THE CORPORATION OF THE TOWNSHIP OF ESSA
VIRTUAL COMMITTEE OF THE WHOLE MEETING

WEDNESDAY, DECEMBER 16, 2020
6:00 p.m.

To view our live stream visit the Township of Essa's YouTube Channel

AGENDA

1. OPENING OF MEETING BY THE MAYOR

2. DISCLOSURE OF PECUNIARY INTEREST

3. DELEGATIONS / PRESENTATIONS / PUBLIC MEETINGS

p. 1 **a) Delegation**
Ken Sharratt, Principal Consultant – Sharratt Water Management Ltd.
Re: Essa Water System Financial Plan Project with Water and Wastewater Rates

Recommendation: *Be it resolved that the Township of Essa Drinking Water System Financial Plan as prepared by Sharratt Water Management Ltd and dated December 7, 2020, be approved; and*
That the Drinking Water and Wastewater System Rate Report as prepared by Sharratt Water Management Ltd. and dated December 7, 2020, be received.

p. 110 **b) Public Meeting**
Re: Proposed Official Plan Amendment (OPA36) and Zoning By-law Amendment (Z4/20) – 14 & 18 Margaret Street, Angus

STAFF REPORTS

4. PLANNING AND DEVELOPMENT

5. PARKS AND RECREATION/ COMMUNITY SERVICES

6. FIRE AND EMERGENCY SERVICES

7. PUBLIC WORKS

8. FINANCE

9. CLERKS / BY-LAW ENFORCEMENT / IT

10. CHIEF ADMINISTRATIVE OFFICER (C.A.O.)

p. 131 **a. Staff Report CAO065-20 submitted by the Chief Administrative Officer, re: Baxter Water System – Amending Agreement with the Town of New Tecumseth.**

Recommendation: *Be it resolved that Staff Report CAO065-20 be received; and*
That Council authorize entering into an amending agreement with the Town of New Tecumseth for the provision of water to supply the community of Baxter from the pipeline which is under the jurisdiction of the Town of New Tecumseth; and
That the By-law be brought forward for Council's consideration at the next regularly scheduled meeting.

11. OTHER BUSINESS

12. ADJOURNMENT

Recommendation: *Be it resolved that this meeting of Committee of the Whole of the Township of Essa adjourn at _____ p.m. to meet again on the 20th day of January, 2021 at 6:00 p.m.*

ESSA Water System

Financial Plan Project
with
Water and Wastewater Rates

December 16, 2020

Sharratt Water Management Ltd.
Sustainable Water Management Specialists

Project Purpose

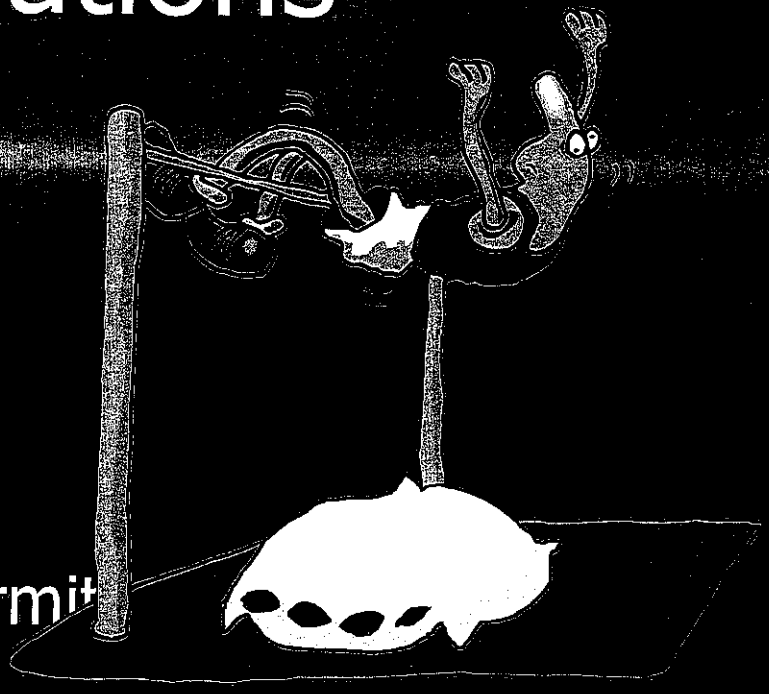
- Develop Water Financial Plan
  - Develop Water/Wastewater Rates
- Approval of Plan and Submit
  - Ontario Government

Water Regulation Changed in 2000

- Walkerton a water regulation landmark
  - Public inquiry
- Safe Drinking Water Act Passed in 2002

MOE Regulations

- 2002 Safe Drinking Water Act
  - Utilities to be licensed



- Elements to obtain a license:
  1. A Permit to Take Water
  2. A Drinking Water Works Permit
  3. An Operational Plan, and
  4. An Accredited Operating Authority
  5. **A Financial Plan**

Financial Plans – Reg. 453/07

- Regulation 453/07
  - Prepare a Financial plan before licensing
  - Cover 6 year period minimum
    - Compulsory for water systems
  - Has mandatory components
    - Available to the public free of charge
    - Placed on the internet
    - Advertise report availability
    - Approved by Council – Copy to MMAH
  - Repeat study every 5 years
    - before next license renewal

Financial Plan Content

- 2006 Clean Water Act
  - Financial Plans to include source protection costs
- 2007
  - Lead service replacement costs

Financial Planning Guidelines

- Guidelines published by MOE - Aug 07
  - "Toward Financially Sustainable Drinking – Water and Wastewater Systems".
- Goal - Achieving financial sustainability

Key MOE Fin. Plan Principles

1. Engaging the public in decision making processes/accessible reports
2. An integrated approach to water/wastewater system financial planning
3. Life-cycle approaches to fin. planning/asset management
4. Funds available when assets need to be maintained, rehab. replaced
5. Asset management planning is central
6. Sustainable level of revenue allows systems to be kept in good condition
7. Rate structures can promote financial sustainability and water conserv.
8. Metering, use of rates, preferable to cross-subsidization using prop. taxes.
9. Growth should fund growth.
10. Financial Plans are living documents - lend themselves to improvement.
11. Multi-year plans should be periodically reviewed.

ESSA Water/Wastewater System

- Water
  - Estimated 2019 Repl. Value $60 million
  - 1,150 Assets listed
  - $12,500 per connection
- Wastewater
  - Est 2019 Repl. Value $75 million
  - 745 Assets
  - $17,800 per connection

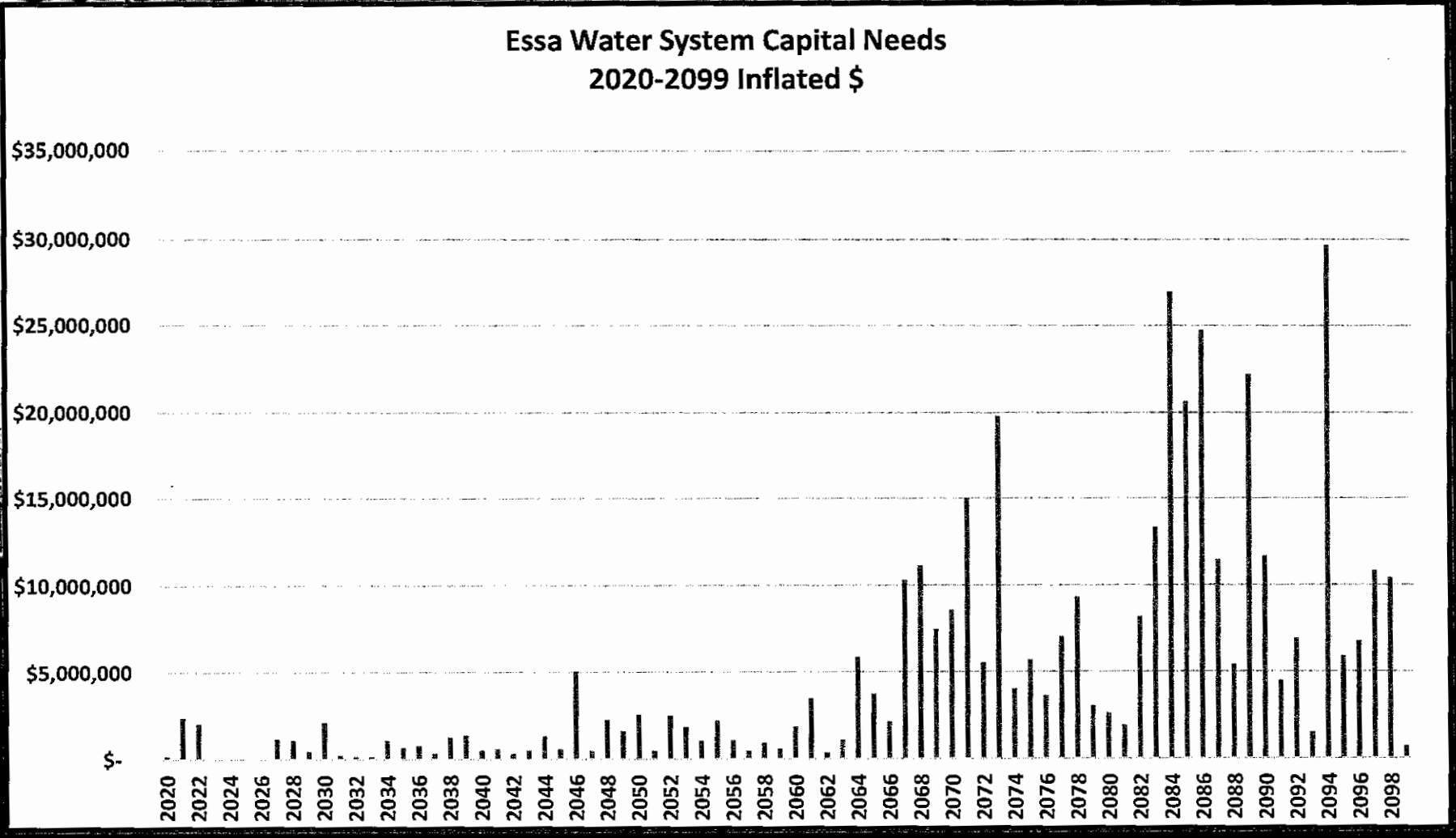
Financial Plan Steps

- Project capital renewal/replacement needs
  - Project all water asset costs to 2099
  - Wastewater assets projected to 2099
- Develop a cost recovery plan
  - Capital renewal costs to 2099
  - Operating costs to 2030
  - Estimate # of users/water sold
  - Develop rates
- Prepare Financial Plan

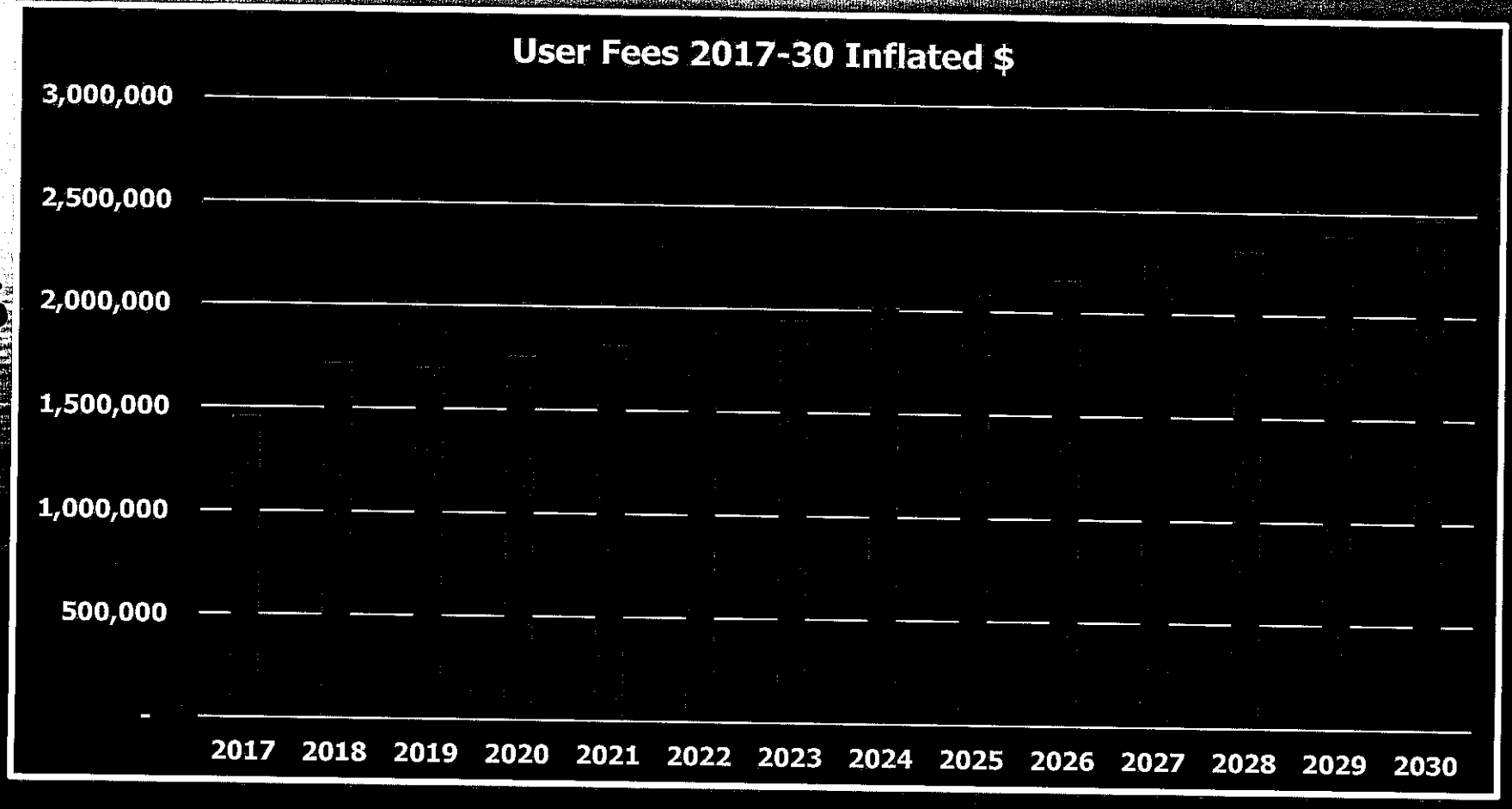
ESSA Rate Setting

- Inflation – Most 2%, 5% for energy
- Capital Projection – 3% inflation
  - (construction price index)
- Rate type – two part rate
  - Fixed component – monthly charge based on meter size
  - Volumetric – based amount of water used

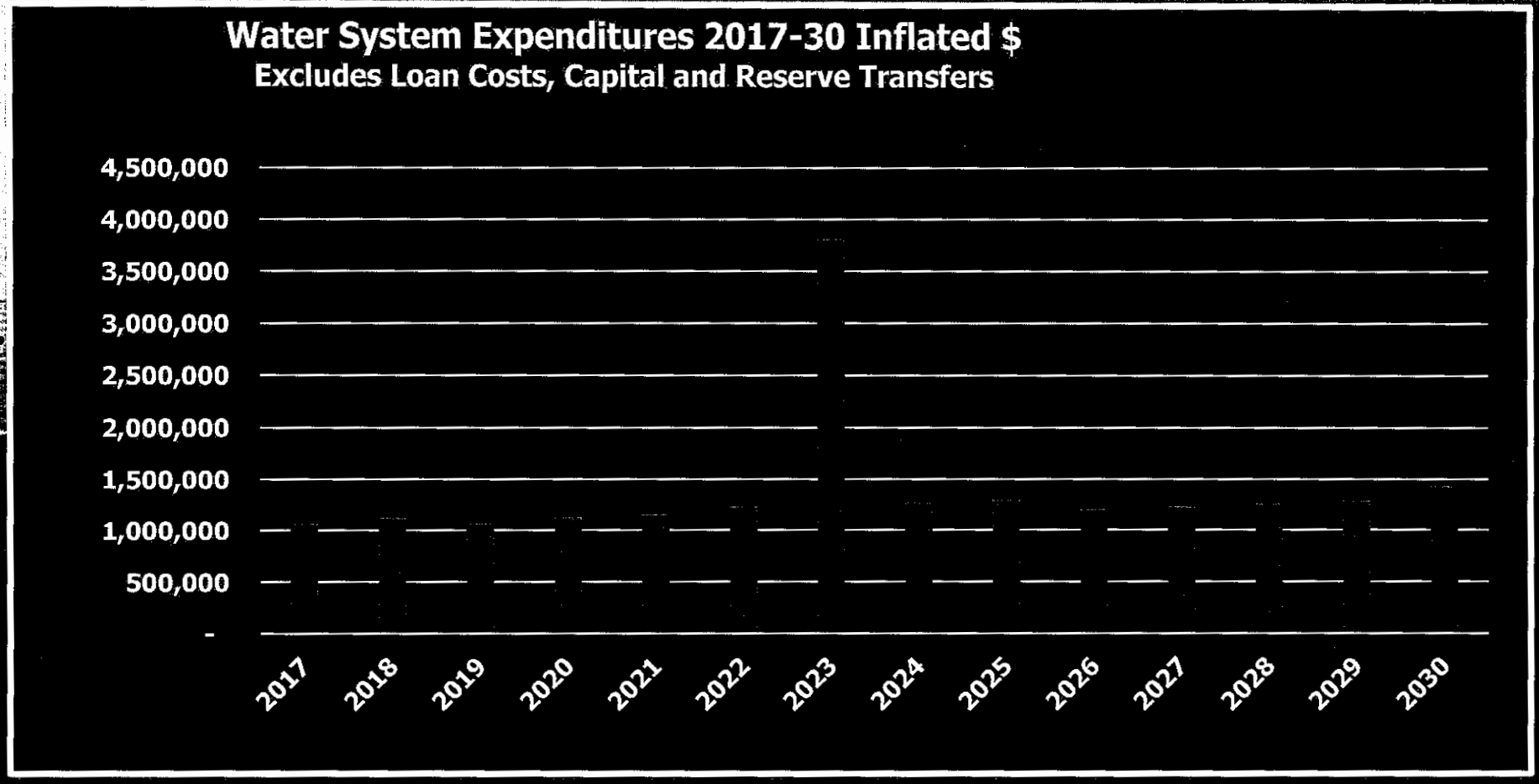
Capital Needs to 2099



User Fees 2017-30 Infl. $



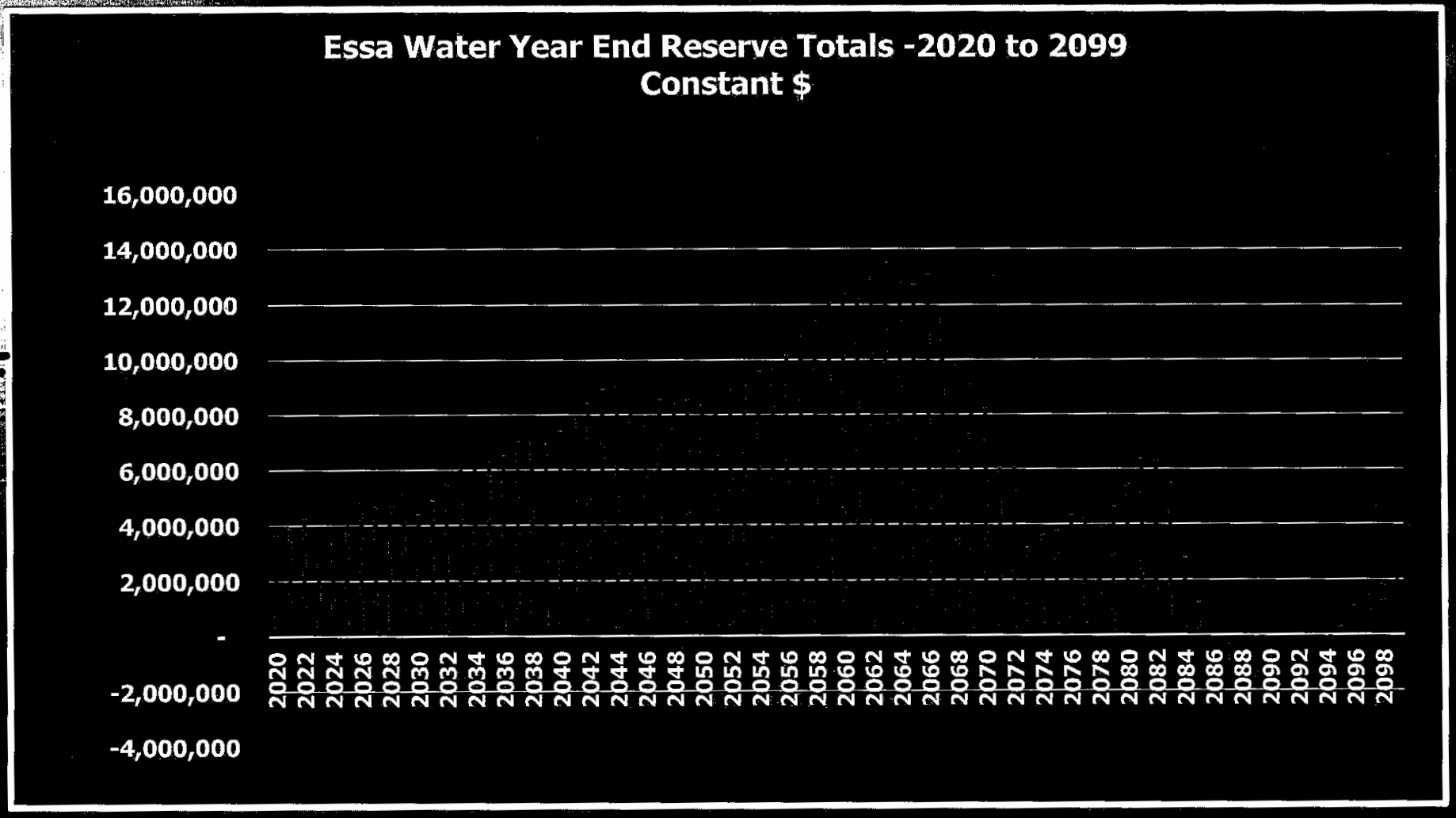
Water Expenditures 2017-30 Infl $



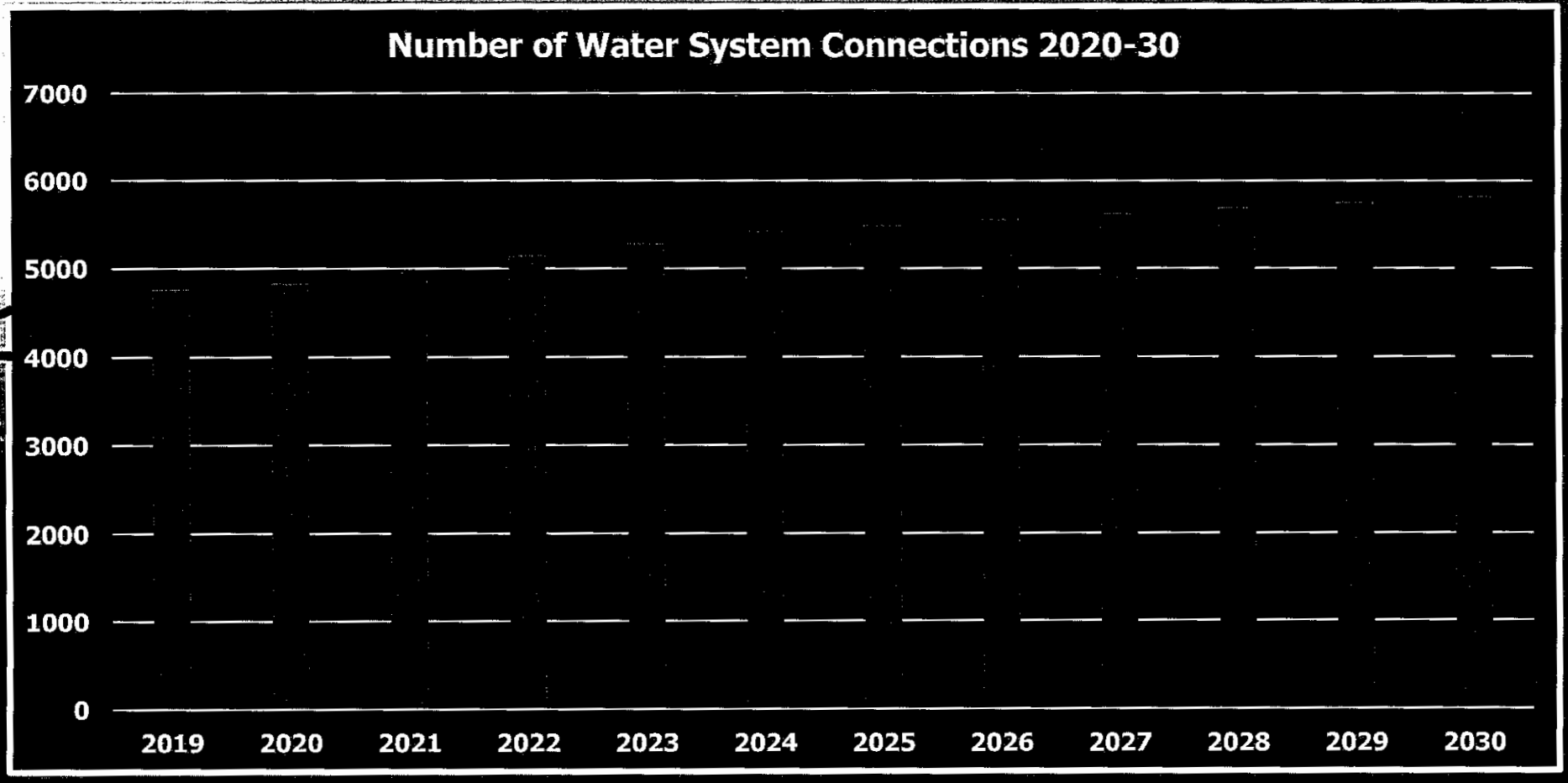
Water Reserve 2020-2030 Infl.$

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Value incl. Stabl. Res.	2,998,494	3,781,792	4,139,235	4,662,445	2,984,345	3,936,576	4,851,915	5,991,967	5,970,896	6,128,813	6,946,973
Addition (Withdrawl) from (to) Ops	783,298	357,442	523,210	- 1,678,100	952,232	915,339	1,140,051	- 21,071	157,917	818,161	- 832,062
Interest Charge on Deficits											
Close Inflated $	3,781,792	4,139,235	4,662,445	2,984,345	3,936,576	4,851,915	5,991,967	5,970,896	6,128,813	6,946,973	6,114,912
Close in 2019$	3,671,643	3,901,626	4,266,798	2,651,552	3,395,725	4,063,403	4,872,017	4,713,480	4,697,225	5,169,201	4,417,542

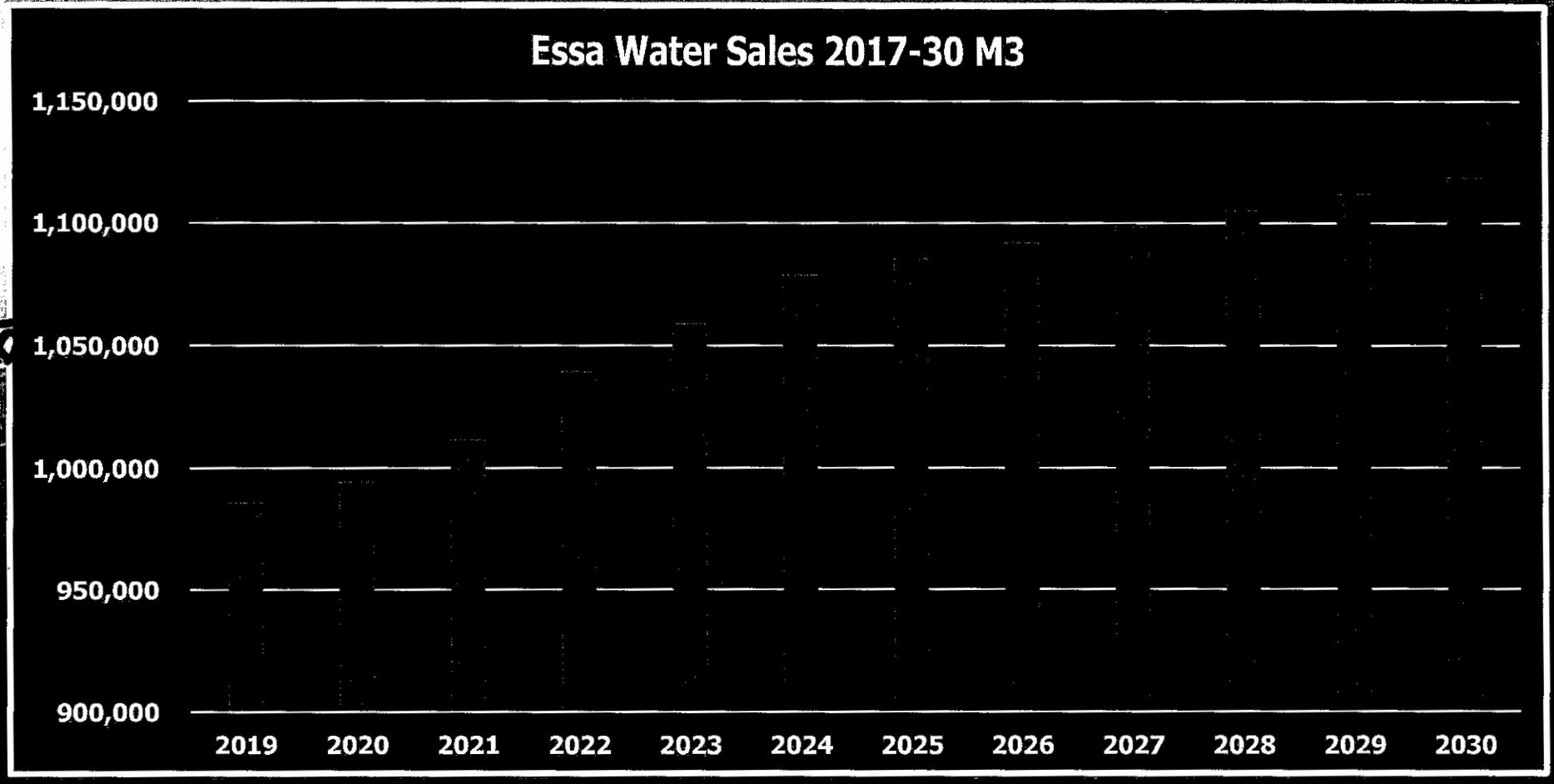
Long Range Reserve Projection



Connections



Projected Future Water Sales M3



Proposed Rates Infl. $

	2020	2021	2022	2023	2024	2025
Fixed Portion per Year	63.07	65.21	65.08	65.60	66.15	67.66
Variable Portion per M3	1.43	1.47	1.48	1.51	1.53	1.58

Water Bills Infl $

Table 1.2 Essa Hypothetical Yearly Water Bills 2020 - 2025 Inflated $						
Hypothetical User	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Single Person with 50 M3/	135	139	139	141	143	146
Couple with 100 M3 per Ye	206	213	214	216	219	225
Family 250 M3 per Year	421	434	436	443	449	462
Average User 180 M3 per Y	320	331	332	337	342	351
Larger User 600 M3 per Ye	1,041	1,073	1,080	1,095	1,111	1,142
Arena at 10,000 M3 per Ye	14,483	14,929	15,036	15,275	15,517	15,961
Industry at 23,000 M3 per Y	33,073	34,091	34,338	34,884	35,439	36,456

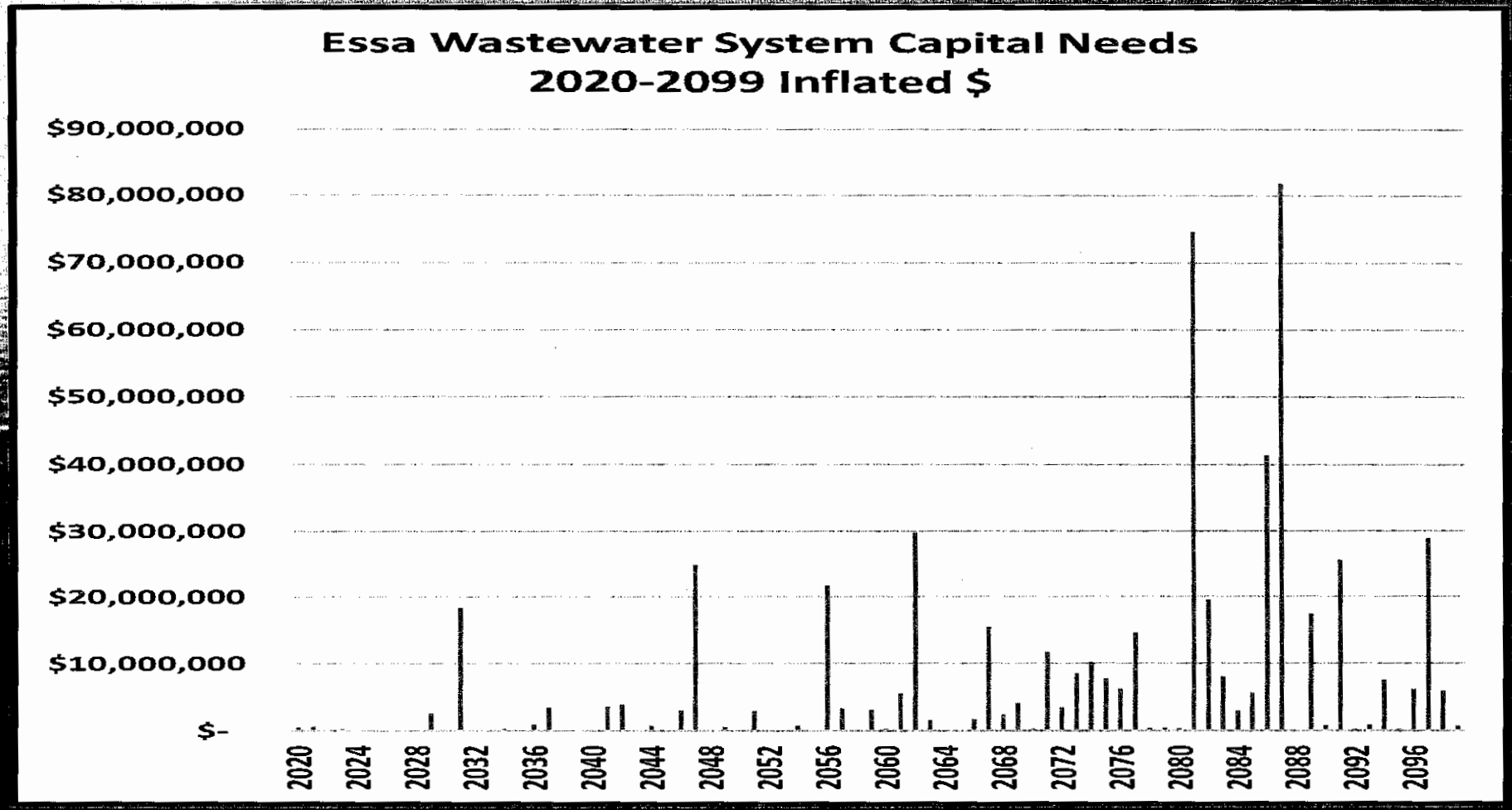
Note: Large user, arena and industry are assumed to have a 2 inch meter

Community Bill Comparisons

Utility	Water Bill
Essa	$483
Shelburne	$648
Toronto	$598
Barrie	$606
Springwater Residential	$730
Markdale	$847
Dundalk	$849
Clearview	$884
Mount Forest	$1,208
Adjala-Tosorontio	$1,415

Based on Average Usage of 294 M3 per Year

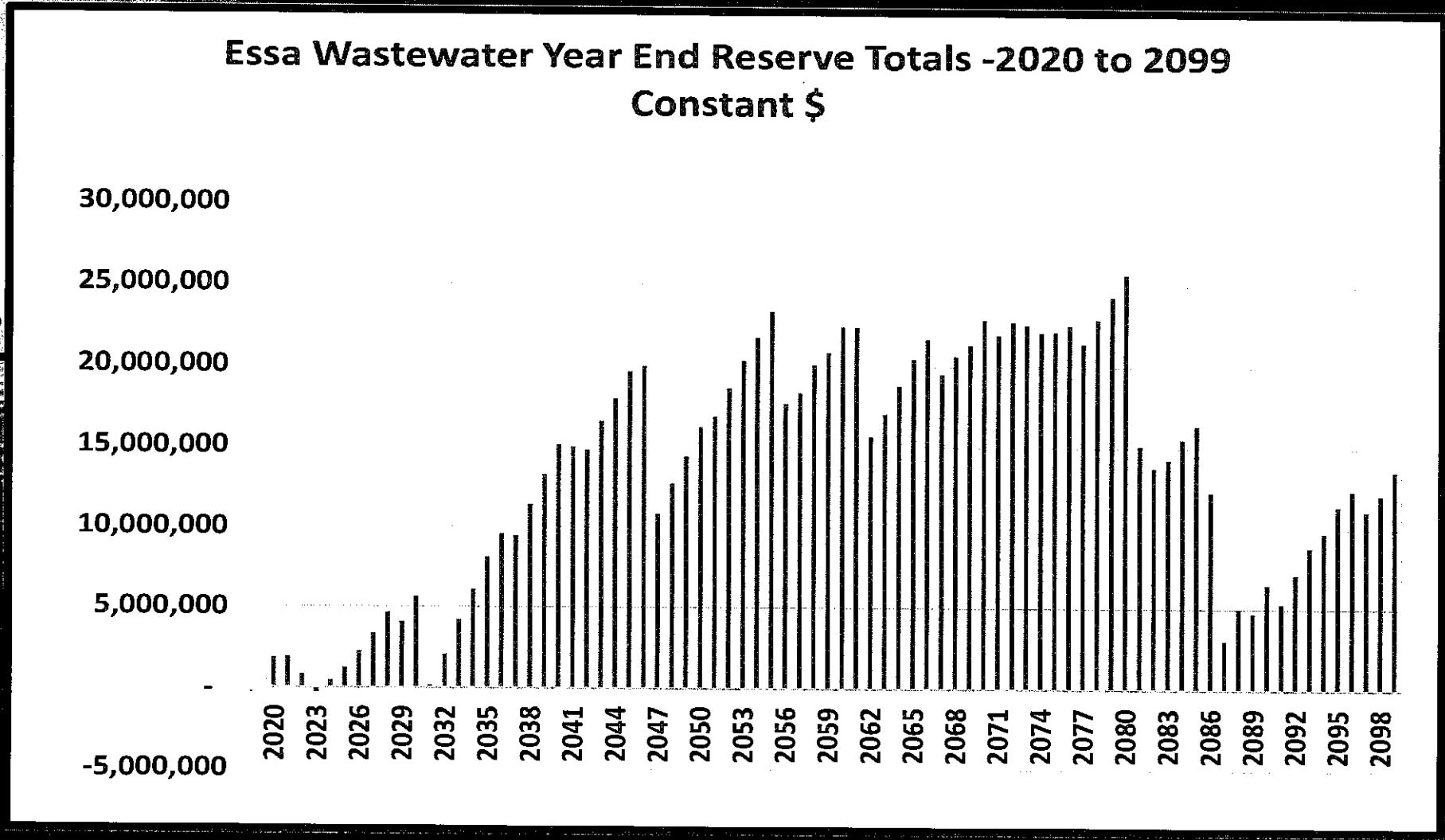
Long Range WWAter Capital Infl $



Wastewater Reserve Infl $

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Value	1,336,378	1,880,683	1,995,852	862,373	- 355,432	499,606	1,470,177	2,726,700	4,235,244	6,025,918	5,439,417
Addition (Withdrawl) from (to) Ops	544,306	115,168	(1,133,478)	(1,217,805)	855,038	970,571	1,256,523	1,508,544	1,790,674	(586,501)	2,317,120
Close Inflated $	1,880,683	1,995,852	862,373	- 355,432	499,606	1,470,177	2,726,700	4,235,244	6,025,918	5,439,417	7,756,538
Close in 2019$	1,825,906	1,881,282	789,194	- 315,796	430,965	1,231,250	2,217,057	3,343,341	4,618,365	4,047,437	5,603,488

Long Range Reserve 2019$



Proposed WW Surcharge Infl $

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2020	2021	2022	2023	2024	2025
95.00%	101.0%	111.0%	118.9%	127.3%	136.3%

Wastewater Bills Infl $

Hypothetical User	2020	2021	2022	2023	2024	2025
Single Person with 50 M3/Year		140	155	168	182	200
Couple with 100 M3 per Year		215	237	257	279	307
Family 250 M3 per Year		438	484	526	572	629
Average User 180 M3 per Year		334	369	401	435	479
Larger User 600 M3 per Year		1,084	1,199	1,302	1,414	1,556
Arena at 10,000 M3 per Year		15,078	16,696	18,156	19,747	21,750

WW Community Bills

Utility	Wastewater Bill
Essa (Angus)	$459
Toronto	$581
Markdale	$676
Clearview	$770
Barrie	$825
Flesherton	$936
Springwater Residential	$1,082
Dundalk	$1,115
Adjala-Tosorontio	$1,313
Mount Forest	$1,485

Based on average use of 294 M3 per Year

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Financial Plan

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Plan Contents

- Follows Reg. 453/07 and Aug 07 Guidelines
- Consistent with PSAB planning approach
  - Consider amortization to 2026
  - Projects net present value forward to 2026
- Includes statements about:
  - Lead abatement
  - Source water protection

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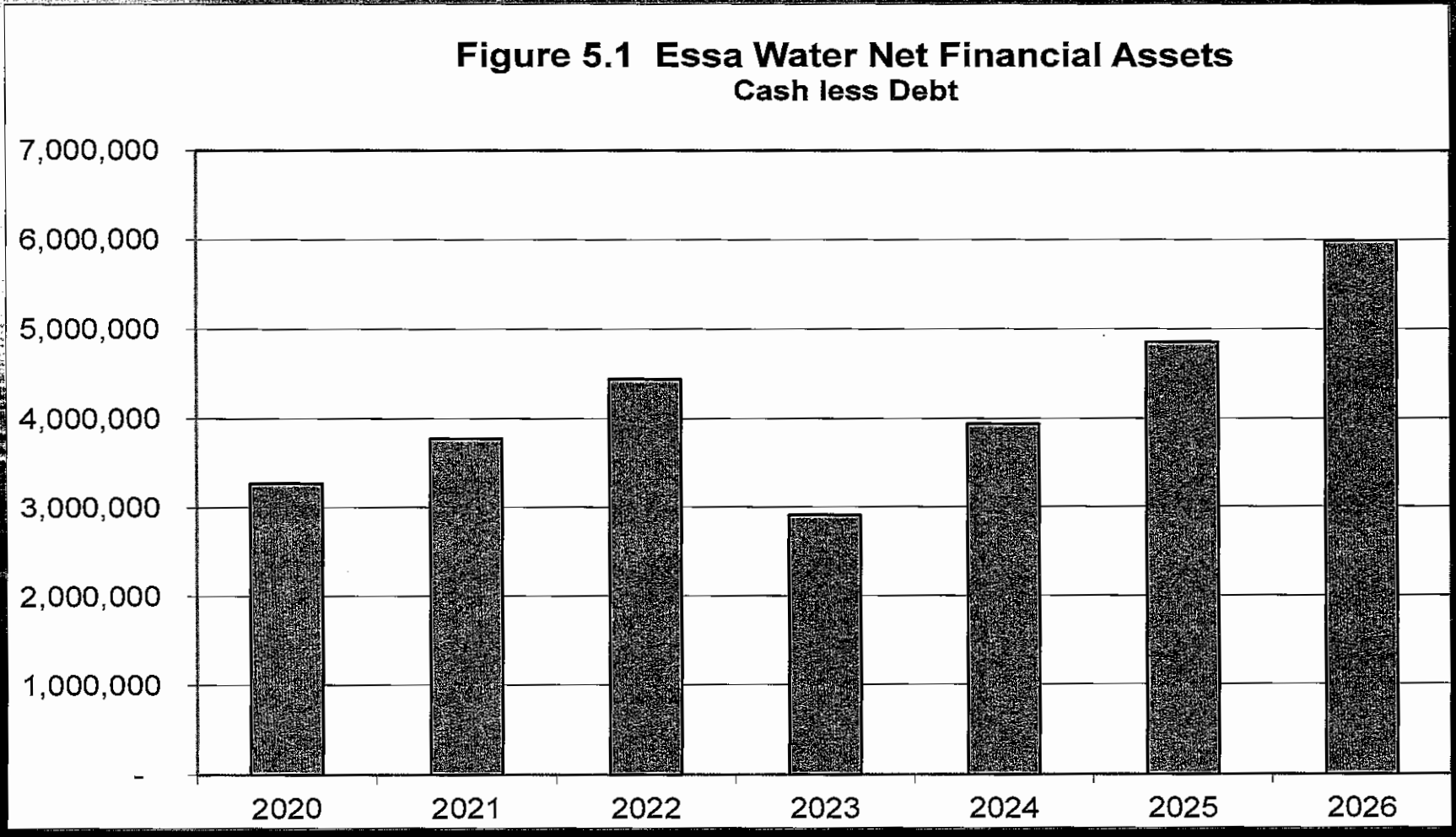
Plan Content

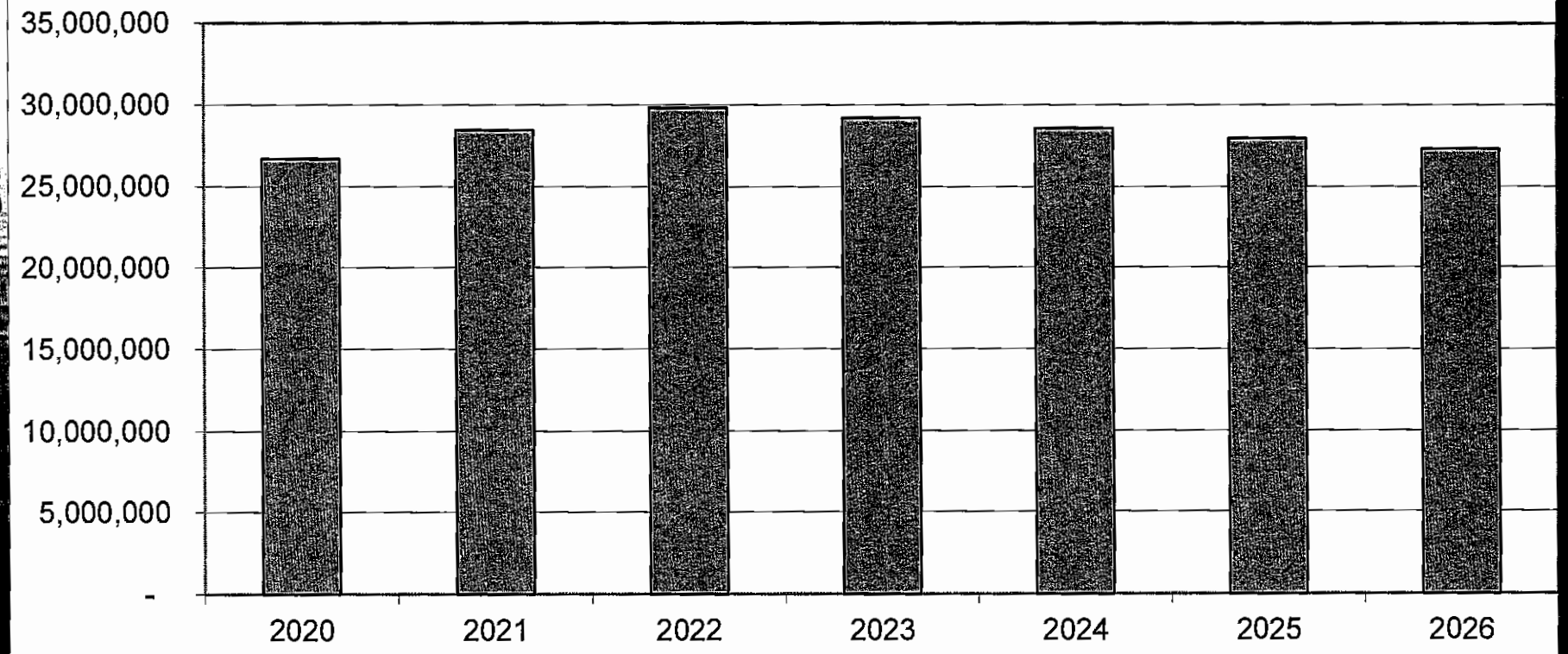
- No lead in system – no plan needed
- Source Protection
  - Golder Study of Threats - 2010
  - NVSPC carried out detail threat Assess. 2017
  - Prov. Grant for Risk Management Office
    - High risk applications reviewed by Nottawasaga VCA
      - $10,000 per year
- Government grants not assumed
  - But the Township can apply

Cash Less Debt-Good Reserve Inflated $

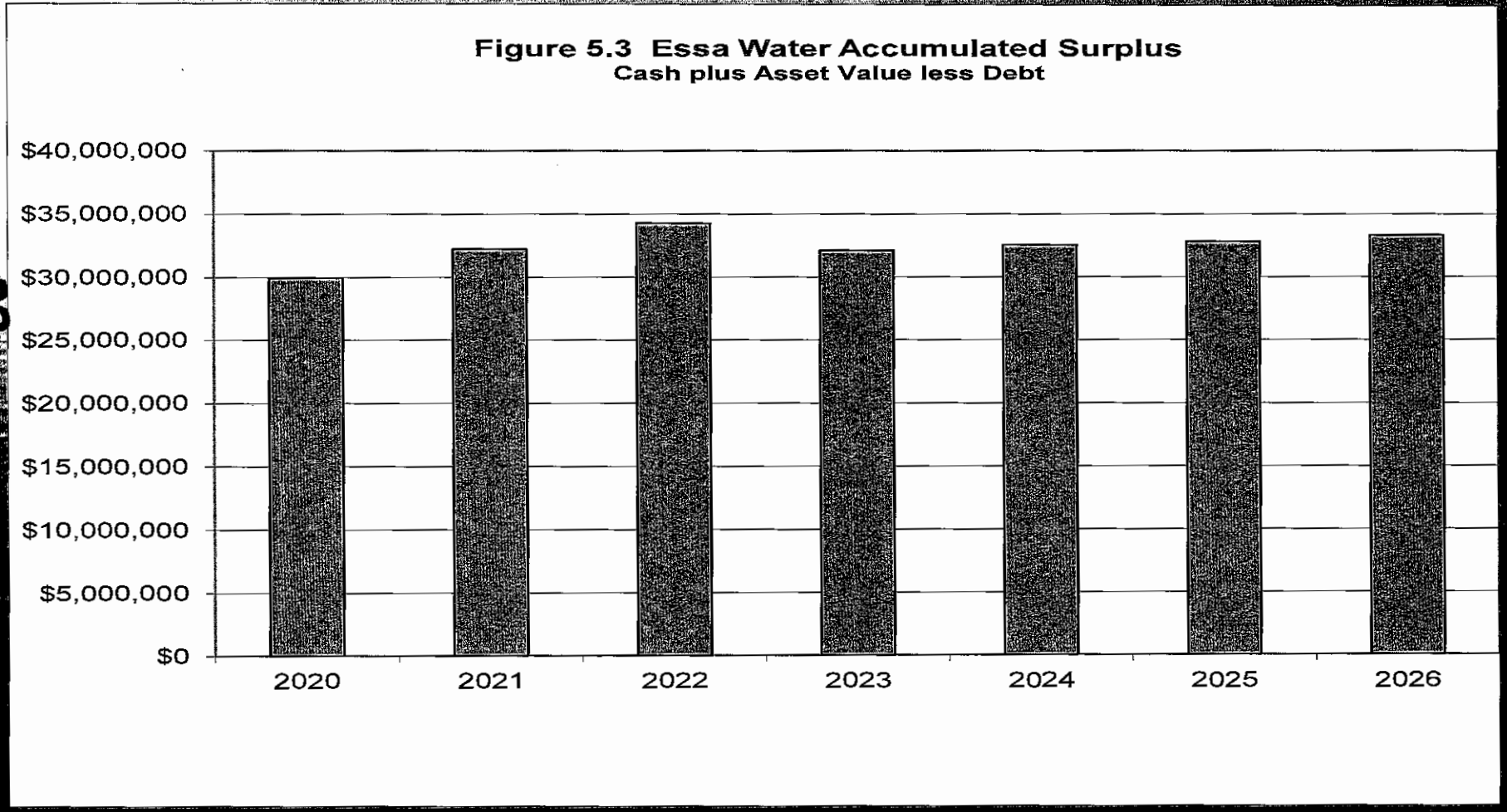


Capital Assets Stable Infl.$

Figure 5.2 Essa Water Tangible Capital Assets
Original Cost less Amortization (Net Book Value)



Cash and Asset Value Less Debt Inflated $



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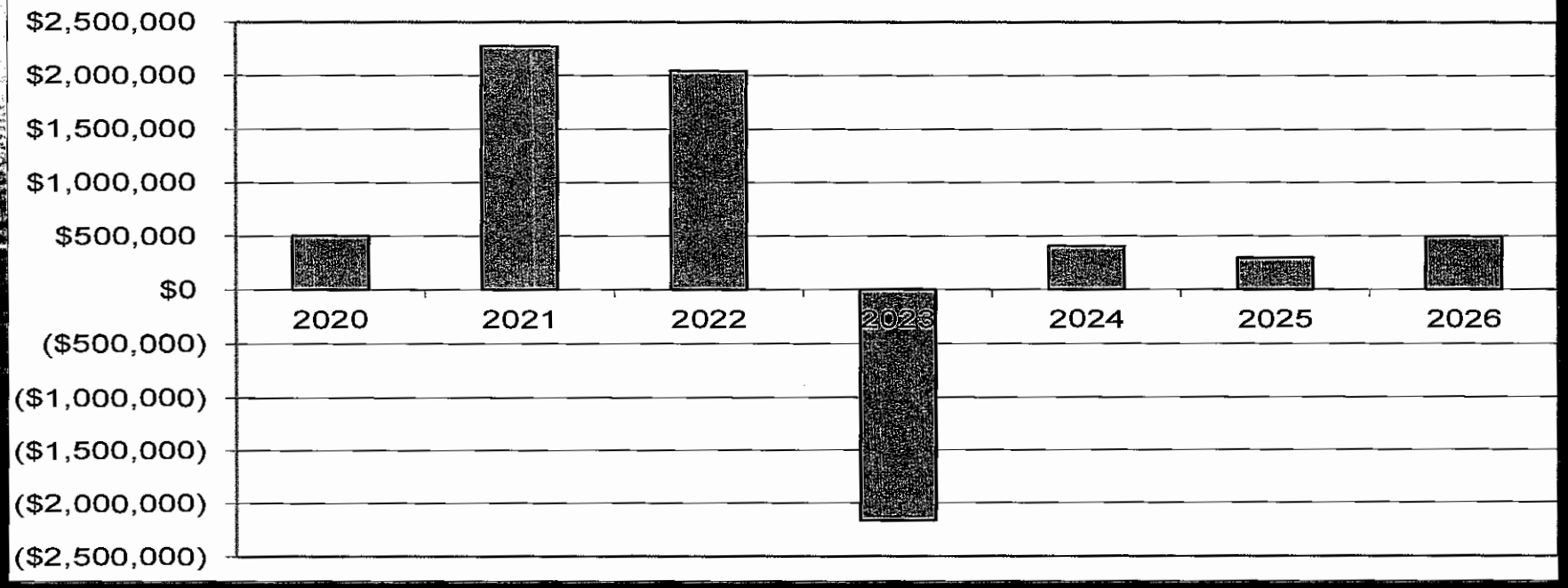
Revenues Less Expenses Incl. Amortization Infl $

Figure 5.4 Essa Water Excess Revenues over Expenses
Revenues less Expenses Including Amortization in Inflated $



Conclusions

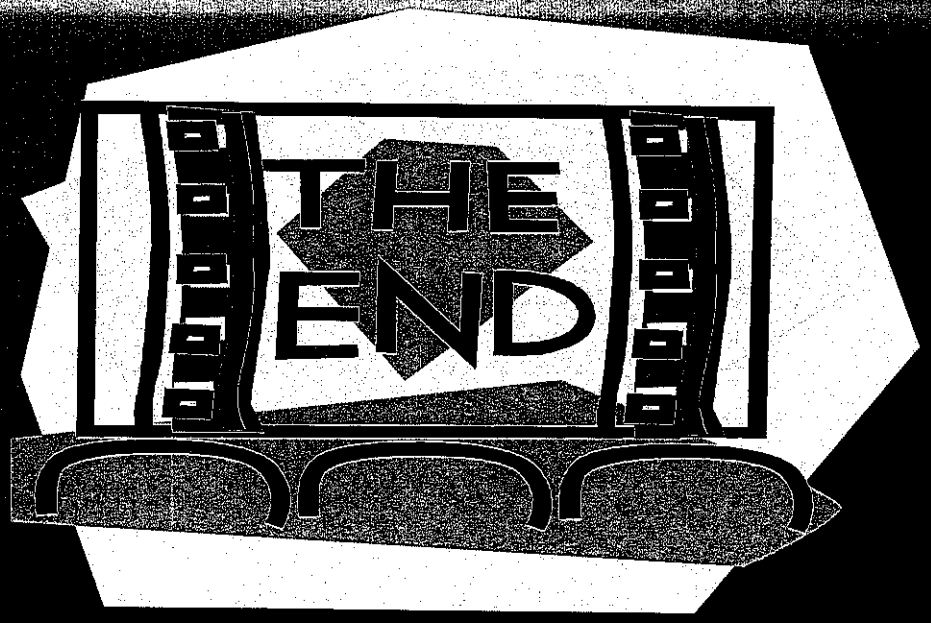
- Good reserves
- Professional operator
- Energetic Staff
- & Managing growth
- Systems are in good shape
- Infrastructure renewal master plan
  - Roadmap for the future

Value of Water

	Amount Used (litres)	What $1.00 will buy Quantity Purchased 2020 Rate	2025 Rate
Drink a 340 ml glass of Essa tap water	0.3	1,793	1,557
Drink a 500 ml bottle of Essa tap water	0.5	1,219	1,059
Buy a 500 ml bottle of water at Tim Hortons	0.5	1/2 bottle	?
Shower 30 minutes (Number of Showers)	270.0	2	2
Shower 10 minutes (Number of Showers)	90.0	7	6
Shower 5 minutes (Number of Showers)	45.0	14	12
Run dishwasher start to finish - new (# of washes)	25.0	24	21
Run dishwasher start to finish - older (# of washes)	38.0	16	14
Flush an older 15 litre (# of flushes)	15.0	41	35
Flush a 6 litre toilet (# of flushes)	6.0	102	88
Flush a high efficiency toilet (# of flushes)	4.5	135	118
Wash clothes - older top load (# of wash loads)	175.0	3	3
Wash clothes - new front load (# of wash loads)	90.0	7	6
Assume the cost of water if use 300 m3 per year			
	Yearly cost	$492	$567
	Cost/m3	$1.64	$1.89
	Cost/litre	$0.0016	$0.00189

Clouds?

- Wastewater Plant Upgrades
- Climate change
  - Heavy rainfall
  - Storms
  - Higher Temps – Irrigation?
- New Regulations
  - Plastics
  - Pharmaceuticals
  - Wastewater treatment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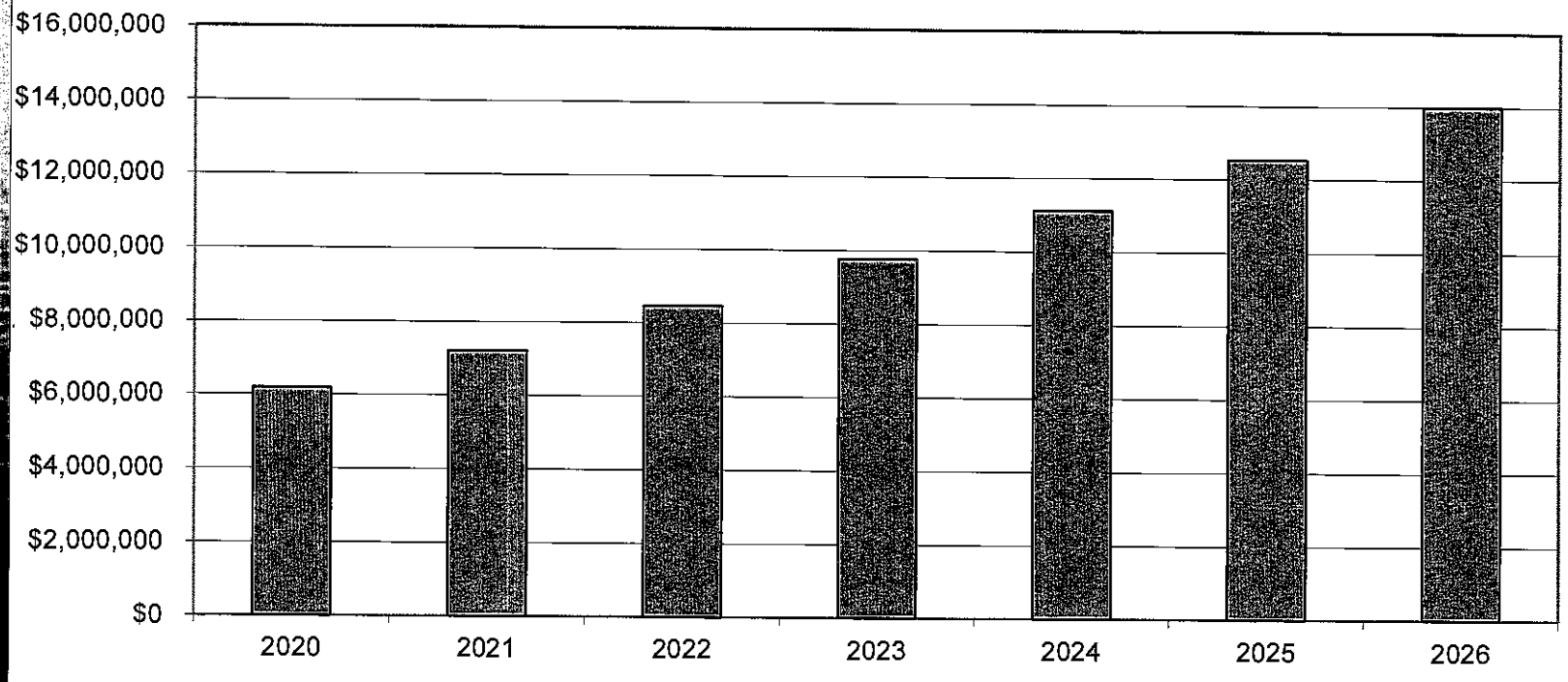
END

Cash Less Expenditures and Capital Infl $

Figure 5.5 Essa Cash and Cash Equivalents at Year End
Excess Revenue, including DC Revenues, over Expenditures less Capital Costs - Infl. $



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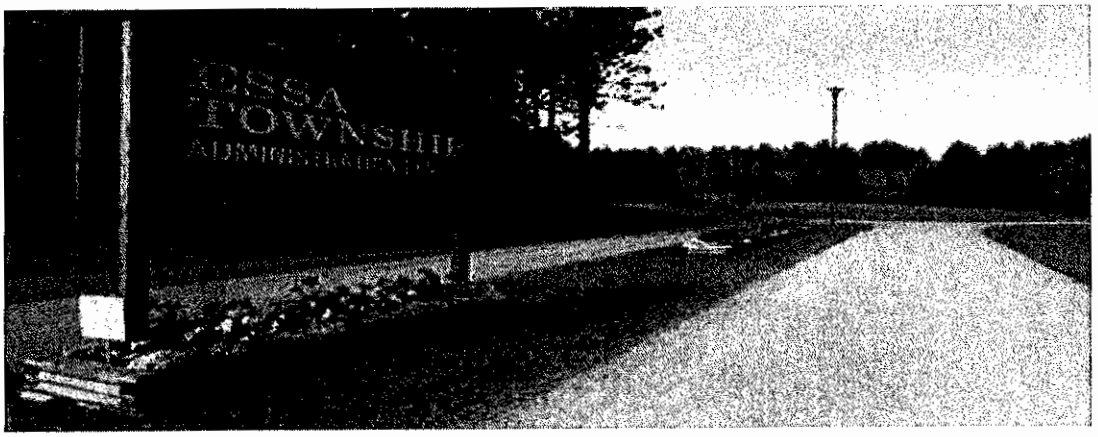
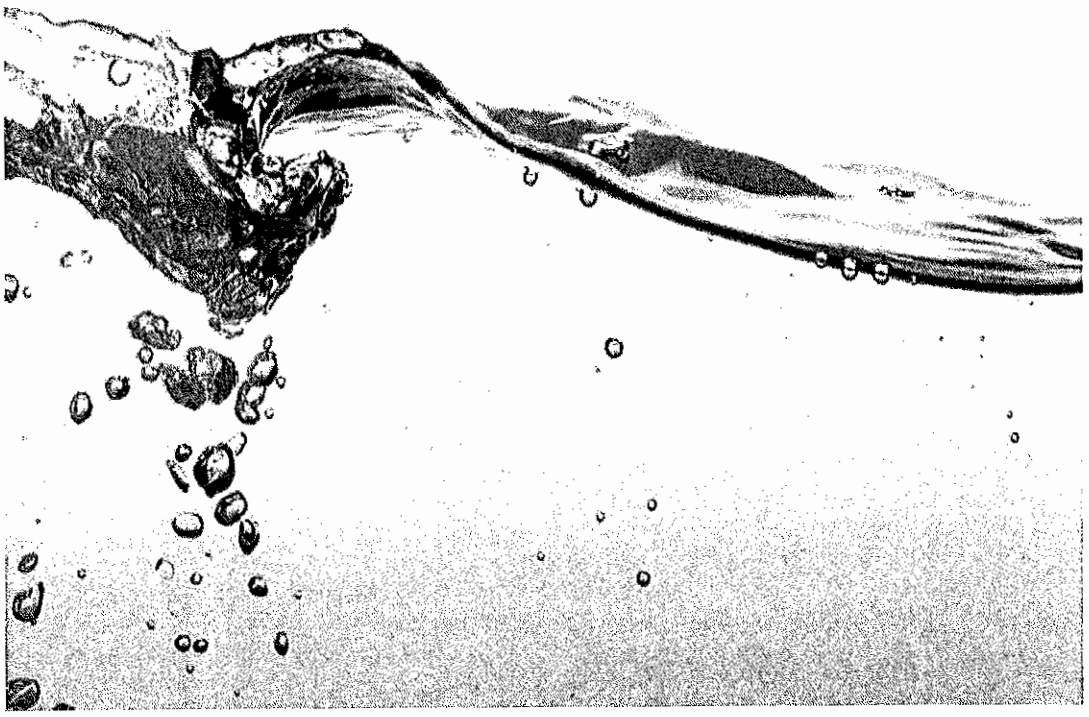


The Township of Essa
Drinking Water System

Financial Plan

December 7, 2020



Sharratt Water Management Ltd.
Sustainable Water Management Specialists

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1.0 Introduction

The Township of Essa has authorized Sharratt Water Management Ltd. (SWML) to develop the Financial Plan for the Township's drinking water system. A renewal of the drinking water system is now required and a financial plan must be prepared, approved by Council, and submitted to the provincial Ministry of Municipal Affairs and Housing in order to obtain a licence renewal.

This Financial Plan has been prepared in accordance with the Financial Plan regulation (O. Reg. 453/07) made under the Safe Drinking Water Act, shown in appendix 1, as well as the provisions of the financial planning guidelines published by the Ministry of the Environment (MOE) in August 2007 entitled "Toward Financially Sustainable Drinking-Water and Wastewater Systems".

In order to develop this financial plan, water system capital needs, have been projected in current dollars and then inflated to the year 2099. In addition, operating costs have been inflated and projected to 2030. The revenue needed to support the operating and capital plan is laid out in a funding plan that relies on user fees based on rates, capital levies, connection charges and some other sundry sources of revenue. Development charges are used to fund projects that accommodated growth. User fees from rates are set so that adequate reserves are developed in order to fund future capital and major maintenance expenses to at least 2030 and to maintain reserves at a sustainable level well into the future. This projection is based on the planning assumptions concerning asset lifetimes, the future inflation and interest rates as well as the level of ongoing asset maintenance.

The Financial Plan is also based on the 2019 tangible capital asset information that the Township generated in accordance with the Public Sector Accounting Board (PSAB) standard PS 3150 requirements. The Financial Plan includes a projection of financial and non-financial tangible capital assets to the year 2026 that is the six-year planning horizon required by Reg. 453/07. Capital renewal costs were projected to 2099 to determine the long run sustainability of the user fees at current levels of annual increase and to determine what user fee increase levels would be fully life cycle sustainable to 2099.

1.1 Legislative Context to Financial Planning

There have been a number of legislative initiatives affecting water system management and operations over the past decade. These initiatives were a result of the water borne illness tragedy in Walkerton in 2000. Following this event, the Government of Ontario established a public inquiry chaired by the Honourable Dennis O'Connor to look into the tragedy. The Inquiry Report recommended a comprehensive approach to the delivery of safe drinking water in Ontario.

The MOE has responded to the Inquiry recommendations by making legislative changes. One change directly related to the development of this Financial Plan was the passage of the Safe Drinking Water Act, 2002 (SDWA). It requires owners of a municipal drinking water system to apply for and initially obtain a Municipal Drinking Water Licence and to renew the licence at preset times. Five elements must be in place in order for the owner of a drinking water system to obtain a licence:

1) A Drinking Water Works Permit to establish or alter a drinking-water system;

2) An accepted Operational Plan. The Drinking Water Quality Management Standard (DWQMS) is the standard upon which operational plans are based. The plan documents an operating authority's quality management system (QMS).

3) An Accredited Operating Authority. A third party audit of an operating authority's QMS will be the basis for accreditation.

4) A Permit to Take Water.

5) A Financial Plan that must be prepared and approved in accordance with the prescribed requirements in the Financial Plans Regulation.

Regulation 453/07 of the Safe Drinking Water Act was passed in 2007 and contains several provisions affecting the preparation of Financial Plans pertaining to the licencng of a water system:

- A person who makes an application under the Act for a municipal drinking water licence shall, before making the application, prepare and approve financial plans for the system that satisfy the requirements of O. Reg. 453/07, S. 1(1).

- The Financial Plan must be approved by a resolution that is passed by the Council of the municipality

- The Financial Plan must apply to a period of at least six years with the first year to which the financial plans must apply must be the year in which the drinking water system's existing municipal drinking water licence would otherwise expire.
- Once a system is licensed, the municipality's Financial Plan is required to be updated every 5 years, in conjunction with every application for license renewal.

1.2 Recent Accounting and Policy Changes

In June 2006, the Public Sector Accounting Board (PSAB) of the Canadian Institute of Chartered accountants approved new municipal financial accounting and reporting standards requiring that tangible capital assets (TCA), including components of the water

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system, be included in municipal financial statements. The new accounting standard PS 3150 came into effect on January 1, 2009. This provides for a sharper focus on the depreciation of the capital asset base of the water system and the need to plan for renewal and replacement on a timely basis. This data is an integral component of the financial statements included in this Financial Plan.

The Clean Water Act 2006 targets the protection of drinking water supplies through the development of collaborative, locally driven, science and watershed based source protection plans. According to the MOE financial planning guidelines, Financial Plans should include source water protection costs related to the provision of water services. Utilities are encouraged to have, at minimum, estimates of any current source protection costs as a separate cost item by the time that their Financial Plans are required in order to effectively align with the anticipated approval timelines for source protection plans.

In June 2007, the government of Ontario proposed a lead action plan. The Financial Plans regulation contains requirements for municipalities to include in their Financial Plans, the costs associated with replacing lead service pipes that are part of the drinking water system.

1.3 Township of Essa Water System

The Township of Essa water system serves customers in the communities of Baxter, Thornton and Angus. Nearly all users are metered.

In December 31, 2019 the system served 4,766 residential and industrial, commercial and institutional users.

The Township uses a two-part rate structure with a fixed or basic charge that increases for larger meter sizes. It also includes a volumetric charge that applies to all water used. The water rates for 2020 are as set out in Table 1:

Table 1 Township of Essa Water Rates (2020)

Water			Wastewater
Fixed Portion of the Rate	**Per Annum**		**Wastewater Surcharge**
Meter Size			
5/8x3/4 inch	$	63.07	95%
1 inch	$	88.31	95%
1.5 inch	$	113.54	95%
2 inch	$	182.93	95%
3 inch	$	705.09	95%
Volumetric Portion of the Rate			
Cost per Cubic Metre (M3) for all Water Used	$	1.43	95%
Rate Calculation - apply fixed charge adjusted for the number of months billed and add the cost for all water used. For example, someone with a 5/8x3/4 in. meter billed for 3 months using 100 m3, and , would pay $63.07 divided by 4 or $15.02 plus 100 x 1.43 or $143 for a total of $158.02 for three months. The wastewater bill would be $158.02 multiplied by .95 or $150.12			

2.0 Operating Plan

The operating plan details the recurring minor maintenance as well as the capital renewal and major maintenance investment costs required to sustain the drinking water system. These costs are detailed in the Essa Drinking Water and Wastewater System Rate Report dated December 7, 2020. Some key assumptions are set out below.

2.1 Operations Expenses

Operating costs such as labour, chemicals, insurance and other costs are projected to increase at 2.0% per annum, system operator costs at 1.5% for the 2021-2030 periods.

2.2 Capital Renewal and Major Maintenance Expenses

Capital renewal and major maintenance costs have been projected to 2099 and funding needs for these costs have been included in the user fee revenue estimates for 2021-2030. The combined system is expected to add 66 new connections for each year for 2021-2030 and a major development in Baxter will increase the number of water connections from 53 at present to 381 in 2025. A Thornton reservoir expansion is projected for 2021 to meet growth needs and will be funded partially by development charges. The intent of the operating plan is to ensure that funding will be available, when needed, at least for the projected capital and major maintenance costs between 2021 and 2030, and a substantial time beyond. Capital costs are projected to increase at 3.0% per year and major maintenance at 2% to 2099. The capital renewal and major maintenance needs are set out in the Essa Drinking Water and Wastewater System Rate Report dated

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December 7, 2020. It was determined that the proposed plan with revenues from user fees increased at 3.5%, or .7% above projected capital renewal inflation of 2.8% per annum is sustainable. The plan will be able to cover, with a loan likely in the 2080s, all major maintenance and projected capital replacement costs to 2099.

2.3 Debt Servicing Costs

The Township currently has one water loan outstanding and none are projected: This is a $1.9 million 15-year loan taken out in 2009 at 2.49%. The principal remaining as of December 31, 2019 was $645,701.01.

2.4 Lead Replacement Costs

There is no lead present in the system and as a result, no funds have been set aside for lead abatement. There is only a requirement to check for lead in the distribution system every third year, and then only under the Ministry of the Environment's "reduced sampling" protocol.

2.5 Source Water Protection Costs

Extensive background assessment work has been carried out to evaluate and alleviate the threats to the water sources in Angus and Thornton. In July 2010, Golder Associates submitted a report to the Township detailing their findings from a threat assessment. The report was entitled Source Water Protection Assessment - #07 1140 0014 (2000). The Nottawasaga Valley Source Protection Authority, in 2017, carried out a further assessment of water source threats in a report Nottawasaga Valley Source Protection Area Approved Assessment Report. The Provincial government has provided the Township with a grant to establish a Risk Management Office, and to implement the source protection plan requirements. The Township refers all risky development applications to the Nottawasaga Valley Conservation Authority for a full risk assessment. This costs about $10,000 per year and is budgeted.

3.0 Funding Plan

The funding plan lays out a plan on how the Township will generate the required funds to meet the expenditure requirements detailed in the operating plan. The funding plan is detailed in the Essa Drinking Water and Wastewater System Rate Report dated December 7, 2020. The funding plan proposed will rely primarily on user fees, capital levies, connection fees and various sundry charges. Development charges will fund projects that accommodate growth. Some key assumptions and results are presented below.

3.1 Government Grants

No allowance has been made for government grants in the 2021-2030 periods. Should grants be obtained, the funds would be used to renew designated assets.

3.2 Debt

The current debt will be serviced and the loan will be fully paid off in the first half of 2024. No additional debt is foreseen at this time.

3.3 Required User Fees

Based on this funding plan set out in the Essa Drinking Water and Wastewater System Rate Report dated December 7, 2020, user fees and water rates are projected to increase at 3.5% in inflated dollars or about .7% per annum above projected capital inflation for the 2021-30 periods and beyond to 2099. This is based on the need to generate adequate revenue to cover capital renewal and major maintenance along with an assumption that most operating as well as capital and major maintenance costs will inflate at 2.0% and capital renewal costs at 3% per annum.

4.0 Continuous Improvement

Provincial regulation 453/07 requires that the Financial Plans be updated every 5 years, along with the request for the renewal of the Drinking Water Licence. This on-going update will assist in revisiting the assumptions made to develop the operating and funding plans as well as re-assessing the need for capital renewal and major maintenance expenditures.

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5.0 Financial Plan Summary

This section provides a summary of principal features concerning the current and future state of the water system contained in the projected Financial Statements over 7 years (2020-2026) in compliance with O. Reg. 453. The detailed financial statements are set out in tabular form in Section 6. The notes regarding the various line entries in financial statements are presented at the end of the financial statement section.

5.1 Statement of Financial Position (Table 6.1)

One important feature of a water system is a statement of it's the net financial assets/debt. A positive number indicates that the system has the resources to deal with future capital and other needs. A negative number indicates that past capital and other investments must be financed from future revenues. The Essa water system's net financial assets are shown in Figure 5.1:

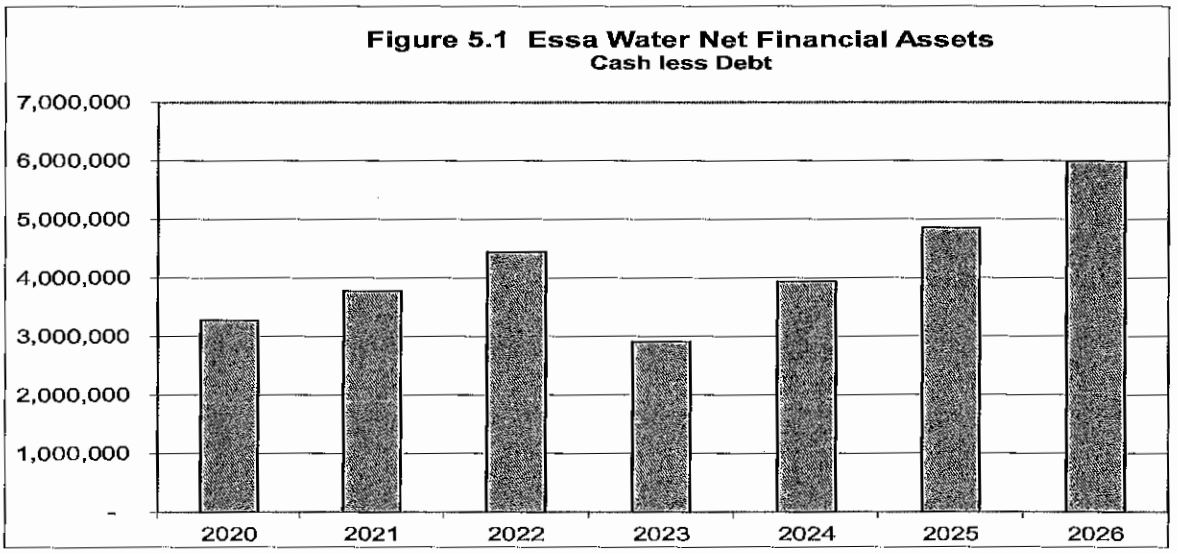


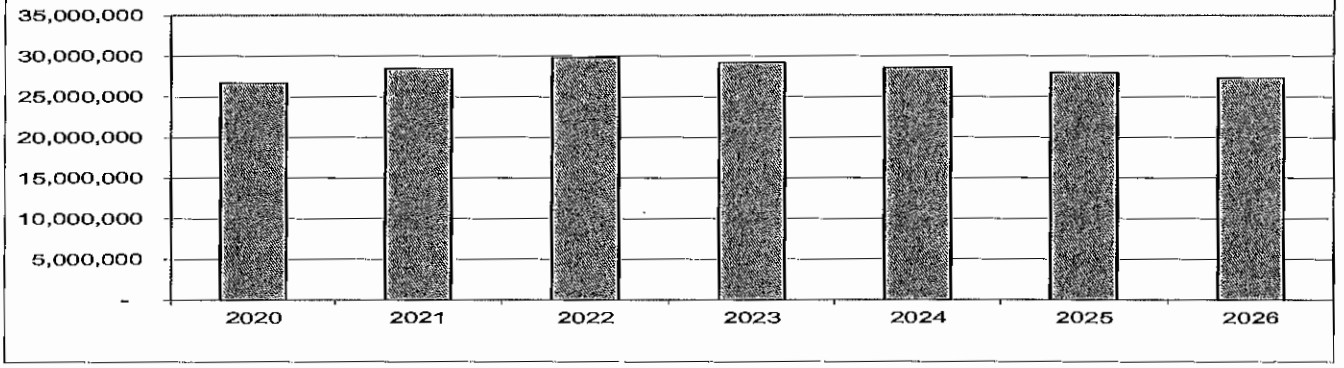
Figure 5.1 shows that that the system is projected to have a surplus in 2020, and this is projected to grow through 2022. It then declines in 2023 due the reserve drawdown to fund water main renewal and rehabilitation projects in Thornton and Angus and the Baxter water pumping station project. The net financial assets, cash, then increase to through 2026. In fact, based on figure 5.4 in the Essa Drinking Water and Wastewater System Rate Report dated December 7, 2020, this substantial surplus will remain until 2085, based on the current estimated lifetimes of a number of assets. The projected water

system capital reserve, set out in the above rate report, will be drawn down in the 2080s and a loan required for a few years, assuming that the revenue from user fees increases at .7% above the current projected rate of inflation. All assets forming the basis for figure 5.1 are priced in inflated dollars. About half of the financial assets set out above are in the development charges reserve and earmarked exclusively for growth-oriented projects. This proportion varies by year depending on capital renewal and growth expenditure. This is discussed in notes 1 and 2 in table 6.1 and the projected funds in the development charges reserve from 2020-2030 are shown in appendix 3.

A second feature is the total value of the water system's tangible capital assets such as wells, water towers, reservoirs and water lines. The current value of the capital assets is termed net book value (NBV). It is the original cost of an asset less the accumulated amortization. Tangible capital assets, once installed, are being used, and are immediately decreasing in value. Annual amortization is determined by dividing the original (historic) cost of an asset by its expected lifetime in years. Amortization is accumulated as the asset wears out so that by the last year of the expected life of the asset, amortization equals the original value of the asset. At that time, at least from an accounting point of view, the asset has no net book value. The asset may operate and provide water service for several years with no book value, however, at some point; they will need to be replaced. Sometimes, the asset fails before its expected life value.

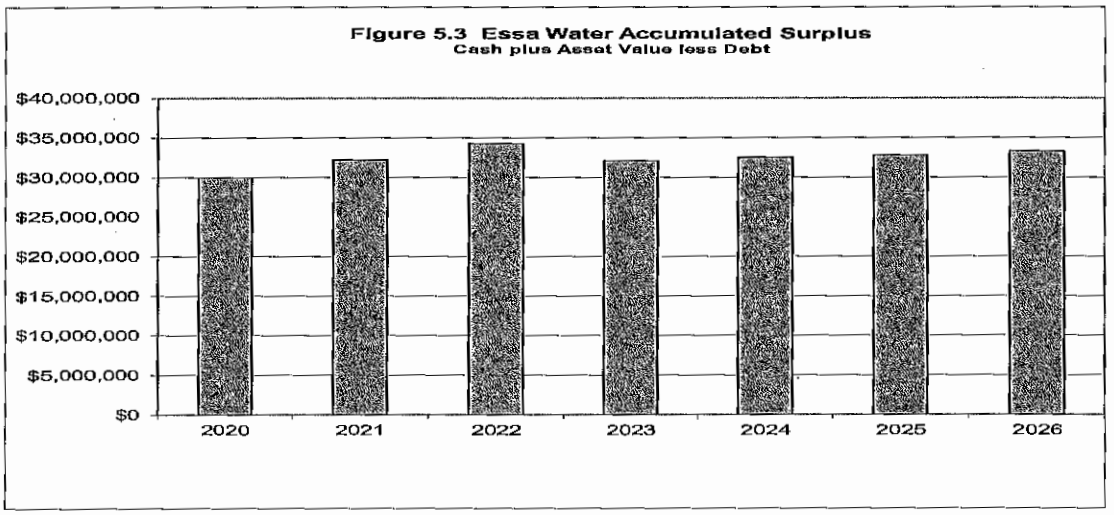
Water systems have a great deal of resources tied up in tangible capital assets and managing these assets is critical to maintaining current and future levels of service. Essa's water assets are estimated to have a replacement cost of $60 million as of December 31, 2019. As has been noted above, tangible capital assets, once installed, are being used and decrease in value due to amortization. An increase in tangible capital asset value is an indication that assets have been renewed faster than they are used. A decrease indicates that assets are being used, or amortized, faster than they are renewed. The net present value of the Township's water system assets is set out in Figure 5.2.

Figure 5.2 Essa Water Tangible Capital Assets
Original Cost less Amortization (Net Book Value)



The net book value increases substantially in 2021 and 2022 as the Thornton and particularly the Baxter capital projects come on line. The net book value of the assets then declines slowly but is higher in 2026 than in 2020. This is consistent with the Essa system being quite new and growing. It is apparent from figure 5.1 of the December 7, 2020 Water and Wastewater Rate Report, that major renewal investments will be needed in the 2040s and by the 2060s to the end of the century, very substantial capital renewal and replacement will be required. The planned undertaking of an asset masterplan in the near future will greatly clarify the future asset renewal needs.

A third feature is the accumulated surplus set out in Figure 5.3. It represents cash on hand plus the net book value of tangible capital assets less debt.



From 2020 until 2026, the accumulated surplus is positive, and growing, indicating that the combination of reserves and the net book value of the capital assets increasingly exceed amortization. The bulge in 2021 and 2022 is due to the addition of assets funded by the developer in the Baxter pumping station project. This and the large reserve of financial assets, shown in Figure 5.5, indicate that the Township's proposed financial plan is sustainable and in a good position.

5.2 Statement of Operations (Table 6.2)

This statement summarizes the yearly operating revenues and expenditures. The expenditures include ongoing operating costs plus asset amortization. It provides an indication about the maintenance of the system assets are being maintained on a yearly

basis.

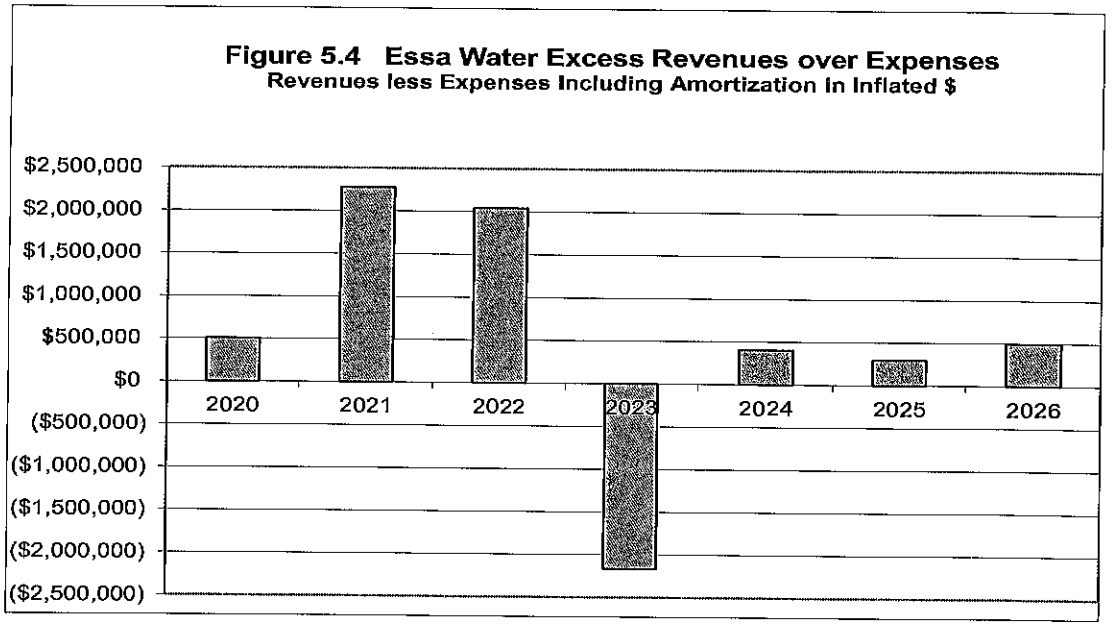


Figure 5.4 indicates that more is being spent on renewal than the decline in the value of the tangible capital assets on a yearly basis. The projected increase in 2021 is due to the funds being withdrawn from the development charges reserve, and added to revenue, to finance the Thornton reservoir expansion. The funds flowing into the Baxter project from the developer and the connection charges inflated the 2021 and 2022 numbers. The decline in 2023 is due to the major water main renewal projects in Thornton and Angus. Apart from this one year, the revenues exceed all costs including the total amortization of all assets. The Financial Plan has been designed to account for all foreseeable expenditures to 2026 and, in fact, well beyond. The financial asset capital and major maintenance reserves are projected to be maintained at a sustainable level to 2099. In the meantime, there is a substantial reserve to handle unexpected emergencies such as assets failing before the projected end of their projected life, or capital expenditures to deal with future new regulations. Consequently, the system is in good shape.

5.3 Statement of Cash Flow (Table 6.3)

This fifth feature shows how revenues are generated and spent over the study period. The revenues include user fees primarily assisted by some sundry revenues. Development charges finance growth projects. The expenditures include operating expenses and capital acquisitions. These are shown in Table 6.3 and set out in Figure 5.5.

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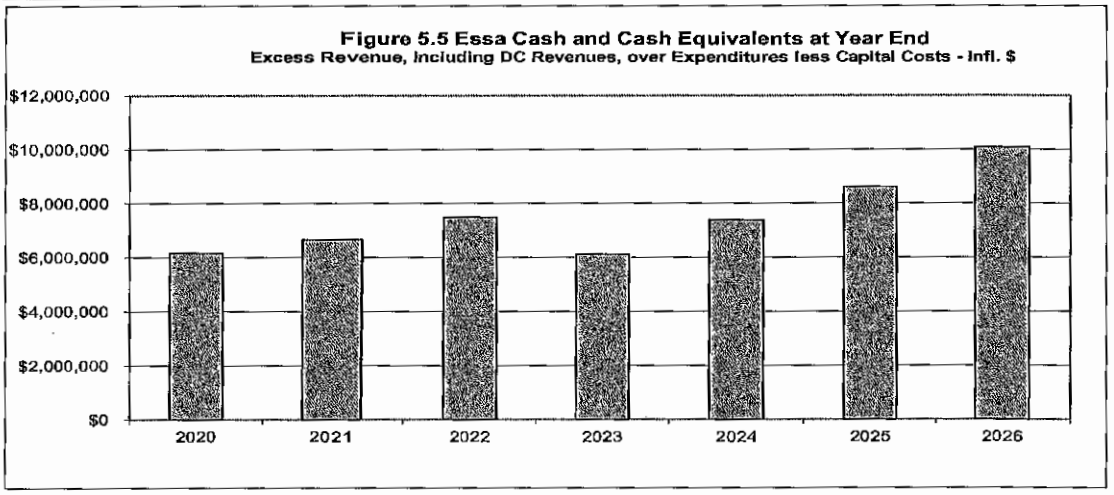

Figure 5.5 indicates that the cash equivalents, in inflated dollars, are positive throughout the study period. This includes the funds held in infrastructure renewal reserves, rate stabilization reserves and the development charge reserves The cash levels decline in 2023 as the reserve is drawn down to fund water main renewal work in Thornton and Angus. The overall cash balance puts the Township in a position to fund projected needed capital renewal, growth or major maintenance projects into the future, if user fee revenues are increased at .7% above capital inflation each year. It also has the capability to withstand wet years when water fee revenue growth is below expectations.

The projected rates under this recommended approach, in inflated dollars, is set out in table 2 below:

Table 2 Essa Water Rates 2020-2026 Inflated $

Annual Fixed Cost		**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Meter Size (inches)							
	0.62	63.07	65.21	65.08	65.60	66.15	67.66
	0.75	63.07	65.21	65.08	65.60	66.15	67.66
	1	88.31	91.29	91.11	91.84	92.62	94.72
	1.5	113.54	117.37	117.14	118.09	119.08	121.78
	2	182.93	189.10	188.72	190.25	191.85	196.20
	2.5		456.44	455.54	459.22	463.08	473.59
	3	705.09	717.26	715.84	721.63	727.69	744.21
	4	-	912.88	911.07	918.44	926.16	947.18
Variable Rate							
Cost per M3 Infl. $		1.43	1.47	1.48	1.51	1.53	1.58
Cost per M3 2020$		1.43	1.44	1.41	1.40	1.39	1.39

5.4 Conclusion

The Essa water system has been growing due to an increase in population in Angus and to a lesser extent in Thornton. A new development that will add over 300 connections to the system is projected for Baxter over the next four years. Growth is projected to continue to the end of the decade. A reservoir expansion is projected for 2021 will be funded mostly from development charges. The system has a good financial capital reserve and is undertaking a good level of maintenance and small capital renewal. An asset master plan is being undertaken that will provide a roadmap for future renewal and replacement. This current regime is projected to be sustainable to 2099 based on the plans assumptions about system assets, inflation and interest rates as well as annual user fee increases of .7% per annum over capital inflation. The detailed financial statements, set out in tabular form, that were the basis for the above summary charts follow in Section 6.

6.0 Financial Statements

The detailed financial statements are set out in the following tables followed by the notes that correspond to the numbers in the tables.

6.1 Statement of Financial Position

Table 6.1 Statement of Financial Position - Township of Essa Water System

	2020	2021	2022	2023	2024	2025	2026	Notes
Financial Assets								
Cash and Cash Equivalents	3,781,792	4,139,235	4,662,445	2,984,345	3,936,576	4,851,915	5,991,967	1
Development Chargte Reserve	2,384,354	2,522,404	2,827,200	3,135,852	3,448,409	3,764,919	4,085,433	2
Long Term Accounts Receivable	-	-	-	-	-	-	-	
Deposits	-	-	-	-	-	-	-	
Total Financial Assets	**6,166,147**	**6,661,639**	**7,489,646**	**6,120,197**	**7,384,985**	**8,616,834**	**10,077,400**	
Liabilities								
Accounts Payable (Capital)	-	-	-	-	-	-	-	
Debt Principal Outstanding	508,361	367,579	223,271	75,346	(0)	-	-	3
Deferred Revenue (Dev Charge Reserve Bal.)	2,384,354	2,522,404	2,827,200	3,135,852	3,448,409	3,764,919	4,085,433	4
Government Grant	-	-	-	-	-	-	-	
Other liabilities	-	-	-	-	-	-	-	
Total Liabilities	2,892,715	2,889,984	3,050,471	3,211,199	3,448,409	3,764,919	4,085,433	
Net Financial Assets (Debt)	**3,273,432**	**3,771,655**	**4,439,175**	**2,908,998**	**3,936,576**	**4,851,915**	**5,991,967**	
Non Financial Assets								
Tangible Capital Asset Cost	34,727,914	34,847,245	37,093,371	39,068,559	38,849,472	38,817,272	38,762,069	5
Additions to Tangible Capital Assets - Cost	149,350	2,374,706	2,021,392	28,138	28,982	29,851	-	6
Accumulated Amortization incl. Addition	8,209,252	8,776,088	9,294,177	9,910,098	10,315,929	10,905,429	11,464,922	7
Total Non Financial Assets	26,668,012	28,445,863	29,820,586	29,186,599	28,562,524	27,941,694	27,297,147	
Accumulated Surplus/(deficit)	**$29,941,444**	**$32,217,519**	**$34,259,761**	**$32,095,597**	**$32,499,101**	**$32,793,609**	**$33,289,113**	
Note: Unaudited for Planning Purposes Only - Actual results will differ from the above and these differences could be material.								

6.2 Statement of Financial Operations

Table 6.2 Statement of Financial Operations - Township of Essa Water System

	2020	2021	2022	2023	2024	2025	2026	Notes
Revenues								
User Fees	$1,757,153	$1,818,654	$1,882,307	$1,948,187	$2,016,374	$2,086,947	$2,159,990	8
Other Revenues	$36,000	$36,720	$37,454	$38,203	$38,968	$39,747	$40,542	9
Developer Contribution		$1,204,571	$1,204,571					10
Connection Charges		$467,032	$467,032					11
Interest on Reserves	$0	$0	$0	$0	$0	$0	$0	12
Repayment of Reserve Loan	$157,233	$155,505	$153,777	$152,049	$150,322	$148,594	$146,866	13
Earned Dev Charge Revenues	$118,656	$283,656	$118,656	$118,656	$59,328	$0	$0	14
Total Revenues	$2,069,042	$3,966,138	$3,863,797	$2,257,096	$2,264,991	$2,275,287	$2,347,398	
Expenses								
Day to Day Operating Expenses	$770,400	$805,134	$861,590	$918,337	$947,090	$1,059,794	$1,018,310	15
Major Maintenance (non capital)	$203,425	$268,288	$295,038	$2,826,153	$250,403	$260,303	$179,036	16
Debt Interest	$15,228	$11,787	$8,260	$4,644	$938	$0	$0	17
Amortization	$565,445	$598,855	$646,669	$662,125	$652,381	$650,681	$644,547	18
Lead Abatement	$0	$0	$0	$0	$0	$0	$0	19
Source Water Protection	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	20
Total Expenses	$1,564,499	$1,690,062	$1,821,555	$4,421,259	$1,860,812	$1,980,778	$1,851,894	
Excess (Deficit) of Revenues over Expenses	$504,543	$2,276,075	$2,042,242	($2,164,163)	$404,179	$294,509	$495,504	
Other								
Working Capital	$0	$0	$0	$0	$0	$0	$0	
Government Transfers	$0	$0	$0	$0	$0	$0	$0	
Miscellaneous	$0	$0	$0	$0	$0	$0	$0	
Excess (Deficit) of Revenues over Expenses	$504,543	$2,276,075	$2,042,242	($2,164,163)	$404,179	$294,509	$495,504	
Accumulated Surplus (Deficit) Beginning of year	$29,436,901	$29,941,444	$32,217,519	$34,259,761	$32,095,598	$32,499,777	$32,794,286	
Accumulated Surplus (Deficit) End of Year	$29,941,444	$32,217,519	$34,259,761	$32,095,598	$32,499,777	$32,794,286	$33,289,790	

Note: Unaudited for Planning Purposes Only - Actual results will differ from the above and these differences could be material.

2020 Beginning Accumulated Surplus/(Deficit) is made up of	
Working Surplus (Deficit)	
Capital Reserve Opening	2,392,149
Rate Stablization Reserve opening	606,345
Development Charge Reserve opening	2,085,090
Total Cash	5,083,585
Less	
Debt start of year	645,701
Dev Charge Res Opening	2,085,090
Total Debt/Liabilities	2,730,791
Add	
Tangible Capital Assets Adj Opening for 2020	27,084,107
Accounting Adjustment	-
Opening Balance for 2020	29,436,901

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6.3 Statement of Cash Flow

Table 6.3 Statements of Change in Cash Flow - Township of Essa Water System

	2020	2021	2022	2023	2024	2025	2026	Notes
Operating Transactions								
Total Operating Revenues	$1,911,809	$3,810,633	$3,710,020	$2,105,046	$2,114,669	$2,126,694	$2,200,532	21
Homeowner Loan Repayment	$0	$0	$0	$0	$0	$0	$0	
Total Cash for Operating Expenses	$1,564,499	$1,690,062.45	$1,821,555	$4,421,259	$1,860,812	$1,980,779	$1,851,894	22
Interest from Cash Reserves (Excl DC Reserve)	$0	$0	$0	$0	$0	$0	$0	
Development Charge Proceeds (Net)	$299,264	$138,050	$304,796	$308,652	$312,556	$316,510	$320,514	23
Excess of Revenues Over Expenses	$646,575	$2,258,620	$2,193,261	($2,007,561)	$566,414	$462,425	$669,152	
Deduct Non Cash Charges to Operations								
Amortization	$565,445	$596,855	$646,669	$662,125	$652,381	$650,681	$644,547	24
Loss on the Disposal of Assets	$0	$0	$0	$0	$0	$0	$0	
Total	$565,445	$596,855	$646,669	$662,125	$652,381	$650,681	$644,547	
Working Capital Items								
Accounts Receivable	$0	$0	$0	$0	$0	$0	$0	
Working Capital Items	$0	$0	$0	$0	$0	$0	$0	
Capital Work in Progress	$0	$0	$0	$0	$0	$0	$0	
Cash provided/used in Operating Transactions	$1,212,020	$2,855,475	$2,839,930	($1,345,436)	$1,218,795	$1,113,107	$1,313,700	
Capital Transactions								
Acquisition of TCAs	$149,350	$2,374,706	$2,021,392	$28,138	$28,982	$29,851	$0	
Proceeds on Disposal of TCA	$0	$0	$0	$0	$0	$0	$0	
Cash provided/used in Capital Transactions	$149,350	$2,374,706	$2,021,392	$28,138	$28,982	$29,851	$0	
Investing Transactions								
Proceeds from Investments	$0	$0	$0	$0	$0	$0	$0	
Cash (used in) Provided by Investing Activities	$0	$0	$0	$0	$0	$0	$0	
Cash Provided/used in Investing Transactions	$0	$0	$0	$0	$0	$0	$0	
Financing Transactions								
Other	$0	$0	$0	$0	$0	$0	$0	
Proceeds from Debentures/Loans	$157,233	$155,505	$153,777	$152,049	$150,322	$148,594	$146,866	
Debt Principal Repayment	$137,340	$140,781	$144,309	$147,924	$75,346	$0	$0	
Proceeds from Government Grants	$0	$0	$0	$0	$0	$0	$0	
Working Surplust	$0	$0	$0	$0	$0	$0	$0	
Cash Provided by/(used) in Financing Activities	$19,893	$14,724	$9,469	$4,125	$74,975	$148,594	$146,866	
Increase (decrease) in Cash Equivalents	$1,082,562	$495,492	$828,007	($1,369,449)	$1,264,788	$1,231,849	$1,460,565	
Cash and Cash Equivalents at the beginning of the Year	$5,083,585	$6,166,147	$6,661,639	$7,489,646	$6,120,198	$7,384,986	$8,616,835	
Cash and Cash Equivalents at the End of the Year	$6,166,147	$6,661,639	$7,489,646	$6,120,198	$7,384,986	$8,616,835	$10,077,400	

Note: Unaudited for Planning Purposes Only - Actual results will differ from the above and these differences could be material.

2020 Cash and Cash Beginning of Year	
Opening Capital Reserve	$2,392,149
Opening Rate Stablization Reserve	$606,345
Opening Dev Charge Reserve Angus	$1,909,773
Opening Dev Charge Reserve Thornton	$175,317
Working Capital Surplus from 2014	$0
Total	$5,083,585

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6.4 Notes on the Essa Water System Financial Plan

1. Cash and cash equivalent is represented by the funds in short-term bank investments drawn from the capital and major maintenance reserve and the rate stabilization reserve. The interest from the capital and rate stabilization reserves goes to general Township revenue.
2. The development charges revenue arises from charges placed on new residential and commercial/industrial and institutional developments. The fees are shown in appendix 2. They are based on the development charges study carried out for the Township in 2018. The interest on the funds in the development charge reserve are shown within the reserve and are set out in appendix 3.
3. The system has one 15-year loan outstanding in as of December 31, 2019. This loan with an interest rate of 2.49% was commenced in 2009 and will be paid off in early 2024. The principal outstanding as of December 31, 2019 was $645,701.
4. Deferred revenue is considered a liability for accounting purposes and represents funding that is held in cash reserve pending events that gave rise to the payment of these funds. The Township is often receiving development charge funds in advance of building facilities to accommodate growth or to pay debt charges on past growth oriented projects. The funds will be considered as expenditures in the year when a liability that facilitates growth is incurred, such as the year that a new reservoir is built, or the years when the Township is searching for a new well site to accommodate growth. The Township has two accounts for development charge funds. One is the Angus water system development charges reserve. As of December 31, 2019, it had a surplus of $1,909,773. The second is the Thornton development charge reserve. As of December 31, 2019, it had a balance of $175,317. The projected reserve transactions for 2020 to 2030 for both reserves are set out in appendix 3.
5. The Township valued tangible capital assets acquired to the end of 2019. This project has extended the valuation of new capital assets and capital asset replacement to 2026. Capital works are assumed to have no residual value when they have reached the end of their projected life. Current capital works costs, based on historic cost, and are inflated to future cost at an inflation rate of 3% per annum for the 2020-2026 period. Amortization was determined using the straight-line method. All works are assumed to have been constructed or disposed of on July 1.
6. These are capital projects according to the PSAB definition of capital meaning that they recur at long intervals and include reservoir expansion, new generators, large pump replacement, a new SCADA system etc. The full list, to 2026, is shown in appendix A of Essa Drinking Water and Wastewater System Rate Report dated December 7, 2020.
7. Amortization was determined using the straight-line method. Almost all works are assumed to have been constructed or disposed of on July 1. A half year of amortization was provided for in the first year for those with a start date of July 1. The cumulative amortization of each asset was summed to produce this total. The original historic costs, additions to the system, amortization and closing net present values is set out in appendix 4.
8. This user fee revenue is from the fixed and variable portion of the water charges paid by the systems users.
9. This revenue comes from connection fees, final reading charges, sale of water permits, late payment penalties and miscellaneous revenues.

10. The funds are the developer's contribution to the Baxter pumping station project spread over 2021 and 2022.
11. These are fees raised from the connection charges that are proposed to be charged to the water system users that are outside the major development in Baxter but have access to the water system.
12. No interest is attributed to the capital renewal reserve.
13. This represents the loan repayment to the water capital reserve. In 2015, the Township passed by law 2015-34 to withdraw $2,073,400 in funds from the water reserve and repay these funds, with 1.25% interest, over 15 years. The principal balance owing as of December 31, 2019 was $1,658,720. This loan will be fully repaid in 2030.
14. Earned development charge revenues are funds taken from the DC reserve to pay for principal and interest on past projects that facilitated growth, and for current projects that support growth. Part of the loan described in note #3 above was undertaken to fund growth. $118,656 per year is included in earned revenues. This will cease 2024 when the loan is paid off. In 2021, funding was drawn from the DC reserve to fund the Thornton water reservoir expansion.
15. Day to day operating costs cover wages, office supplies, chemicals, energy and other features needed to run a water system. Most are projected to increase at 2.0% per annum.
16. Major maintenance represent substantial one-time regularly recurring preventive maintenance repair projects that will maintain the life of an asset, but did not meet the Township's PSAB definition of capital. Examples include line flushing, hydrant maintenance, generator upkeep, water main lining, tank inspections etc. For a full listing see appendix, A of the Essa Drinking Water and Wastewater System Rate Report dated December 7, 2020.
17. Debt interest is on the debt set out in note 3 above.
18. This is the annual amortization of each water system asset determined by dividing original (historic) acquisition value of the asset by the number of years it is expected to be in service. The amortization of each asset is summed to yield an annual figure that is shown here as a non-financial expense.
19. There is no lead present in the system and as a result, no funds have been set aside for lead abatement, and only limited testing is required every three years.
20. Extensive background assessment work has been carried out to evaluate and alleviate the threats to the water sources in Angus and Thornton. In July 2010, Golder Associates submitted a report to the Township detailing their findings from a threat assessment. The report was entitled Source Water Protection Assessment - #07 1140 0014 (2000). The Nottawasaga Valley Source Protection Authority, in 2017, carried out a further assessment of water source threats in a report Nottawasaga Valley Source Protection Area Approved Assessment Report. The Provincial government has provided the Township with a grant to establish a Risk Management Office, and to implement the source protection plan requirements. The Township refers all risky development applications to the Nottawasaga Valley Conservation Authority for a full risk assessment. This costs about $10,000 per year and is budgeted.
21. Revenues from user fees and miscellaneous sources are summarized on this line.
22. Operating expenses on this line include amortization.
23. These are net yearly increases in development charge reserves. Net revenue is the total revenue including interest on the balance less expenditures that facilitate

growth undertaken during the year. The fees are shown in appendix 2 and the reserve is shown in appendix 3.

24. Amortization, a non-financial cost, was included in the operating expenses set out in line 20, above, and therefore this line shows the addition of amortization to total system cash flows.

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Appendix 1 Ontario Regulation 453/07

ONTARIO REGULATION 453/07
FINANCIAL PLANS

Consolidation Period: From April 1, 2008 to the e-Laws currency date.

Last amendment: O. Reg. 69/08.

This is the English version of a bilingual regulation.

Requirement to prepare financial plans

1. (1) A person who makes an application under clause 32 (1) (b) of the Act for a municipal drinking water licence shall, before making the application, prepare and approve financial plans for the system that satisfy the requirements prescribed under section 2. O. Reg. 453/07, s. 1 (1).

(2) A person who makes an application under subsection 32 (4) of the Act for the renewal of a municipal drinking water licence shall, before making the application, prepare and approve financial plans for the system that satisfy the requirements prescribed under section 3. O. Reg. 453/07, s. 1 (2).

(3) As a condition in a municipal drinking water licence that is issued in response to an application made under section 33 of the Act for a municipal drinking water licence, the Director shall include a requirement that the owner of the drinking water system, by the later of July 1, 2010 and the date that is six months after the date the first licence for the system is issued, prepare and approve financial plans for the system that satisfy the requirements prescribed under section 3. O. Reg. 453/07, s. 1 (3).

(4) The Director shall include, as a condition in a municipal drinking water licence, the requirement set out in subsection (3) in any amendments to a license made after the application, if the condition is not satisfied at the time when the amendment is made. O. Reg. 453/07, s. 1 (4).

Financial plan requirements; new systems

2. For the purposes of clause (b) of the definition of "financial plans" in subsection 30 (1) of the Act, the following requirements are prescribed for financial plans that are required by subsection 1 (1) to satisfy the requirements of this section:

1. The financial plans must be approved by a resolution that indicates that the drinking water system is financially viable and that is passed by,
    i. the council of the municipality, if the owner of the drinking water system is a municipality, or
    ii. the governing body of the owner, if the owner of the drinking water system has a governing body and is not a municipality.
2. The financial plans,
    i. must include a statement that the financial impacts of the drinking water system have been considered, and
    ii. must apply for a period of at least six years.
3. The first year to which the financial plan must apply is the year in which the drinking water system is expected to first serve the public.
4. For each year in which the financial plans apply, the financial plans must include details of the proposed or projected financial operations of the drinking water system itemized by,
    i. total revenues, further itemized by water rates, user charges and other revenues,
    ii. total expenses, further itemized by amortization expenses, interest expenses and other expenses,
    iii. annual surplus or deficit, and
    iv. accumulated surplus or deficit.
5. The owner of the drinking water system must,
    i. make the financial plans available, on request, to members of the public who are served by the drinking water system without charge,

ii. make the financial plans available to members of the public without charge through publication on the Internet, if the owner maintains a website on the Internet, and

iii. provide notice advising the public of the availability of the financial plans under subparagraphs i and ii, if applicable, in a manner that, in the opinion of the owner, will bring the notice to the attention of members of the public who are served by the drinking water system.

6. The owner of the drinking water system must give a copy of the financial plans to the Ministry of Municipal Affairs and Housing. O. Reg. 453/07, s. 2.

Financial plan requirements; licence renewal

3. (1) For the purposes of clause (b) of the definition of "financial plans" in subsection 30 (1) of the Act, the following requirements are prescribed for financial plans that are required by subsection 1 (2) or a condition that is included in a municipal drinking water licence under subsection 1 (3) to satisfy the requirements of this section:

1. The financial plans must be approved by a resolution that is passed by,

   i. the council of the municipality, if the owner of the drinking water system is a municipality, or

   ii. the governing body of the owner, if the owner of the drinking water system has a governing body and is not a municipality.

2. The financial plans must apply to a period of at least six years.

3. The first year to which the financial plans must apply must be the year determined in accordance with the following rules:

   i. If the financial plans are required by subsection 1 (2), the first year to which the financial plans must apply must be the year in which the drinking water system's existing municipal drinking water licence would otherwise expire.

   ii. If the financial plans are required by a condition that was included in a municipal drinking water licence under subsection 1 (3), the first year to which the financial plans must apply must be the later of 2010 and the year in which the first licence for the system was issued.

4. Subject to subsection (2), for each year to which the financial plans apply, the financial plans must include the following:

   i. Details of the proposed or projected financial position of the drinking water system itemized by,

      A. total financial assets,

      B. total liabilities,

      C. net debt,

      D. non-financial assets that are tangible capital assets, tangible capital assets under construction, inventories of supplies and prepaid expenses, and

      E. changes in tangible capital assets that are additions, donations, write downs and disposals.

   ii. Details of the proposed or projected financial operations of the drinking water system itemized by,

      A. total revenues, further itemized by water rates, user charges and other revenues,

      B. total expenses, further itemized by amortization expenses, interest expenses and other expenses,

      C. annual surplus or deficit, and

      D. accumulated surplus or deficit.

   iii. Details of the drinking water system's proposed or projected gross cash receipts and gross cash payments itemized by,

      A. operating transactions that are cash received from revenues, cash paid for operating expenses and finance charges,

      B. capital transactions that are proceeds on the sale of tangible capital assets and cash used to acquire capital assets,

      C. investing transactions that are acquisitions and disposal of investments,

      D. financing transactions that are proceeds from the issuance of debt and debt repayment,

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E. changes in cash and cash equivalents during the year, and

F. cash and cash equivalents at the beginning and end of the year.

iv. Details of the extent to which the information described in subparagraphs i, ii and iii relates directly to the replacement of lead service pipes as defined in section 15.1- 3 of Schedule 15.1 to Ontario Regulation 170/03 (Drinking Water Systems), made under the Act.

5. The owner of the drinking water system must,

i. make the financial plans available, on request, to members of the public who are served by the drinking water system without charge,

ii. make the financial plans available to members of the public without charge through publication on the Internet, if the owner maintains a website on the Internet, and

iii. provide notice advising the public of the availability of the financial plans under subparagraphs i and ii, if applicable, in a manner that, in the opinion of the owner, will bring the notice to the attention of members of tbe public who are served by the drinking water system.

6. The owner of the drinking water system must give a copy of the financial plans to the Ministry of Municipal Affairs and Housing. O. Reg. 453/07, s. 3 (1).

(2) Each of the following sub-subparagraphs applies only if the information referred to in the sub-subparagraph is known to the owner at the time the financial plans are prepared:

1. Sub-subparagraphs 4 i A, B and C of subsection (1).

2. Sub-subparagraphs 4 iii A, C, E and F of subsection (1). O. Reg. 453/07, s. 3 (2).

Alternative requirements for two or more drinking water systems

4. If section 3 applies to the financial plans of two or more drinking water systems that are solely owned by the same owner, the requirements prescribed by the section may, as an alternative, be satisfied by financial plans that comply with the section but treat those systems as if they were one drinking water system. O. Reg. 453/07, s. 4.

Amendment of financial plans

5. Sections 2 and 3 do not prevent financial plans from being amended. O. Reg. 453/07, s. 5.

Additional information

6. The requirements of this Regulation do not prevent a person from providing additional information in financial plans prepared for the purpose of meeting the requirements of the Act. O. Reg. 453/07, s.

Appendix 2 Development Charges for Essa

Development Charges for Essa

Residential

	Singles and Semis	Rows and Multiples	Apartments 2 plus bedrooms	Apartment, bachelor or bedroom
Angus	$ 2,154.00	$1,927.00	$ 1,308.00	$ 964.00
Thornton	$ 8,794.00	$7,867.00	$ 5,338.00	$ 3,933.00

Non Residential Charge per Square Metre

Angus	$ 12.13
Thornton	$ 126.14

from the April 2018 Development Charges Study

Appendix 3 Development Charges Reserve Transactions Inflated $

Angus Service Area

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Value		1,909,773	2,161,439	2,416,288	2,674,361	2,935,699	3,200,343	3,468,334	3,739,716	4,014,530	4,292,821	4,574,632
DC Charges Collected		227,507	227,507	227,507	227,507	227,507	227,507	227,507	227,507	227,507	227,507	227,507
Capital/Major Maint. Exp.		0	0	0	0	0	0	0	0	0	0	0
Transfer to Current Fund		0	0	0	0	0	0	0	0	0	0	0
Interest on Opening Bal.		24,159	27,342	30,566	33,831	37,137	40,484	43,874	47,307	50,784	54,304	57,869
Close in Inflated $	**1,909,773**	**2,161,439**	**2,416,288**	**2,674,361**	**2,935,699**	**3,200,343**	**3,468,334**	**3,739,716**	**4,014,530**	**4,292,821**	**4,574,632**	**4,860,008**

Thornton Service Area

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Value		175,317	222,916	85,407	131,868	178,917	226,561	274,808	323,665	373,140	423,241	473,976
DC Charges Collected		45,381	45,381	45,381	45,381	45,381	45,381	45,381	45,381	45,381	45,381	45,381
Capital/Major Maint. Exp.		0	185,709	0	0	0	0	0	0	0	0	0
Transfer to Current Fund		0			-	-	-	-	-	-	-	-
Interest on Opening Bal.		2,218	2,820	1,080	1,668	2,263	2,866	3,476	4,094	4,720	5,354	5,996
Close in Inflated $	**175,317**	**222,916**	**85,407**	**131,868**	**178,917**	**226,561**	**274,808**	**323,665**	**373,140**	**423,241**	**473,976**	**525,352**

Total Close in Inflated $	**2,085,090**	**2,384,354**	**2,501,695**	**2,806,230**	**3,114,616**	**3,426,904**	**3,743,142**	**4,063,381**	**4,387,670**	**4,716,062**	**5,048,608**	**5,385,361**
Yearly Increase over Previous Year		**299,264**	**117,341**	**304,534**	**308,387**	**312,288**	**316,238**	**320,239**	**324,290**	**328,392**	**332,546**	**336,753**

Appendix 4 Essa Tangible Capital Assets 2020-2026 Inflated $

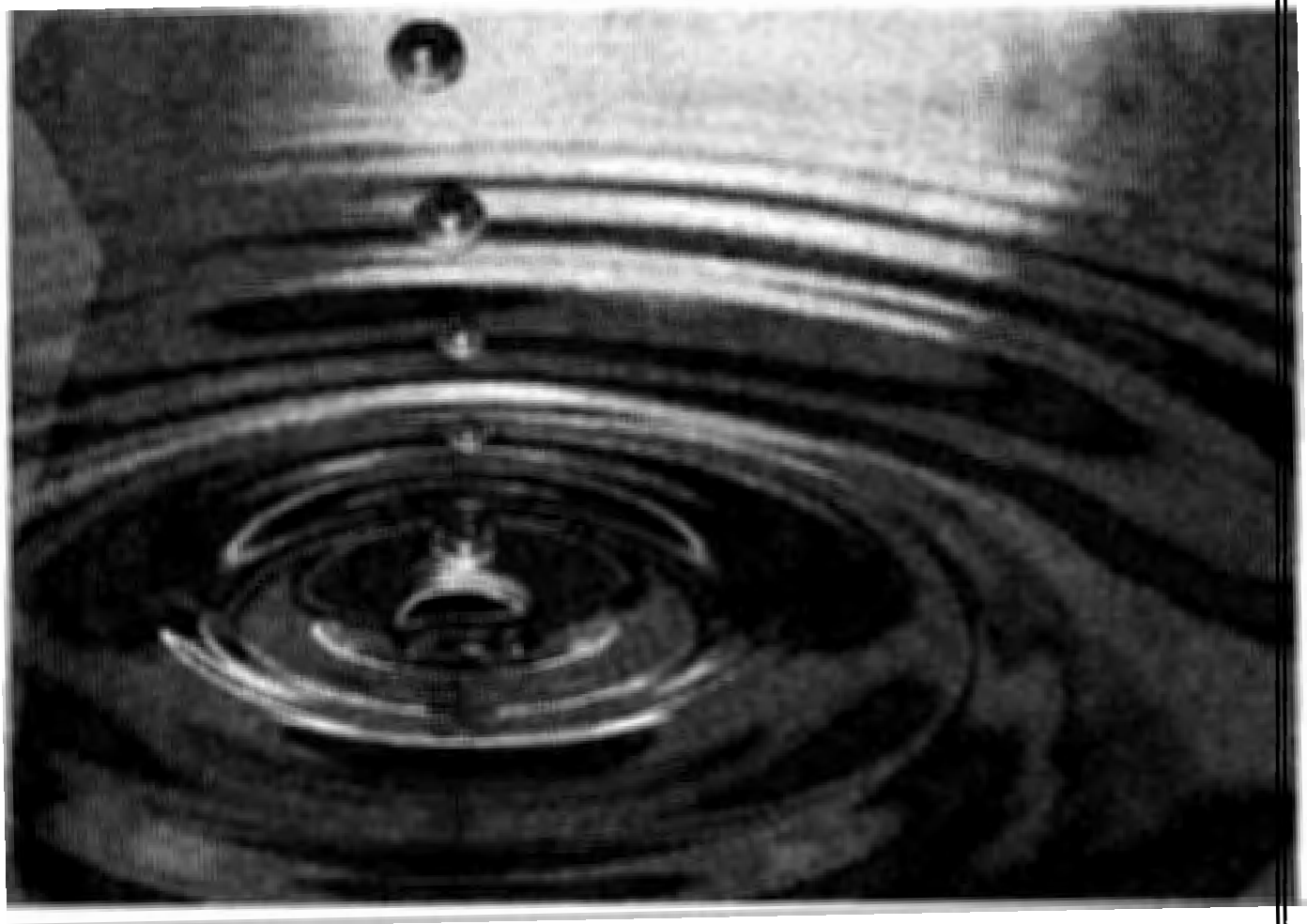
	2020	2021	2022	2023	2024	2025	2026
Opening NBV	$27,084,107	26,668,012	28,445,863	29,820,586	29,186,599	28,562,524	27,941,694
Original Cost	34,727,914	34,847,245	37,093,371	39,068,559	38,849,472	38,817,272	38,762,069
Additions	149,350	2,374,706	2,021,391.96	28,137.72	28,982	29,851	-
Disposal	-	0	$0	$0	0	0	0
Closing Cost	34,877,264	37,221,951	39,114,763	39,096,697	38,878,454	38,847,123	38,762,069
Annual Amortization	565,445	596,855	646,669	662,125	652,381	650,681	644,547
Accumulated Amortization	8,209,252	8,776,088	9,294,177	9,910,098	10,315,929	10,905,429	11,464,922
Closing NBV	26,668,012	28,445,863	29,820,586	29,186,599	28,562,524	27,941,694	27,297,147

Township of Essa

Drinking Water and Wastewater System

Rate Report

December 7, 2020



Sharratt Water Management Ltd.
Sustainable Water Management Specialists

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1.0 EXECUTIVE SUMMARY

The Township of Essa is located in Simcoe County with a 2016 population of 21,083 up from 17,970 in 2011. Three communities are served by the water system within the Township: Angus, Thornton and Baxter with about 4,766 connected users as of December 31, 2019. The wastewater system in Angus has 4,194 connections. The balance of the users utilize private wells and septic systems. Users all pay a two-part water rate and a wastewater surcharge on the water bill. The fixed portion of the two-part rate increases for larger meter sizes in recognition of the higher costs of larger meters. All users with same meter size pay the same water and wastewater rates.

The Township has undertaken this project to prepare water rates, which will ensure that sufficient funds will be in place to cover the future water system operating costs, water and wastewater system life-cycle asset renewal and replacement costs, as well as accommodate substantial growth in the next ten years. It will also provide the basis for the preparation and submission of a water system financial plan. The preparation of a water system financial plan is one of the statutory requirements, set by the province of Ontario, for obtaining a renewal of the water system operating license.

This rate project carried out the following tasks:

1) Compiled the current and projected operating costs for 2017-2030, and beyond to 2099 for water and 2099 for wastewater
2) Considered the growth projects in Thornton and Baxter
3) Estimated and tabulated the capital renewal and replacement costs to 2099 for water and wastewater assets. Current 2019 asset data was provided by the Township
4) Estimated the most likely quantities of water sold, and number of current and future connections
5) Developed water and wastewater rates for 2021 to 2030
6) Estimated the projected water and wastewater bills of various customers using different quantities of water
7) Compared the rates in the Township of Essa, for an average user, with those in other communities

The intent of the project is to develop a sustainable financing plan that will fully meet the current financial needs, as well as making full provision for renewing all water system financial assets and accommodating growth in Thornton and Baxter. This means that each year, from 2021-30, and beyond, user fees have been set at such a level, that when needed, funds will be available to meet future projected operating, capital renewal, replacement needs, and growth needs. Development charges provide the bulk of the financing for growth. However, in order for growth to proceed, some renewal and replacement work has to be undertaken to facilitate growth that benefit existing users, and this is included in future rates.

The costs of the identified current and long-range capital renewal needs, as well as capital needed to accommodate growth, have been combined with the projection of the operating costs, which include the effects of growth on the operating costs, needed to produce an overall projection of system cost. Various methods have been utilized to supply the necessary financial resources to pay for this overall cost. These include loans, user fees, developer fees, development charges, connection charges and reserves. Grants have not been included but should an opportunity arise, they could be used to reduce projected capital costs. User fees are the key component of the financing plan, as they pay down debt and build up reserves, as well as meeting day-to-day operating and smaller capital costs. In view of the difficulty of predicting the rate of new development and in consideration of the impact the anticipated growth could have on future water revenues, it is recommended that rates be monitored annually to determine if projected revenues and expenditures are in line with expectations. This is particularly critical with respect to the number of new connections. The projected increase in connections helps keep rates lower than otherwise. If the projected increases in the number of new

users do not materialize, then it may be necessary to revise the rates to ensure that sufficient revenues are realized.

1.1 WATER RATE

Rates are calculated by considering the user fee requirements, and by taking into account future water use and the number of connections. User fees are projected to increase; however, the projected number of new users is projected to offset at least the rate impact of some of the projected increase.

The Development Charge Background Study (DC Study), carried out for the Township in April 2018, projects a substantial increase in population. A large development project in Baxter will increase the number of water and wastewater users very substantially. The number of additional users that this represents is set out in table 5.4. The rates for 2021 to 2030 were developed by assuming that all of the development projected in the DC study, and the Baxter development, will be realized on the current schedule. The proposed 2021 to 2025 rates are set out in table 1.1. A new rate study will be undertaken in 2025. The projected rates for 2021-30 are set out in table 5.6.

Table 1.1 Proposed Two Part Essa Water Rate 2021-30 Inflated $

Annual Fixed Cost	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Meter Size (inches)						
0.62	63.07	65.21	65.08	65.60	66.15	67.66
0.75	63.07	65.21	65.08	65.60	66.15	67.66
1	88.31	91.29	91.11	91.84	92.62	94.72
1.5	113.54	117.37	117.14	118.09	119.08	121.78
2	182.93	189.10	188.72	190.25	191.85	196.20
2.5		456.44	455.54	459.22	463.08	473.59
3	705.09	717.26	715.84	721.63	727.69	744.21
4	-	912.88	911.07	918.44	926.16	947.18
Variable Rate						
Cost per M3 Infl. $	1.43	1.47	1.48	1.51	1.53	1.58
Cost per M3 2020$	1.43	1.44	1.41	1.40	1.39	1.39

The above rate maintains an increasing variable rate through 2030, with the fixed portion of the rate showing small annual increases to 2030. The variable charge increases at about or slightly below the projected rate of inflation. The projected water bills associated with the above-proposed rates set out in table 1.2.

Table 1.2 Projected Essa Annual Water Bills with the proposed Rates 2021-30 Inflated $

Hypothetical User	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Single Person with 50 M3/Year	135	139	139	141	143	146
Couple with 100 M3 per Year	206	213	214	216	219	225
Family 250 M3 per Year	421	434	436	443	449	462
Average User 180 M3 per Year	320	331	332	337	342	351
Larger User 600 M3 per Year	1,041	1,073	1,080	1,095	1,111	1,142
Arena at 10,000 M3 per Year	14,483	14,929	15,036	15,275	15,517	15,961
Industry at 23,000 M3 per Year	33,073	34,091	34,338	34,884	35,439	36,456
Note: Large user, arena and industry are assumed to have a 2 inch meter						

A user taking 50 cubic metres per year is projected to pay $135 in 2020, and $146 in 2025. Someone using 100 cubic metres per year will pay $206 in 2020, and $225 in 2025. A user of 250 cubic metres per year will

pay a water bill of $421 in 2020, and $462 in 2025. A larger user, such as a supermarket, taking 600 cubic metres per year will pay $1,041 in 2020, and $1,142 in 2025. An arena that uses 10,000 cubic metres per year will pay $14,483 in 2020, and $15,961 in 2025. A very large user, if there is one in Angus; accounting for 23,000 cubic metres will pay $33,073 in 2020, and $36.456 in 2025. All figures are in inflated dollars.

1.2 WASTEWATER RATE

Wastewater rates are calculated by considering the user fee requirements, and by taking into account future water use and the number of connections. User fees are projected to increase due to an aging treatment plant in Angus, however, as with water rates, the anticipated growth in the projected number of new users will offset some of the projected increase in user fees. Wastewater rates are surcharge to water rates as a percentage of the water bill. Thus, a 95% surcharge is simply .95 times the cost of the water bill. The proposed surcharges for 2021 to 2025 are shown in table 1.3.

Table 1.3 Proposed Essa Wastewater Surcharges for 2021-30 Inflated $

2020	2021	2022	2023	2024	2025
95.00%	101.0%	111.0%	118.9%	127.3%	136.3%

The proposed surcharges show an increase from 2021 to 2025, meaning that wastewater user fee needs are increasing faster than water user fees. A major increase in capital renewal is forecast for the wastewater treatment plant that is now 40 years old. Major components are reaching the end of their accounting life, and will likely need replacement throughout the next ten years or so, commencing in the next three years.

The projected wastewater bills are shown in table 1.4.

Table 1.4 Projected Essa Wastewater Bills 2020-2030 Inflated $

Hypothetical User	2020	2021	2022	2023	2024	2025
Single Person with 50 M3/Year	128	140	155	168	182	200
Couple with 100 M3 per Year	196	215	237	257	279	307
Family 250 M3 per Year	400	438	484	526	572	629
Average User 180 M3 per Year	304	334	369	401	435	479
Larger User 600 M3 per Year	989	1,084	1,199	1,302	1,414	1,556
Arena at 10,000 M3 per Year	13,759	15,078	16,696	18,156	19,747	21,750

A user taking 50 cubic metres per year is projected to pay $128 in 2020, and $200 in 2025. Someone using 100 cubic metres per year will pay $196 in 2020, and $307 in 2025. A user of 250 cubic metres per year will pay a wastewater bill of $400 in 2020, and $629 in 2025. An average user of 180 cubic metres per year will pay $304 in 2020, and $479 in 2025. A larger user such as a food store will pay $989 in 2020, and this increases to $1,556 in 2025. An arena, using 10,000 of water per year, is projected to pay $13,759 in 2020, and $21,750 in 2025, assuming that all of the water taken is included in the wastewater surcharge calculation. All figures are in inflated dollars.

1.3 VALUE OF ESSA WATER – WHAT IT DOES IN THE HOME

		What $1.00 will buy Quantity Purchased	
	Amount Used (litres)	2020 Rate	2025 Rate
Drink a 340 ml glass of Essa tap water	0.3	1,793	1,632
Drink a 500 ml bottle of Essa tap water	0.5	1,219	1,110
Buy a 500 ml bottle of water at Tim Hortons	0.5	1/2 bottle	?
Shower 30 minutes (Number of Showers)	270.0	2	2
Shower 10 minutes (Number of Showers)	90.0	7	6
Shower 5 minutes (Number of Showers)	45.0	14	12
Run dishwasher start to finish - new (# of washes)	25.0	24	22
Run dishwasher start to finish - older (# of washes)	38.0	16	15
Flush an older 15 litre (# of flushes)	15.0	41	37
Flush a 6 litre toilet (# of flushes)	6.0	102	92
Flush a high efficiency toilet (# of flushes)	4.5	135	123
Wash clothes - older top load (# of wash loads)	175.0	3	3
Wash clothes - new front load (# of wash loads)	90.0	7	6

Assume the cost of water if use 300 m3 per year

A thirsty Essa, and most likely many thirsty Essa users, user can consume 1,793 glasses of water for one dollar. This will decline to 1,632 in 2025. Sixteen five-minute showers for $1 in 2020, and 12 in 2025. A dollar will buy 16 dishwasher runs in 2020, and 15 in 2025. With a high efficiency toilet, that is now installed in most new homes, 135 flushes can be had for one dollar in 2020, and 123 in 2025. Seven top load washes for $1 in 2020, and 6 in 2025. No doubt, water bills are going up; however; tap water from the municipality is a great buy.

2.0 TOWNSHIP OF ESSA RATE DEVELOPMENT PROJECT

2.1 PROJECT PURPOSE

The Township intends to develop full cost life-cycle water and wastewater rates for its water and wastewater systems. This report begins by taking the system operator's and Township's 5 year estimate of capital need, the growth estimated from the development charges study completed in April, 2018, considers the Baxter development and then takes the Township's 2019 asset listing and projects it to 2099 for water and wastewater. The time horizons were selected based on the life of the longest-lived asset. For water, a water main is assumed functional for 80 years, and for wastewater, sewer mains are assumed to last 80 years. All assets reaching the end of their projected lifetime are replaced at original cost inflated to future year costs when it reaches the end of its life. A financing plan is developed for all capital renewal costs identified in the above process, as well as financing for the day-to-day operation of the systems. Any existing user costs associated with growth are also included. A plan is then created by setting out a projection of all revenues, relevant operating costs, needed reserve set-asides and debt to fund operating and capital replacement to 2099 for water and for wastewater. Projections of water sold, and the number of connections are a key part of the analysis. This information serves as the basis for setting simple, smooth and fair water rates, based on current practice across Ontario, as well as conforming to MOE financial planning guidelines. This report projects the water bills of typical customers associated with the proposed future water rates. Finally, the report compares the water and wastewater bills of a number of communities with those for Essa.

2.2 LEGISLATIVE CONTEXT FOR THE PREPARATION OF THIS RATE REPORT

There have been a number of legislative initiatives affecting water system management and operations over the past decade. These commenced with the water borne illness tragedy in Walkerton in 2000. Following this event, the government established a public inquiry to look into the tragedy, chaired by the Honourable Dennis O'Connor. The Connor Inquiry report recommended a comprehensive approach to the delivery of safe drinking water in Ontario.

The Ministry of Environment (MOE) has responded to the Inquiry recommendations by making legislative changes. One having relevance to the development of rates and financial plans was the passage of the Safe Drinking Water Act, 2002 (SDWA). It requires owners of municipal drinking water systems to apply for and obtain a Municipal Drinking Water Licence. Five elements must be in place in order for the owner of a drinking water system to obtain a licence:

- A Drinking Water Works Permit to establish or alter a drinking-water system;
- An accepted Operational Plan. The Drinking Water Quality Management Standard (DWQMS) is the standard upon which operational plans are based. The plan documents an operating authority's quality management system (QMS).
- An Accredited Operating Authority. A third party audit of an operating authority's QMS will be the basis for accreditation.
- A Permit to Take Water.
- A Financial Plan that must be prepared, based on up-to-date rates, and approved in accordance with the prescribed requirements in the Financial Plans Regulation. Up to date rates are a key foundation for a Financial Plan. The preparation of rates is the main purpose of this project. The Financial Plan will be presented in a separate document.

Under section 30 of the SDWA, the Financial Plans' element of the licence program must either be prepared in accordance with the Sustainable Water and Sewage System Act, 2002 (SWSSA), or in accordance with the requirements set by the Minister of the Environment. SWSSA regulations were not published for ten years, and

accordingly SWSSA act is no longer in force and has lapsed. Accordingly, the requirements set by the Minister of Environment apply, and these are the 2007 MOE Regulation 453/07 and MOE guidelines.

Regulation 453/07 of the Safe Drinking Water Act 2002 was passed in 2007, and contains two key provisions that apply to existing water systems:

- *"A person who makes an application under the Act for a municipal drinking water licence shall, before making the application, prepare and approve Financial Plans for the system that satisfy the requirements of Reg. 453/07."*
- *"As a condition in a municipal drinking water licence that is issued in response to an application made under section 33 of the Act for a municipal drinking water licence, the Director shall include a requirement that the owner of the drinking water system, by the later of July 1, 2010 and the date that is six months after the date the first licence for the system is issued, prepare and approve Financial Plans for the system that satisfy the requirements prescribed Reg. 453/07."*

The review of capital and replacement needs and the preparation of fully sustainable rates is the foundation for the financial plans. In August 2007, the MOE published "Toward Financially Sustainable Drinking-Water and Wastewater Systems". This document provides an outline of the Province's approach and principles for developing the above-mentioned Financial Plans, including the rates. Achieving financial sustainability in the province's municipal and water and wastewater sector is the long-term goal.

The above MOE publication set out nine principles to guide the preparation of Financial Plans, and by implication, water rates:

1. *Ongoing public engagement and transparency can build support for, and confidence in, financial plans and the system(s) to which they relate.* The owner of the drinking water system must make the Financial Plan available, on request, to members of the public who are served by the drinking water system without charge, publish them on the internet, if one is available, and provide notice to the public of the availability of the document.

2. *An integrated approach to planning among water, wastewater and storm water systems is desirable given the inherent relationship among these services*. If one entity plans for both water and wastewater, then this arrangement allows owners and operators to make more rational decisions about operations, capital investment and environmental protection – choices that the recognize the inter-relationship between water and wastewater services. Many municipalities, where water users are metered, pay for the costs of wastewater services by levying a surcharge on water rates. This is a valuable linkage, as those who use water will generate equivalent amounts of water. However, the guideline encourages municipalities to structure their accounts to reflect the three separate activity areas: water, wastewater and storm water. Costs are to be computed on a service basis for water, and separately for wastewater. Separating fire protection costs from other system costs is desirable. Recovering costs for storm water through a surcharge on water bills does not satisfy the user pay principle.

3. *Revenues collected for the provision of water and wastewater services should ultimately be used to meet the needs of those services.* This can be done by establishing dedicated reserves, in which excess utility revenues above current cash costs and capital expenditures are saved for future utility needs.

4. *Financial planning with midcourse corrections is preferable to planning over the short term, or not planning at all*. It is recommended that utilities, when they undertake capital investment planning, adopt a planning horizon that encompasses the entire life cycle of the asset base. This may not be immediately possible, but in the interim, a planning horizon of at minimum 35 years is desirable.

5. *An asset management planning approach is a key input to the development of a financial plan*. A very useful starting assumption, in preparing capital investment plans is that each asset will need to be replaced at the end of the estimated life that is assigned to it for accounting purposes. The intent of an asset management plan, the rates and accompanying financial plan is to ensure that when assets need to be maintained, rehabilitated or replaced; municipalities are in a financial position to do so.

6. *A sustainable level of revenue allows for reliable service that meets or exceeds environmental standards, while providing sufficient resources for future rehabilitation and replacement needs.* A sustainable utility is one that can adequately cover current operating costs, maintain and repair its existing asset base, replace assets when appropriate, fund future growth and service enhancements, and account for inflation and changes in technology. Capital expenditures can be funded through user fees, new debt issuance and cash reserves. The use of debt is limited by the municipality's debt ceiling. Many municipalities wish to avoid the use of debt and, accordingly, need to raise additional revenues from ratepayers today to pay for future investment needs. According to the guidelines, it is a good practice for the funding plan to identify the contribution of various funding sources towards satisfying capital investment plan requirements over the projection periods. A related best practice is for the funding plan to include projected balances for debt and cash reserves in each period of the projection horizon. Additional best practices include:

- Avoiding large fluctuations in rates from year to year
- Keeping debt within a sustainable level
- Avoiding depleting cash reserves or, conversely, building up large cash balances that do not reflect future cash needs

7. *Ensuring users pay for the services they are provided leads to equitable outcomes and can improve conservation. In general, metering and the use of rates can help ensure users pay for services rendered.* Rate structures should promote financial sustainability and water conservation. Metering and the use of rates are preferable to cross subsidization using property taxes.

8. *Financial Plans are living documents that require continuous improvement. Comparing the accuracy of financial projections with actual results can lead to improved planning in the future.* From time to time, it is good practice to review the accuracy of projections in both capital investment and funding plans. The appropriate frequency is likely to be once in 3 to 5 years.

9. *Financial Plans benefit from the close collaboration of various groups, including engineers, accountants, auditors, utility staff, and municipal council*.

In summary, this rate report has been prepared in line with the various pieces of MOE legislation and regulations and in particular, with the above mentioned MOE guideline document.

3.0 WATER SERVICE FINANCING OPTIONS

Municipalities have a number of alternatives available to fund water and wastewater services:

Development Charges - Such charges are applied to developers and others connecting new non-serviced areas or lots to the existing water systems. Most of the growth related costs of building additions to the system are generally passed on to these developers and their new customers. Existing users may have to pay some costs of accommodating new growth, as part of these new developments have features that benefit existing users, but are spared the bulk of the capital cost of expanding infrastructure to accommodate new users to the system. The Township, in 2018, commissioned a development charge study in accordance with the development charges act. This report will use the growth numbers and the funding allocations between existing

and new users set out in the 2018 report. Development charge funds are placed in a dedicated reserve fund, and used to fund growth-related projects, including new wells, reservoir expansions, new plant components, wastewater pumping stations, and pipe oversizing. The development charges set out in the April 2018 Development Charges study is shown in appendix F, and projected transactions in the development charge reserve is shown in appendix G. Developers also pay fees in accordance with agreements. The agreements between developers and the Township will involve the developers up fronting costs for water developments in Thornton and Baxter.

Connection Charges - Fees are charged to landowners who wish to connect to the system. The fee covers the cost to the water utility associated with installing a service line from the existing water main or large sewer to the edge of the property line. The Township uses a connection fee and this will be applied to approximately 75 water users in Baxter who will be connected to the water system in the next few years.

Government Grants - The Ontario and Federal governments provide funding on a shared basis with municipalities. The formula is one-third Federal government, one third Provincial government and one third municipal funding. Capital grants have been received that financially assist projects to accommodate growth. No additional grants are assumed for the water projects set out in this study. Should grants be received in future, they will be applied to the approved projects.

Reserves - Reserves are quantities of funds, drawn from user fees, and set aside to deal with unexpected equipment repairs, and to renew ageing water systems. Increasingly, municipalities are carrying out studies to look out 30 to 100 years to identify capital renewal or replacement projects that need to be sustainably funded, in large part, by reserves. The Township, as of December 31, 2019, has a water system infrastructure reserve surplus of $2,392,149.05 and the wastewater system infrastructure reserve has a surplus of $1,336,377.77. The Township also has stabilization reserves intended to make up revenues on a wet year to cover lower than expected revenues. The stabilization reserve totals, as of December 31, 2019, for water was $606,345.47 and for sewer was $405,775.81. Infrastructure reserves will need to be replenished. Funds are set aside from the water and wastewater operating plans to sustain these reserve replenishment needs.

Debentures/Loans – Many Ontario water systems have borrowed funds to provide upgrades to service existing users. Utilizing debentures and loans allows principal and interest to be recovered over a long time, spread over a large number of future water users, rather than having the full cost burden fall on one group of water users at one time. The water system has a $1.9 million 15-year loan taken out in 2009 at 2.49%. The principal remaining as of December 31, 2019 was $645,701.01.

User Fees – Smaller, recurring capital maintenance and renewal projects are often financed out of the annual operating funds of the water system. User fees also contribute to the reserves, and cover all the costs not covered by other financing approaches.

Most water systems use some or all of the above means. In this project, revenue generation will rely upon user fees, connection fees, the existing loan, development charges and developer fees as well as reserves derived from user fees.

4.0 WATER RATE TYPES

There are a number of rate types that are in use in Ontario. These are as follows:

Flat Rate - All users are assessed an annual fee that does not depend on the amount of water used. This approach, by necessity, is utilized when users are not metered. As of the end of 2019, approximately 23 users are on flat rates and not yet metered. Each of the current flat rate water user pays a fixed fee of $50 per month. All remaining 4,746 users are metered.

Decreasing Block - Users pay less per cubic metre as water use exceeds a certain pre-set amount. This rate provides an economic advantage to large industrial or institutional water users. The Township, does not utilize a decreasing block. All Township water system users pay the same volumetric charge.

Increasing Block - Users pay more per cubic metre as water use increases beyond a pre-set amount. This is sometimes called the conservation rate, as it was designed to encourage large users to be more careful with their water use. The Township charges all users the same amount per cubic metre, and does not use the increasing block method.

Two-part Constant Unit - The user pays a fixed fee at each billing, that increases with meter size, that covers a small amount of the total water costs, usually meter replacement and billing costs, plus the same charge for all users for each and every cubic metre of water used. The Township currently utilizes this rate type for both water and wastewater, and it is recommended that this be continued in the future.

Seasonal Rate – Higher rates in the summer are applied to those who take more water in summer than in winter. This is often used when the system is closest to capacity. This is not utilized by the Township, and is not proposed at this time.

Flat rates are commonly utilized in about a tenth or less of Ontario municipalities that are not metered, and in communities that are only partially metered. Decreasing block rates were formerly very popular, as they provided some relief for large users. However, the popularity of this rate type is declining. The management of a system that is reaching capacity, and will face expensive expansion, often employs increasing block rates. The two-part constant unit rate is now the most commonly used rate type. It is recommended that the Township continue with the two-part constant unit rate for setting 2021 and future rates. The 2020 rate is set out in table 4.1.

Table 4.1 Essa 2020 Water and Wastewater Rates $

Water			Wastewater
Fixed Portion of the Rate	**Per Annum**		**Wastewater Surcharge**
Meter Size			
5/8x3/4 inch	$	63.07	95%
1 inch	$	88.31	95%
1.5 inch	$	113.54	95%
2 inch	$	182.93	95%
3 inch	$	705.09	95%
Volumetric Portion of the Rate			
Cost per Cubic Metre (M3) for all Water Used	$	1.43	95%
Rate Calculation - apply fixed charge adjusted for the number of months billed and add the cost for all water used. For example, someone with a 5/8x3/4 in. meter billed for 3 months using 100 m3, and , would pay $63.07 divided by 4 or $15.02 plus 100 x 1.43 or $143 for a total of $158.02 for three months. The wastewater bill would be $158.02 multiplied by .95 or $150.12			

5.0 PROPOSED WATER SYSTEM RATES FOR 2021-2030

5.1 WATER SYSTEM RATE SETTING ASSUMPTIONS

The water rate setting process in this report begins by establishing a financing plan for 2017-2030, that will also provide full funding for all renewal and replacement to 2099. This plan contains information about various system attributes, such as future revenue sources, the projected day-to-day expenditures needed to operate the system, estimated future capital projects to provide for system asset renewal and replacement, reserves and debt. Water sold and the number of connections are projected. Several assumptions have been made in preparing the financing plan:

• Inflation (operating)	Most at 2% per annum 2021-2099
• Inflation (capital)	3.0% per annum 2021-2099
• Number of new connections	Based on the April 2018 DC Study and the Baxter development
• Water main life expectancy	80 years
• Growth Related Development	DC/Existing user costs based on the 2018 DC study and developer agreements in Thornton and Baxter

5.2 CAPITAL RENEWAL EXPENDITURES NEEDED

Projecting future capital renewal and replacement expenditures is a very important step in developing sustainable rates. In this project, the system operator's (OCWA) projection and the Townships projection of capital needs to 2025 was utilized and shown in appendix A. This included capital and major maintenance. Only capital was used in this calculation. Major maintenance was included in the operational budget. Next, the Township's asset database was used to estimate renewal needs from 2026 to 2099. This asset database sets out the initial costs, when the asset was installed, and set the cost of each asset to 2019 costs and in future costs. Also shown in the portion covered by DC charges, existing users, grants or other development charges and new user meter fees. This information is detailed in appendix B. Based on the life expectancies of each asset, a future renewal and replacement schedule was developed for 2026-2099. For example, an asset installed in 1994, with a 30-year life, is scheduled for replacement in 2024. The 2019 asset cost was inflated to 2024 replacement costs, the year when the asset is scheduled for replacement. Water mains, with an 80-year life, installed in 1994 will be replaced in 2074, with 2019 replacement cost inflated to 2074 costs. This approach was used for all 1,140-listed water and all 745 wastewater assets in place to 2019, and projected out to 2099. The projected asset replacement schedule for water for 2020 to 2099 is summarized in figure 5.1.

Figure 5.1 Cost of Water Asset Renewal/Replacement and Growth 2020-2099 Inflated $

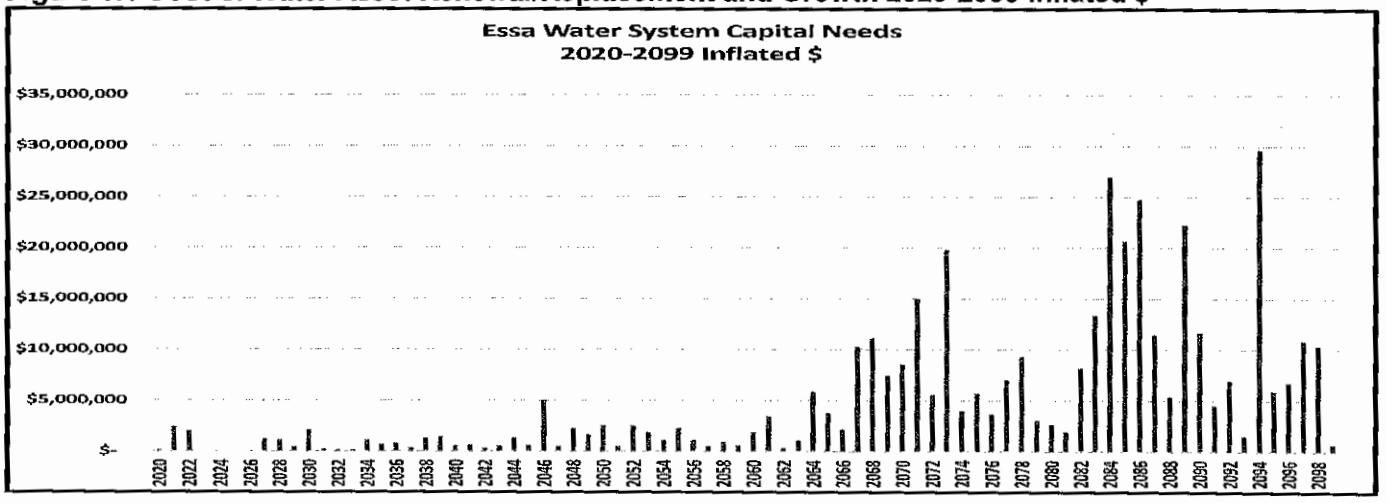


Figure 5.1 provides a long-term perspective on capital needs. The key projects in the near term include the following:

- 2021-22 Baxter and Thornton pumping station and reservoir construction and expansion
- 2027 Mill Street back-up generator, renewal of Mc George treatment building and reservoir
- 2028 Brownley treatment plant pumps, chemical feed system and SCADA
- 2030 Major Mill Street plant overhaul
- 2046 McGeorge generator and plant control replacement, Mill Street reservoir replacement
-

Most of the expenditures are periodic renewal of buildings, underground reservoirs, chemical feed systems, controls and pumps at the various treatment plants. In the short term, there is some meter replacement and SCADA installation and capacity expansion projects in Thornton and Baxter projected for 2021. The Thornton project, currently estimated at $375,058 will be funded partially from $165,000 in development charges. The Baxter pumping station project in 2021 will be funded from developer fees, connection charges, development charges and user fee. The balance and all other capital currently projected will be funded from user fees. Major capital renewal and replacement will occur in the 2050s, and will become substantial in the late 2060s onwards. At that time, most system components including above ground assets as well as water mains will need replacing.

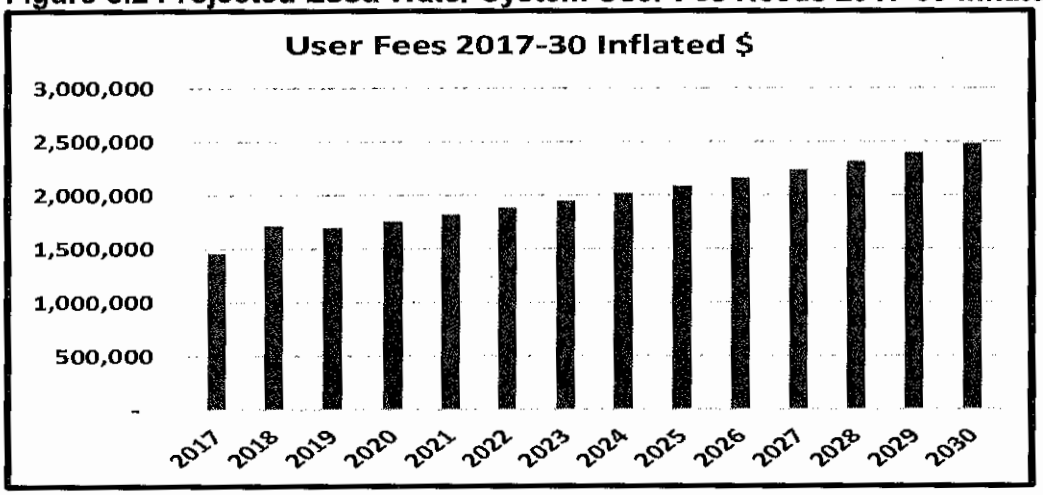
5.3 OPERATING PLAN

The operating financial plan for the water system sets out the revenues and expenditures, and summarizes the financing strategy for the water system. The major maintenance projections provided by OCWA and the Township, included in appendix A, are shown on the major maintenance expenditure line in the operating plan. The objective, adopted in this study, is to use user fees as much as possible to finance projected asset renewal expenditures, with loans used to finance major projects in the near term, and loans undertaken when major renewal projects are needed such as major water main replacement or water tower construction. The summarized operating financial transactions for 2017 to 2030 are shown in table 5.1.

5.3.1 User Fee Requirements

Revenues are comprised primarily of revenues from user fees, development charges, developer fees, connection charges and, to a lesser degree, from late payment charges on overdue accounts. Contributions are made from the capital reserve to augment revenue needs in the years, when large capital expenditures occur. The projected user fee revenue needs are set out in lines 72-74 of table 5.1. The projected user fees are illustrated graphically in Figure 5.2 below:

Figure 5.2 Projected Essa Water System User Fee Needs 2017-30 Inflated $

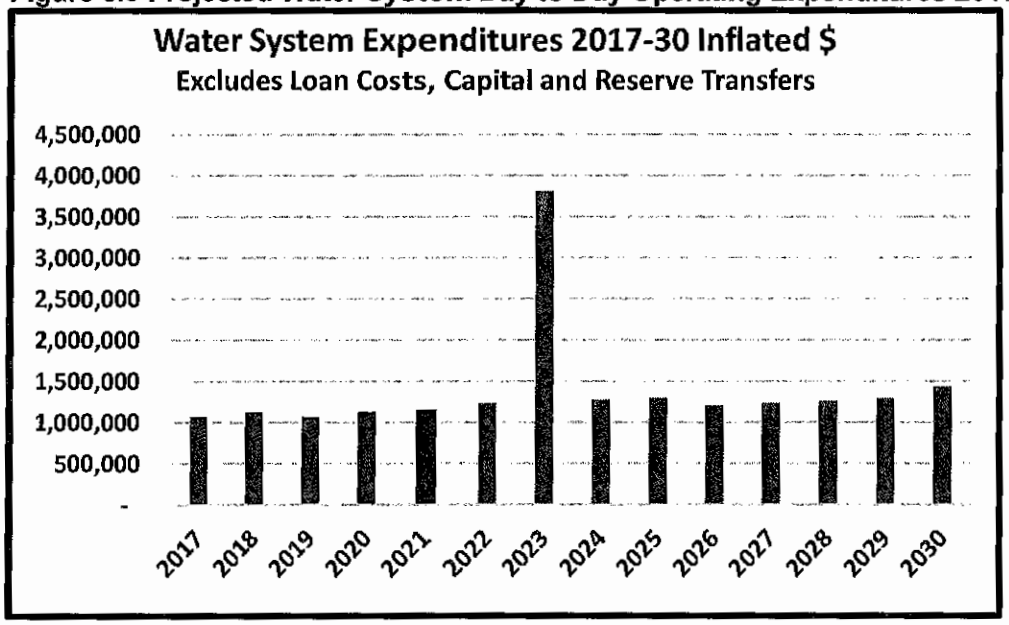


User fees are projected to increase at 3.5% per year from 2021 to 2030 and beyond to 2099. Included in the user fee increase is provision for the inflation of operating costs of 2% per year, and inflation of 3% per year for projected capital costs. The proposed schedule of user fee increases funds all routine projected operating costs, and provides sufficient revenue to cover the currently projected capital asset renewal and replacement needs to 2099.

5.3.2 Operating Expenses

Total operating expenditures represent the routine day-to-day costs of operating the system, and include labour, benefits, electrical, chemical and testing costs. They also include debt payments, capital expenditures and reserve transfers. The total expenses are summarized in line 59 of table 5.1. Day to day operating costs exclude loan repayments, capital costs and reserves. These are excluded as they vary greatly from year to year and make year-to-year comparisons difficult. The day-to-day operating expenditures are summarized in line 60 in table 5.1, and are illustrated in figure 5.3.

Figure 5.3 Projected Water System Day to Day Operating Expenditures 2017-30 Inflated $



Fluctuations in actual expenditures are normal. The above costs show a decline to 2020 due to lower long-term contract fees. The expenses then rise from 2021 to 2024 due to the cost of additional water takings from the pipeline, plus, in 2023, the undertaking of water line rehabilitation work in Thornton and Angus water distribution systems. All projected costs include inflation. The increases then rise in line with inflation of 2% per annum from 2026 onwards.

5.3.3 Debt

The water system has one loan outstanding. This was taken out in 2009 for a 15-year term. The principal remaining as of December 31, 2019 was $645,701.01. It will be fully paid off in 2024. The schedule is shown in appendix E. No further debt is projected at this time.

Table 5.1 Essa Summary Water System Financial Plan - Actual $ 2017-2020 and Inflated $ 2021-30 Page 1 of 2

	Essa Water System Operating Plan 2017-2030 Inflated $					0.03									
		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	EXPENDITURES														
1	Salaries/Wages	78,108	77,088	62,643	60,221	61,124	62,041	62,972	63,916	64,875	65,848	66,836	67,839	68,856	69,889
2	Salaries/Wages Part Time		-	813	3,500	3,553	3,606	3,660	3,715	3,771	3,827	3,885	3,943	4,002	4,062
3	WATERWORK-Wages & Benefits Transfer	23,868	24,226		24,830	25,202	25,581	25,964	26,354	26,749	27,150	27,557	27,971	28,390	28,816
4	Employee Benefits Full Time	4,316	4,405	3,919	3,050	3,096	3,142	3,189	3,237	3,286	3,335	3,385	3,436	3,487	3,540
5	Extended Health Benefits	9,633	9,666	8,160	6,100	6,191	6,284	6,379	6,474	6,571	6,670	6,770	6,872	6,975	7,079
6	Employee Health Tax	1,473	1,511	1,324	1,175	1,193	1,211	1,229	1,247	1,266	1,285	1,304	1,324	1,344	1,364
7	Employee Assistance Plan	51	51	43	40	41	41	42	42	43	44	44	45	46	46
8	OMERS	7,381	7,518	6,464	5,443	5,552	5,663	5,776	5,892	6,009	6,130	6,252	6,377	6,505	6,635
9	WSIB	2,287	2,444	2,131	1,717	2,145	2,188	2,231	2,276	2,322	2,368	2,415	2,464	2,513	2,563
10	Mileage	149	221	453	350	357	364	371	379	386	394	402	410	418	427
11	Office Supplies	977	1,244	574	800	874	891	909	927	946	965	984	1,004	1,024	1,044
12	Advertising	841	773	231	500	586	598	610	622	635	647	660	673	687	701
13	Insurance	4,870	-	4,967	5,000	5,100	5,202	5,306	5,412	5,520	5,631	5,743	5,858	5,975	6,095
14	Interest on Borrowing (2009 Loan)	48,156	36,749	53,770	15,228	11,787	8,260	4,644	938	-	-	-	-	-	-
15	Contract Services	530,250	539,264	420,618	455,714	462,550	469,488	476,530	483,678	490,933	498,297	505,772	513,358	521,059	528,875
16	Transfer to Reserve from Water Revenues	100,202	(940,036)	-	-	-	-	-	-	-	-	-	-	-	-
17	Water Loan Principal Payment (2009 Loan)	438,917	450,324	433,303	137,340	140,781	144,309	147,924	75,346	-	-	-	-	-	-
18	Other Write-offs	657	759	2,274	300	998	1,017	1,038	1,059	1,080	1,101	1,123	1,146	1,169	1,192
19	Tower rental/Meter Reads (terminated)	14,588	15,419	23,889	11,000	11,000	11,000	13,000	13,000	13,260	13,525	13,796	14,072	14,353	14,640
20	NVCA Source Water Threat Assess				10,000	10,200	10,404	10,612	10,824	11,041	11,262	11,487	11,717	11,951	12,190
21	WATERWORK-Pipeline Consumption Fee	27,969	28,227	28,911	27,500	42,237	81,366	116,237	126,442	127,706	128,983	130,273	131,576	132,892	134,221
22	Postage - Angus Water	16,644	14,782	15,655	12,000	12,600	13,230	13,892	14,586	15,315	16,081	16,885	17,729	18,616	19,547
23	Telephone - Angus	3,096	3,262	3,874	4,000	4,080	4,162	4,245	4,330	4,416	4,505	4,595	4,687	4,780	4,876
24	Hydro	120,578	118,798	124,970	120,000	126,000	132,300	138,915	145,861	153,154	160,811	168,852	177,295	186,159	195,467
25	Angus System Maintenance and Renewal	138,883	159,467	281,254	47,895	74,263	66,656	56,275	63,760	56,120	-	-	-		60,000
26	Angus Water - Minor Maintenance														
27	Angus Water - Major Maintenance														
28	Angus Water - Capital				97,850					-	-	-	-	-	-
29	Angus Major Maintenance (Misc. Expense pre 2020)														
30	Postage - Thornton Water	2,181	1,835	1,827	1,500	1,575	1,654	1,736	1,823	1,914	2,010	2,111	2,216	2,327	2,443
31	Thornton Hydro	17,453	16,687	16,937	18,000	18,900	19,845	20,837	21,879	22,973	24,122	25,328	26,594	27,924	29,320
32	Thornton Major Maintenance and Asset Renewal	36,040	81,613	39,074	9,270	9,548	18,576	353,410	10,433	28,657	29,230	29,815	30,411	31,020	31,640
33	Snow removal-Thornton Water	977	1,834	1,785	1,200	1,532	1,562	1,594	1,626	1,658	1,691	1,725	1,760	1,795	1,831
34	Developer front end cost Repayment									92,031					
35	Thornton Water - Capital	-	-	-	51,500	375,058	16,381	-	-	-	-	-	-	-	-
36	Postage - Baxter Water	239	197	190	160	168	176	185	194	204	214	225	236	248	261
37	Telephone - Baxter	2,275	2,800	2,541	2,500	2,550	2,601	2,653	2,706	2,760	2,815	2,872	2,929	2,988	3,047
38	Baxter Hydro	4,102	3,778	4,469	4,000	4,200	4,410	6,630	6,962	7,310	7,676	8,059	8,462	8,885	9,330
39	Miscellaneous Expense - Baxter Water	18,233	4,842	7,724	-	-	-	-	-	-	-	-	-	-	-
40	Snow removal- Baxter Water	977	1,834	1,785	-	1,532	1,562	1,594	1,626	1,658	1,691	1,725	1,760	1,795	1,831
42	Baxter Water - Operator Costs and Major Maintenance (Misc. Expense pre 2020)	-	-	-	7,210	2,122	73,676	75,409	83,468	80,002	81,602	83,234	84,898	86,596	88,328
43	Baxter Water - Capital - Pumping Station	-	-	-	-	1,999,648	2,005,001	28,138	28,982	29,851					
44	Distribution Systems - Major Maintenance	-	-	-	139,050	180,353	131,127	2,341,058	92,742	95,524	97,435	99,383	101,371	103,398	105,466
45	All Systems-Capital Renewal of End of Life Assets Pos	-	-	-							-	1,209,653	1,081,076	473,188	2,117,773
47	Total Expenses	1,656,374	672,683	1,556,720	1,285,744	3,608,695	3,340,586	3,935,196	1,312,759	1,359,949	1,207,346	2,443,151	2,341,508	1,761,365	3,494,538

Continued next page....

Table 5.1 Essa Summary Water System Financial Plan - Actual $ 2017-2020 and Inflated $ 2021-30 Page 2/2

		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
49	INCOME														
50	Ostar Funding	-	(27,553)	(588,199)	-	-	-	-	-	-	-	-	-	-	-
51	Water Penalty	(14,337)	(18,209)	(18,081)	(16,000)	(15,300)	(15,606)	(15,918)	(16,236)	(16,561)	(16,892)	(17,230)	(17,575)	(17,926)	(18,285)
52	Miscellaneous Revenue	(25,319)	(22,206)	(13,701)	(15,000)	(15,300)	(15,606)	(15,918)	(16,236)	(16,561)	(16,892)	(17,230)	(17,575)	(17,926)	(18,285)
53	Loan Authorized Interest	(30,866)	(21,133)	-	-	-	-	-	-	-	-	-	-	-	-
54	Water Permits	(13,050)	(825)	(2,540)	(3,000)	(3,060)	(3,121)	(3,184)	(3,247)	(3,312)	(3,378)	(3,446)	(3,515)	(3,585)	(3,657)
55	Final Water Reading Certificate	(3,010)	(2,850)	(1,890)	(3,000)	(3,060)	(3,121)	(3,184)	(3,247)	(3,312)	(3,378)	(3,446)	(3,515)	(3,585)	(3,657)
56	Developers Contribution	-	-	(91,042)	-	(1,204,571)	(1,204,571)	-	-	-	-	-	-	-	-
57	Connection Fees	-	-	-	-	(467,032)	(467,032)	-	-	-	-	-	-	-	-
58	Frontage Fees	-	-	-	-	-	-	-	-	-	-	-	-	-	-
59	Rate Stabalization Fees	-	-	-	-	-	-	-	-	-	-	-	-	-	-
60	Loan Repayment as per BL	-	-	-	(157,233)	(155,505)	(153,777)	(152,048)	(150,322)	(148,594)	(146,866)	(145,138)	(143,410)	(141,682)	(139,955)
61	Loan Repayment (2009 Loan DC Share)				(118,656)	(118,656)	(118,656)	(118,656)	(59,328)	-	-	-	-	-	-
62	Deferred Charge	-	-	-	-	-	-	-	-	-	-	-	-	-	-
63	An Service Fees	(1,261,188)	(1,491,802)	(1,466,826)	(1,518,167)	(1,571,303)	(1,626,299)	(1,683,219)	(1,742,132)	(1,803,107)	(1,866,215)	(1,931,533)	(1,999,136)	(2,069,106)	(2,141,525)
64	T Service Fees	(191,097)	(205,294)	(215,316)	(222,852)	(230,651)	(238,724)	(247,080)	(255,727)	(264,678)	(273,941)	(283,528)	(293,453)	(303,724)	(314,354)
65	S Service Fees	(16,253)	(19,451)	(15,580)	(16,134)	(16,699)	(17,284)	(17,888)	(18,515)	(19,163)	(19,833)	(20,527)	(21,246)	(21,989)	(22,759)
66	Total User Service Fees	1,468,538	1,716,548	1,697,723	1,757,153	1,818,654	1,882,307	1,948,187	2,016,374	2,086,947	2,159,990	2,235,590	2,313,836	2,394,820	2,478,638
67	Principal Loan Instalment (2009 Loan above in 2020)	(285,902)	(301,426)	(259,379)	-	-	-	-	-	-	-	-	-	-	-
68	Capital Reserve Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-
69	Rate Stabelization Reserve Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-
70	Government of Ontario Source Prot Grant	-	-	-	-	-	-	-	-	-	-	-	-	-	-
71	WATERWORKS-R-Contribution from Reserves	(142,252)	(121,413)	-	-	-	-	-	-	-	-	-	-	-	-
72	WATERWORKS-R-Development Charges Earned	(237,312)	(118,656)	(118,656)	-	(165,000)	-	-	-	-	-	-	-	-	-
73	Contribution From User Rates	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74	Inclusion of Prev Year Working Surplus	-	-	-	-	-	-	-	-	-	-	-	-	-	-
75	**Total Income**	(2,211,205.56)	(2,348,915.99)	(2,791,180.69)	(2,068,041.81)	(3,969,137.58)	(3,993,796.79)	(2,257,095.53)	(2,284,990.80)	(2,275,297.36)	(2,347,397.71)	(2,422,086.39)	(2,499,426.22)	(2,579,525.22)	(2,662,476.53)
76															
77	Transfer to (from) Reserve	954,891.81	1,676,232.88	1,234,461.11	783,298.27	357,442.41	523,210.44	(1,678,100.45)	952,231.71	915,338.78	1,140,051.39	(21,071.14)	157,917.22	818,160.51	(832,061.54)
78															
79	Net	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 5.2 Essa Water Capital Reserve 2020 to 2030 – Inflated $

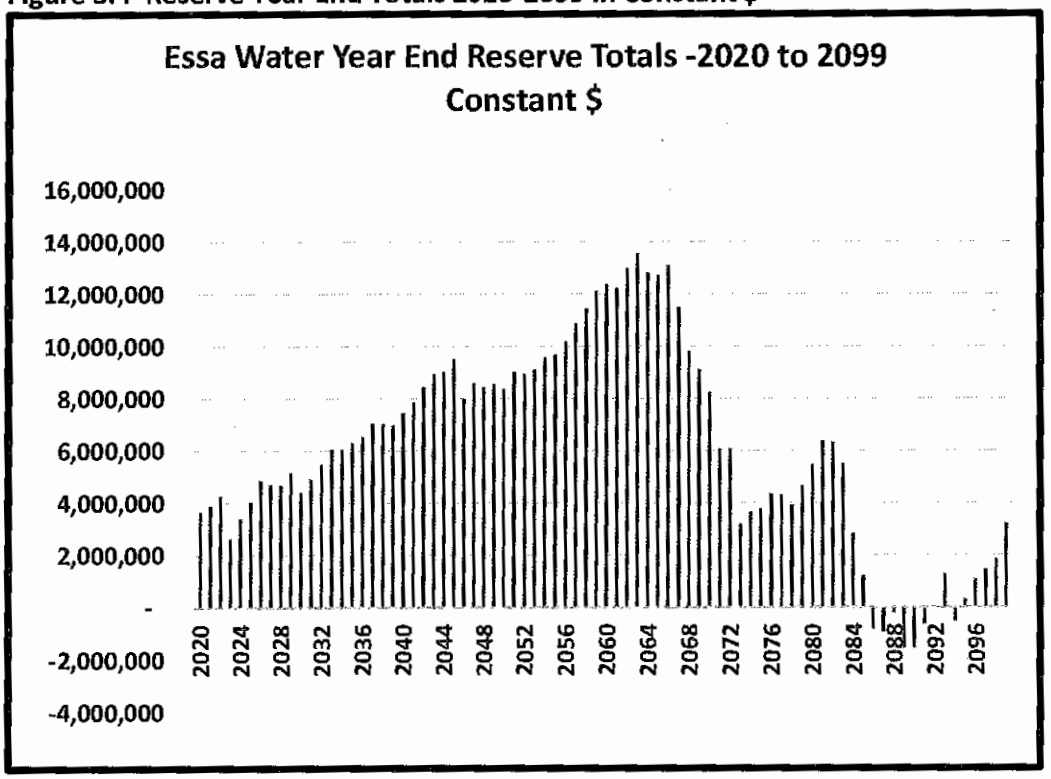
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Value incl. Stabl. Res.	2,998,494	3,781,792	4,139,235	4,662,445	2,984,345	3,936,576	4,851,915	5,991,967	5,970,896	6,128,813	6,946,973
Addition (Withdrawl) from (to) Ops	783,298	357,442	523,210	- 1,678,100	952,232	915,339	1,140,051	- 21,071	157,917	818,161	- 832,062
Interest Charge on Deficits											
Close Inflated $	3,781,792	4,139,235	4,662,445	2,984,345	3,936,576	4,851,915	5,991,967	5,970,896	6,128,813	6,946,973	6,114,912
Close in 2019$	3,671,643	3,901,626	4,266,798	2,651,552	3,395,725	4,063,403	4,872,017	4,713,480	4,697,225	5,169,201	4,417,542

The above includes the rate stablization reserve

5.3.4 Reserves

The infrastructure or capital reserve as of December 31, 2019 had a surplus of $2,392,149.05. This reserve, with additions in future years, supplemented by user fees, as shown in table 5.2,will meet the projected capital renewal needs to 2099. There is also a rate stabilization reserve with a balance of $606,345.47 as of December 31, 2019. The full projected capital reserve year-end to 2099 is illustrated in figure 5.4, and shown in detail, by year, in appendix D. The reserve is projected to be in surplus to 2085, when some borrowing will be required to carry out large-scale capital renewal.

Figure 5.4 Reserve Year End Totals 2020-2099 in Constant $



5.4 TOWNSHIP WATER SALES/CONNECTIONS

5.4.1 Water Sales 2015-2030

Water sold is water that a user had paid for. From 2021 to 2030, the rate-setting period, total water sold to existing residential and smaller industrial commercial and institutional (ICI) users is projected to decline modestly due to conservation. This is a result of provincial plumbing regulations, enacted in 1991, requiring installation of water efficient fixtures (toilets, showers and faucets) in all new connections, and the restrictions on the sale of toilets that use more than 6 litres per flush. In addition, people carrying out renovations will replace currently inefficient fixtures with more water efficient ones. Highly efficient front-load washing machines are now very popular with homeowners. An annual improvement in water use efficiency of .5% per annum is assumed in all of the connections, existing as of December 2019, meaning a decline in water sold of about .5%.

Offsetting this decline, and adding to water sales, is a significant increase in the number of new residential units. The increase, shown in table 5.4, is based on the number of new units projected in the 2018 DCA study and the Baxter development. New residential users added to the system post 2019 will be using water efficient fixtures required by the changes to the plumbing code referenced above. As a result, they will use significantly less per person per day than those using older model fixtures and fittings. The water use per person of the new users is estimated at 150 litres per person per day (lppd) compared to an estimated 180 litres per person by existing users. This assumption of 150 lppd is included in the estimates above. New users, as a group, even though they have more efficient fixtures than existing users, will add to overall water sales.

This growth in projected water sales helps reduce the growth in water rates. The actual water use for 2017-2019 and the projected water sales to all water users from 2020 to 2030 are set out in table 5.3 and illustrated in figure 5.5.

Figure 5.5 Past and Projected Water Sales in the Essa Water System 2017-30

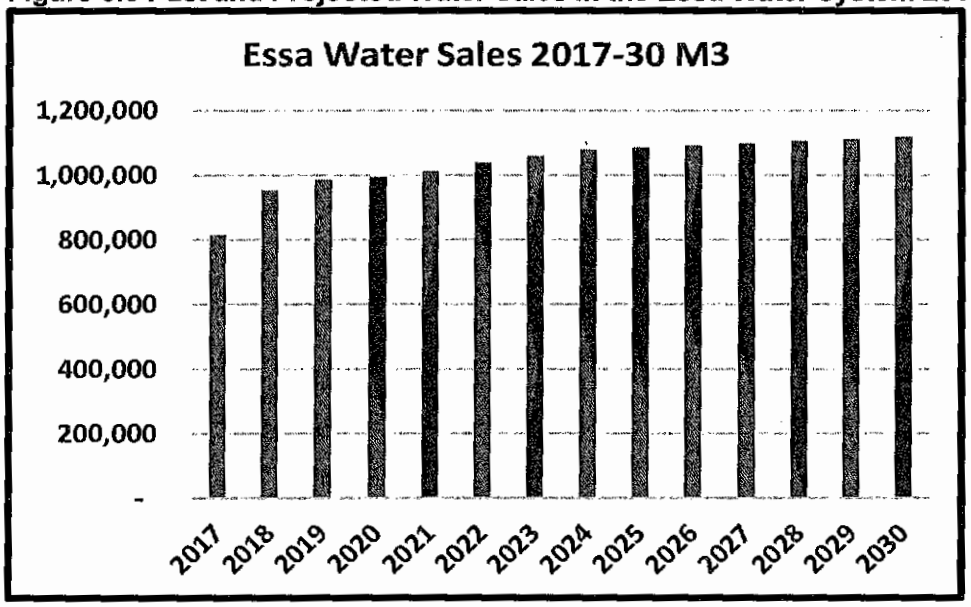


Table 5.3 Quantity of Water Sold in M3 Yearly 2017-2030

Water Sales to	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Pre 2020 Users M3	814,759	952,502	986,128	981,197	976,291	971,410	966,553	961,720	956,912	952,127	947,366	942,629	937,916	933,227
Post 2019 Users M3		Not Appl	Not Appl	11,387	33,427	66,122	90,471	115,175	126,561	137,948	149,334	160,721	172,107	183,494
Total Water Sales M3	814,759	952,502	986,128	994,604	1,011,739	1,039,554	1,059,047	1,078,919	1,085,498	1,092,101	1,098,728	1,105,378	1,112,053	1,118,751

Table 5.4 Number of Water Connections Yearly 2017-2030

Connections	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Metered Existing	4693	4,759	4,825	4,891	4,957	5,023	5,089	5,155	5,221	5,287	5,353	5,419
Baxter	53	53	113	233	306	381	381	381	381	381	381	381
Flat	23	23	23	23	23	23	23	23	23	23	23	23
Total	4766	4,835	4,961	5,147	5,286	5,427	5,493	5,559	5,625	5,691	5,757	5,823

Note: 2020 Total is for mid year.

Table 5.5 Sample Water Bills with the Proposed Rates 2020-2030

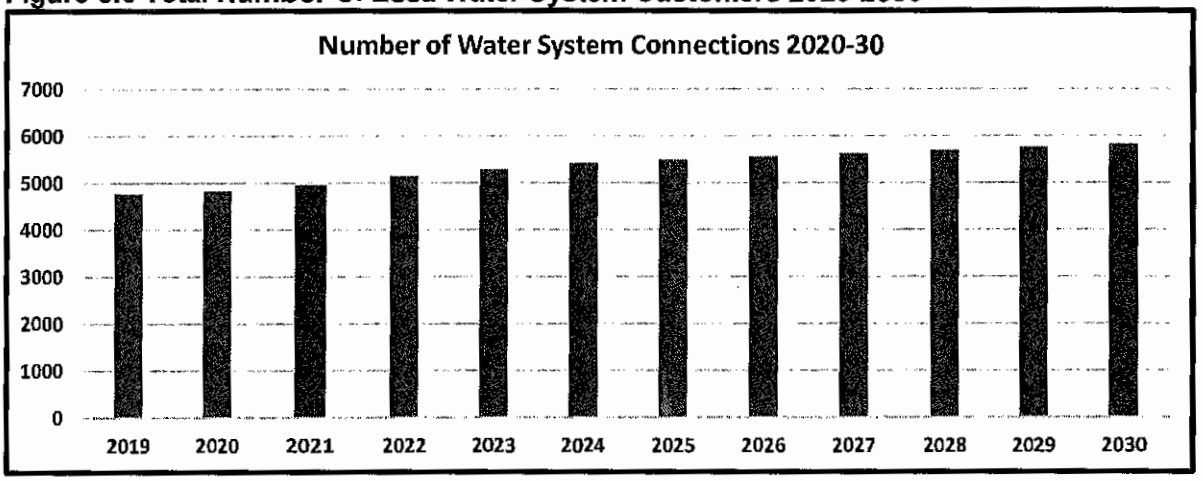
Hypothetical User	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Single Person with 50 M3/Year	135	139	139	141	143	146	150	154	158	162	167
Couple with 100 M3 per Year	206	213	214	216	219	225	231	238	244	251	258
Family 250 M3 per Year	421	434	436	443	449	462	475	488	502	516	530
Average User 180 M3 per Year	320	331	332	337	342	351	361	371	381	392	403
Larger User 600 M3 per Year	1,041	1,073	1,080	1,095	1,111	1,142	1,174	1,206	1,240	1,274	1,310
Arena at 10,000 M3 per Year	14,483	14,929	15,036	15,275	15,517	15,961	16,419	16,890	17,375	17,874	18,387
Industry at 23,000 M3 per Year	33,073	34,091	34,338	34,884	35,439	36,456	37,503	38,580	39,689	40,830	42,005

Note: Large user, arena and industry are assumed to have a 2 inch meter

5.4.2 Projected Number of Customers

The current number of customers, and the projected customers, are set out in table 5.4 and illustrated in figure 5.6. The increase is made up almost exclusively of residential connections.

Figure 5.6 Total Number of Essa Water System Customers 2020-2030



The number of connections by 2030, using the 2018 DCA report projection, is 20% larger than the number in 2020. This is based on a projected increase in the number of new residential customers in Angus, a large addition in Baxter, and a smaller increase in Thornton. There will also be a small increase in the number of ICI customers, as well as the loss of some of the pre-2019 customers. This will likely result in a relatively small increase in ICI customers however, no estimate is provided of their water purchases, due to the small numbers and generally small levels of water use. The increase in the number of residential customers will help keep water bills lower than otherwise.

5.5 WATER RATE CALCULATIONS

Rates are calculated by considering the user fee revenue requirements, and by taking into account future projected water use and the number of connections. As illustrated in figure 5.3, user fees are projected to increase. This would normally cause rates to rise. However, the number of new users will help offset some of the projected increase in user fees. For purposes of computing rates for the next ten years, this report will assume that all of the residential units are added to the system according to the schedule set out in the 2018 DC study, the Baxter development, and the resulting water usage and numbers of users set out in table 5.3 and 5.4

The rates recommended in this study will utilize the two-part rate structure currently in use. One part of this rate is a fixed cost applied to all users regardless of water use. Included in this are the billing costs, including salaries and mailing costs, as well as the cost of renewing meters every 20-25 years or so. The second part is the cost per cubic metre that depends on the amount of water used. All costs that are not included in the fixed portion of the rate are included in this rate component. The more that is used, the higher the water bill. The proposed rates are set out in table 5.5.

Table 5.6 Essa Proposed Two-Part Water Rate 2021-2030 Inflated $

Annual Fixed Cost	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Meter Size (inches)											
0.62	63.07	65.21	65.08	65.60	66.15	67.66	69.20	70.79	72.43	74.11	75.85
0.75	63.07	65.21	65.08	65.60	66.15	67.66	69.20	70.79	72.43	74.11	75.85
1	88.31	91.29	91.11	91.84	92.62	94.72	96.88	99.11	101.40	103.76	106.18
1.5	113.54	117.37	117.14	118.09	119.08	121.78	124.56	127.42	130.37	133.40	136.52
2	182.93	189.10	188.72	190.25	191.85	196.20	200.68	205.29	210.04	214.93	219.95
2.5		456.44	455.54	459.22	463.08	473.59	484.41	495.54	507.00	518.79	530.92
3	705.09	717.26	715.84	721.63	727.69	744.21	761.21	778.70	796.71	815.24	834.30
4	-	912.88	911.07	918.44	926.16	947.18	968.81	991.08	1,013.99	1,037.57	1,061.84
Variable Rate											
Cost per M3 Infl. $	1.43	1.47	1.48	1.51	1.53	1.58	1.62	1.67	1.72	1.77	1.82
Cost per M3 2020$	1.43	1.44	1.41	1.40	1.39	1.39	1.40	1.40	1.41	1.41	1.42

The proposed rates in table 5.6 show an increasing cost from 2020-2030; however, these increases are modest in the next few years, due to the increase in the number of new users and their additional water purchases that helps offset the normal inflationary increases in rates. Assuming an inflation rate of 3% per year for capital renewal needs, the variable rate increases at about or slightly below an inflation rate of 3%. Rate checking calculations for the above rates are set out in appendix C.

Clearly, rates and the annual increase in rates are kept down somewhat thanks to the number of new users in the future. If the development proposed do not generate the numbers set out in the 2018 DC study and the Baxter development, then the rates may have to increase to maintain the needed revenue flow to renew infrastructure. This will not require a rate study, but will require annual monitoring of new development and water sales.

5.6 SAMPLE MONTHLY WATER BILLS FOR VARIOUS USER GROUPS

A number of hypothetical user groups were selected to determine the impacts of the rates. The water bills are set out in table 5.7.

Table 5.7 Hypothetical Water Bills for the Proposed Water Rates 2021-2025 Inflated $

Hypothetical User	2020	2021	2022	2023	2024	2025
Single Person with 50 M3/Year	135	139	139	141	143	146
Couple with 100 M3 per Year	206	213	214	216	219	225
Family 250 M3 per Year	421	434	436	443	449	462
Average User 180 M3 per Year	320	331	332	337	342	351
Larger User 600 M3 per Year	1,041	1,073	1,080	1,095	1,111	1,142
Arena at 10,000 M3 per Year	14,483	14,929	15,036	15,275	15,517	15,961
Industry at 23,000 M3 per Year	33,073	34,091	34,338	34,884	35,439	36,456
Note: Large user, arena and industry are assumed to have a 2 inch meter						

A user taking 50 cubic metres per year is projected to pay $135 in 2020, and $146 in 2025. Someone using 100 cubic metres per year will pay $206 in 2020, and $225 in 2025. A user of 250 cubic metres per year will pay a water bill of $421 in 2020, and $462 in 2025. A larger user, such as a supermarket, taking 600 cubic metres per year will pay $1,041 in 2020, and $1,142 in 2025. An arena that uses 10,000 cubic metres per year will pay $14,483 in 2020, and $15,961 in 2025. A very large user, if there is one in Angus; accounting for 23,000 cubic metres will pay $33,073 in 2020, and $36.456 in 2025. All figures are in inflated dollars.

5.7 WATER BILL COMPARISONS WITH OTHER COMMUNITIES

The projected water bill for an average user in Essa is compared with water bills for an average user in a number of communities in Ontario. The usage for all communities is 293 cubic metres per year, which is the estimated average water usage per connection. All users are assumed to have a standard 15mm (5/8 by ¾") meter. The bill comparisons are set out in table 5.8.

Table 5.8 Water Bills of Various nearby Communities 2020

Utility	Water Bill
Essa	$483
Shelburne	$648
Toronto	$598
Barrie	$606
Springwater Residential	$730
Markdale	$847
Dundalk	$849
Clearview	$884
Mount Forest	$1,208
Adjala-Tosorontio	$1,415
Based on Average Usage of 294 M3 per Year	

Essa's rates are for 2020, and are based on full life-cycle capital renewal of all assets to 2099. Essa is a smaller system, and smaller size is normally associated with higher water bills for users due to the inability to spread high initial capital costs over a sufficiently large number of users. The City of Toronto benefits from having large numbers of users; however; this advantage is offset in Toronto by having old infrastructure needing renewal and replacement. Essa's rates are very favourable and this is projected to continue.

6.0 PROPOSED WASTEWATER SYSTEM RATES FOR 2021-2030

6.1 WASTEWATER RATE SETTING ASSUMPTIONS

The wastewater rate setting approach is the same as for the water system. It begins by establishing a capital and major maintenance-financing plan, as well as an operating plan for 2017-2030. The capital plan covers the period from 2020 to 2099, consistent with the estimated 80-year life of a sewer main. The operating plan contains information about various system attributes, such as currently available information concerning various revenue sources, the day-to-day expenditures needed to operate the system, debt-servicing requirements, and existing reserve levels. The capital needs projections include funding for capital investments to renew assets. This is combined with the operating plan to produce an overall wastewater capital, and operating financing plan, with user-fee revenues and loans adjusted to ensure sustainability. Several assumptions were made in preparing the capital and operating plans:

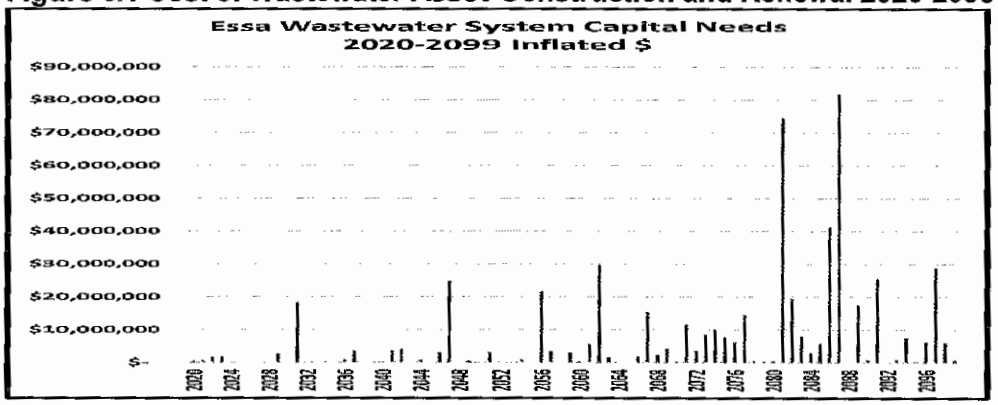
Inflation	capital 3% per annum, most operating 2%
Interest on loans	2.5%

Population growth/new connections as anticipated in the DC Background Study 2018 and the Baxter development

6.2 CAPITAL AND MAJOR MAINTENANCE EXPENDITURES

Projected capital and major maintenance renewals cost estimates were prepared based on the existing 2019 asset database, prepared and maintained by Township staff. The system operator provided an estimate of capital and major maintenance costs for the 2020-2025 period, shown in appendix I. The DC study was consulted concerning growth capital, as was the Baxter development agreement. From 2026 to 2099, the cost of renewing all capital assets was estimated based on the year when an asset reached the end of its life, from an accounting perspective. Thus, if a blower used in the wastewater plant was estimated to have a life of 30 years when it was installed in the year 2000, it will be due for replacement in 2030. Accordingly, the original price inflated to 2030 costs was entered into the capital renewal category for 2030. This was done for all 744 wastewater assets listed in the database from 2020 to 2099. The totals of all these projections are shown graphically in Figure 6.1. The capital renewal costs utilized in the rate calculation are shown in appendix J.

Figure 6.1 Cost of Wastewater Asset Construction and Renewal 2020-2095 Inflated $



The wastewater plant was installed in 1981. It is reaching a key aging point. From 2020 to 2030, there is an estimated $9 million worth of assets that will reach the end of their life. From 2031 to 2040, the number is an

additional $23.5 million reaching the end of their life. Beyond 2040, there are major expenditures projected for each decade. These numbers are based on accounting guidelines. There is a need in the next year or so to carry out a full and detailed review by engineers of the condition of these assets as they currently exist on the ground and develop an updated 10 to 15 year capital renewal plan. This will provide a sound base for setting future rates and managing the multi-year renewal process that is just beginning.

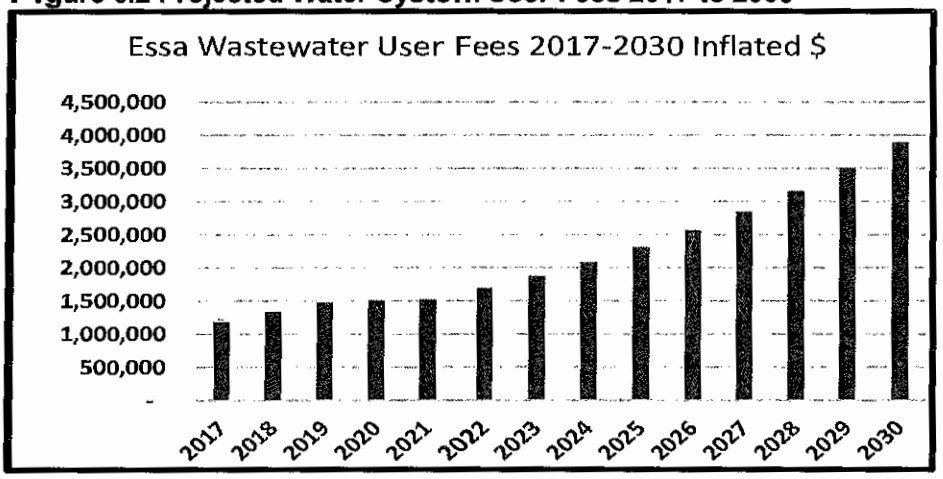
6.3 WASTEWATER OPERATING PLAN

The summary operating financial statement for the wastewater system is set out in table 6.1.
The operating fund numbers for 2017-19 are based on actual year-end values; the figures for 2020 are current estimates of year end closure. Those for 2021 to 2030 and beyond are based on the trends established in 2017-2020, with allowances made for growth and the Baxter development. All figures for 2021 to 2030 are inflated.

6.3.1 User Fee Requirements

User fee needs projections are set out in line 3 of table 6.1 and are shown in figure 6.2 below:

Figure 6.2 Projected Water System User Fees 2017 to 2030

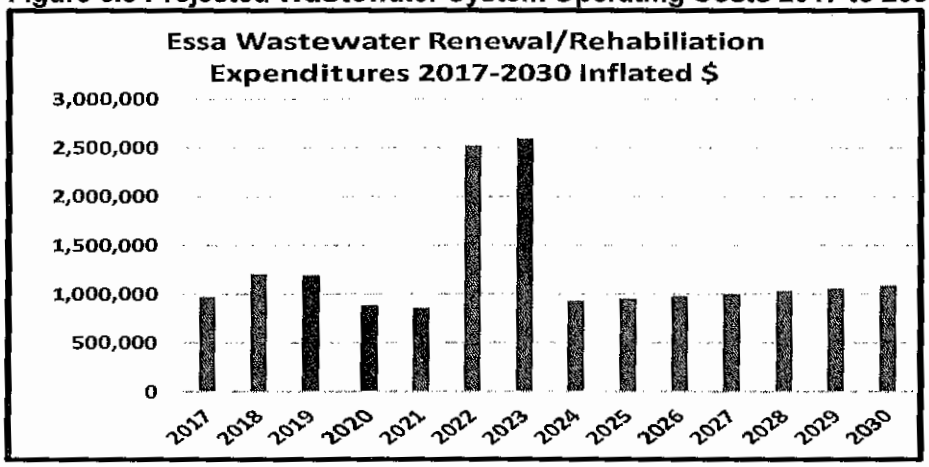


User fee revenues have increased over the past few years and in view of the cost of the assets that are reaching the end of their life, it is proposed that user fees increase at 11% per year, including inflation, to 2033. After that period, when substantial renewal costs are projected to be incurred and financed for the long term, the increase is projected at 2.8% per year to 2099. These rate increases will be carefully scrutinized in 2025, when more information about the amount of renewal is required within the wastewater plant.

6.3.2 Routine Operating Expenses

Future non-capital operating expenditures are summarized in line 44 and all expenditures including capital costs are shown in line 48 in table 6.1, and are illustrated in figure 6.3:

Figure 6.3 Projected Wastewater System Operating Costs 2017 to 2030 Inflated $



Operating costs are projected to increase at about 2% per annum from 2020 to 2030, including inflation of 2% per annum. The figures for 2017 to 2019 include some small capital expenses and some variations in major maintenance. The large increase in 2022 and 2023 is for plant major maintenance and renewal. In reality, these expenses vary from year to year depending up maintenance schedules, and the incidence of unplanned repairs. Otherwise, the increase is uniform and is due to inflation.

6.3.3 Debt

As of December 31, 2019, there is no debt on the user pay part of the system; however, there was debt in development charges reserve. Debt is very likely needed in the early 2030s as many wastewater assets are reaching the end of their life. In order to produce a sustainable plan, an $8.5 million loan is proposed to commence on January 1, 2031 for 20 years at 2.5% interest. Some short term borrowing may also be required in the early 2030s to make this plan sustainable. In practice, an engineering review, when undertaken, will provide a clearer picture of the extent and timing of the renewal, that is needed. It will also develop a stretched out plan that may change the amount of borrowing needed as well as the timing of this borrowing. The long-term debt situation can be better reviewed in the 2025 rate study.

Table 6.1 Wastewater System Operating Statement 2017- 20 Actual, 2021-30 Inflated $

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Revenues:														
1 Sewer Penalty	(13,009)	(14,859)	(16,817)	(15,000)	(15,300)	(15,606)	(15,918)	(16,236)	(16,561)	(16,892)	(17,230)	(17,575)	(17,926)	(18,285)
2 Miscellaneous Revenue	(350)		(582)		-	-	-	-	-	-	-	-	-	-
3 Angus Sewer Service Fees	(1,183,756)	(1,334,047)	(1,477,495)	(1,507,045)	(1,522,115)	(1,689,548)	(1,675,396)	(2,081,692)	(2,310,678)	(2,564,853)	(2,846,966)	(3,160,155)	(3,507,772)	(3,893,527)
4 Sewer Permits	(13,550)	(450)	(4,800)	(5,000)	(5,100)	(5,202)	(5,306)	(5,412)	(5,520)	(5,631)	(5,743)	(5,858)	(5,976)	(6,095)
5 Connection Fees	(20,670)	(20,870)	(20,642)	(22,000)	(22,440)	(22,889)	(23,347)	(23,813)	(24,290)	(24,776)	(25,271)	(25,776)	(26,292)	(26,818)
6 Frontage Fees	(23,570)	(23,570)	(23,522)	(24,000)	(24,480)	(24,970)	(25,469)	(25,978)	(26,498)	(27,028)	(27,568)	(28,120)	(28,682)	(29,256)
7 Development Charges Earned	(693,813)	(346,907)	(346,907)		-									
8 Contribution from Reserves	(463,992)	(124,330)			-									
9 Developer's Contribution														
10 Wastewater Rate Stabl. Reserve				(405,776)										
11 Loan														
12 **Total Revenues**	(2,412,810)	(1,864,832)	(1,890,765)	(1,978,821)	(1,589,435)	(1,758,214)	(1,945,438)	(2,153,132)	(2,383,547)	(2,639,179)	(2,922,800)	(3,237,484)	(3,586,648)	(3,974,081)
13														
14 **Expenditures**														
15 Wages and Salaries:	34,466	34,315	36,293	39,790	40,387	40,993	41,608	42,232	42,865	43,508	44,161	44,823	45,495	46,178
17 Salaries/Wages Part Time			813		-	-	-	-	-	-	-	-	-	-
18 Salaries/Wages Full Time Overtime	1,735	1,769	2,230	2,080	2,111	2,143	2,175	2,208	2,241	2,274	2,308	2,343	2,378	2,414
19 Employee Benefits Full Time	3,975	3,984	4,490	4,125	4,187	4,250	4,313	4,378	4,444	4,510	4,578	4,647	4,716	4,787
20 Extended Health Benefits	650	672	775	750	761	773	784	796	808	820	832	845	858	870
21 Employee Health Tax	20	20	23	25	25	26	26	26	27	27	28	28	29	29
22 Employee Assistance Plan	3,444	3,509	3,779	3,500	3,553	3,606	3,660	3,715	3,771	3,827	3,885	3,943	4,002	4,062
23 OMERS	999	1,068	1,247	1,100	1,122	1,144	1,167	1,191	1,215	1,239	1,264	1,289	1,315	1,341
24 WSIB	7,956	8,115		8,275	8,440	8,609	8,781	8,957	9,136	9,319	9,505	9,695	9,889	10,087
25 Total Wages and Salaries	53,245	53,453	49,651	59,645	60,586	61,543	62,515	63,502	64,506	65,525	66,561	67,613	68,682	69,768
26														
27 **Admin Operating Expenses:**														
28 Mileage	45	75	156	45	45	45	45	45	45	45	45	45	45	45
29 Advertising		8,560	8,974											
30 Interest on Borrowing	169,935	161,375	152,401		-	-	-	-	-	-	-	-	-	-
31 Contract Services - Angus	441,829	445,986	661,780	441,829	448,456	455,183	462,011	468,941	475,975	483,115	490,361	497,717	505,182	512,760
Contract Services - Baxter						150,000	300,000	350,000	400,000	406,000	412,090	418,271	424,545	430,914
32 Sewer Principal Payment	176,971	185,532	194,506			-	-	-	-	-	-	-	-	-
33 Transfer to Reserve from Sewer Rev	64,417	(51,109)		64,417		-	-	-	-	-	-	-	-	-
34 2031 Loan Principal and Interest												-	-	-
Short Term Loan 2031														
35 Total Admin Operating Expenses	853,197	750,418	1,017,817	506,290	448,501	605,228	762,055	818,985	876,020	889,159	902,496	916,033	929,772	943,718
36														
37 **Wastewater Operations:**														
38 Hydro-Angus	184,600	179,761	181,601	160,000	168,000	176,400	185,220	194,481	204,205	214,415	225,136	236,393	248,212	260,623
Hydro - Baxter						7,000	7,350	7,718	8,103	8,509	8,934	9,381	9,850	10,342
39 Heat	2,785	5,455	4,513	3,000	3,060	3,121	3,184	3,247	3,312	3,378	3,446	3,515	3,585	3,657
40 Other Write-offs	5,345	779	2,230	250	255	260	265	271	276	281	287	293	299	305
41 System Renewal and Replacement	283,672	497,752	292,062	217,330	170,805	1,815,020	1,869,470	186,643	192,242	198,010	203,950	210,068	216,371	222,862
42 Snow Removal		11,781	11,847	3,000	3,060	3,121	3,184	3,247	3,312	3,378	3,446	3,515	3,585	3,657
43 Total Wastewater Operations	476,402	695,527	472,054	383,580	345,180	2,004,922	2,068,673	395,607	411,451	427,972	445,199	463,165	481,902	501,446
44 **Total Non - Capital Expenses**	**1,382,844**	**1,499,399**	**1,539,522**	**949,515**	**854,267**	**2,671,693**	**2,893,243**	**1,278,095**	**1,351,977**	**1,382,656**	**1,414,256**	**1,446,810**	**1,480,357**	**1,514,932**
45														
46 **Capital Renewal/Replacement**				485,000	620,000	220,000	270,000	20,000	61,000	-	-	-	2,692,792	142,028
47														
48 **Total All Expenses**	**1,382,844**	**1,499,399**	**1,539,522**	**1,434,515**	**1,474,267**	**2,891,693**	**3,163,243**	**1,298,095**	**1,412,977**	**1,382,656**	**1,414,256**	**1,446,810**	**4,173,149**	**1,656,960**
49														
50 **Transfer to (from) Reserve**	**1,029,966**	**365,433**	**351,244**	**544,306**	**115,168**	**(1,133,478)**	**(1,217,805)**	**855,038**	**970,571**	**1,256,523**	**1,508,544**	**1,790,674**	**(586,501)**	**2,317,120**
51														
52 **Net**	-	-	-	-	-	-	-	-	-	-	-	-	-	-

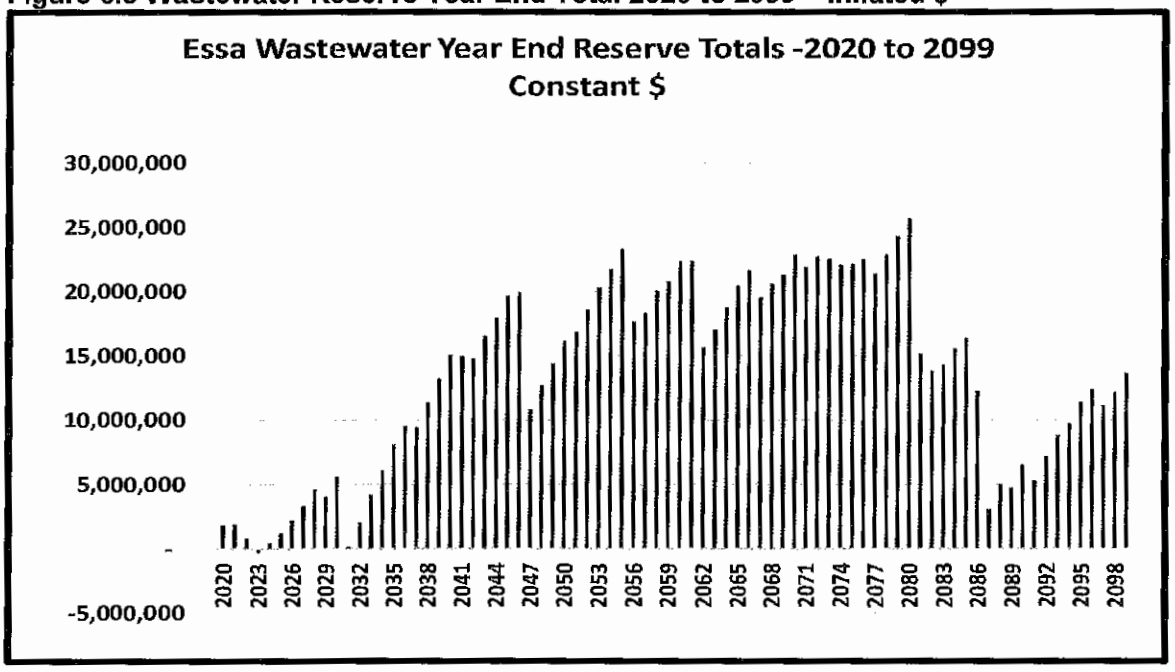
6.3.4 Reserves

The capital or infrastructure reserve has a surplus of $1,336,377.77 at December 31, 2019. The reserve is utilized to carry out the renewal and replacement of infrastructure that has reached the end of its life. There is also a rate stabilization reserve intended to avoid sudden changes in rates. It has a balance of $405,775.81 as of December 31, 2019. It is proposed that this be added to the infrastructure reserve to assist in renewing aging assets in the next few years. The infrastructure reserve is projected to remain in balance until the early 2030s, when a loan and some short-term borrowing will be needed. By the middle of the 2030s, the reserve will have a positive balance once again and is projected to remain that way until the mid-2080s, when a loan will be needed. This is shown in figure 6.4. The reserve to 2030 is shown in table 6.2.

Table 6.2 Wastewater System Capital Reserve 2020-2030 Inflated $

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Value	1,336,378	1,880,683	1,995,852	862,373 -	355,432	499,606	1,470,177	2,726,700	4,235,244	6,025,918	5,439,417
Addition (Withdrawl) from (to) Ops	544,306	115,168	(1,133,478)	(1,217,805)	855,038	970,571	1,256,523	1,508,544	1,790,674	(586,501)	2,317,120
Close Inflated $	1,880,683	1,995,852	862,373 -	355,432	499,606	1,470,177	2,726,700	4,235,244	6,025,918	5,439,417	7,756,538
Close in 2019$	1,825,906	1,881,282	789,194 -	315,796	430,965	1,231,250	2,217,057	3,343,341	4,618,365	4,047,437	5,603,488

Figure 6.3 Wastewater Reserve Year End Total 2020 to 2099 – Inflated $



The full reserve figures for 2020 to 2099 are shown in appendix K.

6.4 WASTEWATER RATE CALCULATIONS

The Township recovers its wastewater costs through a wastewater surcharge on the water bill for all users in Angus, and will apply to those when the new development in Baxter is complete. Computing this surcharge requires a comparison with the water charges to those connected to the wastewater system, and the number of wastewater users compared to water users. The detailed calculations are shown in Appendix H. The proposed surcharges are shown in table 6.3.

Table 6.3 Essa Proposed Wastewater Surcharge 2021 to 2030

2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
95.00%	101.0%	111.0%	118.9%	127.3%	136.3%	145.9%	156.3%	167.4%	179.3%	192.1%

The increasing percentages indicate that wastewater fees are rising faster than water fees. This increase for wastewater reflects the projected very substantial increase in capital renewal expenditures expected in the next 15 years.

6.5 WASTEWATER BILLS FOR SELECTED CUSTOMERS

Sample wastewater bills have been prepared for various hypothetical user groups that return wastewater to the Essa treatment system. The impact on wastewater bills set out in table 6.4:

Table 6.4 Wastewater System Hypothetical Annual Wastewater Bills 2019-25 Inflated $

Hypothetical User	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Single Person with 50 M3/Year	128	140	155	168	182	200	219	241	265	291	320
Couple with 100 M3 per Year	196	215	237	257	279	307	338	371	409	449	495
Family 250 M3 per Year	400	438	484	526	572	629	693	762	840	924	1,018
Average User 180 M3 per Year	304	334	369	401	435	479	527	580	638	703	774
Larger User 600 M3 per Year	989	1,084	1,199	1,302	1,414	1,556	1,713	1,885	2,075	2,285	2,516
Arena at 10,000 M3 per Year	13,759	15,078	16,696	18,156	19,747	21,750	23,959	26,395	29,083	32,047	35,317

A user taking 50 cubic metres per year is projected to pay $128 in 2020, and $200 in 2025. Someone using 100 cubic metres per year will pay $196 in 2020, and $307 in 2025. A user of 250 cubic metres per year will pay a wastewater bill of $400 in 2020, and $629 in 2025. An average user of 180 cubic metres per year will pay $304 in 2020, and $479 in 2025. A larger user such as a food store will pay $989 in 2020, and this increases to $1,556 in 2025. An arena, using 10,000 of water per year, is projected to pay $13,759 in 2020, and $21,750 in 2025, assuming that all of the water taken is included in the wastewater surcharge calculation. All figures are in inflated dollars.

6.6 WASTEWATER BILL COMPARISONS WITH OTHER COMMUNITIES

The projected wastewater water bills for Essa are compared with bills for a number of communities. The water usage, the basis for a wastewater surcharge, for all communities is 294 cubic metres per year, which is a general Ontario average. All users are assumed to have a standard 15mm (5/8 by ¾") meter. The bill comparisons are set out in table 6.5.

Table 6.5 Comparison of Wastewater Rates with Other Communities 2020

Utility	Wastewater Bill
Essa (Angus)	$459
Toronto	$581
Markdale	$676
Clearview	$770
Barrie	$825
Flesherton	$936
Springwater Residential	$1,082
Dundalk	$1,115
Adjala-Tosorontio	$1,313
Mount Forest	$1,485
Based on average use of 294 M3 per Year	

Essa's 2020 rates are based on full life-cycle capital renewal of all assets to 2099. Essa's rates compare very favourably with nearby communities. However, wastewater bills in Essa will increase faster in the next few years, than they have in the past, as the system is facing major renewal of the more expensive assets in waste treatment process.

APPENDICES

3a

Sharratt Water Management Ltd.
Sustainable Water Management Specialists

APPENDIX A WATER CAPITAL/MAJOR MAINTENANCE PROJ. 2020-2025 2020$ 1/3

Action Area	2020	2021	2022	2023	2024	2025
Baxter						
High Lift Pumps						
High Lift Pumps						
Sodium Hypochlorite Addition						
Sodium Hypochlorite Tank						
Chlorine Analyzer Probes and Membrane Caps	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000
Chemical Pump Rebuild Kits	$1,000	$1,000	$6,000	$1,000	$6,000	$1,000
Pumphouse building						
Diesel Generator Repairs/Replacement	$5,000	$50,000	$5,000	$5,000	$5,000	$5,000
Diesel Tank						
Emergency Repairs						
Above Grade Water Storage Tank						
Piping						
Baxter Pumping Station Construction		$1,946,603	$1,946,603	25,000	25,000	25,000
OCWA Operational Additions			$60,000	$60,000	$60,000	$60,000
Subtotal Baxter	**$7,000**	**$1,998,603**	**$2,018,603**	**$92,000**	**$97,000**	**$92,000**
Brownley	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Brownley Well No. 4						
Brownley Well No. 5						
Brownley Well No. 6						
High Lift Pump No. 1						
High Lift Pump No. 2						
High Lift Pump No. 3						
Sodium Silicate						
Sodium Silicate						
Sodium Hypochlorite (Pre-reservoir)						
Sodium Hypochlorite (Pre-reservoir)						
Sodium Hypochlorite (Post Reservoir)						
Sodium Hypochlorite (Post Reservoir)						
Chlorine Analyzer	$1,000	$1,000	$6,000	$1,000	$6,000	$1,000
Chlorine Analyzer						
Chemical Pump Rebuild Kits	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000
Well Pump Pumphouse						
Diesel Generator Repairs	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000
Diesel Fuel Tank/generator inspections	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000
In-ground Reservoir Cleaning		$25,000				
Equipment						
Piping System						
Brownley Subtotal	**$11,000**	**$36,000**	**$16,000**	**$11,000**	**$16,000**	**$11,000**
Thornton (Glen Avenue)	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Well No.1						
Well No. 1						
Well No.2						
Well No.2						
Well No.3						
Well No.3						
Well No.4						
Well No.4						
All Wells						
Monitoring Well						
High Lift Pump Rebuilds . 1			$15,000			
High Lift Pump No. 2						
High Lift Pump No. 3						
Sodium Hypochlorite Addition						
Sodium Hypochlorite Tank						
Chlorine Analyzer (Pre-treatment)						
Chlorine Analyzer (Treated Water)						
Chemical Pump Rebuild Kits	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000
Chlorine Analyzer Probes and Membrane Caps	$1,000	$1,000	$1,000	$6,000	$1,000	$6,000
Pumphouse Building						
Diesel Generator Repairs	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000
Raw and Treated Water Meter Replacement	$50,000					
Emergency Repairs						
Water Storage Tower Inspection						10,000
Reservoir Expansion		$165,000				
External Water Storage and Inspection			$8,000			
Thornton Tower Completion		$113,000				
Pressure Reducing Valves		$85,000				
Watermains Rehbilitation and Repair				$300,000		
Thornton Total	**$59,000**	**$372,000**	**$32,000**	**$314,000**	**$9,000**	**$24,000**

Sharratt Water Management Ltd.
Sustainable Water Management Specialists

APPENDIX A WATER CAPITAL/MAJOR MAINTENANCE PROJECTIONS 2020-2025 2020$ 2/3

Angus (McGeorge Water Treatment Plant)	2020	2021	2022	2023	2024	2025
McGeorge Well No. 1						
McGeorge Well No. 2						
High Lift Pump No. 1						
High Lift Pump No. 2						
Sodium Silicate						
Sodium Silicate						
Sodium Hypochlorite						
Sodium Hypochlorite Storage						
Sodium Hypochlorite Storage						
Meter Replacement Raw and Treated Water	$35,000					
Chlorine Analyzer Probes and Membrane Caps	$1,000	$1,000	$6,000	$1,000	$6,000	$1,000
Chlorine Analyzer						
Chemical Pump Rebuild Kits	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000
Storage Room						
Pump Station Building						
Diesel Generator Repairs and Load Testing	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000
Diesel Fuel Tank/generator Inspections	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000
Emergency Repairs						
On-Site Storage						
Piping System						
Piping System						
Subtotal McGeorge WTP	**$46,000**	**$11,000**	**$16,000**	**$11,000**	**$16,000**	**$11,000**

Angus Mill Street Water System	2020	2021	2022	2023	2024	2025
Mill Street Well No. 1						
Mill Street Well No. 1						
High Lift Pump No. 1						
High Lift Pump No. 2						
High Lift Pump No. 3						
High Lift Pump No. 4						
Sodium Silicate						
Sodium Silicate						
Sodium Hypochlorite (into Mill Street Well No. 1)						
Sodium Hypochlorite (into Mill Street Well No. 1)						
Sodium Hypochlorite (feeding incoming line from						
Sodium Hypochlorite (feeding incoming line from						
Chlorine Analyzer						
Chlorine Analyzer						
Chemical Pump Rebuild Kits	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000
Turbidimeter						
Flow Meter						
SCADA to Integrate All Angus Well Sites	$60,000					
Diesel Generator	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000
Diesel Fuel Tank/generator inspections	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000
Water System Permit Renewal			$4,000			
Angus Drinking Water License Renewal	$1,500					
Building Maintenance for Mill, McGeorge etc	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000
Singer Valve/Clay Valve Repair				$5,000		
DWQMS Audits	$3,000	$3,000	$5,000	$3,000	$3,000	$5,000
In-ground Concrete Reservoir						
Piping System						
Mill Street Subtotal	**84,500**	**23,000**	**29,000**	**28,000**	**23,000**	**25,000**

APPENDIX A WATER CAPITAL/MAJOR MAINTENANCE PROJ. 2020-2025 2020$ 3/3

Action Area	2020	2021	2022	2023	2024	2025
Essa Distribution System						
Hydrant Painting	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000
Swabbing 5-8 kms	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000
Hydrant Repairs and Replacement	$35,000	$35,000	$35,000	$35,000	$35,000	$35,000
Main Line Valve and Service Repairs	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000
Lead Detection	$20,000	$5,000	$5,000	$5,000	$5,000	$5,000
Total Distribution System	**$95,000**	**$80,000**	**$80,000**	**$80,000**	**$80,000**	**$80,000**
Unplanned Water Distribution Repairs	$20,000	$20,000	$20,000			
Drinking Water System Repairs	$20,000	$20,000	$20,000	$2,000,000		
Total	**$40,000**	**$40,000**	**$40,000**	**$2,000,000**	**$0**	**$0**
Major Maintenance						
Angus MM 2019	$46,500	$70,000	$61,000	$50,000	$55,000	$47,000
Angus MM Infl. $	$47,895	$74,263	$66,656	$56,275	$63,760	$56,120
Thornton MM Infl	$9,000	$9,000	$17,000	$314,000	$9,000	$24,000
Thoronto MM Infl.	$9,270	$9,548	$18,576	$353,410	$10,433	$28,657
Baxter MM 2019	$7,000	$2,000	$72,000	$67,000	$72,000	$67,000
Baxter Infl	$7,210	$2,122	$78,676	$75,409	$83,488	$80,002
Distribution System MM 2019	$135,000	$120,000	$120,000	$2,080,000	$80,000	$80,000
Distributioin System Infl	$139,050	$127,306	$131,127	$2,341,058	$92,742	$95,524
Total MM 2019 $	$197,500	$201,000	$270,000	$2,511,000	$216,000	$218,000
Total MM Infl	$203,425	$213,241	$295,036	$2,826,153	$250,403	$260,303
Capital						
Angus Non Growth Capital	$95,000	$0	$0			
Angus Non Growth Infl. $	$97,850					
Thornton Non Growth Capital 2019	$50,000	$198,000	$15,000			
Thornton Non Growth Capital Infl $	$51,500	$210,058	$16,391			
Thornton Growth Capital 2019	$0	$165,000	$0			
Thornton Growth Capital Infl $	$0	$165,000	$0			
Baxter Non Growth Capital 2019	$0	$50,000	$0	$25,000	$25,000	$25,000
Baxter Non Growth Capital Infl	$0	$53,045	$0	$28,136	$28,982	$29,851
Baxter Growth Capital 2020		$1,946,603	$1,946,603	$0	$0	$0
Baxter Growth Capital Infl $	$0	$1,946,603	$2,005,001	$0	$0	$0
Total Non Growth Capital 2019$	**$145,000**	**$248,000**	**$15,000**	**$25,000**	**$25,000**	**$25,000**
Total Non Growth Capital Infl $	**$149,350**	**$263,103**	**$16,391**	**$28,138**	**$28,982**	**$29,851**
Total Growth 2019	**$0**	**$2,111,603**	**$1,946,603**	**$0**	**$0**	**$0**
Total Growth Inflated $	**$0**	**$2,111,603**	**$2,005,001**	**$0**	**$0**	**$0**
Total Capital Expenditures 2019$	**$145,000**	**$2,359,603**	**$1,961,603**	**$25,000**	**$25,000**	**$25,000**
Total Capital Expenditures Inflated$	**$149,350**	**$2,374,706**	**$2,021,392**	**$28,138**	**$28,982**	**$29,851**

Note: Growth projects in green contain at least a portion of funding from development charges

APPENDIX B WATER SYSTEM CAPITAL ENTERED IN THE WATER OPERATING PLAN 2020-30 INFLATED $

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Asset Reaching End of Life Totals Inflated	$0	$0					$0	$1,209,653	$1,081,076	$473,188	$2,117,773
Non Growth Capital Inflated	149,350	263,103	16,391	28,138	28,982	29,851	0	0	0	0	0
Growth Related Capital Inflated	-	2,111,603	2,005,001	-	-	-	0	0	0	0	0
Total Capital Inflated for Inclusion in Op Plan	$ 149,350	$ 2,374,706	$ 2,021,392	$ 28,138	$ 28,982	$ 29,851	$ -	$ 1,209,653	$ 1,081,076	$ 473,188	$ 2,117,773

APPENDIX C WATER REVENUE CALCULATION 2020-30 INFLATED $

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Fixed Charge Revenues											
Flat Rate											
Number of Connections	25	25	25	25	25	25	25	25	25	25	25
Rate per Year	600	612	624	637	649	662	676	689	703	717	731
Revenue	15,000	15,300	15,606	15,918	16,236	16,561	16,892	17,230	17,575	17,926	18,285
Metered Connections											
5/8 by 3/4 Meter											
Number of Connections	4,755	4,881	5,067	5,206	5,347	5,413	5,479	5,545	5,611	5,677	5,743
Rate/Yr	63.07	65.21	65.08	65.60	66.15	67.66	69.20	70.79	72.43	74.11	75.85
Revenue	299,898	318,268	329,743	341,529	353,725	366,219	379,152	392,538	406,394	420,736	435,582
1 inch Meter											
Number of Connections	20	20	20	20	20	20	20	20	20	20	20
Rate/Yr	88.31	91.29	91.11	91.84	92.62	94.72	96.88	99.11	101.40	103.76	106.18
Revenue	1,766	1,826	1,822	1,837	1,852	1,894	1,938	1,982	2,028	2,075	2,124
1.5 inch Meter											
Number of Connections	12	12	12	12	12	12	12	12	12	12	12
Rate/Yr	113.54	117.37	117.14	118.09	119.08	121.78	124.56	127.42	130.37	133.40	136.52
Revenue	1,362	1,408	1,406	1,417	1,429	1,461	1,495	1,529	1,564	1,601	1,638
2.0 inch Meter											
Number of Connections	22	22	22	22	22	22	22	22	22	22	22
Rate/Yr	182.93	189.10	188.72	190.25	191.85	196.20	200.68	205.29	210.04	214.93	219.95
Revenue	4,024	4,160	4,152	4,185	4,221	4,316	4,415	4,516	4,621	4,728	4,839
3.0 inch Meter											
Number of Connections	1	1	1	1	1	1	1	1	1	1	1
Rate/Yr	705	717	716	722	728	744	761	779	797	815	834
Revenue	705	717	716	722	728	744	761	779	797	815	834
Total Fixed Charges	**322,756**	**341,680**	**353,445**	**365,608**	**378,191**	**391,197**	**404,653**	**418,575**	**432,979**	**447,882**	**463,302**
Variable Rate Revenues											
Amount of Water Sold (M3)	994,604	1,011,739	1,039,554	1,059,047	1,078,919	1,085,498	1,092,101	1,098,728	1,105,378	1,112,053	1,118,751
Cost/Cubic Metre	1.43	1.47	1.48	1.51	1.53	1.58	1.62	1.67	1.72	1.77	1.82
Total Variable Revenue	1,422,284	1,491,296	1,543,491	1,597,514	1,653,427	1,711,296	1,771,192	1,833,184	1,897,345	1,963,752	2,032,483
Total All Metered Revenues	**1,745,040**	**1,832,976**	**1,896,936**	**1,963,121**	**2,031,618**	**2,102,493**	**2,175,844**	**2,251,758**	**2,330,324**	**2,411,634**	**2,495,785**
Projected Needed Revenues	**1,757,153**	**1,818,654**	**1,882,307**	**1,948,187**	**2,016,374**	**2,086,947**	**2,159,990**	**2,235,590**	**2,313,835**	**2,394,820**	**2,478,638**
Variance	**(12,114)**	**14,322**	**14,630**	**14,934**	**15,244**	**15,546**	**15,854**	**16,168**	**16,488**	**16,815**	**17,147**

APPENDIX D ESSA WATER SYSTEM CAPITAL RESERVE 2020-2099 INFLATED $

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Opening Value	2,998,494	3,781,792	4,139,235	4,662,445	2,984,345	3,936,576	4,851,915	5,991,967	5,970,896	6,128,813
Addition (Withdrawl) from (to) Op	783,298	357,442	523,210	(1,678,100)	952,232	915,339	1,140,051	(21,071)	157,917	818,161
Transfer (to) from Capital	-	-	-	-	-	-	-	-	-	-
Close Inflated $	3,781,792	4,139,235	4,662,445	2,984,345	3,936,576	4,851,915	5,991,967	5,970,896	6,128,813	6,946,973
Close in 2019$	3,671,843	3,901,626	4,266,798	2,651,552	3,395,725	4,063,403	4,872,017	4,713,480	4,697,225	5,169,201
	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Opening Value	6,946,973	6,114,912	7,019,175	8,082,994	9,184,597	9,425,068	10,127,731	10,814,482	12,015,781	12,338,267
Addition (Withdrawl) from (to) Op	(832,062)	904,263	1,063,820	1,101,603	240,471	702,663	686,751	1,201,299	322,486	272,672
Transfer (to) from Capital	-	-	-	-	-	-	-	-	-	-
Close Inflated $	6,114,912	7,019,175	8,082,994	9,184,597	9,425,068	10,127,731	10,814,482	12,015,781	12,338,267	12,610,939
Close in 2019$	4,417,542	4,923,108	5,504,126	6,072,101	6,049,593	6,311,267	6,542,940	7,058,005	7,038,341	6,982,371
	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
Opening Value	12,610,939	13,838,273	15,071,893	16,667,765	18,166,699	18,922,555	20,520,372	17,741,518	19,640,464	19,870,037
Addition (Withdrawl) from (to) Op	1,227,334	1,233,619	1,595,872	1,498,934	755,857	1,597,817	(2,778,854)	1,898,947	229,573	941,820
Transfer (to) from Capital	-	-	-	-	-	-	-	-	-	-
Close Inflated $	13,838,273	15,071,893	16,667,765	18,166,699	18,922,555	20,520,372	17,741,518	19,640,464	19,870,037	20,811,857
Close in 2019$	7,438,754	7,865,908	8,445,419	8,936,812	9,037,518	9,515,188	7,987,037	8,584,390	8,431,778	8,574,210
	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059
Opening Value	20,811,857	20,942,150	23,259,711	23,694,250	24,888,108	26,988,802	28,057,640	30,385,011	33,463,926	36,233,925
Addition (Withdrawl) from (to) Op	130,293	2,317,560	434,540	1,193,857	2,100,694	1,068,838	2,327,371	3,078,915	2,769,999	3,265,770
Transfer (to) from Capital	-	-	-	-	-	-	-	-	-	-
Close Inflated $	20,942,150	23,259,711	23,694,250	24,888,108	26,988,802	28,057,640	30,385,011	33,463,926	36,233,925	39,499,695
Close in 2019$	8,376,591	9,032,807	8,933,354	9,110,185	9,591,372	9,680,795	10,178,460	10,883,344	11,440,990	12,108,902
	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069
Opening Value	39,499,695	41,637,337	42,346,278	46,340,229	49,741,356	48,548,205	49,662,009	52,546,998	47,487,974	41,792,272
Addition (Withdrawl) from (to) Op	2,137,642	708,941	3,993,951	3,401,127	(1,193,150)	1,113,804	2,884,989	(5,059,024)	(5,695,702)	(1,834,857)
Transfer (to) from Capital	-	-	-	-	-	-	-	-	-	-
Close Inflated $	41,637,337	42,346,278	46,340,229	49,741,356	48,548,205	49,662,009	52,546,998	47,487,974	41,792,272	39,957,416
Close in 2019$	12,392,437	12,236,348	13,000,424	13,546,142	12,838,021	12,750,052	13,097,800	11,492,033	9,819,107	9,114,569
	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079
Opening Value	39,957,416	37,219,212	28,295,112	29,052,689	15,785,104	18,546,697	19,860,799	23,489,908	23,971,023	22,447,547
Addition (Withdrawl) from (to) Op	(2,738,204)	(8,924,099)	757,577	(13,267,585)	2,761,593	1,314,102	3,629,109	481,115	(1,523,476)	5,039,524
Transfer (to) from Capital	-	-	-	-	-	-	-	-	-	-
Close Inflated $	37,219,212	28,295,112	29,052,689	15,785,104	18,546,697	19,860,799	23,489,908	23,971,023	22,447,547	27,487,070
Close in 2019$	8,242,685	6,083,811	6,064,757	3,199,170	3,649,381	3,794,129	4,358,719	4,316,458	3,924,394	4,665,465
	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089
Opening Value	27,487,070	33,225,379	39,936,346	40,704,897	36,618,154	19,259,343	8,521,215	(5,959,885)	(6,959,771)	(1,570,196)
Addition (Withdrawl) from (to) Op	5,738,308	6,710,967	768,551	(4,086,743)	(17,358,811)	(10,738,128)	(14,481,100)	(850,889)	5,563,569	(10,867,748)
Transfer (to) from Capital	-	-	-	-	-	-	-	-	-	-
Close Inflated $	33,225,379	39,936,346	40,704,897	36,618,154	19,259,343	8,521,215	(5,959,885)	(6,959,771)	(1,570,196)	(12,477,199)
Close in 2019$	5,475,190	6,389,405	6,322,684	5,522,225	2,819,623	1,211,260	(822,515)	(932,532)	(204,261)	(1,575,837)
	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099
Opening Value	(12,477,199)	(12,749,577)	(5,423,720)	29,672	11,471,663	(4,797,181)	3,004,785	10,518,854	14,425,485	19,238,442
Addition (Withdrawl) from (to) Op	39,551	7,644,597	5,588,985	11,441,991	(16,268,845)	7,921,896	7,514,068	3,906,631	4,812,957	14,998,183
Transfer (to) from Capital	-	-	-	-	-	-	-	-	-	-
Close Inflated $	(12,749,577)	(5,423,720)	29,672	11,471,663	(4,797,181)	3,004,785	10,518,854	14,425,485	19,238,442	34,236,625
Close in 2019$	(1,563,338)	(645,680)	3,430	1,287,276	(522,630)	317,822	1,080,195	1,438,225	1,862,212	3,217,459

APPENDIX E ESSA WATER SYSTEM DEBT 2019-2024

Interest Rate	Type		2019	2020	2021	2022	2023	2024
	Semi Annual							
2.49%	Principal		$133,983.37	$137,340.32	$ 140,781.39	$ 144,308.67	$ 147,924.31	$ 75,346.34
	Interest		$ 18,585.25	$ 15,228.22	$ 11,787.24	$ 8,259.66	$ 4,644.31	$ 938.06
	Total		$152,568.62	$152,568.54	$ 152,568.63	$ 152,568.33	$ 152,568.62	$ 76,284.40
DC Share		77.8%	$118,655.76	$118,655.69	$ 118,655.76	$ 118,655.53	$ 118,655.76	$ 59,327.95
User Fees		22.2%	$ 33,912.86	$ 33,912.85	$ 33,912.87	$ 33,912.80	$ 33,912.86	$ 16,956.45
Total		100.0%	152,568.62	152,568.54	152,568.63	152,568.33	152,568.62	76,284.40
Principal Balance Year End			645,701.02	508,360.70	367,579.31	223,270.65	75,346.34	(0.00)

Note: DC share payments appear as earned development charge revenue in operating plan financial statement.

APPENDIX F ESSA DEVELOPMENT CHARGES 2018-2028 CONSTANT $

Water

Residential

	Singles and Semis	Rows and Multiples	Apartments 2 plus bedrooms	Apartment, bachelor or bedroom
Angus	$ 2,154.00	$1,927.00	$ 1,308.00	$ 964.00
Thornton	$ 8,794.00	$7,867.00	$ 5,338.00	$ 3,933.00

Non Residential Charge per Square Metre

Angus	$ 12.13
Thornton	$ 126.14

Wastewater

Residential

	Singles and Semis	Rows and Multiples	Apartments 2 plus bedrooms	Apartment, bachelor or bedroom
Angus	$ 1,361.00	$1,218.00	$ 826.00	$ 609.00
Baxter	$ 1,361.00	$1,218.00	$ 826.00	$ 609.00

Non Residential Charge per Square Metre

Angus	$ 7.83
Baxter	$ 7.83

from the April 2018 Development Charges Study

APPENDIX G WATER DEVELOPMENT CHARGES RESERVE TRANSACTIONS AND TOTALS 2020-2030

Angus Service Area

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Value		1,909,773	2,161,439	2,416,283	2,674,381	2,935,809	3,200,343	3,468,334	3,739,716	4,014,530	4,292,821	4,574,632
DC Charges Collected		227,507	227,507	227,507	227,507	227,507	227,507	227,507	227,507	227,507	227,507	227,507
Capital/Major Maint. Exp.		0	0	0	0	0	0	0	0	0	0	0
Trans fer to Current Fund		0	0	0	0	0	0	0	0	0	0	0
Interest on Opening Bal.		24,159	27,342	30,590	33,921	37,127	40,484	43,874	47,307	50,784	54,304	57,869
Close in Inflated $	1,909,773	2,161,439	2,416,283	2,674,381	2,935,809	3,200,343	3,468,334	3,739,716	4,014,530	4,292,821	4,574,632	4,860,008

Thornton Service Area

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Value		175,317	222,919	68,407	131,668	176,917	226,561	274,606	323,665	373,140	423,241	473,976
DC Charges Collected		45,361	45,361	45,361	45,361	45,361	45,361	45,361	45,361	45,361	45,361	45,361
Capital/Major Maint. Exp.		0	155,709	0	0	0	0	0	0	0	0	0
Trans fer to Current Fund		0			-	-	-	-	-	-	-	-
Interest on Opening Bal.		2,218	2,820	1,060	1,888	2,283	2,685	3,478	4,094	4,720	5,354	5,995
Close in Inflated $	175,317	222,916	65,407	131,868	176,917	226,561	274,606	323,665	373,140	423,241	473,976	525,332

Total Close in Inflated $	2,085,090	2,384,354	2,501,695	2,806,230	3,114,616	3,426,904	3,743,142	4,063,381	4,387,670	4,716,062	5,048,608	5,385,341
Yearly Increase over Previous Year		298,264	117,341	304,534	308,387	312,288	316,238	320,239	324,290	328,392	332,546	336,753

APPENDIX H WASTEWATER SURCHARGE CALCULATION 2021-30 - INFLATED $

		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Water Revenues from those Connected to WW		1,510,999	1,563,884	1,618,620	1,675,272	1,733,907	1,794,593	1,857,404	1,922,413	1,989,698	2,059,337
Wastewater Revenues Needed		1,522,115	1,689,548	1,875,398	2,081,692	2,310,678	2,564,853	2,846,986	3,160,155	3,507,772	3,893,627
Ratio wastewater to water Revenues		100.7%	108.0%	115.9%	124.3%	133.3%	142.9%	153.3%	164.4%	176.3%	189.1%
Angus and Baxter Water Users		Ratio stays essentially the same throughout									
Angus and Baxter Wastewater Users											
Adjustment Factor		3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Proposed Wastewater Surcharge	95%	103.7%	111.0%	118.9%	127.3%	136.3%	145.9%	156.3%	167.4%	179.3%	192.1%

APPENDIX I WASTEWATER CAPITAL AND MAJOR MAINTENANCE PROJECTIONS 2020-2025 CONSTANT 2019$

	2020	2021	2022	2023	2024	2025
Angus Wastewater Treatment Facility						
Engineer Inspection of Concrete Tanks	50,000					
Disc Filter Installation and Sand Filter Removal	300,000					
Rotrary Drum Thickener		600,000				
Diesel Generator Repairs	5,000	5,000	5,000	5,000	5,000	5,000
Vac Truck for Clarifier Cleanings	7,000	7,000	7,000	7,000	7,000	7,000
General Building Maintenance	10,000	10,000	10,000	10,000	10,000	10,000
General Pump and Piping Replacement	10,000	10,000	10,000	10,000	10,000	10,000
Biological Additive	5,000	5,000	5,000	5,000	5,000	5,000
Contingency for Uplanned Repair	30,000	30,000	30,000	30,000	30,000	30,000
Rebuild Return and Waste Pumps						15,000
Rebuild Secondary Effluent Pumps						20,000
Rebuild Sludge Recirculating Pumps	40,000					
Blower 6 Replacement	50,000					
Blower 4 Replacement	50,000					
New Reject Pumps and Upsize	25,000					
Blower rebuilds - motors and compressors	20,000	20,000	20,000	20,000	20,000	20,000
LV Ballasts	5,000	5,000	5,000	5,000	5,000	5,000
Angus Wastewater Collection						
Pump Station Cleaning	28,000	28,000	28,000	28,000	28,000	28,000
Vac Trucks for Sewer Backups and Clogs	6,000	6,000	6,000	6,000	6,000	6,000
Sewer Flushing	25,000	25,000	25,000	25,000	25,000	25,000
Pump Station #4 Rebuilds						6,000
Pump Station #1 Grinder Pump Replacement			200,000			
Pump Station #2 piping and New Grinder Installation				250,000		
Wastewater System Upgrade			1,500,000	1,500,000		
Unplanned Angus WWTP Repairs	30,000	30,000	30,000	30,000	30,000	30,000
Total All Items	696,000	781,000	1,881,000	1,931,000	181,000	222,000
Total Major Maintenance 2019$	211,000	161,000	1,661,000	1,661,000	161,000	161,000
Total Major Maintenance Inflated $	217,330	170,805	1,815,020	1,869,470	186,643	192,242
Capital Renewal 2019$	485,000	620,000	220,000	270,000	20,000	61,000
Capital Renewal Inflated $	499,550	657,758	240,400	303,887	23,185	72,837
Total Year Budget 2019$	696,000	781,000	1,881,000	1,931,000	181,000	222,000

Note: Yellow or shaded items above are considered capital and included in capital in the operating plan. The balance are consider major maintenance in the operating plan

APPENDIX J WASTEWATER SYSTEM CAPITAL EXPENDITURES 2020-2030 INFLATED $

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Renewal of Assets Reaching End of Life							$ -	$ -	$ -	$ 2,692,792	$ 142,028
Short Term Projection of Capital Renewal	485,000	620,000	220,000	270,000	20,000	61,000	NA	NA	NA	NA	NA
Growth	0	0	0	0	0	0	0	0	0	0	0
Total Capital	$ 485,000	$ 620,000	$ 220,000	$ 270,000	$ 20,000	$ 61,000	$ -	$ -	$ -	$ 2,692,792	$ 142,028

APPENDIX K ESSA WASTEWATER CAPITAL RESERVE 2020-2099 INFLATED $

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Opening Value	1,336,378	1,880,883	1,995,852	862,373	(355,432)	499,606	1,470,177	2,726,700	4,235,244	6,025,918
Addition (Withdrawl) from (to) Ops	544,306	115,168	(1,133,478)	(1,217,805)	855,038	970,571	1,256,523	1,508,544	1,790,674	(586,501)
Transfer (to) from Capital	-	-	-	-	-	-	-	-	-	-
Close Inflated $	1,880,683	1,995,852	862,373	(355,432)	499,606	1,470,177	2,726,700	4,235,244	6,025,918	5,439,417
Close in 2019$	1,825,906	1,881,282	789,194	(315,796)	430,965	1,231,250	2,217,057	3,343,341	4,618,365	4,047,437
	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Opening Value	5,439,417	7,756,538	195,072	3,005,671	6,305,857	9,457,685	12,980,870	15,755,263	16,059,023	19,991,461
Addition (Withdrawl) from (to) Ops	2,317,120	(7,561,468)	2,810,599	3,300,185	3,151,828	3,523,185	2,774,393	303,760	3,932,439	3,935,123
Transfer (to) from Capital	-	-	-	-	-	-	-	-	-	-
Close Inflated $	7,756,538	195,072	3,005,671	6,305,857	9,457,685	12,980,870	15,755,263	16,059,023	19,991,461	23,926,585
Close in 2019$	5,603,466	136,820	2,046,716	4,168,914	6,070,528	8,089,249	9,532,193	9,432,983	11,400,851	13,247,570
	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
Opening Value	23,926,585	27,998,317	28,650,264	29,132,875	33,613,446	37,611,933	42,360,017	44,320,783	24,758,725	29,959,511
Addition (Withdrawl) from (to) Ops	4,071,732	651,948	482,610	4,480,571	3,998,487	4,748,084	1,960,765	(19,562,058)	5,200,785	4,959,403
Transfer (to) from Capital	-	-	-	-	-	-	-	-	-	-
Close Inflated $	27,998,317	28,650,264	29,132,875	33,613,446	37,611,933	42,360,017	44,320,783	24,758,725	29,959,511	34,918,913
Close in 2019$	15,050,475	14,952,358	14,761,387	16,535,588	17,963,569	19,642,117	19,952,732	10,821,463	12,713,209	14,386,130
	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059
Opening Value	34,918,913	40,453,830	43,368,004	49,335,206	55,479,576	61,116,765	67,629,538	52,739,807	56,356,411	63,550,006
Addition (Withdrawl) from (to) Ops	5,534,917	2,914,174	5,967,202	6,144,370	5,637,189	6,512,773	(14,889,731)	3,616,604	7,193,594	4,343,344
Transfer (to) from Capital	-	-	-	-	-	-	-	-	-	-
Close Inflated $	40,453,830	43,368,004	49,335,208	55,479,576	61,116,765	67,629,538	52,739,807	56,356,411	63,550,006	67,893,350
Close in 2019$	16,181,012	16,841,402	18,800,668	20,308,016	21,719,884	23,334,383	17,666,935	18,328,579	20,066,140	20,813,171
	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069
Opening Value	67,893,350	75,163,728	77,421,121	55,765,872	62,508,444	71,027,195	79,671,313	88,947,260	80,738,095	87,827,069
Addition (Withdrawl) from (to) Ops	7,270,378	2,257,394	(21,655,249)	6,742,572	8,518,751	8,644,118	7,275,947	(8,209,165)	7,088,974	5,628,392
Transfer (to) from Capital	-	-	-	-	-	-	-	-	-	-
Close Inflated $	75,163,728	77,421,121	55,765,872	62,508,444	71,027,195	79,671,313	86,947,260	80,738,095	87,827,069	93,455,461
Close in 2019$	22,370,830	22,371,547	15,644,722	17,025,538	18,782,334	20,454,536	21,672,367	19,538,522	20,634,996	21,317,852
	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079
Opening Value	93,455,461	103,203,212	101,836,195	108,900,457	111,232,188	112,242,946	115,914,210	121,412,200	118,920,393	130,908,984
Addition (Withdrawl) from (to) Ops	9,747,751	(1,367,017)	7,064,262	2,331,712	1,010,778	3,671,264	5,497,990	(2,491,807)	11,988,591	12,295,480
Transfer (to) from Capital	-	-	-	-	-	-	-	-	-	-
Close Inflated $	103,203,212	101,836,195	108,900,457	111,232,168	112,242,946	115,914,210	121,412,200	118,920,393	130,908,984	143,204,463
Close in 2019$	22,655,712	21,896,085	22,733,002	22,543,444	22,085,727	22,143,797	22,518,555	21,413,976	22,886,174	24,306,536
	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089
Opening Value	143,204,463	155,846,563	94,625,683	88,869,532	94,861,386	106,260,677	115,294,633	89,045,665	22,726,341	38,592,547
Addition (Withdrawl) from (to) Ops	12,642,100	(61,220,881)	(5,756,151)	5,991,854	11,399,291	9,033,956	(26,248,968)	(66,319,324)	15,866,206	(1,126,904)
Transfer (to) from Capital	-	-	-	-	-	-	-	-	-	-
Close Inflated $	155,846,563	94,625,683	88,869,532	94,861,386	106,260,677	115,294,633	89,045,665	22,726,341	38,592,547	37,465,643
Close in 2019$	25,681,863	15,139,136	13,804,089	14,305,633	15,557,972	16,388,993	12,289,062	3,045,077	5,020,361	4,731,812
	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099
Opening Value	37,465,643	53,266,070	44,741,438	61,928,427	78,880,530	89,576,453	107,967,280	120,836,186	111,542,944	125,498,911
Addition (Withdrawl) from (to) Ops	15,800,427	(8,524,632)	17,186,990	16,952,103	10,695,923	18,390,827	12,868,906	(9,293,242)	13,955,967	19,652,365
Transfer (to) from Capital	-	-	-	-	-	-	-	-	-	-
Close Inflated $	53,266,070	44,741,438	61,928,427	78,880,530	89,576,453	107,967,280	120,836,186	111,542,944	125,498,911	145,151,276
Close in 2019$	6,531,421	5,326,351	7,157,686	8,851,466	9,758,926	11,419,921	12,408,826	11,120,865	12,147,844	13,640,895

PUBLIC MEETING OUTLINE
PROPOSED OFFICIAL PLAN AMENDMENT AND ZONING BY-LAW AMENDMENT
RE: 14 AND 18 MARGARET STREET, ANGUS
NOTICE TO RE-DESIGNATE 'INSTITUTIONAL' AND 'RESIDENTIAL' LANDS TO 'RESIDENTIAL- MULTIPLE' AND TO REZONE 'INSTITUTIONAL (I)' AND 'RESIDENTIAL, LOW DENSITY, DETACHED (R1)' LANDS TO 'RESIDENTIAL, HIGH DENSITY, APARTMENTS WITH SPECIAL PROVISIONS (R5-X)', TO PERMIT A 26 UNIT TOWNHOUSE DEVELOPMENT

December 16th, 2020

INTRODUCTION BY MAYOR:

The purpose of this Public Meeting is to discuss proposed amendments to the and the Township's Zoning By-law 2003-50, and the Township's Official Plan as amended, to hear a presentation from Greg Barker from Innovative Planning Solutions, introduced by Township Planning Staff, and to hear all comments from residents of the Township of Essa.

DESCRIPTION OF THE PROPOSAL – MANAGER OF PLANNING AND DEVELOPMENT

The Township is in receipt of a complete application submission for 14 and 18 Margaret Street, Angus. The submission includes applications for a Zoning By-law Amendment (ZBA) and Official Plan Amendment (OPA) to rezone and redesignate the subject lands to permit a 26-unit townhouse development.

14 Margaret Street is less than 1 hectare in size, is zoned and designated for Institutional uses including but not limited to schools, libraries, churches, and long-term care homes. This property currently contains a one-storey church and supporting parking area. 18 Margaret Street is also less than 1 hectare in size, zoned and designated for low-density residential use, predominantly used as an access point to 14 Margaret Street and appears to contain a shed on the property.

The ZBA is being requested by the applicant to rezone the subject lots to permit high-density residential uses on both 14 and 18 Margaret Street. 14 Margaret Street is zoned Institutional (I) and 18 Margaret Street is zoned Residential, Low Density, Detached (R1). The applicant is seeking to rezone the lands to Residential, High Density, Apartments with Special Provisions (R5-X). Special provisions are requested to allow for relief of 2.5 m from the front yard setback requirements and relief of 2 m from the rear yard setback requirements. Staff note that the (R5-X) zone would also allow for a maximum building height of 21m on the subject lands.

The OPA is being requested as current policy does not permit residential development to occur at 14 Margaret Street due to its' Institutional designation. The OPA requests for the 'Residential-Multiple' designation to apply to the subject lands to facilitate the proposed development.

A full comment set concerning this application's circulation is pending Staff's review and will inform the forthcoming recommendation Report that will be provided to Council for their decision at a future meeting of the Committee of the Whole.

Staff welcomes Mr. Barker from Innovative Planning Solutions to deliver his presentation on the subject applications.

COMMENTS FROM THE PUBLIC – MAYOR

Speakers must state their name and address so that proper records may be kept and notice of future decisions be sent to those persons involved in the review process.

REPLY – MAYOR

Council may ask questions for clarification.

FINAL STATEMENT – MAYOR

If there are no further questions, Council wishes to thank all those in attendance for their participation. The Planning and Development Department will be preparing a Staff Report to be presented to Council at a future meeting of the Committee of the Whole.

Corporation of the Township of Essa
5786 County Road 21
Utopia, Ontario
L0M 1T0

Telephone: (705) 424-9770
Fax: (705) 424-2367
Web Site: www.essatownship.on.ca

TOWNSHIP of ESSA
Where Town and Country Meet

NOTICE OF A VIRTUAL PUBLIC MEETING pursuant to the PLANNING ACT
concerning
AN OFFICIAL PLAN AMENDMENT (OPA 36) AND ZONING BY-LAW AMENDMENT (No. ZA/20)
14 & 18 Margaret Street, Angus

TAKE NOTICE that the Council of the Corporation of the Township of Essa will hold a **Public Meeting on Wednesday the 16th day of December, 2020 at 6:00 p.m** to consider an Official Plan Amendment and Zoning By-Law Amendment under the Planning Act.

THE PURPOSE of this Virtual Public Meeting is to discuss a proposed Amendment to the Official Plan and Zoning By-law in accordance with Sections 22 and 34 of the Planning Act, R.S.O., c.p. 13, and to hear comments and review written submissions from the public and other plan review agencies.

THE PROPOSED AMENDMENT would affect those lands described as Plan 160A Lot 2 to 4 and Plan 160A Lot 5, Township of Essa in accordance with a proposal put forward by Wynstar Developments Inc. The properties are designated "Institutional" and "Residential" in the Official Plan and zoned as Institutional (I) and Residential, Low Density, Detached (R1) in Zoning By-Law 2003-50. The applicant is proposing to create a new residential lot to permit a twenty-six (26) unit townhouse development.

Specifically, the Official Plan is proposed to be amended from "Institutional" to a Residential Multiple designation, and to rezone the subject lands from Institutional (I) and Residential, Low Density, Detached (R1) to Residential, High Density, Apartments (R5) with Special Provisions (R5-X).

VIRTUAL PARTICIPATION In accordance with precautions to protect the health and safety of the public during the COVID-19 pandemic, the Township will be holding this public meeting virtually. Any person may participate electronically in the public meeting and/or make written or verbal representation either in support of, or in opposition to, the proposed amendment. To receive details on how to participate, please contact Township Planner Shannon Holness (Email: sholness@essatownship.on.ca / Phone: 705-424-9770 ext. 111) **by 4:30 pm on Friday December 11th, 2020**. We cannot accept any meeting participation that is not planned for in advance.

If you wish to be notified of the adoption of the proposed by-law amendment, you must make a written request to the Clerk of the Township of Essa. If a person or a public body that files a notice of appeal of a decision of the Township of Essa, in respect of the proposed zoning by-law amendment, does not make oral submission at a public meeting or make written submissions to the Township of Essa before the proposed amendments are adopted, the Local Planning Appeal Tribunal may dismiss all or part of the appeal.

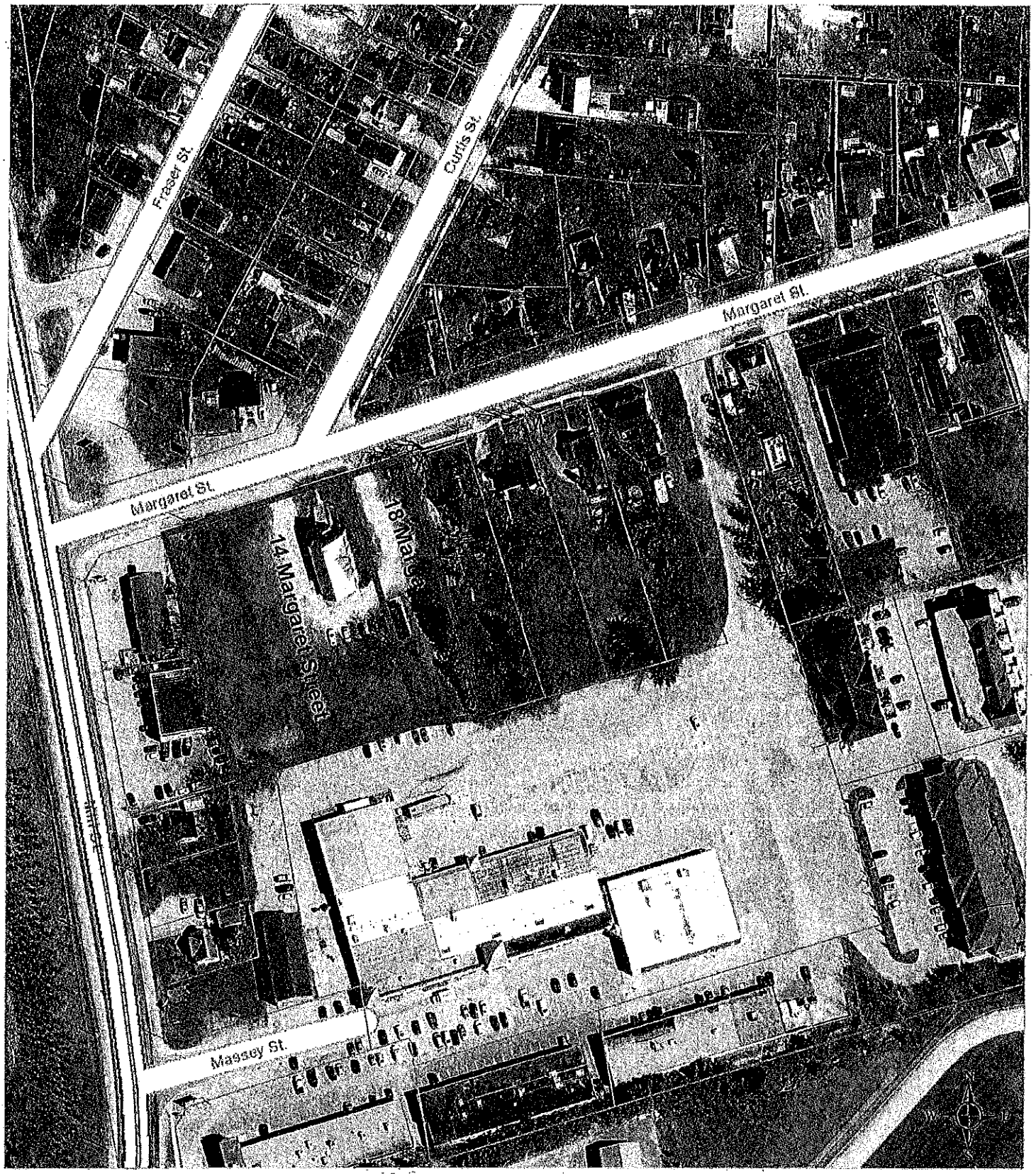
ADDITIONAL INFORMATION related to the proposed amendments is available through the Planning and Development Department during regular business hours at (705) 424-9770.

DATED this 13th day of November, 2020.

Aimee Powell,
Manager, Planning & Development

30

14 & 18 Margaret Street - OPA 36 and Z4/20



1:2,257

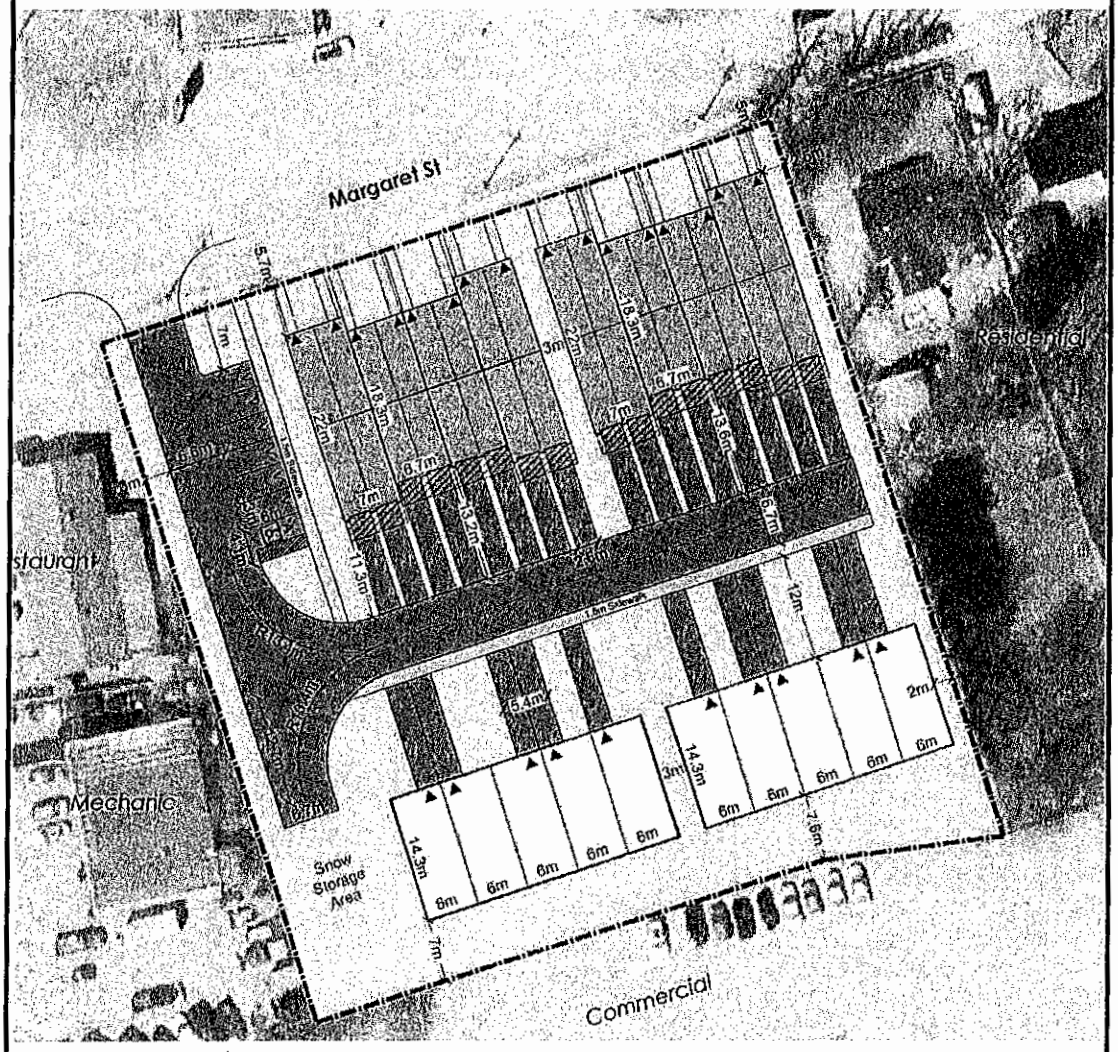
0 0.05 0.1 0.2 km

113

November 13, 2020

TOWNSHIP OF ESSA
Where Town and Country Meet

Concept Plan – 14 Margaret Street and 18 Margaret Street, Angus



Legend

- Subject Lands
  - Area: 6,540.3m²
  - No. of Units: 26
  - Density: 39.8 u/ha
- Back-to-Back Townhomes
  - Roof-Top Amenity Space: 379.6m²
- Block Townhomes

Figure 5.

CONCEPTUAL SITE PLAN

Source: Innovative Planning Soutions Inc,

Drawn By: IPS | File: 19-817

IPS INNOVATIVE PLANNING SOLUTIONS
PLANNERS • PROJECT MANAGERS • LAND DEVELOPERS

IPS CONSULTING

14 & 18 Margaret Street

re

Official Plan & Zoning Bylaw Amendment Applications

ESSA TOWNSHIP

December 16, 2020
Public Meeting

Application Context

Subject Lands:

- Address: 14 & 18 Margaret St
- Frontage: Combined 80.3 m
- Lot Area: 0.65 ha (1.62 acres)

Existing Site Conditions:

- One-storey church, vacant at the time of purchase (April 2019).
- One (1) accessory structure (shed).
- Limited vegetation, generally along the boundaries of the lands.
- Two (2) points of access.
- Relatively flat in topography.
- Backs onto parking associated with Rainbow Mall.
- Adjacent existing commercial lands to north, west and south.

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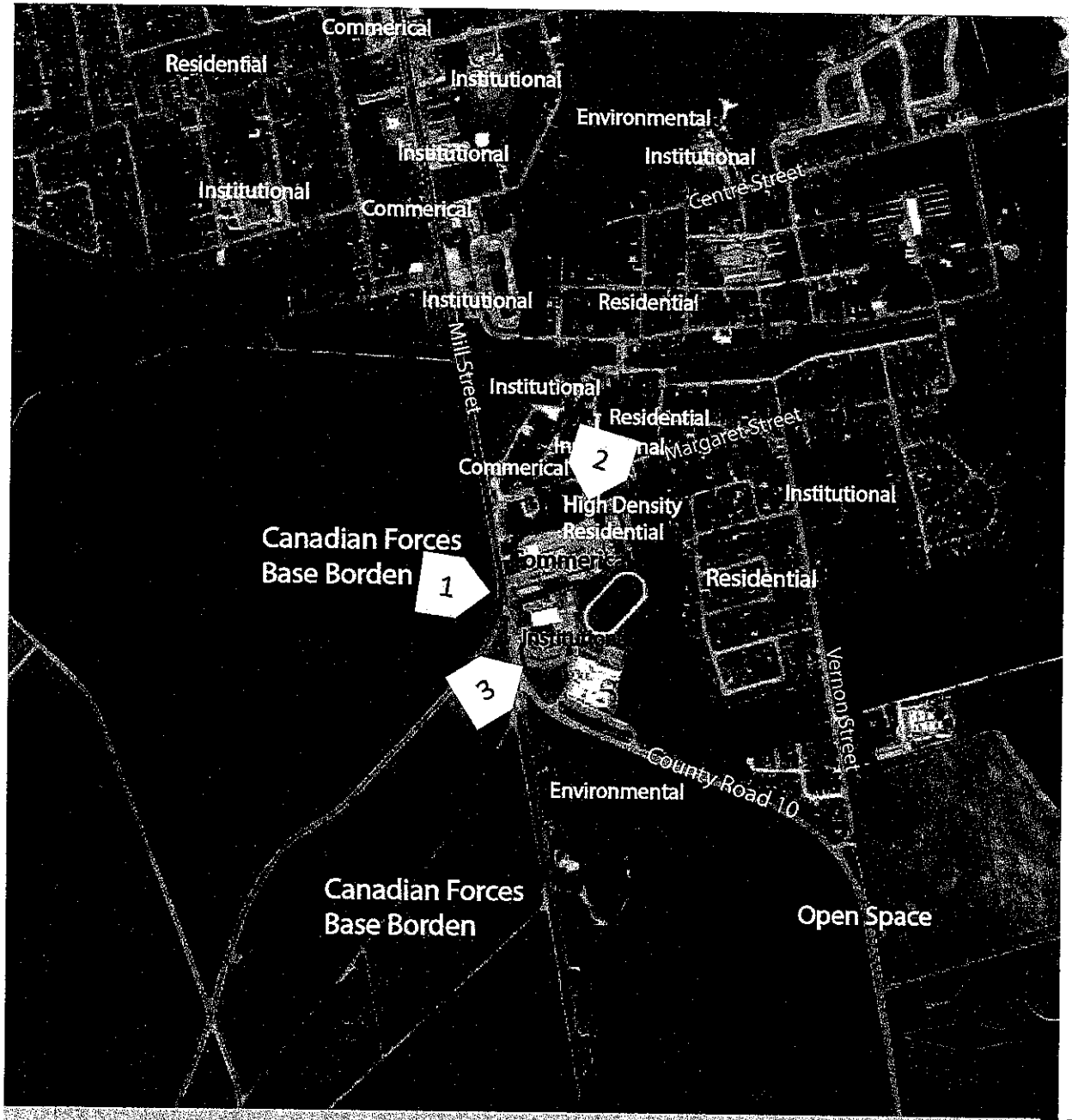
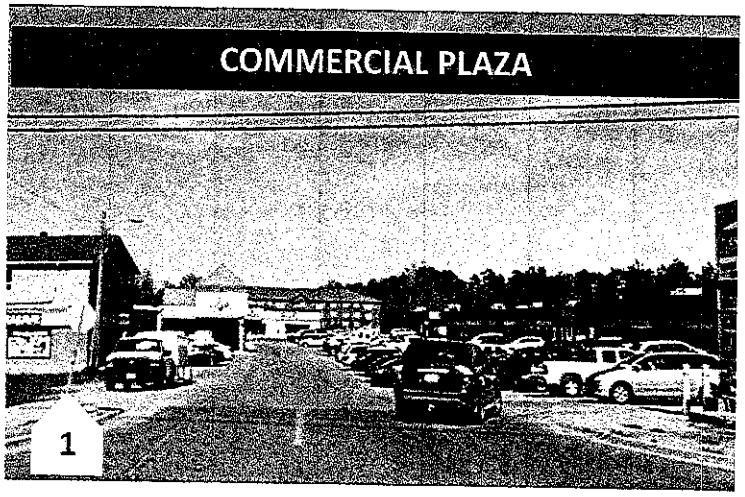
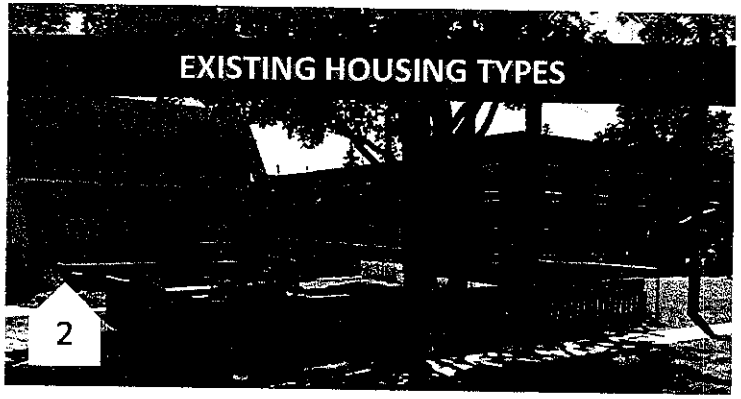
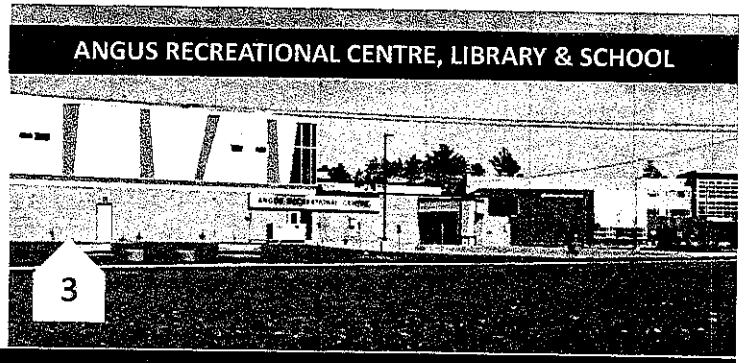


Surrounding Uses

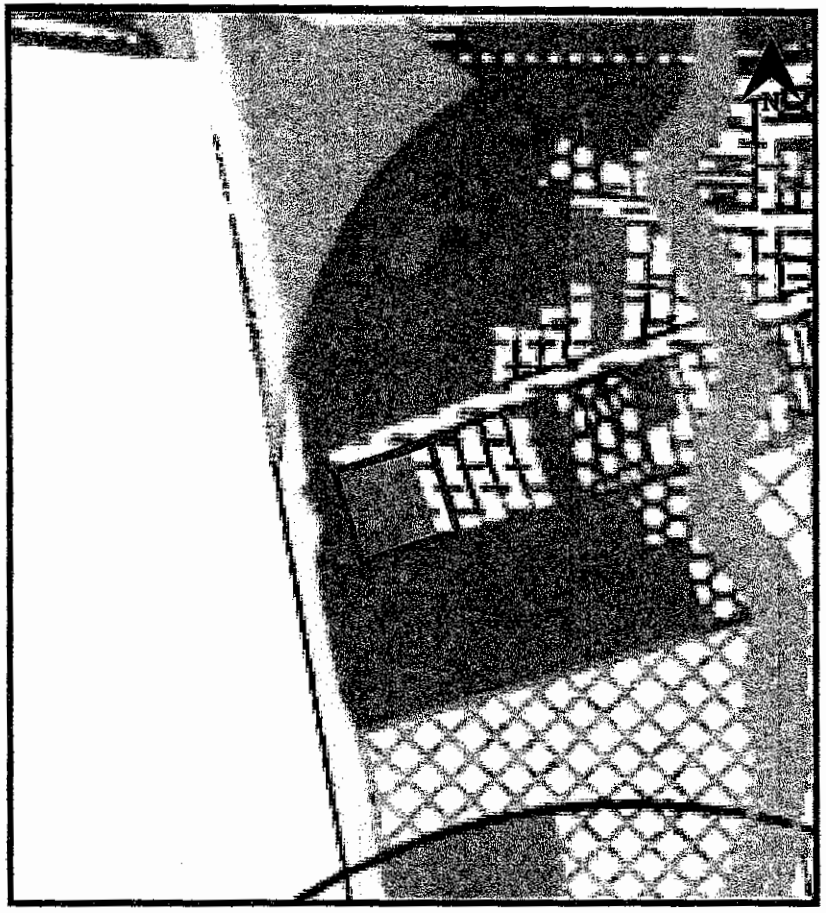






IPS CONSULTING

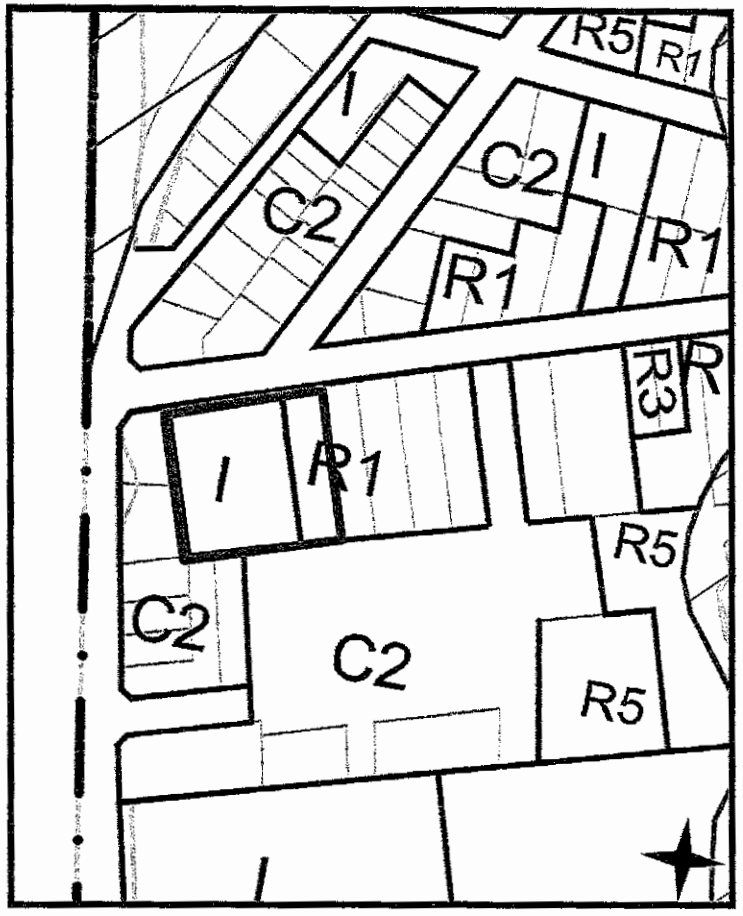
Current Official Plan Designation:
Institutional & Residential



Legend

- Site Boundary
- Institutional
- Residential
- Open Space
- Environmental
- Residential - Multiple
- Commercial

Current Zoning:
Institutional & Residential 1



Legend

- Subject Lands
- I - Institutional
- R1 - Residential (Low Density - Detatched)
- R3 - Residential (Medium Density, Townhome)
- R5 - Residential (High Density, Apartments)
- C2 - Commercial (Core Commercial)

Land Use Designation & Zoning

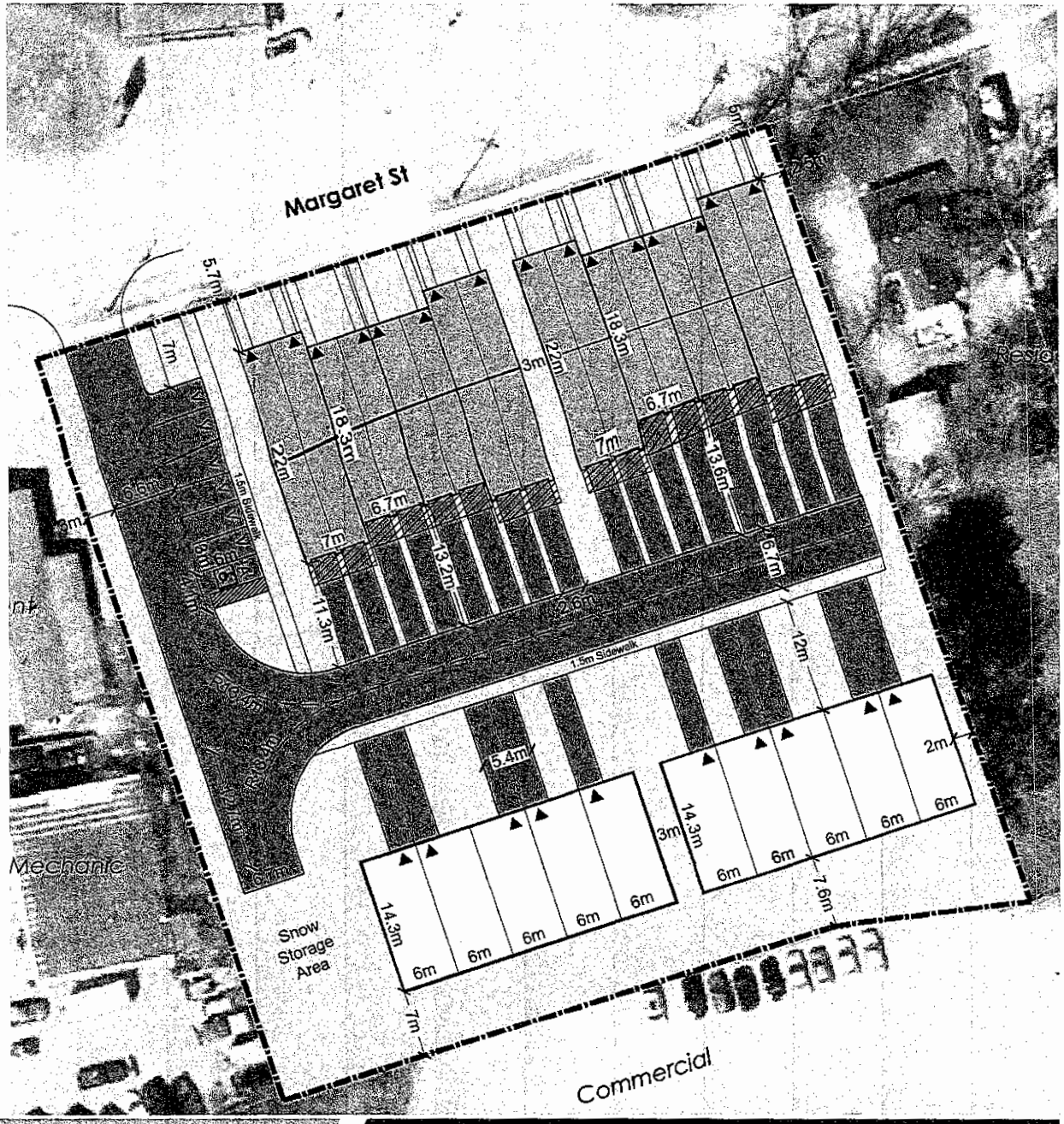
IPS CONSULTING

Development Concept:

- Total density of 39.8 uph
- 7 visitor & 78 private parking spaces
- Interior sidewalk, snow storage area, private internal garbage collection, vehicle turnaround

- 10 block/cluster 2 storey townhomes
  - Private rear yards
  - 3 bed + 2 bath
  - ~1,850ft²
  - Garage and 2 surface parking spaces

- 16 back-to-back 3 storey townhomes
  - Direct pedestrian access to Margaret Street
  - Rooftop amenity area
  - Internal 2nd floor balconies
  - 2,600-3,300 ft² (three floors)
  - Garage and 2 surface parking spaces



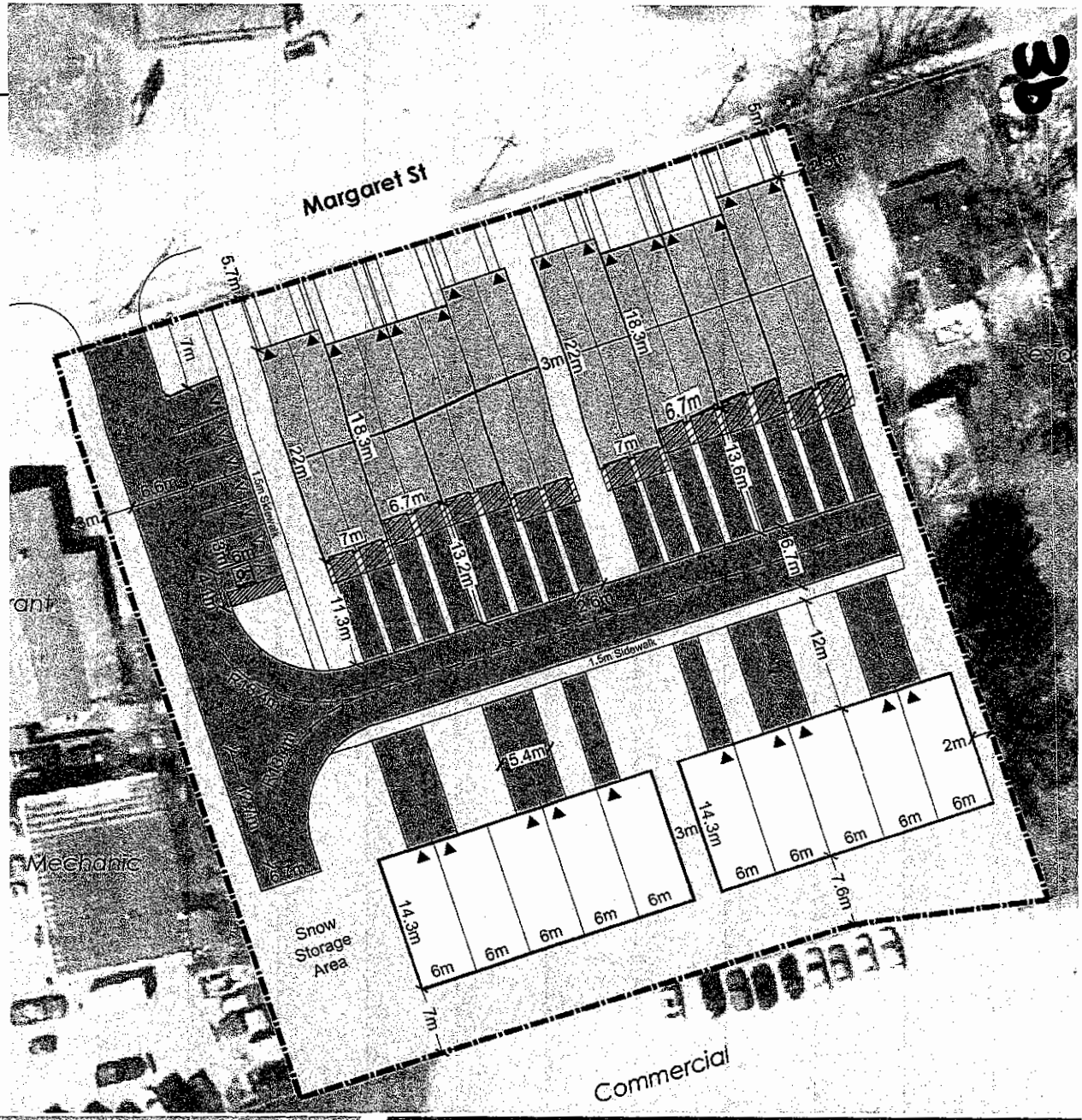
Proposed Development

IPS CONSULTING

Provision	Required	Provided
Lot Area	*3,053 m²*	*6,540.3 m²*
Lot Frontage	*24.0 m*	*80.3 m*
Setbacks (min.)		
Front Yard	*7.5 m*	*5.0 m*
Interior Side Yard	*1.5 m*	*2.0 m*
Rear Yard	*9.0 m*	*7.0 m*
GFA (max.)	*40.0 m²*	*>40.0 m²*
Lot Coverage (max.)	*40%*	*29%*
Parking Spaces	*38 (1.35/unit)*	*85 (3.26/unit)*
Building Height (max.)	*21.0 m*	*12.0 m*

Townhouse, Back to Back

Shall mean a building containing four or more dwelling units divided vertically above and below grade by a common wall, including a rear common wall.



Proposed Development

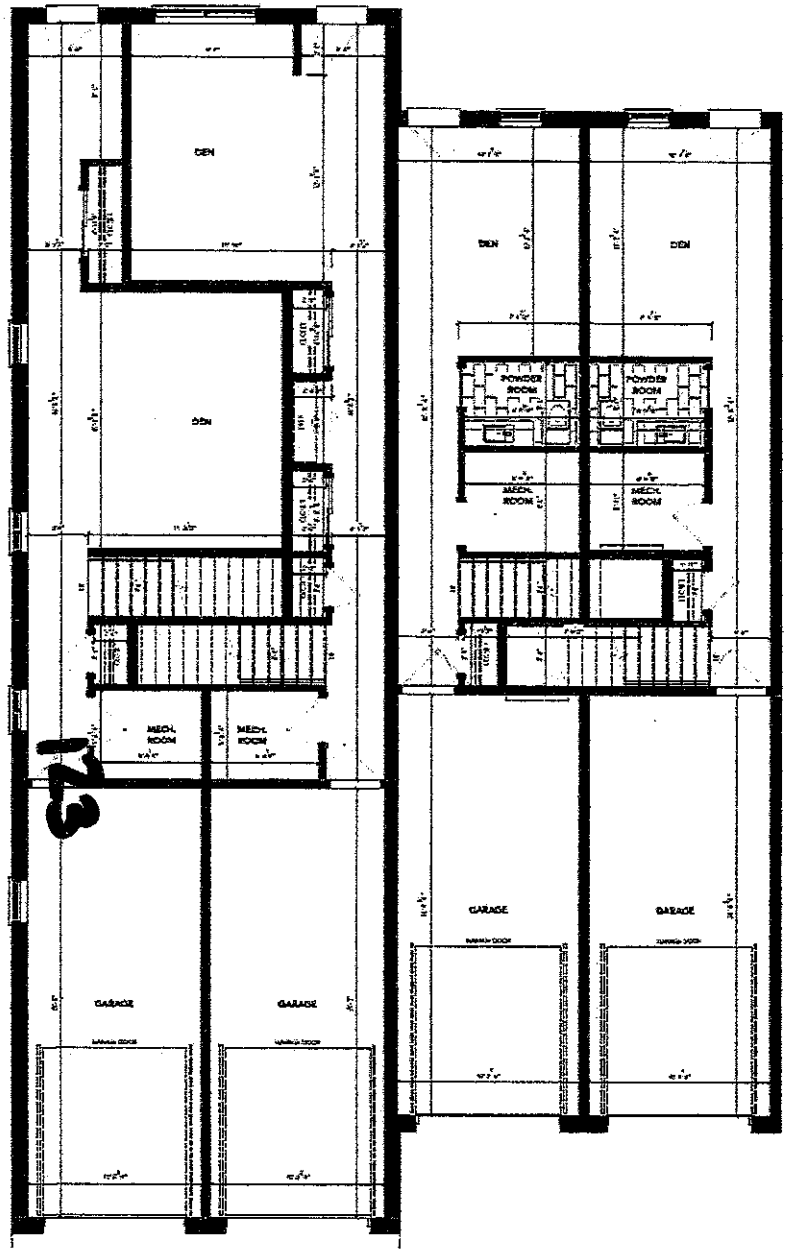
IPS CONSULTING

Block Townhomes

IPS
CONSULTING

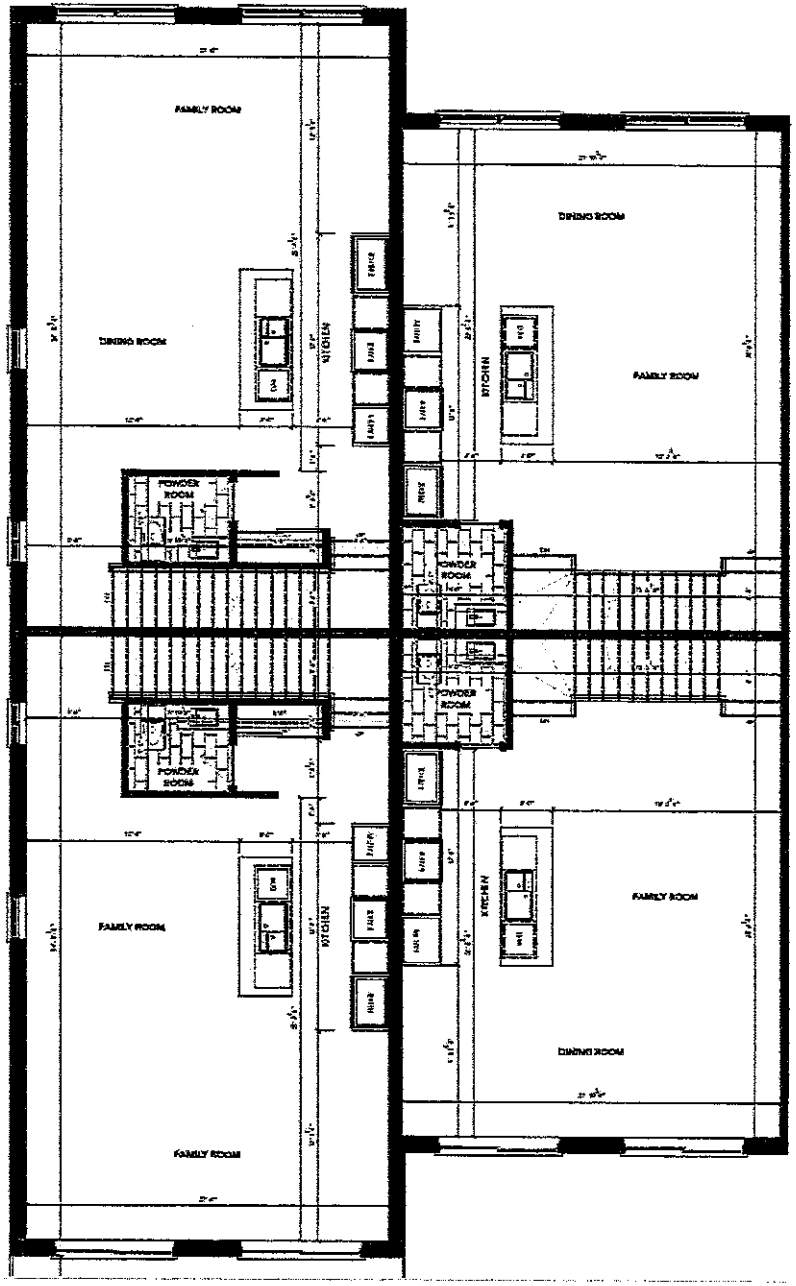
Back-to-Back Townhomes

IPS CONSULTING



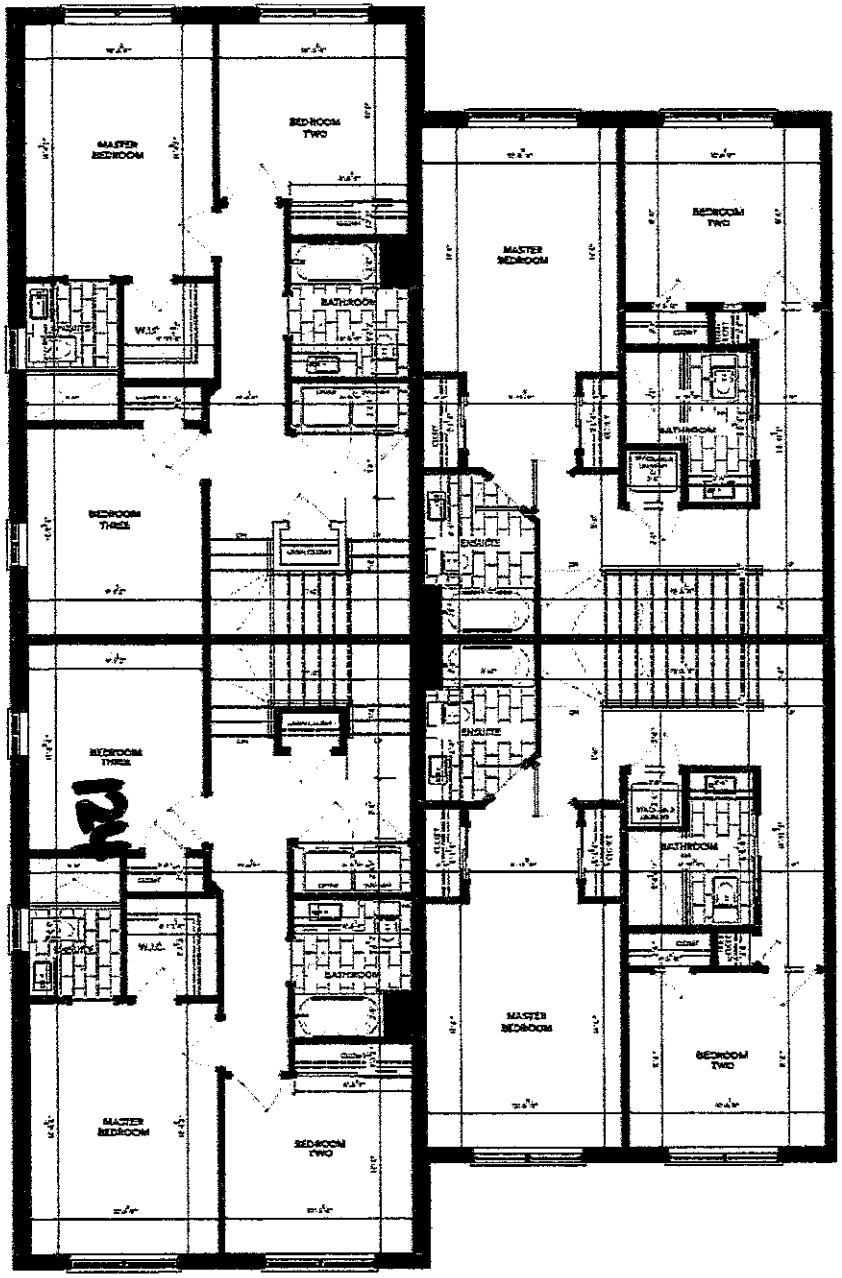
Ground Floor

Second Floor



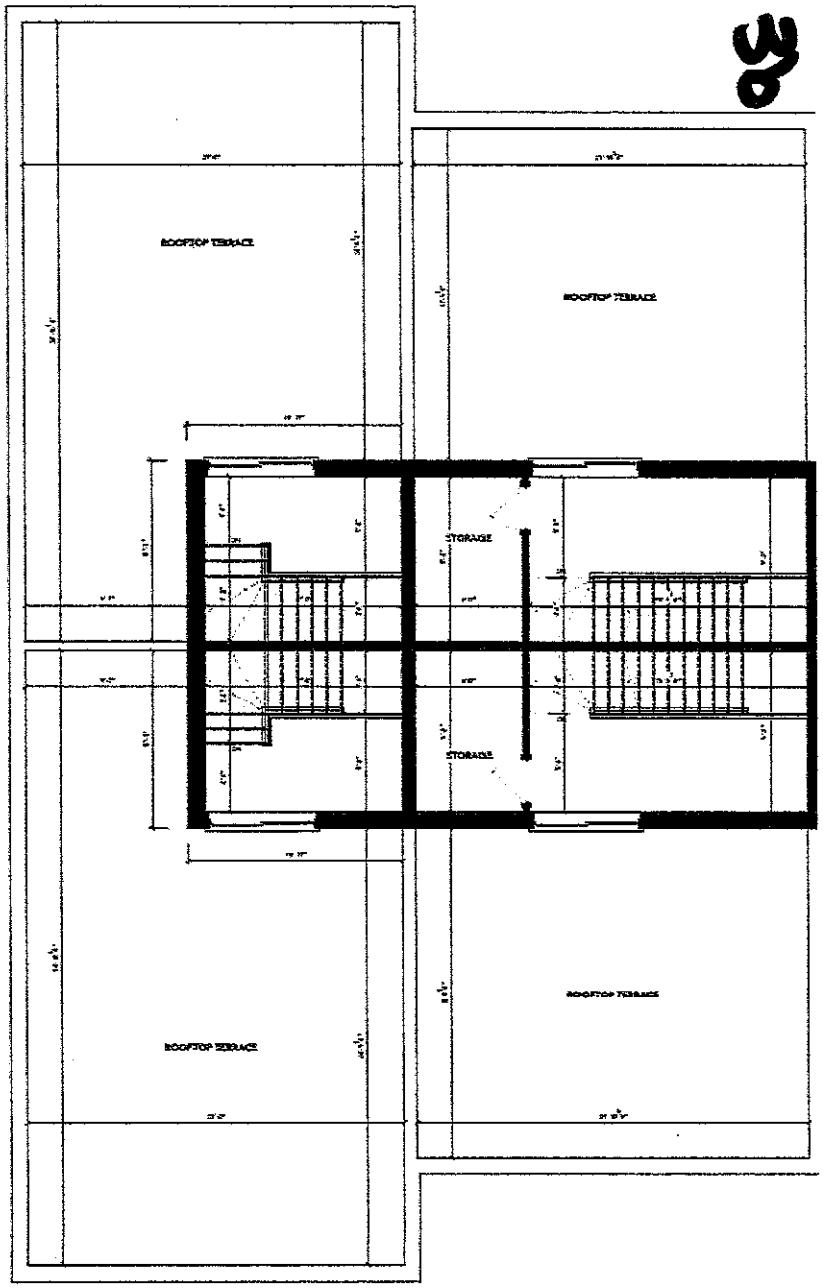
Back-to-Back Townhomes

IPS CONSULTIN



Third Floor

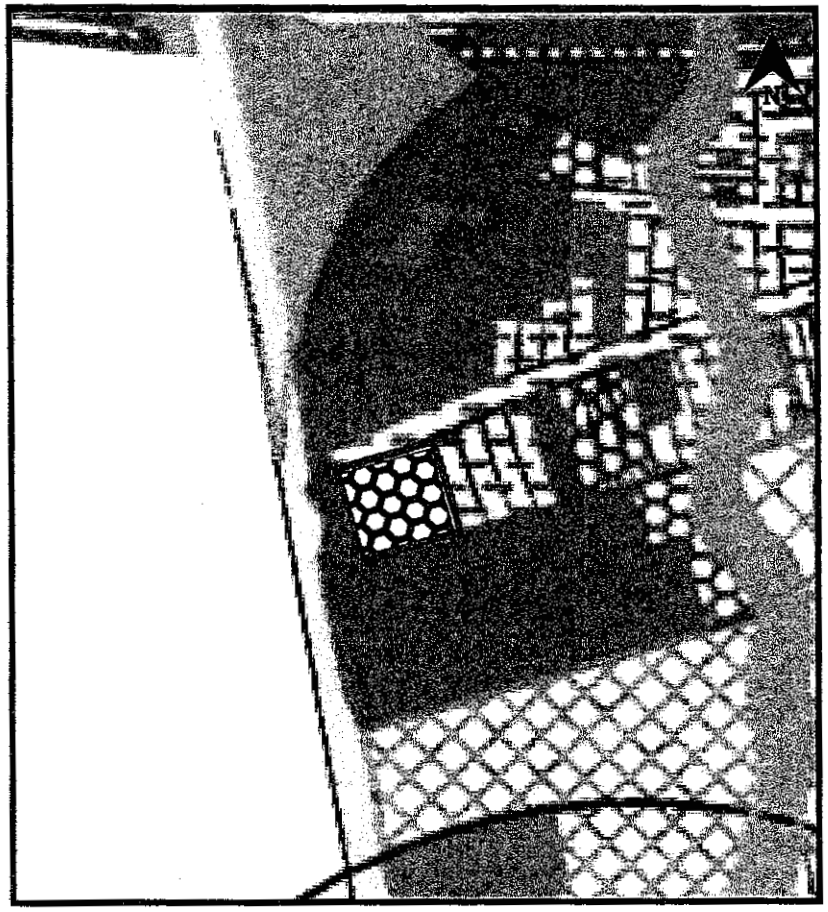
Rooftop



Back-to-Back Townhomes

IPS CONSULTING

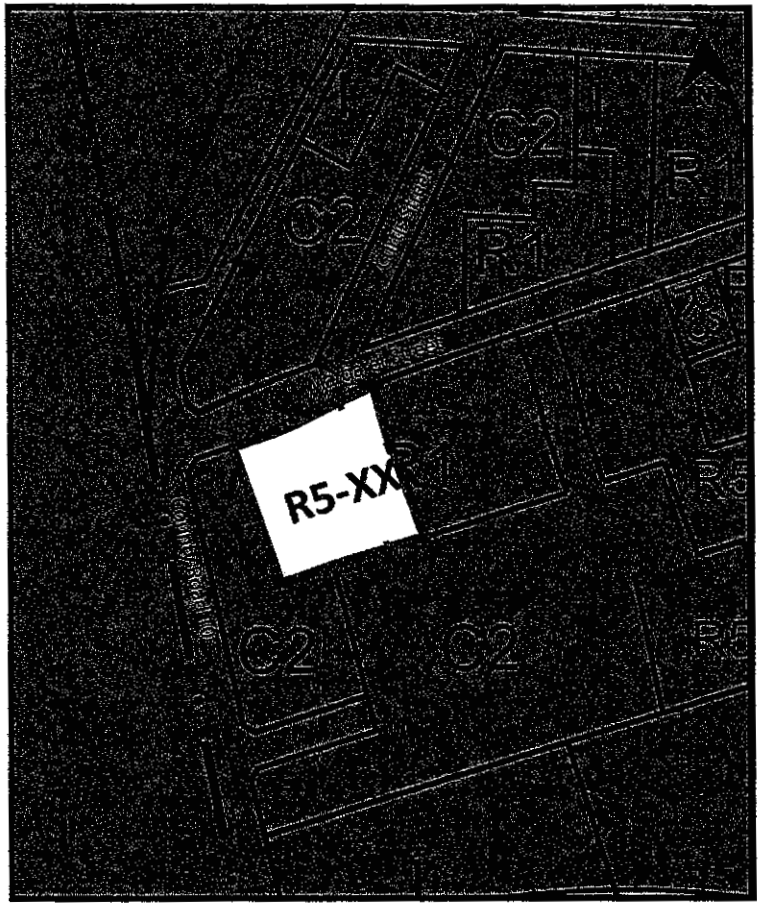
Proposed Official Plan Amendment: Residential - Multiple



Legend

- Site Boundary
- Institutional
- Residential
- Open Space
- Environmental
- Residential - Multiple
- Commercial

Proposed Zoning By-law Amendment: Residential (High Density)



Legend

- Subject Lands
- I - Institutional
- R1 - Residential (Low Density - Detatched)
- R3 - Residential (Medium Density, Townhome)
- R5 - Residential (High Density, Apartments)
- C2 - Commercial (Core Commercial)

Land Use Designation & Zoning

IPS CONSULTING

- Planning Justification Report
  - Site Plan Design Brief
  - Land Use Compatibility/Impact Study
  - Active Transportation Plan
  - Affordable Housing Study
  - Residential Impact Study
  - Employment Study

- Functional Servicing Report & Preliminary Stormwater Management Report

- Geotechnical Investigation

- Traffic Impact Study

- Arborist Report with Tree Inventory & Preservation Plan

Supporting Studies

IPS CONSULTING

Residential Growth & Redevelopment

IPS CONSULTING

The Township Official Plan supports the development of new multiple density residential developments subject to specific criteria.

- Provides the necessary functional elements – access/circulation, parking, appropriate setbacks, landscaping, amenity areas, snow storage & suitably sized dwellings.

- Offers efficient use of underutilized lands, existing infrastructure & facilities, providing for additional potential customers to support nearby businesses.

- Adjacent existing commercial uses and offers close proximity to a mix of uses including institutional, open space & other multi-unit residential uses, thereby avoiding multi-unit residential development amidst an established, low-density residential area.

- The applications propose to re-designate and re-zone the lands to the Residential Multiple designation and R5 exception zone to facilitate the development of:
  - 10 block/cluster townhomes
  - 16 back-to-back townhomes

- The lands are an appropriate location for the proposed residential development, located in proximity to commercial, institutional and recreational amenities at the edge of an existing residential area.

- The development will contribute to the range of housing types, tenures, costs, and densities in the Angus Settlement Area.

- The proposed development is consistent and in conformity with Provincial, County and Municipal Planning policies.

Conclusion

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Thank you!

ESSA
TOWNSHIP

TOWNSHIP OF ESSA STAFF REPORT

STAFF REPORT NO.: CAO065-20

DATE: December 16, 2020

TO: Committee of the Whole

FROM: Colleen Healey-Dowdall, Chief Administrative Officer

SUBJECT: Baxter Water System – Amending Agreement with the Town of New Tecumseth

---

RECOMMENDATION

That Staff Report CAO065-20 be received; and

That Council authorize entering into an amending agreement with the Town of New Tecumseth for the provision of water to supply the community of Baxter from the pipeline which is under the jurisdiction of the Town of New Tecumseth.

BACKGROUND

Staff reported on the Baxter water supply and booster pumping station facility and distribution system this past July (July 8th) and again just recently on December 2nd with the December 2nd report focused on awarding the tender for works. Since July, staff has spent considerable time investigating the supply (and demand) for water in Baxter. After detailed evaluation, all are satisfied that the design of works will provide for adequate water for all homes. The purchase amount of water from the Town of New Tecumseth is fixed since New Tecumseth will only supply 500 m^3 per day of water to the Township. The report of July 8th is attached to remind Council of earlier issues.

COMMENTS AND CONSIDERATIONS

It has been established that the construction of the booster pumping station facility will commence in the spring of 2021 and will be completed in the fall of 2021. As such, the purchase of additional water from New Tecumseth should correspond with this, and the supply, as outlined in Section C of the Water Supply Amending Agreement, should be adjusted to accommodate for construction.

The Manager of Public Works will be later reporting on the project, cost and plans for connections.

FINANCIAL IMPACT

The Township will be responsible to start to pay for additional water from the Town of New Tecumseth on January 1, 2022. The final details with Brookfield and New Tecumseth are currently being ironed out and staff intends to present a by-law with the agreement attached at the next meeting of Council.

Manager of Finance or Deputy Treasurer Approval: _____

SUMMARY/OPTIONS

Council may:

1. Do nothing.
2. Enter into an amending agreement to purchase additional water from the Town of New Tecumseth beginning in 2021.
3. Further delay the purchase of water from the Town of New Tecumseth which may be jeopardizing the ability of water being available.

CONCLUSION

Option #2 is recommended.

Respectfully submitted:

C Healey

Colleen Healey-Dowdall
CAO

Attachments:
July 8, 2020 Report CAO040-20
Amending Agreement

Colleen Healey

From: Rick Vatri <RVatri@newtecumseth.ca>
Sent: July 20, 2020 10:30 AM
To: Colleen Healey; West, Craig
Cc: Ego, Melanie; Blaine Parkin; Bruce Hoppe; Lori Bedford; John Henry; Chad Horan; Rayna Thompson
Subject: RE: Baxter Water Supply and Booster Pumping Station Facility

Hi Colleen,

In an effort to avoid any confusion, please confirm I am properly representing the Essa proposal in the chart below.

Date	units	New Baxter flows	Total Essa Flows (Angus and Baxter)
01-Jan-18	m^3/day	0	100
01-Jan-19	m^3/day	0	100
01-Jan-20	m^3/day	0	100
01-Jan-21	m^3/day	0	100
01-Jul-21	m^3/day	50	150
01-Jan-22	m^3/day	50	200
01-Jul-22	m^3/day	50	250
01-Jan-23	m^3/day	50	300
01-Jul-23	m^3/day	50	350
01-Jan-24	m^3/day	50	400
01-Jul-24	m^3/day	50	450
01-Jan-25	m^3/day	50	500
01-Jan-26	m^3/day	0	500
01-Jan-27	m^3/day	0	500

Regards,

Rick Vatri, CET

Director of Engineering and Development
Engineering Department
Tel: 705-435-3900 Ext: 1253
Web: www.newtecumseth.ca

WATER SUPPLY AMENDING AGREEMENT

THIS AGREEMENT MADE THIS XXTH DAY OF XXXXXXXX, 2019,

B E T W E E N:

THE CORPORATION OF THE TOWN OF NEW TECUMSETH

Hereinafter Referred To As "New Tecumseth"
OF THE FIRST PART

- and -

THE CORPORATION OF THE TOWNSHIP OF ESSA

Hereinafter Referred To As "Essa"
OF THE SECOND PART

WHEREAS the parties entered into a Water Supply Agreement dated the 7th day of May, 2007, which Agreement is still in force and a copy of which is attached hereto as Appendix "1";

AND WHEREAS the Water Supply Agreement made provision for the supply of water to the community of Baxter located in Essa from a pipeline under the jurisdiction of New Tecumseth;

AND WHEREAS the parties are desirous of amending the Agreement in order to increase the quantity of water to be supplied to Essa for the community of Baxter;

NOW THEREFORE in consideration of the mutual promises and covenants set out in this Amending Agreement, the parties hereto agree as follows:

A] BACKGROUND:

1. The parties hereto acknowledge the accuracy of the foregoing recitals and incorporate same as terms of this Amending Agreement.

2. Appendix "1" attached hereto shall form part of this Amending Agreement including the Primary Agreement attached as Schedule "A" to the Water Supply Agreement.

3. The Water Supply Agreement attached hereto as Appendix "1" will continue to be in full force and effect except as specifically amended herein.

B] CONNECTION BY ESSA:

4. Essa will be entitled to increase its water taking from the pipeline from one hundred cubic metres (100m^3) of water per day by an additional four hundred cubic metres (400m^3) for a total permitted and required taking of five hundred cubic metres (500m^3) per day subject to the terms of this Amending Agreement and the Water Supply Agreement.

5. The parties acknowledge that the existing connection to the pipeline at or near the intersection of Simcoe County Roads #10 and #21 is sufficient to permit the additional water taking so that no further connection construction will be required in order to implement the increased water taking.

6. Essa will continue to be solely responsible for all aspects of the Distribution System including regulatory approvals and supplying all data required by New Tecumseth in relation to the Distribution System.

7. Paragraph 12 of the Water Supply Agreement is amended by striking the reference to 100m^3 per day and substituting it with 500m^3 per day.

C] TERM:

8. The term of this Amending Agreement will continue to be as set out in the Water Supply Agreement with the exception that the increased water taking to five hundred cubic metres (500m^3) per day will commence on a phased-n basis as follows:

Date	Increase in Flow (Cubic Metres)	Total Flow (Cubic Metres)
Existing	-----	100
November 2019	100	200
December 2020	200	400
December 2021	100	500

D] FINANCIAL COMPENSATION:

9. Essa will pay to New Tecumseth the sum of nine hundred thousand, five hundred and sixty nine dollars ($900,569.00) as a Buy-In Fee as a contribution on account of New Tecumseth's costs in relation to the pipeline in order to permit Essa to increase its water taking to five hundred cubic metres (500m^3) per day for the Baxter community.

10. The parties acknowledge that Essa is required to pay to New Tecumseth the amounts to be charged by New Tecumseth pursuant to Article 7 of the Primary Agreement (Schedule "A" of the Water Supply Agreement) and in particular, the items charged for pursuant to Article 7.02. Those amounts as set out in paragraph 17 of the Water Supply Agreement are hereby amended to reflect the current amounts being paid as follows:

(a)	production costs;	-	38.67¢ m^3
(b)	capital charge;	-	5.00¢ m^3
(c)	debt contribution;	-	8.50¢ m^3
(d)	transmission charge;	-	19.00¢ m^3
TOTAL:		-	67.58¢ m^3

Essa acknowledges that the foregoing amounts being charged pursuant to the Primary Agreement are subject to change and Essa shall pay such amount as, from time-to-time, is determined under the Primary Agreement.

11. Pursuant to paragraph 18 of the Water Supply Agreement, Essa acknowledges its requirement to pay the pipeline maintenance charge from time-to-time in force. The amount currently in force is 5.73¢ per m^3, as imposed pursuant to Article 6.04 of the Primary Agreement.

12. The remaining paragraphs under "Financial Compensation" in the Water Supply Agreement will continue to apply with the exception that the reference to one hundred cubic metres (100m^3) per day in paragraphs 19 and 21 of the said Water Supply Agreement will be hereby amended to five hundred cubic metres (500m^3) per day.

E] UPGRADES AND EXPANSION:

13. There are no amendments or changes to the paragraphs under this Section of the Water Supply Agreement.

F] RESTRICTIONS AND WAIVERS:

14. There are no amendments to the paragraphs under this Section of the Water Supply Agreement.

G] DEFAULT:

15. There are no amendments to the paragraphs under this Section of the Water Supply Agreement.

H] ADMINISTRATION:

16. There are no amendments to the paragraphs under this Section of the Water Supply Agreement and the following provisions are confirmed for the purposes of this Amending Agreement:

(a) This Amending Agreement may be executed in counterparts as set out in paragraph 40 of the Water Supply Agreement;

(b) Time shall be of the essence of this Amending Agreement; and

(c) This Amending Agreement shall be governed by the laws of the Province of Ontario and shall enure to the benefit of and be binding upon the respective successors of the parties.

IN WITNESS WHEREOF the parties have hereunto affixed their respective seals under the hands of their proper officers duly authorized in that behalf.

THE CORPORATION OF THE TOWN OF NEW TECUMSETH
Per:

_____
RICK MILNE, MAYOR

_____
CINDY ANNE MAHER, CLERK

We have authority to bind the Corporation.

THE CORPORATION OF THE TOWNSHIP OF ESSA
Per:

_____
SANDIE MACDONALD, MAYOR

_____
LISA LEHR, CLERK

We have authority to bind the Corporation.

TOWNSHIP OF ESSA STAFF REPORT

STAFF REPORT NO.: CAO040-20

DATE: July 8, 2020

TO: Committee of the Whole

FROM: Colleen Healey-Dowdall, Chief Administrative Officer

SUBJECT: Baxter Water System – Proposal for Expansion

RECOMMENDATION

That Staff Report CAO040-20 be received; and

That Council accept the Baxter Water Expansion proposal as presented in AECOM's design package and endorse submission to the MOE; and approve the proposed Water Supply Amending Agreement with the purchase of additional water from the Town of New Tecumseth to commence January 1, 2021.

BACKGROUND

The Environmental Assessment for an expanded water supply to Baxter was undertaken by the Township and last amended in 2017. While the Township hired AECOM to design the water system expansion, it was recently peer reviewed by the Ainley Group when OCWA raised issue with a couple of design details related to the booster station. For example, OCWA had suggested that a revised recharge/refill time schedule be considered. OCWA's concerns triggered questions and dialogue with the Town of New Tecumseth (TNT) and OCWA's concerns have now been addressed. Note that Ainley's involvement was necessary since the Township did not have in-house water expertise to oversee the project in the past year.

In addition, the Ainley Group, on behalf of the Township, also had some concerns, primarily related to the amount of water to be purchased from the TNT for Essa's use in Baxter and storage – part of the concern related, again, to design criteria.

After approximately a year of consultation, the water system expansion planned and designed for Baxter is now acceptable to the Township including the Fire Chief, AECOM, OCWA and Ainley.

COMMENTS AND CONSIDERATIONS

The water system planned for Baxter will provide for a fire flow of 64L/second. This is appropriate for a population of up to 1,500 according to the Ministry of Environment, Conservation and Parks (MOE) Design Guidelines for Drinking Water Systems. It is anticipated that Baxter will contain a total population of approximately 1,220 persons (existing homes in Baxter plus new Brookfield homes). Based on this, a fire flow of 50L/second may be acceptable, however, Brookfield has agreed to the 64L/second which the Municipality is more comfortable with to accommodate a higher population and ensuring sufficient surplus storage, as well as meeting the North American Insurance Industry Standard.

The Township has in place a water purchasing agreement with the TNT and has also already arranged for an expansion to increase its purchase amount of 100 m^3/day to 500 m^3/day (proposed amending agreement attached as Attachment 1).

Brookfield would like the increased water to become available as soon as possible, however, it may be best to delay the commencement of the increase in purchase amount since it will take approximately 5 months to gain MOE approval on the design of the new water booster station and water distribution system. Essa will have to pay for an increased amount of water to be purchased from the TNT in accordance with the schedule to be contained in the amended Water Supply Agreement.

At this time, Brookfield anticipates a building program to correspond to the following increase in water flows:

2021	100 m^3
2022	200 m^3
2023	100 m^3
2024	existing homes in Baxter may connect

Staff believes it is best that the Water Supply Amending Agreement with the TNT contain wording to the effect that the purchase of increase in flow amount commence January 1, 2021. This would allow Essa the opportunity to budget properly, and as well, to re-examine rates.

The increase in flow amount has already been approved in principle by New Tecumseth Council and has been accounted for in the TNT's water models. Any increased amount would not be available until the Collingwood Plant expansion is completed in 2024.

FINANCIAL IMPACT

Brookfield has already posted a Letter of Credit (LC) in the amount of just over 3 million dollars with Essa in order to front-end costs of the Baxter water system expansion project. Essa has been drawing from the posted LC as costs incur/expenditures realized in accordance with the established Water Supply and Distribution Upgrades/Front-ending

Agreement signed by the Municipality and Brookfield on December 19, 2019 (refer to Attachment 2).

OTHER

One issue not yet decided on by Council is the issue of connections by existing, unserviced homes in Baxter. Council should decide soon if it intends to force connection by all homeowners or to allow connection to be optional. As well, there is the cost of connection and timing. Most homeowners would agree that it is advantageous to connect to municipal water but appreciate when their Council provides time to connect over several years and/or payment options that allow for payment deferral with interest. This issue should be considered and decided on in the coming weeks/months once the new Manager of Public Works has had an opportunity to report to Council on the matter, to outline advantages and disadvantages of the situation. There are also others on the fringes of Baxter who would like to connect.

SUMMARY/OPTIONS

Council may:

1. Take no further action, delaying the project and Brookfield overall.
2. Accept the Baxter Water Expansion proposal as presented in AECOM's design package and endorse submission to the MOE.
3. Approve the proposed Water Supply Amending Agreement with the purchase of additional water from the TNT to commence January 1, 2021.
4. Approve the proposed Water Supply Amending Agreement with the purchase of additional water from the TNT to commence on a different date to suit either Brookfield or Council.

CONCLUSION

Options #2 and #3 are recommended.

Respectfully submitted:

C Healey

Colleen Healey-Dowdall
CAO

Attachments:
Proposed Water Supply Amending Agreement
Water Supply and Distribution Upgrades/Front-ending Agreement

WATER SUPPLY AMENDING AGREEMENT

THIS AGREEMENT MADE THIS XXTH DAY OF XXXXXXXX, 2020,

BETWEEN:

THE CORPORATION OF THE TOWN OF NEW TECUMSETH

Hereinafter Referred To As "New Tecumseth"
OF THE FIRST PART

- and -

THE CORPORATION OF THE TOWNSHIP OF ESSA

Hereinafter Referred To As "Essa"
OF THE SECOND PART

WHEREAS the parties entered into a Water Supply Agreement dated the 7th day of May, 2007, which Agreement is still in force and a copy of which is attached hereto as Appendix "1";

AND WHEREAS the Water Supply Agreement made provision for the supply of water to the community of Baxter located in Essa from a pipeline under the jurisdiction of New Tecumseth;

AND WHEREAS the parties are desirous of amending the Agreement in order to increase the quantity of water to be supplied to Essa for the community of Baxter;

NOW THEREFORE in consideration of the mutual promises and covenants set out in this Amending Agreement, the parties hereto agree as follows:

A] BACKGROUND:

1. The parties hereto acknowledge the accuracy of the foregoing recitals and incorporate same as terms of this Amending Agreement.

2. Appendix "1" attached hereto shall form part of this Amending Agreement including the Primary Agreement attached as Schedule "A" to the Water Supply Agreement.

3. The Water Supply Agreement attached hereto as Appendix "1" will continue to be in full force and effect except as specifically amended herein.

B] CONNECTION BY ESSA:

4. Essa will be entitled to increase its water taking from the pipeline from one hundred cubic metres (100m^3) of water per day by an additional four hundred cubic metres (400m^3) for a total permitted and required taking of five hundred cubic metres (500m^3) per day subject to the terms of this Amending Agreement and the Water Supply Agreement.

5. The parties acknowledge that the existing connection to the pipeline at or near the intersection of Simcoe County Roads #10 and #21 is sufficient to permit the additional water taking so that no further connection construction will be required in order to implement the increased water taking.

6. Essa will continue to be solely responsible for all aspects of the Distribution System including regulatory approvals and supplying all data required by New Tecumseth in relation to the Distribution System.

7. Paragraph 12 of the Water Supply Agreement is amended by striking the reference to 100m^3 per day and substituting it with 500m^3 per day.

C] **TERM:**

8. The term of this Amending Agreement will continue to be as set out in the Water Supply Agreement with the exception that the increased water taking to five hundred cubic metres (500m^3) per day will commence on a phased-in basis as follows:

Date	Increase in Flow (Cubic Metres)	Total Flow (Cubic Metres)
Existing	-----	100
January 1, 2021	100	200
January 1, 2022	200	400
January 1, 2023	100	500

D] **FINANCIAL COMPENSATION:**

9. Essa will pay to New Tecumseth the sum of nine hundred thousand, five hundred and sixty nine dollars ($900,569.00) as a Buy-In Fee as a contribution on account of New Tecumseth's costs in relation to the pipeline in order to permit Essa to increase its water taking to five hundred cubic metres (500m^3) per day for the Baxter community.

10. The parties acknowledge that Essa is required to pay to New Tecumseth the amounts to be charged by New Tecumseth pursuant to Article 7 of the Primary Agreement (Schedule "A" of the Water Supply Agreement) and in particular, the items charged for pursuant to Article 7.02. Those amounts as set out in paragraph 17 of the Water Supply Agreement are hereby amended to reflect the current amounts being paid as follows:

(a)	production costs;	-	38.67¢ m^3
(b)	capital charge;	-	5.00¢ m^3
(c)	debt contribution;	-	8.50¢ m^3
(d)	transmission charge;	-	19.00¢ m^3
TOTAL:		-	67.58¢ m^3

Essa acknowledges that the foregoing amounts being charged pursuant to the Primary Agreement are subject to change and Essa shall pay such amount as, from time-to-time, is determined under the Primary Agreement.

11. Pursuant to paragraph 18 of the Water Supply Agreement, Essa acknowledges its requirement to pay the pipeline maintenance charge from time-to-time in force. The amount currently in force is 5.73¢ per m^3, as imposed pursuant to Article 6.04 of the Primary Agreement.

12. The remaining paragraphs under "Financial Compensation" in the Water Supply Agreement will continue to apply with the exception that the reference to one hundred cubic metres (100m^3) per day in paragraphs 19 and 21 of the said Water Supply Agreement will be hereby amended to five hundred cubic metres (500m^3) per day.

E] UPGRADES AND EXPANSION:

13. There are no amendments or changes to the paragraphs under this Section of the Water Supply Agreement.

F] RESTRICTIONS AND WAIVERS:

14. There are no amendments to the paragraphs under this Section of the Water Supply Agreement.

G] DEFAULT:

15. There are no amendments to the paragraphs under this Section of the Water Supply Agreement.

H] ADMINISTRATION:

16. There are no amendments to the paragraphs under this Section of the Water Supply Agreement and the following provisions are confirmed for the purposes of this Amending Agreement:

(a) This Amending Agreement may be executed in counterparts as set out in paragraph 40 of the Water Supply Agreement;

(b) Time shall be of the essence of this Amending Agreement; and

(c) This Amending Agreement shall be governed by the laws of the Province of Ontario and shall enure to the benefit of and be binding upon the respective successors of the parties.

IN WITNESS WHEREOF the parties have hereunto affixed their respective seals under the hands of their proper officers duly authorized in that behalf.

THE CORPORATION OF THE TOWN OF NEW TECUMSETH
Per:

_____
RICK MILNE, MAYOR

_____
CINDY ANNE MAHER, CLERK

We have authority to bind the Corporation.

THE CORPORATION OF THE TOWNSHIP OF ESSA
Per:

_____
SANDIE MACDONALD, MAYOR

_____
LISA LEHR, CLERK

We have authority to bind the Corporation.

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FILE COPY

WATER SUPPLY AND DISTRIBUTION UPGRADES/ FRONT-ENDING AGREEMENT

made this day of , 2018

BETWEEN:

THE CORPORATION OF THE TOWNSHIP OF ESSA

"Township"

-and-

BROOKFIELD RESIDENTIAL (ONTARIO) LIMITED

"Developer"

Collectively referred to as the "Parties"

RECITALS

1. The Developer is the owner of the lands in the Township of Essa, County of Simcoe, described as follows:

   Part of Lot 16, Concession 4 Essa, being Parts 1 and 2 Plan 51R-41377; Township of Essa, County of Simcoe, being all of PIN 58990-0115(LT) (the Lands) as set out on Schedule "A" attached.

2. The Developer proposes to subdivide the Lands and is proceeding with a plan of Subdivision for the purpose of selling, or conveying the Lands in 253 residential building lots, subject to approval of the Council for the Township (the Plan).

3. The Developer has conveyed the following lands to the Township for Municipal purposes to service the Plan:

   (i) Part Lot 16, Concession 5, Essa, being Parts 1, 2 & 3 on Plan 51R-41354, Township of Essa, County of Simcoe being all of PIN 58111-0347(LT) as set out in Schedule "A" attached.

   (ii) Part of Lot 16, Concession 4, Essa Township designated as Part 1 on Plan 51R-41420 except Part 1 on 51R-41473, Township of Essa, County of Simcoe, being all of PIN 58990-0119(LT), as set out in Schedule "A" attached.

   collectively referred to as the Township Lands (the "Township Lands")

4. The Developer received Draft Plan Approval for the Lands from the Township on March 17, 2010 for 250 units, and Redline and Draft Plan Extension Approval on December 20, 2017 for 253 units.

5. The Developer agrees that the Draft Plan Approval is pursuant to File No.: E-T-0602.

6. The Plan will require the connection of each lot to the Township water supply and distribution system.

7. The Township and the Developer agree that the Township requires upgrades to the Township water supply and distribution system in order for the development of the Plan to proceed.

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8. The Developer wishes to facilitate the expeditious development of the Lands and to that end has sought to enter into this Water Supply and Distribution Upgrades/ Front-Ending Agreement ("the Agreement") with the Township to provide for water capacity and distribution for the Plan.

9. The Developer is entering into the Agreement and agreeing to pay for certain upgrades to the Township water supply and distribution system, conditional upon the Township obtaining the necessary water capacity from the Corporation of the Town of New Tecumseth ("New Tecumseth") and subject to the provisions of the Agreement.

10. The Township entered into a Water Supply Agreement with New Tecumseth dated May 7, 2007, securing the right to obtain additional water supply from New Tecumseth for the Community of Baxter which would be sufficient to provide water capacity for the Plan (Water Supply Agreement). The Township is acquiring the said additional water capacity at the rates to be set by New Tecumseth from time to time, as contemplated by the Amendment to the Water Supply Agreement.

11. The Township agrees to acquire approximately 400 cubic metres (400m^3) of water capacity per day pursuant to the Water Supply Agreement, 300 cubic metres of which is available for use for the Plan, and 100 cubic metres of which is available for other land in the Township of Essa.

12. The Water Supply Agreement between the Corporation of the Town of New Tecumseth and the Township dated May 7, 2007 remains in full force and affect.

13. The Township commissioned a study by AECOM ("AECOM study") dated January, 2017 to study the Baxter Settlement Area water upgrades.

14. The Developer agrees that the Township will arrange for the Engineering design and contract the administration for construction and commissioning of a new pumping station and reservoirs to be located on Part 1 of 51R-41420, a watermain for distribution, and hydrants, and the Developer agrees to front-end all of the actual costs for this project as outlined by the AECOM study, and as set out further in this Agreement.

15. The Township has enacted Development Charges By-law # 2013-60.

In consideration of the covenants herein contained, and other good and valuable consideration, the Parties covenant and agree to the following:

1. Recitals Deemed True

   1.1. The Parties agree that the Recitals shall be deemed to be true and shall be incorporated as terms of the Agreement.

2. Lands

   2.1. The Lands proposed for the development are as set out in Schedule "A" attached.

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3. Definitions

3.1. Developer includes an individual, an association, a partnership or corporation, and where the singular is used it shall be construed as including the plural.

3.2. Front-Ending means the obligation of the Developer to pay for the cost of the Water Supply and Distribution Upgrades prior to being allowed to register its Plan, with set amounts to be reimbursed to the Developer by the Township upon the development of other lands in the Township and upon receipt of certain funds by the Township.

3.3. Local Services Charge means those Charges applying to Local Services as set out in Section 2.(5) of the *Development Charges Act*, 1997 S.O. 1997 C.27 (the "Development Charges Act").

3.4. Total Cost Estimate means the total amount estimated for the cost of constructing the Water Supply and Distribution Upgrades required to allow the Plan to proceed, less any Front-Ending contribution to be paid by the Developer for its proportionate share of the total cost estimate.

3.5. As-Constructed Cost means the actual cost determined once the Water Supply and Distribution System Upgrades have been completed and approved by the Township's Engineers.

3.6. Water Supply and Distribution Upgrades shall mean the items set out in 7.1.3 which are required to be constructed in order to upgrade the Township's Water Supply and Distribution System.

4. Developer's Expense

4.1. The Developer agrees to be responsible to satisfy all requirements of the Agreement at its expense and agrees that every provision of the Agreement by which the Developer is obligated in any way is deemed to include the words "at the expense of the Developer and to the Township's satisfaction" unless specifically stated otherwise including the payment of all applicable taxes, charges, fees, and levies.

5. Term

5.1. The Parties agree that, the Township in its sole and unfettered discretion, may terminate the Agreement fifteen (15) years after the date of execution of the Agreement by the Township, and the Township has no further obligation to reimburse the Developer after expiry of the Agreement.

6. Legal Authority

6.1. The Parties agree that the Agreement is being entered into in accordance with Sections 51 (24) (25) and (26) of *the Planning Act*, R.S.O. 1990, c.P.13 (the *"Planning Act")*.

6.2. The Developer represents and warrants that it is entering into the Agreement voluntarily and has obtained independent legal advice.

7. Developers Front Ending Costs and Total Cost Estimate

7.1.1. The Developer agrees that the Total Cost Estimate for Local Service Charges which is the amount it is to contribute as its Front- Ending Contribution for the Water Supply and Distribution Upgrades is $3,155,620.00 which is to be paid to the Township prior to execution of the Agreement by the Township in cash or by way of an Irrevocable Letter of Credit that can be drawn upon by the Township at any time, worded to the satisfaction of the Township and the Township's solicitor.

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7.1.2. The Developer agrees that the Water Supply and Distribution Upgrades are as set out in the chart in section 7.1.3.

7.1.3.

Item No.	Item Description	Unit	Est. Quant.	Unit Price	Total Price	Brookfield Share (70.4%)
1.0	WATER SUPPLY					
1.1	Capital Cost Contribution for Collingwood Water (Additional 400m3/d)	L.S.	1	$850,000.00	$850,000.00	$595,000.00
	Sub-Total Item 1.0 WATER SUPPLY				$850,000.00	$595,000.00
2.0	PUMPING STATION AND RESERVOIR					
2.1	Building and Site			$328,900.00	$328,900.00	$231,545.00
2.1.1	-Sitework	L.S.	1	$529,000.00	$529,000.00	$372,416.00
2.1.2	-Reservoir Expansion	L.S.	1			
2.2	Process/Mechanical			$379,000.00	$379,000.00	$266,816.00
2.2.1	-Process	L.S.	1	$197,220.00	$197,220.00	$138,842.88
2.2.2	(Pipework/pumps/chemical	L.S.	1	$435,000.00	$435,000.00	$306,240.00
2.2.3	/feel)	L.S.	1			
	-Mechanical					
	-Electrical					
2.3				$100,000.00	$100,000.00	$70,040.00
2.3.1	Property Acquisition -Property for pumping station and reservoir	L.S.	1			
	Sub-Total Item 2.0 BOOSTER PUMPING STATION				$1,969,120.00	$1,385,899.88
3.0	DISTRIBUTION					
3.1	Watermain	ea	5	$3,500.00	$17,500.00	$11,968.00
3.1.1	Fire Hydrants					
	Sub-Total Item 3.0 DISTRIBUTION				$17,500.00	$11,968.00
	SUMMARY					
1.0	WATER SUPPLY				$850,000.00	$598, 400.00
2.0	PUMPING STATION AND RESERVOIR				$1,969,120.00	$1,386,260.40
3.0	DISTRIBUTION				$17,500.00	$12,320.00
	Construction Total				$2,836,620.00	$1,996,960.40
4.0	Engineering and Contingency				$319,000.00	$224,576.00
	TOTAL COST ESTIMATE				$3,155,620.00	$2,221,536.40

7.2. The Parties agree that the Developer's Front-Ending Contribution is comprised solely of Local Service Charges and the Developer's direct responsibility charges which include and all Engineering costs for the Water Supply and Distribution Upgrades, and that the amount set out herein is only an estimate of the total cost to be paid by the Developer.

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7.3. The Parties agree that all construction and engineering costs are to be borne by the Developer as set out further in the Agreement. The Developer further agrees that the engineering work for the Water Supply and Distribution Upgrades may include but is not limited to the following: preparing tenders and/or obtaining quotes, contract administration, issuing progress payment certificates, environmental assessments, preparing submissions, and applying for government agency approvals

8. As-Constructed Costs

8.1. The Township and the Developer agree that if the final As-Constructed Cost is greater than the Total Cost Estimate as set out herein, the Developer will pay any additional cost up-front within thirty (30) days of receiving an invoice from the Township failing which the amount may be deducted from any Securities held by the Township, or the Township can charge interest on any outstanding balance at 1.2% per month, in the Township's sole and absolute discretion, and the Developer will be reimbursed their share of the total As Constructed Cost as set out further in the Agreement. If the Township elects to draw on any existing Letter of Credit, it must be topped up to its previous amount within thirty (30) days, failing which the Developer will be deemed to be in substantial breach of the Agreement and any Pre-Servicing Agreement.

8.2. The Township and the Developer agree that if the final As-Constructed Cost is less than the Total Cost Estimate as set out herein, the Township will reimburse the Developer the difference between the amount paid by the Developer as set out in Section 7.1.1 herein and the amount of the final As-Constructed Cost. The decision as to whether it is to be a reimbursement shall be decided in the Township's sole and absolute discretion acting reasonably. Payment is to occur within 30 days of the Township determining that a payment is required.

9. Developer's Contribution to Local Services

9.1. The Township and the Developer agree that the cost apportioned to the Plan for 253 units is $2,221,156.00 or 70.40% of the Total Cost Estimate, , which is identified as the Developer's Local Service Contribution for the Water Supply and Distribution Upgrades. The Developer and the Township agree that if the actual costs of the Water Supply and Distribution Upgrades exceed or are less than the Total Cost Estimate outlined in Section 7.1.1 of the Agreement, the Developer's cost for the Water Supply and Distribution Upgrades will increase or decrease according to the actual costs.

9.2. The Township and the Developer agree that the Developer's payments are Local Service Charges for the Plan. The Township and the Developer further agree that although the Developer is Front-Ending the entire Total Cost Estimate set out in Section 7.1.1 herein, it may ultimately only be responsible for the Local Service Charges applicable to the Plan which is impacted by whether any reimbursement is received by the Township from other developers

10. Limited Obligation to Reimburse Developer

10.1. The Township and the Developer agree that if the Township collects Water Connection Fees from rate payers in Baxter, reimbursement may be paid to the Developer for its total Front-Ending Contribution, less its Local Services portion of the Water Supply and Distribution Upgrades, such that if the actual costs of the project exceed/decrease the engineering cost estimate outlined in Section 7.1.3, the Developer's proportionate share of the costs will increase or decrease according to the total actual costs of the project along with any eligible reimbursement.

10.2. The Developer acknowledges and agrees that if the Township does not receive payment for all or any portion of the Front-Ending costs less the Developers Contribution to Local Service Charges, from existing rate payers within fifteen (15) years from the date of execution of the Agreement, the Township only has an obligation to reimburse the Developer up to the total amount collected by the Township during the Term of the

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Agreement. The Developer further acknowledges that the Township has no obligation to require rate payers in Baxter to connect to the Municipal Water system, and as a result there may be no mandatory payments required by the Township and no reimbursement to the Developer. The Township acknowledges that its current plan is not to allow any resident to connect to municipal water services without paying their proportionate connection fee, which amount has yet to be set.

10.3. The Developer acknowledges and agrees that if and when the Township collects $50,000.00 and that amount is available for reimbursement, reimbursement shall be provided to the Developer. Each time that $50,000.00 is paid out to the Developer no further reimbursement will be paid until the minimum $50,000.00 threshold is reached again. This will occur until the entire Front-Ending Contribution less the Developer's Local Service Water Supply and Distribution Upgrades contribution of $2,221,156.00 for a 253 unit plan or $2,208,934.00 for a 250 unit plan, has been reimbursed to the Developer, save and except that the final distribution will be less than $50,000.00 subject always to the 15 year Term of the Agreement. The Developer acknowledges that this Section is based on the presumption that the Township receives payments from Rate Payers in Baxter for Water Connection Fees.

10.4. The Township and the Developer agree that no reimbursement will occur until the Water Supply Upgrades are completed and approved by the Township and the Township's Engineer acting reasonably, and are fully operational.

11. Services in This Agreement Which are Internal to the Lands

11.1. The Developer acknowledges and agrees that none of the services which are the subject of the Agreement are internal to the Plan and as such the services are described in subsection 3(7) in the *Development Charges Act.*

12. Completion & Supervision of Work

12.1. The Developer acknowledges and agrees that the Township and the Township's Engineer will design, tender, hire, complete the contract administration of, and oversee the construction of the Water Supply and Distribution Upgrades. The Developer may review the tender results and offer input to the Township and the Township Engineer, however, all decisions regarding tenders will be in the Township's sole and absolute discretion.

13. Township's Legal, Planning, Administrative (including Public Works), Consulting and Engineering Costs.

13.1. The Developer agrees to pay to the Township all costs incurred by the Township relating to the approval, registration, and completion of the Agreement including but not limited to the following: legal, engineering, planning, administrative (including public works), and peer review consultants, plus all applicable taxes, which costs are incurred by the Township and/or invoiced to the Township for matters completed prior to or subsequent to the date of execution of the Agreement. This shall include costs to provide legal representation, engineering evidence, planning evidence at any Ontario Municipal Board hearing, or otherwise as required by the Township to enforce or complete any provision of the Agreement, including the need for the Township to safeguard the interests of the residents of the Township. This shall include the Township's ability to ensure that the interests of the Township are protected fully in all respects, and in relation to any issues that arise in any other way as a result of the Developer entering into the Agreement.

13.2. In addition to the costs set out in Section 13.1 above, the Developer agrees to pay to the Township, the Township's ongoing costs for all matters relating to: legal, engineering, planning, administrative (including public works), and peer review consultants, plus all applicable taxes, for all items including but not limited to: checking plans, reviewing

specifications, ongoing administration of the Plan, enforcement of any term of the Agreement including any matter that arises as a result of the Township entering into the Agreement, or the Developer developing the Lands whether due to any direct action taken by the Developer or not, or which may arise indirectly as a result of the Developer developing the Lands. This shall include any negotiations or discussions with the Developer, the Developer's lawyers, engineers, other parties retained by the Developer, or any other party howsoever related to the Development, or as a result of the Developer challenging any matter arising pursuant to the Agreement including but not limited to legal and engineering costs, and for all other costs incurred by the Township for the legal or engineering review of any aspect of the Agreement, including any legal opinions required by the Township for any matter relating to or arising from the Developer entering into the Agreement.

13.3. The Developer agrees that all Engineering accounts shall be levied according to the Tariff set out by the Association of Professional Engineers of Ontario, and will be paid within thirty (30) days. If accounts are not paid within thirty (30) days the Township may charge interest at a rate of 1.2% per month on any amount outstanding until such time as the Township is paid in full by the Developer, in the alternative the Township may draw on any Securities deposited with the Township for this Plan in its sole and absolute discretion. If the Township elects to draw on the existing Letter of Credit, it must be topped up to its previous amount, within thirty (30) days.

13.4. The Developer agrees that all legal costs incurred by the Township pursuant to the Agreement are to be paid by the Developer on a 100% cost recovery basis by the Township, without any deduction or set-off whatsoever. All legal costs are to be paid by the Developer within thirty (30) days of receipt of an invoice from the Township. If not, the Township will charge the Developer interest at a rate of 1.2% per month on any amount outstanding that the Township is required to paid until such time as the Township is paid by the Developer. In alternative, the Township may draw on any letter of credits deposited with Township for this Plan in its on sole and absolute discretion.

14. Performance of Covenants

14.1. Any action taken by the Township or on its behalf pursuant to the Agreement shall be in addition to and without prejudice to any security or other guarantee given on behalf of the Developer for the performance of its covenants and agreements herein and upon default on the part of the Developer hereunder, the Township shall, in addition to any other remedy available to it, be at liberty to utilize the provisions of Section 446 and 349(1) of the *Municipal Act, 2001*, S.O. 2001, c.25, as amended (the "*Municipal Act*").

15. Developer's Liabilities & Indemnity

15.1. The Developer agrees to indemnify and save harmless the Township, its agents or servants, from and against all suits and claims, causes of action and demands whatsoever arising out of or connected with the carrying out of the Developer's obligations in the Agreement or from the Developer having entered into the Agreement, and including claims pursuant to the *Construction Lien Act*. This indemnity does not extend to the negligence of the Township, its officers, employees, agents or contractors. The Township has the right to withhold and/or use any portion of any Securities provided pursuant to the Agreement to indemnify the Township for any legal fees, engineering fees or administrative fees the Township incurs to defend its interest against any such suit or claim or demand as set out in this paragraph.

15.2. The Developer shall save the Township, its agents and employees, harmless from any and all claims, demands, losses, costs, damages, actions, suits or proceedings arising out of or attributable to any act or omission of the Developer or those persons for whom the Developer is responsible, connected with the Works for this Plan including

inspection of the Works. It is specifically understood and agreed that inspections of any aspect of construction, review by the Township's Engineer, Township Public Works Staff or any other works or actions undertaken by the Township, it's agents or servants (which are hereinafter specifically agreed to be acting as agents of the Developer with respect to such work), shall impose no liability upon the Township to the Developer and the Developer specifically agrees that no such claim will be made.

16. Securities

16.1. Before signing the Agreement, the Developer will deposit with the Township an irrevocable Letter of Credit or Letters of Credit from a Tier 1 Canadian chartered bank and any cash deposits required by the Township (the "Securities"), issued in accordance with the requirements of the Township's Solicitor, with the Letters of Credit in the format set out as in Schedule "B" attached, and in the amount as set out in the Agreement.

16.2. The Developer acknowledges and agrees that the decision whether or not to draw upon the Securities to pay any obligation of the Developer arising from the Agreement, be it financial or otherwise, shall be made by the Township in the Township's sole and unfettered discretion.

16.3. All Letters of Credit shall have a minimum guarantee period of one (1) year or such longer time as the Township decides and shall be renewed automatically thereafter by the bank of issuance until released by the Township or until notification is delivered by the issuer to the Township of an intention to release the Letter of Credit which notice is to be at least thirty (30) days prior to the intended release by the issuer

16.4. The Developer acknowledges and agrees that the Securities are being deposited with the Township to cover the faithful performance of all of the Developer's obligations under the Agreement. The Developer further agrees that any Securities deposited with the Township may also be used for any other requirements of the Township included in the Agreement. The Developer agrees that the Securities may be drawn upon by the Township at any time and from time to time upon written demand

16.5. In the event of an increase to the estimated cost of the Water Supply and Distribution Upgrades, the Township may request, and the Developer shall provide additional securities as required by the Township within thirty (30) days of notice, failing which the Developer shall be considered in default of the Agreement.

17. Security Breach

17.1. If under the terms of the Agreement any of the following occur then there shall be deemed to be a Security Breach of the Agreement:

17.1.1. the Developer fails to renew the Letter of Credit one (1) month before expiration, or

17.1.2. the Developer fails to provide additional Securities as required under the Agreement.

17.2. In the event of such a security breach, the Township shall have the absolute right to terminate the Agreement, and to forbid any further work being carried out until the Securities have been restored, renewed or increased as required

18. Notice

18.1. Where the Agreement requires notice to be delivered by one Party to the other, such notice shall be in writing and delivered either personally or by email at the addresses noted below. Notice shall be deemed to have been given on the date of delivery.

10a

Township:
The Corporation of the Township of Essa
5786 Simcoe County Road 21
Utopia, ON L0M 1T0

Attention: Greg Murphy, CAO

Tel: (705) 424-9770
Email: gmurphy@essatownship.on.ca

Developer:
BROOKFIELD RESIDENTIAL (ONTARIO) LIMITED
7303 Warden Avenue
Suite 100
Markham, Ontario
L3R 6Y6

Attention: David Murphy, ASO
Tel: 905-948-5198
Email: David.Murphy@brookfieldrp.com

or such other address, email address as the Developer has provided the Township's Clerk in writing and any notice emailed or delivered shall be deemed good and sufficient notice under the terms of this Agreement.

19. Municipal Act- Section 349 (1) and 446

19.1. The Developer acknowledges and agrees that any action taken by the Township, or on its behalf, pursuant to the Agreement, shall be in addition to and without prejudice to any Security or other guarantee given on behalf of the Developer, for the performance of its covenants and agreements, and upon default on the part of the Developer, the Township shall in addition to all other remedies available to it, be at liberty to utilize the provisions of Section 349(1) and 446 of the *Municipal Act*, , plus all remedies available to it pursuant to any Township By-law passed under the *Municipal Act* or the *Planning Act*, if the Township has exhausted all Letters of Credit and cash deposits, and the Developer has not replaced these Securities as required by the Township.

20. Agreement Not to be Called into Question

20.1. The Developer agrees that it will not call into question, directly or indirectly, in any proceeding or action in court, or before any administrative tribunal, the Township's right to enter into and enforce this Agreement. The law of contract applies to the Agreement and the Parties are entitled to all remedies arising from it, notwithstanding any provision of section 51 of the *Planning Act*, interpreted to the contrary. The Township and the Developer agree that adequate consideration has flowed from each Party to the other in relation to this paragraph and that the terms of this paragraph are not severable by any Party. The Developer further agrees that it shall not take the benefit of the Agreement and allege entitlement to any greater rights than as set out in this Agreement. The provisions of this paragraph may be plead by any Party in any action or proceeding as an estoppel of any denial of such right.

21. No Fettering of Discretion

21.1. Notwithstanding any other provisions of the Agreement, the Parties hereto agree with each other that none of the provisions of the Agreement (including a provision stating the Parties intention) is intended to operate, nor shall have the effect of operating, in any way to fetter either the Township Council which authorized the execution of the Agreement or any of its successor councils in the exercise of any of Council's discretionary powers, duties or authorities. The Developer hereby

acknowledges that it will not obtain any advantageous planning or other consideration or treatment by virtue of the existence of the Agreement.

21.2. The Developer agrees that if any other party successfully challenges the Agreement, the Township has no obligation to complete the terms of the Agreement including the construction of the Water Supply and Distributions Upgrades or to refund any money to the Developer, save and except the remainder of the unused Front Ending Contribution in Section 7.1.1, at the point in time there is a successful challenge to the Agreement, once the Township, in its sole and unfettered discretion acting reasonably, has determined that it has no further liability or exposure to costs pursuant to the Agreement, or in any way related to the Agreement.

21.3. The Township and the Developer agree that if any dispute arises under Section 21.2 above, it shall be referred to a single Arbitrator to be agreed upon by the Parties. If the Parties are unable to come to an agreement on the selection of an Arbitrator, either Party may apply under Section 10 of the Arbitration Act, 1991, S.O. 1991 c. 17 for the Court to select an Arbitrator. The Arbitration shall proceed under the rules and procedures as determined by the Arbitrator pursuant to Section 20 of the Arbitration Act, 1991, S.O. 1991 c. 17. The Arbitration will take place in the Township of Essa Municipal Office or such other mutually agreeable location. The determination which shall be made by such Arbitrator shall be final and binding upon the Parties hereto, their successors, administrators and assigns, and there shall be no appeal from such determination. No costs shall be awarded at the Arbitration.

22. Severability and Enforceability

22.1. The Township and the Developer agree that all covenants and conditions contained in the Agreement shall be severable, unless specifically stated otherwise herein, and that should any of the provisions of the Agreement be declared invalid or unenforceable by a court of competent jurisdiction it shall not affect the enforceability of each and every other clause contained herein.

23. Waiver

23.1. The failure of the Township at any time to require performance by the Developer of any obligation under the Agreement shall in no way affect its right thereafter to enforce such obligation, nor shall the waiver by the Township of the performance of any obligation hereunder be taken or be held to be a waiver of the performance of the same or any other obligation hereunder at any later time. The Township shall specifically retain its rights at law to enforce the Agreement.

24. Further Assurances

24.1. The Developer agrees to complete and/or execute such further and other acts, assurances and other things that may be reasonably requested by the Township from time to time to give effect to the full intent and meaning of this Agreement.

25. Effective Date

25.1. The Agreement shall be effective from the date it is executed by the Township and the Developer.

26. Interpretation of Agreement

26.1. The part number and headings, subheadings and section, subsection, clause and paragraph numbers are inserted for convenience of reference only and shall not affect the construction or interpretation of the Agreement.

26.2. The Agreement shall be construed with all changes in number and gender as may be required by the context.

26.3. Reference herein to any statute or any provision thereof shall include such statute or provisions thereof as amended, revised, re-enacted and/or consolidated from time to time and any successor statute thereto.

26.4. All obligations contained herein, although not expressed to be covenants, shall be deemed to be covenants.

26.5. Whenever a statement or provision in the Agreement is followed by words denoting inclusion or example and then there is a list of, or reference to specific items, such list or reference shall not be read so as to limit the generality of that statement or provisions, even if words such as "without limiting the generality of the foregoing" do not precede such list or reference.

27. Governing Law

27.1. The Agreement shall be governed by and has been construed in accordance with the laws of the Province of Ontario and shall be treated in all respects as an Ontario contract.

28. Entire Agreement

28.1. The Agreement constitutes the entire Agreement between the parties pertaining to the subject matter hereof.

29. No Modification

29.1. No modification of, or amendment to the Agreement shall be valid or binding unless set forth in writing and duly executed by the parties hereto.

30. Headings

30.1. The headings inserted in the Agreement are inserted for convenience only and shall not be used as a means of interpreting this Agreement.

31. Singular, etc.

31.1. The use of words in the singular or plural, or with a particular gender, shall not limit the scope or exclude the application of any provision of the Agreement to such Party or circumstances as the context otherwise permits.

32. Registration of Agreement

32.1. The Developer consents to the registration of the Agreement by the Township on the Lands.

32.2. The Developer consents to the registration of any additional agreements with the Township amending, adding to, or deleting any of the terms of the Agreement on the Lands.

33. Consent to Assign

33.1. The Developer shall not assign the Agreement without the written consent of the Township. The Township agrees that it will provide its written consent to any assignment provided:

33.1.1. The Developer is in good standing with respect to all of its obligations under the Agreement;

33.1.2. The person or entity the Agreement is assigned to ("Assignee") agrees in writing to assume all of the outstanding obligations of the Developer under the Agreement including but not limited to the Developer's obligation to provide and maintain Securities to assure the due carrying out of the Agreement; and

33.1.3. The Assignee shall be shown as the registered owner of the Lands.

33.2. Upon any such assignment being completed, the Developer and the Township shall have no further obligations to one another under the Agreement, which said obligations shall be between the Township and the Assignee, provided that the Township shall not be required to return to the Developer any of its deposited Securities until Securities in a like amount and in a form satisfactory to the Township's Solicitor are deposited with the Township.

34. Schedules

34.1. The Schedules attached hereto form part of the Agreement and are comprised of:

Schedule "A" Description of the Lands;
Description of Township Lands ;
Schedule "B" Letter of Credit

35. Enurement

35.1. The Agreement shall be binding upon and enure to the benefit of the parties to the Agreement and their respective administrators, successors and assigns. In the event of the sale of the Lands, the Developer agrees to obtain the purchaser's covenant in writing to assume responsibility for the performance of the Developer's continuing obligations under this Agreement.

IN WITNESS WHEREOF the Parties hereto have hereunto affixed their corporate seals under the hands of their proper officers duly authorized in that behalf.

DATED this 19th day of December, 2018

THE CORPORATION OF THE TOWNSHIP OF ESSA

Per: _____
Name: Sandie Macdonald
Title: Mayor

Per: _____
Name: Lisa Lehr
Title: Clerk

We have authority to bind the Corporation.

DATED this 6th day of November, 2018

BROOKFIELD RESIDENTIAL (ONTARIO) LIMITED

Per: _____
Name: Peter Schut
Title: ASO

Per: _____
Name: David Murphy
Title: ASO

We have the authority to bind the Corporation.

10a

SCHEDULE "A"

Note: It is understood and agreed that this Schedule forms part of The Corporation of the Township of Essa Water Supply and Distribution Upgrades/Front-Ending Agreement

1) Description of the Lands:

Part of Lot 16, Concession 4 Essa, being Parts 1 and 2 Plan 51R-41377; Township of Essa, County of Simcoe, being all of PIN 58990-0115(LT).

Assessment Roll Number: 4321 010 007 15400

2) Description of Township Lands:

Part of Lot 16, Concession 5, Pts 1, 2 & 3, Plan 51R-41354, Township of Essa, County of Simcoe, being all of PIN 58111-0347(LT).

and

Part of Lot 16, Concession 4, Essa Township designated as Part 1 on Plan 51R-41420 except Part 1 on 51R-41473, Township of Essa, County of Simcoe, being all of PIN 58990-0119(LT).

SCHEDULE "B"

Note: It is understood and agreed that this Schedule forms part of The Corporation of the Township of Essa Water Supply and Distribution Upgrades/Front-Ending Agreement

FORM OF LETTER OF CREDIT

BANK OF _____

DATE OF ISSUE: _____ ____, 2012

APPLICANT:
Name of Customer _____
Address of Customer _____
Address of Customer _____
(hereinafter called the "Applicant")

BENEFICIARY:
The Corporation of the Township of Essa
5786 Simcoe County Road 21,
UTOPIA ESSA TOWNSHIP ON L0M 1T0
(hereinafter called the "Beneficiary")

AMOUNT: _____ and Canadian Dollars (Cdn. $_____.00)

Irrevocable and Unconditional Standby Letter of Credit Number: _____ (The "Credit")

Except as otherwise expressly stated, this Letter of Credit is issued subject to "Uniform Customs and Practices for Documentary Credits, 2007 Revision, being International Chamber of Commerce Publication No. UPC 600L".

We hereby authorize you to draw on the Bank of _____, _____, _____, _____, Ontario, (postal code), for the account of our customer, _____, _____, _____, _____, Ontario, (postal code), up to an aggregate amount of _____ and Canadian Dollars (Cdn. $_____.00) to be honoured upon demand.

Pursuant to the request of our said customer, _____, We, the Bank of _____, hereby establish and give to you an Irrevocable Letter of Credit in your favour, in the above total amount, which may be drawn on by you at any time and from time to time upon written demand for payment made upon us by you which demand we shall honour without enquiring whether you have the right as between yourself and our said customer to make such demand and without recognizing any claim of our said customer, or objection by them, to payment by us.

Demand shall be by way of a letter signed by an authorized signing officer of The Corporation of the Township of Essa. Partial drawings shall be permitted. Demand drawn under this Letter of Credit is to state on its face that it is drawn under this Letter of Credit stating its number and date. The original Letter of Credit must be presented with the demand to us at the Bank of _____, _____, _____, _____, Ontario, (postal code), at or before 4:00 p.m. (EST), for our endorsement of any payment thereon. For partial drawings, a copy of the Letter of Credit may be presented with the demand; for the final drawing, the original of the Letter of Credit may be presented with the demand.

The Letter of Credit, we understand, relates to a Pre-servicing / Subdivision / Development / Condominium / Site Plan / Other Agreement, including but not limited to municipal services and financial obligations, between our said customer, _____, and The Corporation of the Township of Essa, and Mortgagees, regarding Pre-Servicing / Subdivision / Development / Condominium / Site Plan / other Agreement of _____, _____, _____ (property description), Township of Essa, County of Simcoe, Province of Ontario.

The amount of this Letter of Credit may be reduced from time to time, as advised by notice in writing, given to us by an authorized signing officer of The Corporation of the Township of Essa.

We hereby agree that drawings under this Letter of Credit will be duly honoured upon demand.

The Letter of Credit will continue in force for a period of one year, but shall be subject to the condition hereinafter set forth. It is a condition of the Letter of Credit that it shall be deemed to be automatically extended without amendment for one year from the present or any future expiration date hereof, unless at least thirty (30) days prior to the present or such future expiration date, we notify you in writing by registered mail or courier with proof of receipt by you that we elect not to consider this Letter of Credit renewed for any such additional period.

For and on Behalf of
Bank of _____

_____
(Authorized Signature)

Bank of _____

_____
(Authorized Counter Signature)

Letter of Credit Number: _____

THIS DOCUMENT CONSISTS OF TWO (2) PAGES