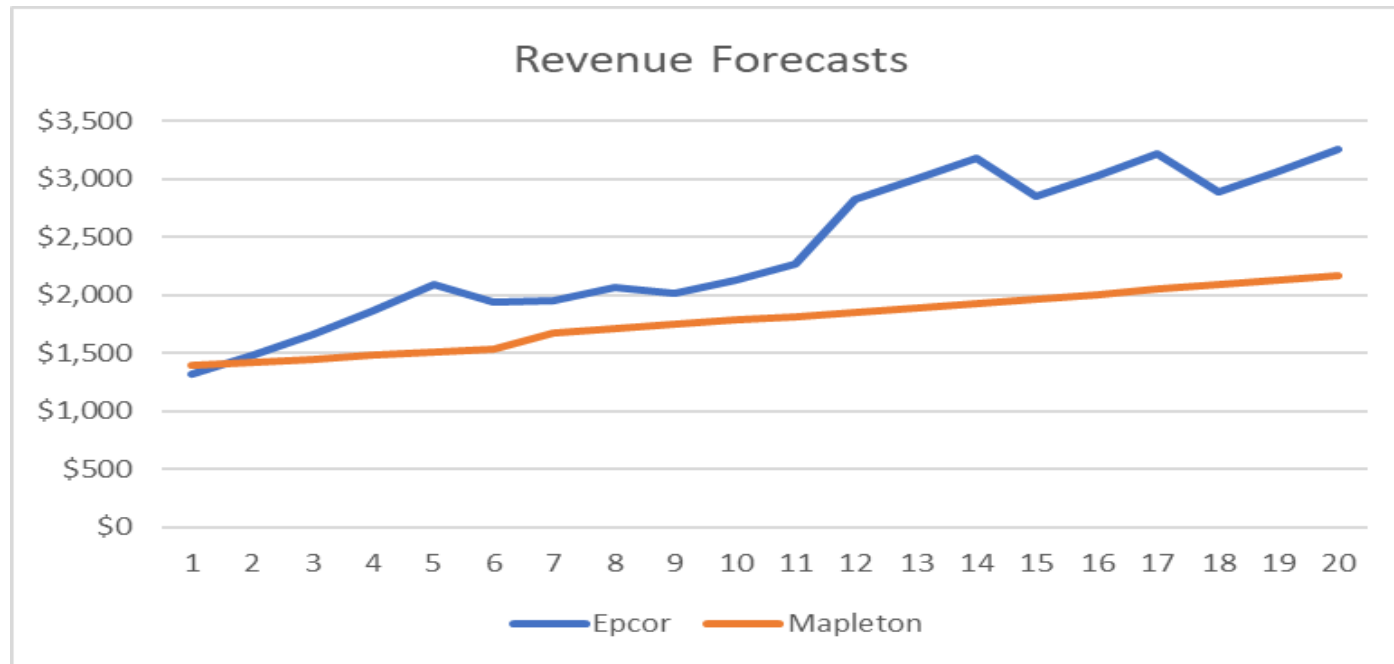


Capital Reserves





Water & Wastewater Rate Revenue Comparison





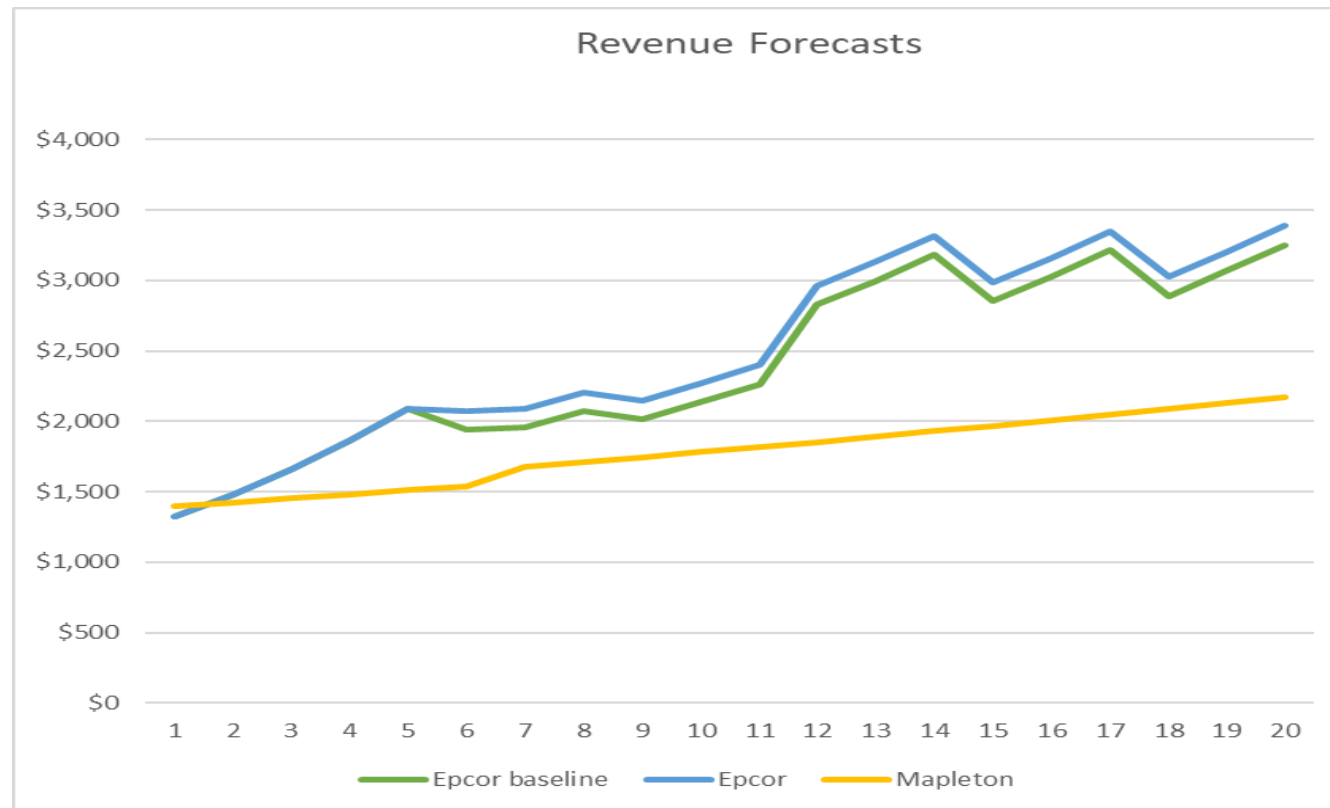
EPCOR Sources & Uses of Cash

Table 9-3: Sources and Uses of Cash During Concession Term (in Thousands)

Sources of Cash		Uses of Cash	
Rate Revenue	48,106	CapEx	20,492
Developer Contribution Received	5,504	Change in DC Reserve	1,753
Facility A Borrowing	20,759	O&M	26,191
Facility B Borrowing	15,177	Interest	4,805
Equity Injection	10,118	Cash Taxes	2,853
Handback Payment	12,420	Facility A Repayment	20,759
		Facility B Repayment	8,390
		Dividends	20,000
		Net Concession Payment	54
		Terminal Debt	6,787
Sum	112,083		112,083

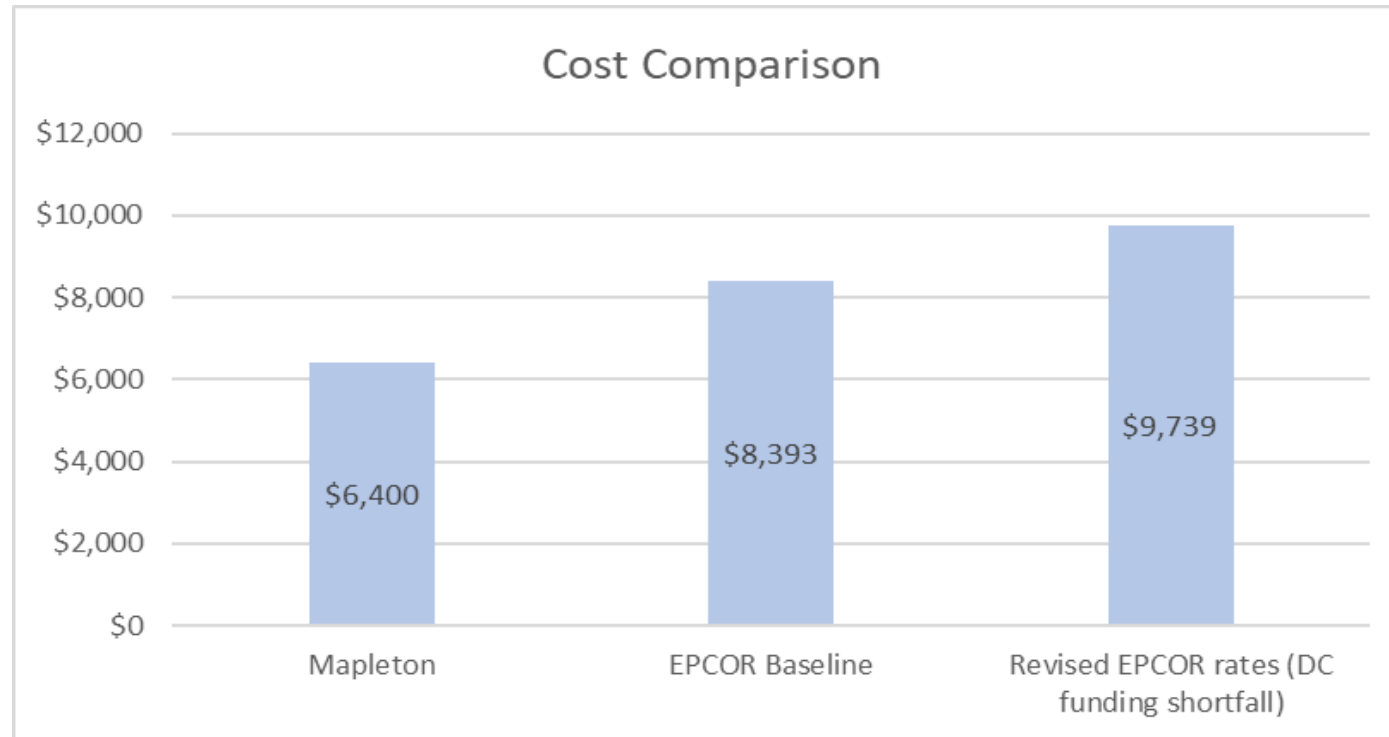


Water & Wastewater Rate Revenue Comparison



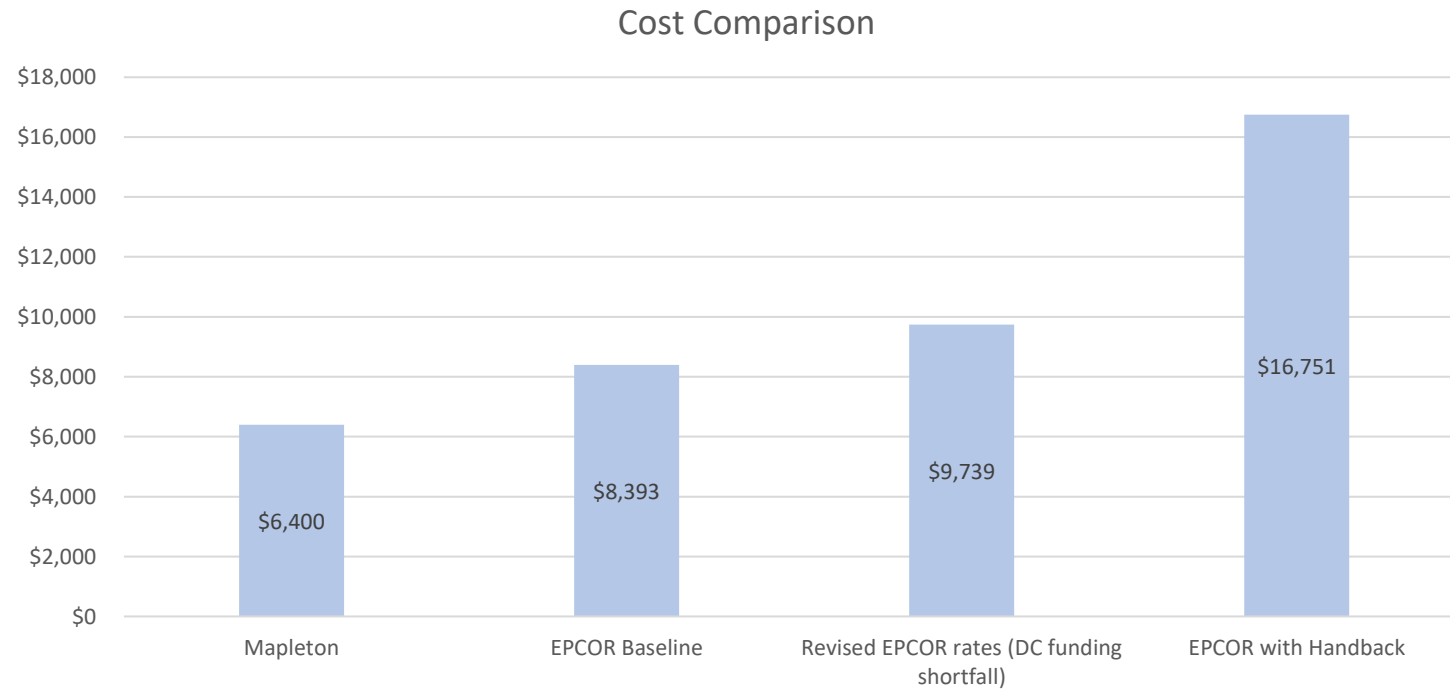


Water & Wastewater Opportunity Cost Comparison (based on today's dollars)





Water & Wastewater Opportunity Cost Comparison (based on today's dollars)





Internal Fund Financing

Sources of Funding	Amounts
Rate supported	\$4,118,082
DC Funding	\$3,474,118
Inter- Funds from capital reserves	\$6,400,000
Total	\$13,992,200

- **The ratepayers and the development community will refund the Capital Reserves with interest**
- **Inter fund loan – interest earned & returned to the capital reserves \$1,713,792**
- **No Impact on the Township’s Debt Repayment Limit**



Conclusion

The Option is to either set aside \$6.4 million from the Capital Reserve and use these funds as a source for infrastructure financing

Or

Accept the Opportunity Cost of the EPCOR investment as measured in its Present Value
Between \$8.3 - \$9.7 million

The Opportunity Cost of the EPCOR investment is \$2 to \$3 million more expensive than using Capital Reserve funds as source for internal financing.

The EPCOR Investment as a Financing Option would not be recommended



Question

THE CORPORATION OF THE TOWNSHIP OF MAPLETON

BY-LAW NUMBER 2020-051

Being a by-law to confirm all actions and proceedings of the Council of the Corporation of the Township of Mapleton

WHEREAS Section 5 of the Municipal Act, S.O. 2001 c. 25 (hereinafter called "the Act") provides that the powers of a Municipal Corporation shall be exercised by its Council;

AND WHEREAS Section 5(3) of the Act states, a municipal power, including a municipality's capacity, rights, powers and privileges under section 9, shall be exercised by by-law, unless the municipality is specifically authorized to do otherwise;

NOW THEREFORE the Council of the Corporation of the Township of Mapleton enacts as follows:

1. All actions and proceedings of the Council of the Corporation of the Township of Mapleton taken at its meetings held on Thursday, July 30, 2020, except those taken specifically by By-law and those required by law to be done by Resolution only are hereby sanctioned, confirmed and adopted as though they were set out herein.
2. The Mayor, or in his absence, the Presiding Officer and the Clerk, or in his/her absence, the Deputy Clerk, are hereby authorized and directed to do all things necessary to give effect to the foregoing.
3. The Mayor, or in his absence, the Presiding Officer and the Clerk, or in his/her absence, the Deputy Clerk, are hereby authorized and directed to execute all documents required by law to be executed by them as may be necessary in order to implement the foregoing and the Clerk, or in his/her absence, the Deputy Clerk, is hereby authorized and directed to affix the seal of the Corporation to any such documents.

READ a first, second and third time on Thursday, July 30, 2020.

Mayor Gregg Davidson

Clerk Barb Schellenberger