



**The Corporation of the
Municipality of Greenstone**

**Greenstone Drinking Water
Systems Financial Plan
#225-301A**

PREPARED BY

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STATEMENT OF CONFIDENTIALITY

OCWA's Report to the Municipality of Greenstone for the Greenstone Drinking Water Systems Financial Plan

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1 Introduction

The Municipality of Greenstone (the Municipality) has retained the Ontario Clean Water Agency (OCWA) to update the financial plan for the Municipality's Drinking Water Systems in order to comply with the financial plan regulation (O. Reg. 453/07) made under the Safe Drinking Water Act.

The Municipality of Greenstone owns five separate drinking water systems. This financial plan covers the combined financial information for all of the drinking water systems and includes the drinking water systems in Beardmore, Caramat, Geraldton, Longlac and Nakina.

The financial plan contained herein has been prepared in accordance with O. Reg. 453/07, as well as the provisions of the financial planning guidelines published by the Ministry of the Environment, Conservation and Parks (MECP) in August, 2007 entitled "Toward Financially Sustainable Drinking-Water and Wastewater Systems".

The financial plan was prepared for Greenstone's Drinking Water Systems based on information supplied by the Municipality, including, future capital and major maintenance projects, water system financial information, as well as tangible capital asset information.

The information supplied by the Municipality was used to generate a financial operating plan which documented annual expenditure requirements from the year 2021 through to 2026. A revenue plan, relying mostly on user fees, was generated to support the expenditure requirements outlined in the operating plan. The information generated in the operating and revenue plans along with the tangible capital asset information was used to develop a financial plan for Greenstone's Drinking Water Systems covering the period from 2021 to 2026.

1.1 Legislative Context to Financial Planning

There have been a number of legislative initiatives affecting water system management and operations over the past decades. These initiatives were a result of the waterborne illness tragedy in Walkerton in 2000. Following this incident, 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 MECP 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 obtain a Municipal Drinking Water Licence. There are five elements that 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 prepared and approved in accordance with the prescribed requirements in the Financial Plans Regulation.

Under section 30 of the SDWA, the Financial Plan 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 MECP. SWSSA regulations have not been published. Accordingly, the requirements set by the MECP apply as per the 2007 MECP guidelines.

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

- 1) 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. O. Reg. 453/07, S. 1(1).
- 2) 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. O. Reg. 453, S. 1(3).

Several other provisions are also set out in the regulation that must be met by a municipality operating a water system:

- 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.
- The Financial Plan must be available, upon request, to members of the public at no charge and posted on the internet (if the municipality maintains a website).
- The municipality must provide notice as deemed appropriate to advise the public of the availability of the Financial Plan.

Once a system is licenced, the municipality's Financial Plan is required to be updated every five years, in conjunction with every application for license renewal. Full documentation of the Financial Plan regulation, O.Reg. 453/07 can be found in Attachment 1.

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 the assets of drinking water systems, be included in municipal financial statements. Stat 3150 came into effect on January 1, 2009.

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 MECP 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 requires municipalities' Financial Plans to include the costs associated with replacing lead service pipes that are part of their drinking water system.

1.2 Greenstone Drinking Water System

The Municipality of Greenstone is located in northwestern Ontario, approximately 270 km northeast of Thunder Bay. The Municipality is comprised of six (6) wards, five (5) of which have municipal drinking water systems; Beardmore, Caramat, Geraldton, Longlac and Nakina. The five (5) drinking water systems are not connected and each system consists of a water treatment plant (WTP) and a distribution system. The Municipality owns all buildings, facilities and equipment that are part of the DWS and all of the DWSs are operated by the Ontario Clean Water Agency. A description of each of the systems can be found below.

1.2.1 Beardmore

The Beardmore Drinking Water System (DWS) consists of a surface water sourced package treatment plant, including intake, SCADA (Supervisory Control and Data Acquisition) system, backwash system, low and high lift works, on-site storage, emergency power and chemical addition.

The intake consists of an intake crib with a design capacity of 1360 m³/day and an intake pipe. Water is drawn from the Blackwater River. The low lift works consist of two (2) 4 stage vertical turbine pumps, each rated at 15.8 L/s at a total dynamic head of 26.5 m.

The pumps deliver raw water to a package plant with a capacity of 1363 m³/day. The plant contains a draft tube flocculator, solids contact clarifier with tube settlers and a two (2) compartment dual media rapid sand filter (sand/anthracite). The plant is accompanied by an automatic backwash system with a total volume of 12 m³. The backwash system also has a 27 m³ waste water storage tank that pumps waste water with a sewage pump to the sanitary sewer system.

The SCADA system includes monitoring of two (2) turbidity meters, one (1) pH monitor, one (1) chlorine analyzer and one (1) chlorine residual recorder.

The Beardmore distribution system is comprised of 100 mm and 150 mm diameter Polyvinyl Chloride (PVC) pipes.

1.2.2 Caramat

The Caramat Drinking Water System consists of a 61 m intake pipe from inlet bell to wet well drawing water from Caramat Lake. There are two (2) low lift pumps that are each rated at 0.87 L/s at a total dynamic head of 40.5 m.

The low lift pumps provide water to a filtration system consisting of two trains each equipped with a roughing filter, slow sand filter and Granular Activated Carbon (GAC) contactor. Each filter is rated at 0.43 L/s. The water receives primary chlorination from two sodium hypochlorite metering pumps, capable of pumping 0.4 L/hr. The water has ozone applied from six (6) ozone generators in two ozone contactors each with a volume of 145 L.

The treated water enters the clearwell which is comprised of two (2) concrete tanks with a total volume of 57 m³. Two (2) high lift pumps (duty/standby) each rated at 2.48 L/s pump water to the distribution system. The finished water is chlorinated again prior to distribution.

The SCADA system in Caramat consists of the monitoring of an online chlorine analyzer, a magnetic flow meter, and oxygen sensors.

The Caramat distribution system is primarily comprised of 150 mm diameter PVC pipes.

1.2.3 Geraldton

The Geraldton Water Treatment plant draws water from an intake structure in Cecile Lake. There are three (3) high lift pumps each rated at 34.7 L/s at a total dynamic head of 12.95 m.

The raw water is treated in two treatment units in parallel consisting of flocculation tanks, settling chambers equipped with tube settlers, and a mixed media filter tank.

The plant is also equipped with backwash pumps and a backwash storage tank that holds process water before a sludge transfer pump transfers the waste water to a lagoon for settling.

Disinfection occurs from two gas chlorinators complete with 22.7 kg/day capacity rotameters. Water is stored in a 556 m³ reservoir consisting of two clearwell compartments. Three (3) high lift pumps distribute the water to the distribution system. Each pump is rated at 34.7 L/s at a total dynamic head of 52.43 m.

The monitoring equipment at the Geraldton WTP consists of two (2) continuous turbidimeters, one (1) continuous online free chlorine residual analyzer, and three flow meters measuring the in-plant domestic use, the flow to the distribution system and the raw water flow rate.

The Geraldton distribution system is comprised of approximately 19 km of Cast Iron pipes, 5 to 6 km of Ductile Iron Pipes, and a small amount of PVC pipes.

1.2.4 Longlac

The Longlac Drinking Water System consists of an intake crib, found in Long Lake, containing a 2.4 m pre-cast concrete pipe with a capacity of 6050 m³/day. Three (3) single stage vertical turbine pumps, each rated at 34 L/s at a total dynamic head of 12.92 m pump the raw water to the water treatment plant. Alum, a polymer and orthophosphate are added to the stream to aid in the filtration/coagulation process.

The Longlac WTP contains a package plant with a capacity of 4050 m³/day, with flocculation, a solids contact clarifier with tube settlers and two (2) compartment dual media rapid sand filter.

The plant is equipped with a 16 m³ backwash storage tank along with a wastewater tank that stores the process waste until it is pumped by waste transfer pumps to the sanitary sewer system.

The monitoring equipment at the Longlac WTP consists of two (2) continuous online monitoring turbidimeters, a continuous online chlorine analyzer, a phosphate analyzer and three (3) flow meters for the influent flow, in plant domestic use and the effluent flow.

The distribution system in Longlac comprises of approximately 5 km of PVC and 11 km of Ductile Iron pipes.

1.2.5 Nakina

The Nakina WTP draws its raw water from one of two wells, each capable of 18.9 L/s at a total dynamic head of 27.4 m. The wells are equipped with 15 HP vertical turbine pumps. Sodium hypochlorite is added as the primary and secondary disinfectant.

There are two (2) chemical pumps for primary disinfection, operating as duty/standby, each capable of pumping 3.6 L/hr.

There are two (2) chemical pumps for secondary disinfection, operating as duty/standby. The duty pump is capable of pumping 0.59 L/hr while the standby pump is capable of pumping 1.1 L/hr.

Water is stored in a 1592 m³ twin celled reservoir. Four (4) high lift pumps pump the water from the clearwell to the distribution system. Three (3) of the pumps are rated at 18.9 L/s at a total dynamic head of 52.43 m with 25 HP motors and one pump is rated at 99.6 L/s at a total dynamic head of 41.45 m with a 75 HP motor.

The Nakina WTP is also equipped with turbidity meter, on-line chlorine residual analyzer, as well as raw water and treated water flow meters.

The Nakina distribution system contains approximately 10 km of pipes, consisting primarily of PVC.

2 Financial Operating Plan

The financial operating plan includes the costs of operating the Greenstone DWSs on an ongoing basis and includes capital investments, operating costs, maintenance costs, administration costs, debt repayment and interest charges.

A financial operating plan for the Greenstone DWSs was developed using historical financial information and projecting the information forward to forecast the annual expenditure requirements, while taking into account capital and major maintenance needs, inflation and any growth forecast.

2.1 Operating Expenses

Recurring operating expenses for the Greenstone DWSs consist of contracted operating services provided by OCWA, utilities cost and other operating expenses such as materials, supplies, maintenance and repair. All operating costs are projected to increase on an annual basis at a rate of 2% per year. The total operating expenses (before amortization) for the Greenstone Drinking Water Systems are generally consistent with fluctuations resulting from major capital projects.

2.2 Major Maintenance and Capital Costs

Yearly maintenance and rehabilitation of the Greenstone Drinking Water Systems is forecasted and many of the costs associated with these works are considered a capital expense and therefore

amortized. Some of these capital items include new pumps, SCADA system upgrades, upgrades to filters, water tower rehabilitation, and new equipment and valves.

2.3 Debt Management

There are four loans (2006 Caramat water system upgrades, 2007 Caramat water system upgrades, 2009 Caramat water system upgrades, and 2014/2016 Equipment Loan) related to the Greenstone Drinking Water Systems as of now. The total loan/debt principal at the end of 2021 is approximately \$1,113,511, which decreases every year.

It is forecasted that the Longlac and Geraldton water towers will be recoated and rehabilitated in 2022 for a total cost of approximately \$1.5 million dollars. This cost is forecasted to be funded by a loan with repayment starting in 2023.

It is also forecasted that the Longlac Water Treatment Plant filters will be replaced in 2023 for a total cost of approximately \$2 million dollars. This cost is forecasted to be funded by a loan with repayment starting in 2024.

It should be noted that as there is currently no reserve fund for the water system, loans would likely be required for major projects if no senior government grants become available.

2.4 Lead Pipe Replacement Cost

There are no costs forecasted for lead pipe replacement for the Greenstone DWSs.

2.5 Source Water Protection Costs

There are no costs forecasted for source water protection for the Greenstone DWSs.

3 Funding Plan

A funding plan was developed to ensure that the annual expenditures forecasted in the financial operating plan can be sustained over the study period. The funding plan relies on revenues from the direct users of the drinking water system through water rates and associated fees. In addition, contributions from general capital reserve would be required to offset years with higher capital expenditures.

3.1 Water Rates

Residential customers are on a quarterly flat rate. Most commercial customers are on a metered rate with remaining commercial customers on a quarterly flat rate. The latest rates (effective on July 1, 2021) can be found on the Municipality's website.

All rates (flat and metered) were increased by 5.0% year over year from 2018 to 2021.

To ensure the water system is sustainable, the following water rate increases are projected.

Year	2021	2022	2023	2024	2025	2026
Water Rate Increase	5%	5%	5%	5%	5%	5%

Table 1 – Water Rate Increase Projection

It is projected that all water rates would continue to increase by 5% from 2021 and 2026.

Revenue from the forecasted rates were developed with the assumption that there will be no change in the current number of customers.

Note these projected water rates were developed based on revenue and expense information provided by the Municipality and for the purpose of this Financial Plan only. Actual rates may need to differ should there be higher/lower projected expenses.

3.2 Water System Reserves

There is currently no water system reserve fund. All revenues are generally used to fund expenditures in the given year. The amount of major maintenance and capital works in the water systems is the deciding factor whether there would be a contribution to the reserve fund in the given year.

As it is projected that there would be major capital projects in 2023 (two water towers rehabilitation) and 2024 (Longlac WTP filters replacement), contribution to the reserve fund is not anticipated for this study period.

3.3 Government Grant

No grants are confirmed and allocated for the study period.

4 Financial Plan Summary

This section provides a summary of principal features concerning the current and projected future state of the Greenstone Drinking Water Systems. The financial information is contained in financial statements covering six years (2021-2026) as outlined in O. Reg. 453. The detailed financial statements are set out in tabular form in Section 7. Notes regarding the financial statements are presented at the end of the financial statement section of this report.

4.1 Statement of Financial Position

4.1.1 Net Financial Assets/(Debt)

A feature of a water system’s Financial Plan is its net financial assets. A positive net financial asset indicates that the system has some 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 Greenstone Drinking Water Systems’ net financial assets are shown in Figure 4.1.

Figure 4.1 – Greenstone DWS Net Financial Assets/(Debt)

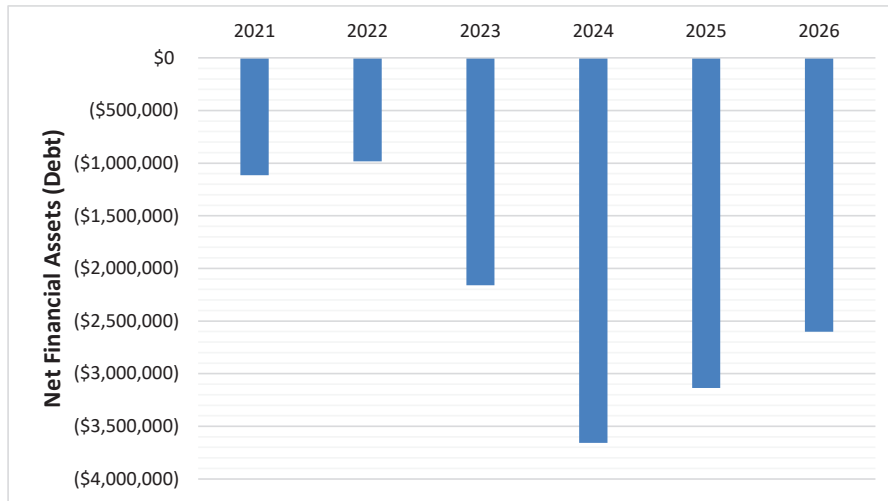


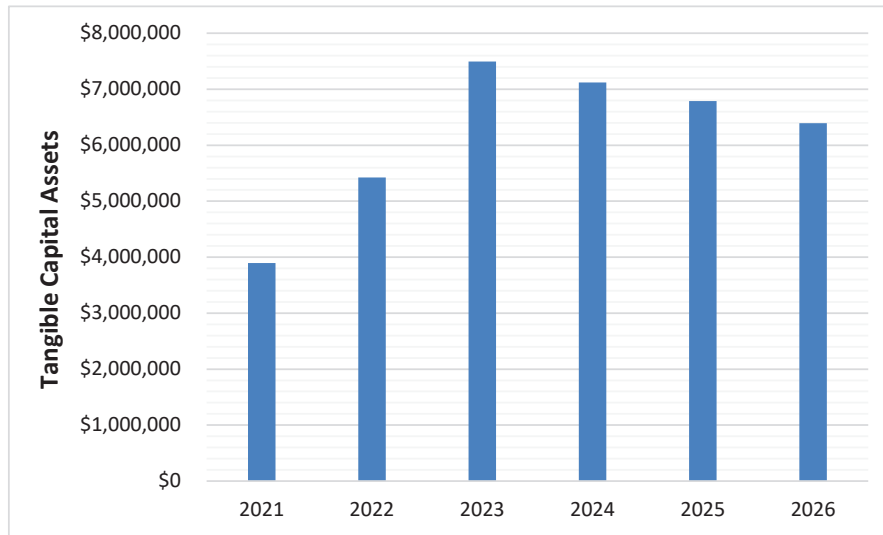
Figure 4.1 shows that the net financial assets projected over the study period are negative as a result of the various loans for the water system. A \$1.5 million dollar loan repayment for rehabilitation of water towers starts in 2023 hence the drop in net financial assets in 2023. As well, a \$2 million dollar loan repayment for the replacement of filters at the Longlac WTP starts in 2024 hence the further drop in net financial assets in 2024. However, the debt is decreasing from 2024 as it is being repaid. Once all debt has been paid off, the net financial assets is projected to be positive.

4.1.2 Tangible Capital Assets (TCA)

Another feature of the Financial Plan is the total value of the water system tangible capital assets (buildings, equipment, watermains). Consideration of the value of tangible capital assets is part of PSAB compliance. The current value of the capital assets is termed net book value (NBV). It is the difference between the original cost of an asset less the accumulated amortization.

Monitoring the state of the system’s TCAs is critical to maintaining current and future levels of service. TCAs begin amortizing once they are installed, in other words, they start to decrease in value. An increase in net book value of tangible capital assets is an indication that assets have been renewed faster than they were used. A decrease in net book value indicates that assets are being used, or amortized, faster than they are renewed. The net book value of the assets is set out in Figure 4.2. The net book value for the Tangible Capital Assets of the Greenstone Drinking Water Systems increases from 2021 to 2023 then slowly decreases to 2026, which indicates that there are more capital works from 2021 to 2023. It is not unusual for smaller municipalities to have a decreasing NBV of assets.

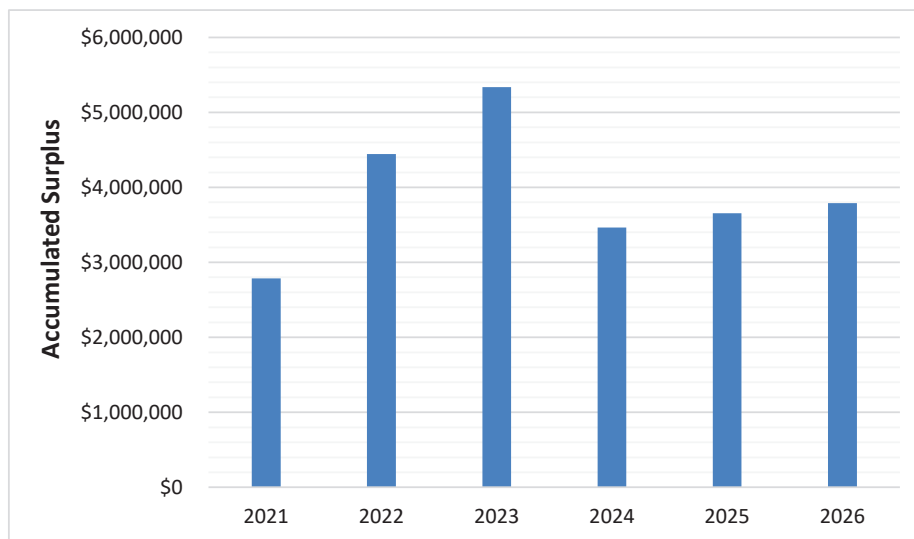
Figure 4.2 – Greenstone DWS Net Book Value of Tangible Capital Assets



4.1.3 Accumulated Surplus

Figure 4.3 sets out the accumulated surplus. It represents cash on hand plus the net book value of tangible capital assets less debt. The water system is projected to show an increase in accumulated surplus throughout the study period. This is showing that the combined cash and asset position is strengthening over this period, and that debt is decreasing as it is being repaid.

Figure 4.3 – Greenstone DWS Accumulated Surplus



4.2 Statement of Financial Operation

This Statement of Financial Operations summarizes revenues and expenditures. The revenue includes revenues from connected users and other sources. Expenditures include operating costs, major maintenance costs, debt interest payment and annual asset amortization.

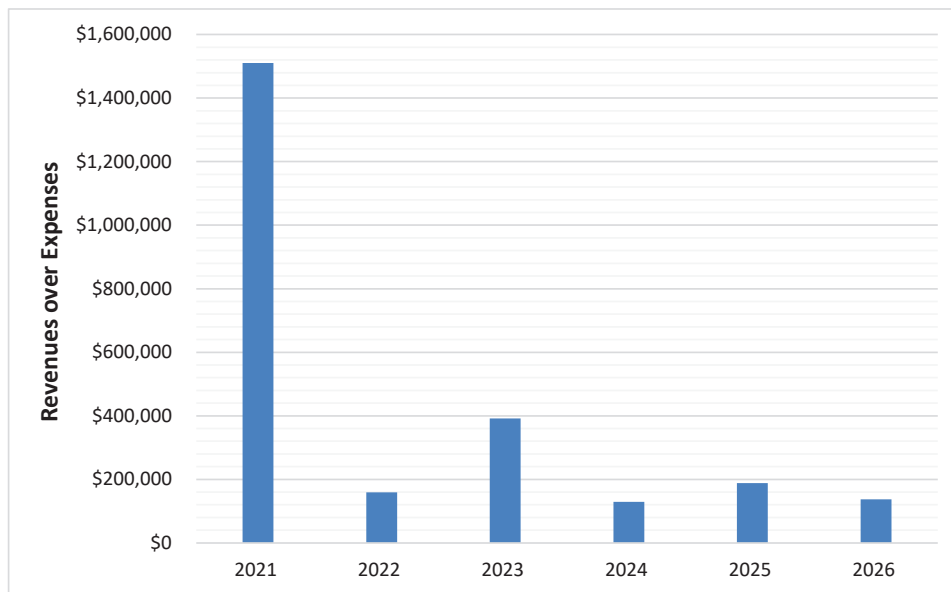
Figure 4.4 projects that the systems’ excess of revenues over expenses, including amortization, is all positive throughout the study period. Note that capital expenses are not included in this figure as capital expenses are not treated as a financial expense in the context of this statement. Hence, the revenues outweigh the expenses in this figure.

Note that the large revenue in 2021 is the result of a contribution from the general capital reserve for a MCC/PLC upgrade project.

It should be noted that excess of revenue could easily be depleted by a major equipment replacement or upgrade project in one of the water systems.

Note also that amortization expense is factored into this calculation. Amortization expense is a financial write-off of the capital assets and it is not a cash expenditure itself. Amortization is included in financial statements to represent the loss in value of the resources required to operate the drinking water system.

Figure 4.4 – Greenstone DWS Revenues less Expenses



5 Continuous Improvement

The SDWA requires the Municipal Drinking Water Licence to be renewed every five (5) years. The Financial Plan regulation requires the preparation and approval of a Financial Plan before making an application for renewal of a Drinking Water Licence. Thus each Financial Plan will require updating at a minimum frequency of every five years. This on-going update will assist in re-visiting the assumptions made in the original Financial Plan, to develop the operating and funding plans as well as re-assessing the need for capital renewal and major maintenance expenditures.

6 Conclusion

The Greenstone Drinking Water Systems is working towards financial self-sustaining. The Municipality of Greenstone is in a unique situation in that it owns five (5) drinking water systems and with a population of only 4,600 (2016 census) to support the expenditures.

The Statement of Financial Position provides a snapshot of the financial health of the DWS. It is shown that there are large debts/loans to be paid off over the study period, however the financial assets and non-financial assets together are greater than the debt, which is a positive indicator. As well there is an increasing surplus of financial assets for the duration of the study period.

Similarly, the Statement of Financial Operations table shows that the DWS will be in surplus for the study period. The DWS is expected to slowly grow its revenue with a steady water rate increase.

In reviewing these statements, it is important to keep in mind that actual numbers may significantly deviate from these over time. In addition, capital and major maintenance cost estimates and schedules may vary from current projections. Therefore, there is a need to monitor the progress of this plan and make adjustments as needed.

This Financial Plan has been prepared in accordance to O. Reg. 453/07 under the Safe Drinking Water Act, 2002. The financial numbers in this report are unaudited with various estimated numbers and shall not be interpreted or used in relation to the Municipality's annual audited Financial Statements.

7 Financial Statements

The detailed financial statements are set out in the following tables. Section 8 details the notes that correspond to the "notes" numbers on the right side of the tables.

Table 7.1 – Statement of Financial Position

Statement of Financial Position	2021	2022	2023	2024	2025	2026	Notes
Financial Assets							
Cash/Cash Equivalents							
System Reserve	\$0	\$0	\$0	\$0	\$0	\$0	4
Other	\$0	\$0	\$0	\$0	\$0	\$0	
Total Cash/Cash Equivalents	\$0	\$0	\$0	\$0	\$0	\$0	
Investments	\$0	\$0	\$0	\$0	\$0	\$0	
Accounts Receivable	\$0	\$0	\$0	\$0	\$0	\$0	
Total Financial Assets	\$0	\$0	\$0	\$0	\$0	\$0	
Liabilities							
Accounts Payable	\$0	\$0	\$0	\$0	\$0	\$0	
Debt Principle	\$1,113,510.62	\$983,341.68	\$2,159,381.34	\$3,657,224.16	\$3,135,632.11	\$2,601,805.66	1
Working Deficit	\$0	\$0	\$0	\$0	\$0	\$0	
Other Liabilities	\$0	\$0	\$0	\$0	\$0	\$0	
Total Liabilities	\$1,113,511	\$983,342	\$2,159,381	\$3,657,224	\$3,135,632	\$2,601,806	
Net Financial Assets (Debt)	(\$1,113,511)	(\$983,342)	(\$2,159,381)	(\$3,657,224)	(\$3,135,632)	(\$2,601,806)	
Non Financial Assets							
Tangible Capital Asset Cost (Closing)	\$11,432,473	\$13,373,202	\$16,023,959	\$16,239,968	\$16,513,823	\$16,736,020	2
Tangible Capital Asset - Disposal	\$0	\$0	\$0	\$0	\$0	\$0	2
Accumulated Amortization (Closing)	\$7,534,690	\$7,946,940	\$8,529,966	\$9,117,072	\$9,724,390	\$10,343,534	2
Total Non Financial Assets	\$3,897,783	\$5,426,262	\$7,493,993	\$7,122,896	\$6,789,433	\$6,392,485	
Accumulated Surplus (Deficit)	\$2,784,273	\$4,442,920	\$5,334,612	\$3,465,672	\$3,653,801	\$3,790,679	

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

Table 7.2 – Statement of Financial Operations

Statement of Financial Operations						
Revenues	2021	2022	2023	2024	2025	2026
User Revenues						
User Fees	\$1,874,905	\$1,968,650	\$2,067,082	\$2,170,436	\$2,278,958	\$2,392,906
W/S Interest/Penalties	\$125,000	\$131,250	\$137,813	\$144,703	\$151,938	\$159,535
Ginogaming/Res #58 Agreement	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
Ginogaming Metered Water	\$105,000	\$110,250	\$115,763	\$121,551	\$127,628	\$134,010
Reserve #58 Metered Water	\$115,515	\$121,291	\$127,355	\$133,723	\$140,409	\$147,430
Water Disc./Connect Charges	\$11,000	\$11,550	\$12,128	\$12,734	\$13,371	\$14,039
Allowance for Uncollectable	(\$65,000)	(\$68,250)	(\$71,663)	(\$75,246)	(\$79,008)	(\$82,958)
Total Revenue from Users	\$2,214,420	\$2,322,741	\$2,436,478	\$2,555,901	\$2,681,296	\$2,812,961
Other						
Contribution from General Capital Reserve	\$1,417,067	\$110,730	\$474,204	\$210,826	\$181,495	\$29,554
Interest on Reserve Fund	\$0	\$0	\$0	\$0	\$0	\$0
Grants	\$0	\$0	\$0	\$0	\$0	\$0
Total Revenues	\$3,631,487	\$2,433,471	\$2,910,682	\$2,766,727	\$2,862,791	\$2,842,516
Expenses						
OCWA Expenses	\$1,528,450	\$1,559,019	\$1,590,200	\$1,622,004	\$1,654,444	\$1,687,533
Waterworks Expenses	\$57,567	\$58,718	\$59,893	\$61,090	\$62,312	\$63,559
OCWA (Greenstone) Expenses	\$1,100	\$1,122	\$1,144	\$1,167	\$1,191	\$1,214
Waterworks (Greenstone) Expenses	\$500	\$510	\$520	\$531	\$541	\$552
Major Maintenance	\$203,309	\$200,583	\$189,340	\$204,110	\$208,503	\$213,626
Expenses Before Interest and Amortization	\$1,790,926	\$1,819,953	\$1,841,097	\$1,888,902	\$1,926,992	\$1,966,484
Debt Interest	\$46,768	\$42,620	\$94,868	\$159,659	\$140,352	\$120,009
Amortization	\$282,868	\$412,250	\$583,026	\$589,061	\$607,318	\$619,144
Total Expenses	\$2,120,562	\$2,274,823	\$2,518,990	\$2,637,623	\$2,674,662	\$2,705,637
Excess of Revenues over Expenses before Other	\$1,510,924	\$158,647	\$391,692	\$129,105	\$188,129	\$136,879
Other	\$0	\$0	\$0	\$0	\$0	\$0
Excess of Revenues over Expenses	\$1,510,924	\$158,647	\$391,692	\$129,105	\$188,129	\$136,879
Annual Surplus (Deficit) Beginning of year	\$0	\$1,510,924	\$1,669,572	\$2,061,263	\$2,190,368	\$2,378,497
Accumulated Surplus (Deficit) End of Year	\$1,510,924	\$1,669,572	\$2,061,263	\$2,190,368	\$2,378,497	\$2,515,375

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

Table 7.3 – Statement of Cash Flow

Statement of Cash Flow	2021	2022	2023	2024	2025	2026
Operating Transactions						
Cash received from Revenues	\$3,631,487	\$2,433,471	\$2,910,682	\$2,766,727	\$2,862,791	\$2,842,516
Cash paid for Operating Expenses	\$1,790,926	\$1,819,953	\$1,841,097	\$1,888,902	\$1,926,992	\$1,966,484
Cash paid for Financing Charges (Debt Interest)	\$46,768	\$42,620	\$94,868	\$159,659	\$140,352	\$120,009
Excess of Operating Revenues Over Operating Expenses	\$1,793,793	\$570,897	\$974,717	\$718,166	\$795,447	\$756,023
Working Capital Items						
Accounts Receivable	\$0	\$0	\$0	\$0	\$0	\$0
Inventory	\$0	\$0	\$0	\$0	\$0	\$0
Capital Work in Progress	\$0	\$0	\$0	\$0	\$0	\$0
Cash provided by Operating Transactions	\$1,793,793	\$570,897	\$974,717	\$718,166	\$795,447	\$756,023
Capital						
Acquisition of TCAs	(\$1,667,771)	(\$1,940,729)	(\$2,650,757)	(\$216,009)	(\$273,855)	(\$222,196)
Proceeds on Disposal of TCA	\$0	\$0	\$0	\$0	\$0	\$0
Cash used in Capital Transactions	(\$1,667,771)	(\$1,940,729)	(\$2,650,757)	(\$216,009)	(\$273,855)	(\$222,196)
Investing						
Cash (used in)/Provided by Investing Activities	\$0	\$0	\$0	\$0	\$0	\$0
Increase (decrease) Cash Provided by Investing Activities	\$0	\$0	\$0	\$0	\$0	\$0
Financing						
Loan to Cover Capital Projects	\$0	\$1,500,000	\$2,000,000	\$0	\$0	\$0
Repayment of Long Term Debt (Principal)	(\$126,021)	(\$130,169)	(\$323,960)	(\$502,157)	(\$521,592)	(\$533,826)
Cash Provided by (used) in Financing Activities	(\$126,021)	\$1,369,831	\$1,676,040	(\$502,157)	(\$521,592)	(\$533,826)
Increase (Decrease) in Cash Equivalents	\$0	\$0	\$0	\$0	\$0	\$0
Cash and Cash Equivalents at the Beginning of the Year	\$0	\$0	\$0	\$0	\$0	\$0
Cash and Cash Equivalents at the End of the Year	\$0	\$0	\$0	\$0	\$0	\$0

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

8 Notes on the Greenstone DWS Financial Plan

The Greenstone Drinking Water Systems (DWS) Financial Plan represents a forecast of the financial performance of the drinking water systems over a study period starting in the year 2021 to 2026. The following notes are intended to document and/or clarify some of the assumptions made in generating the financial information contained in the tables. The reader is cautioned that the financial plan contains un-audited financial information and is subject to change.

1. The Greenstone Drinking Water Systems had a debt principal of approximately \$1,113,510 at year end 2021. \$1,500,000 is projected to be added in 2022 for the rehabilitation of two water towers, and \$2,000,000 is projected to be added in 2023 for the replacement of the Longlac WTP filters. The debt principal decreases from 2024 assuming no additional debt is added. Additional debt would likely be needed should be there a major upgrade required in the DWS and no senior government grants are provided.
2. Tangible Capital Assets Cost (Closing) includes changes (additions/betterments, disposals, write-downs) in tangible capital assets during the year. Tangible Capital Assets (TCA) are assumed to have no residual value when they have reached the end of their projected useful life. Amortization was determined using the straight line method. The calculation of Amortization begins the year after an asset is put into service. New capital items are included in this section.
3. User Fees – Residential customers are on a quarterly flat rate. Most commercial customers are on a metered rate while the remaining commercial customers are on a quarterly flat rate. These fees include an increase of 5% per year from 2021 to 2026.
4. The water system reserve fund is projected to remain at \$0 for the study period.
5. OCWA Expenses – Includes operating charges, maintenance/repairs to the plants and buildings, and utility costs.
6. Waterworks Expenses – Includes recurring costs such as contractor costs, equipment repairs and maintenance, telephone bills and other utilities incurred by the Municipality.
7. OCWA and Waterworks Expenses (Greenstone) – These are items that are applied to Greenstone as a whole and include items such as insurance, equipment rentals, misc. charges.
8. Major Maintenance – Major maintenance items are non routine items of cost less than \$10,000 and/or can be considered operational and maintenance activities.
9. Repayment of Long Term Debt (principal and interest) – Payment of debt are being made each year of the study period. Caramat had an existing debt at the beginning of the study period.

APPENDIX A

Ontario Regulation 453/07

Safe Drinking Water Act, 2002
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,
 - 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 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. 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. 6.

APPENDIX B

Financial Operating Plan

Capital and Major Maintenance Plans (2021-2026)

**Greenstone Drinking Water Systems
Financial Operating Plan**

	2021	2022	2023	2024	2025	2026	Notes
Expenditures							
OCWA Expenses (Sum of B,C,G,L,N)							
Contractors	\$3,168	\$3,231	\$3,296	\$3,362	\$3,429	\$3,498	Sum of 5 water systems
OCWA Water Operating Charges	\$1,477,577	\$1,507,129	\$1,537,271	\$1,568,017	\$1,599,377	\$1,631,364	Sum of 5 water systems
Repairs and Maintenance - Bldg./Grounds	\$25,414	\$25,922	\$26,441	\$26,969	\$27,509	\$28,059	Sum of 5 water systems
Utilities	\$20,656	\$21,069	\$21,490	\$21,920	\$22,359	\$22,806	Sum of 5 water systems
Water Booster Pump - Maint/Repairs (Longlac)	\$1,636	\$1,668	\$1,702	\$1,736	\$1,771	\$1,806	Sum of 5 water systems
Total OCWA Expenses	\$1,528,450	\$1,559,019	\$1,590,200	\$1,622,004	\$1,654,444	\$1,687,533	
Waterworks							
Contractors	\$18,152	\$18,515	\$18,885	\$19,263	\$19,648	\$20,041	Sum of 5 water systems
Repairs and Maintenance (Equipment)	\$36,666	\$37,399	\$38,147	\$38,910	\$39,688	\$40,482	Sum of 5 water systems
Telephone	\$1,386	\$1,414	\$1,442	\$1,471	\$1,500	\$1,530	Sum of 5 water systems
Utilities	\$1,363	\$1,390	\$1,418	\$1,447	\$1,475	\$1,505	Sum of 5 water systems
Total Waterworks Expenses	\$57,567	\$58,718	\$59,893	\$61,090	\$62,312	\$63,559	
OCWA Expenses (Greenstone)							
Insurance	\$0	\$0	\$0	\$0	\$0	\$0	Inflated (2% per year)
OCWA Misc. Oper Charges/Boat Rental	\$1,100	\$1,122	\$1,144	\$1,167	\$1,191	\$1,214	Inflated (2% per year)
Total OCWA (Greenstone) Expenses	\$1,100	\$1,122	\$1,144	\$1,167	\$1,191	\$1,214	
Waterworks (Greenstone)							
Insurance	\$0	\$0	\$0	\$0	\$0	\$0	Inflated (2% per year)
Licenses/Permits	\$500	\$510	\$520	\$531	\$541	\$552	Inflated (2% per year)
Total Waterworks (Greenstone) Expenses	\$500	\$510	\$520	\$531	\$541	\$552	
Caramat Debt - Interest	\$35,114	\$32,990	\$30,759	\$28,414	\$25,951	\$23,363	
Caramat Debt - Principal	\$41,906	\$44,030	\$46,261	\$48,606	\$51,069	\$53,657	
2014 & 2016 Equipment Loan - Interest	\$11,654	\$9,630	\$7,558	\$5,435	\$3,390	\$1,036	
2014 & 2016 Equipment Loan - Principal	\$84,115	\$86,139	\$88,212	\$90,334	\$92,508	\$86,753	
Two Water Towers Rehab - Interest	\$0	\$0	\$56,551	\$48,831	\$40,797	\$32,435	
Two Water Towers Rehab - Principal	\$0	\$0	\$189,487	\$197,207	\$205,242	\$213,604	
Longlac WTP Filters Replacement - Interest	\$0	\$0	\$0	\$76,978	\$70,215	\$63,176	
Longlac WTP Filters Replacement - Principal	\$0	\$0	\$0	\$166,010	\$172,773	\$179,812	
Capital Works	\$1,667,771	\$1,940,729	\$2,650,757	\$216,009	\$273,855	\$222,196	Sum of 5 water systems
Major Maintenance	\$203,309	\$200,583	\$189,340	\$204,110	\$208,503	\$213,626	Sum of 5 water systems
Transfer to Water System Reserve	\$0	\$0	\$0	\$0	\$0	\$0	
Total Expenditures	\$3,631,487	\$3,933,471	\$4,910,682	\$2,766,727	\$2,862,791	\$2,842,516	
Revenues							
FW01 Flat Water Residential (1223)	\$1,163,283	\$1,221,447	\$1,282,520	\$1,346,646	\$1,413,978	\$1,484,677	Increased by rate increase from 2020 actual
FW02 Senior Flat Rate Water (483)	\$414,777	\$435,516	\$457,292	\$480,157	\$504,164	\$529,373	Increased by rate increase from 2020 actual
FW05 Commercial Water Charges (2)	\$2,438	\$2,559	\$2,687	\$2,822	\$2,963	\$3,111	Increased by rate increase from 2020 actual
FW30 Ontario Realty Corp/Service Canada (1)	\$4,420	\$4,640	\$4,873	\$5,116	\$5,372	\$5,641	Increased by rate increase from 2020 actual
FW71 Long Lake Forest Products Water (1)	\$4,388	\$4,608	\$4,838	\$5,080	\$5,334	\$5,601	Increased by rate increase from 2020 actual
FW81 Commercial Water Rate (1)	\$1,158	\$1,216	\$1,277	\$1,340	\$1,407	\$1,478	Increased by rate increase from 2020 actual
FW83 Beardmore Commercial Water (1)	\$630	\$662	\$695	\$730	\$766	\$805	Increased by rate increase from 2020 actual
FWC1 Commercial Flat Rate Water (7)	\$4,770	\$5,008	\$5,259	\$5,522	\$5,798	\$6,088	Increased by rate increase from 2020 actual
MWC1 Metered Water Charges	\$279,040	\$292,992	\$307,642	\$323,024	\$339,175	\$356,134	Increased by rate increase from 2020 actual
MSA1 Reserve #58 Agreement	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	
MSA2 Ginoogaming W/S Agreement	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	
MWA1 Reserve #58 Metered Water	\$115,515	\$121,291	\$127,355	\$133,723	\$140,409	\$147,430	Increased by rate increase from 2020 actual
MWA2 Ginoogaming Metered Water	\$105,000	\$110,250	\$115,763	\$121,551	\$127,628	\$134,010	Increased by rate increase from 2020 actual
W/S Interest/Penalties	\$125,000	\$131,250	\$137,813	\$144,703	\$151,938	\$159,535	Increased by rate increase from 2020 actual
Water Disc./Connect Charges	\$11,000	\$11,550	\$12,128	\$12,734	\$13,371	\$14,039	Increased by rate increase from 2020 actual
Allowance for Uncollectable	-\$65,000	-\$68,250	-\$71,663	-\$75,246	-\$79,008	-\$82,958	Increased by rate increase from 2020 actual
Transfer From Water Reserve Fund	\$0	\$0	\$0	\$0	\$0	\$0	
Grants	\$0	\$0	\$0	\$0	\$0	\$0	
Total Revenues before Other	\$2,214,420	\$2,322,741	\$2,436,478	\$2,555,901	\$2,681,296	\$2,812,961	
Revenue less Expenditures before Other	-\$1,417,067	-\$1,610,730	-\$2,474,204	-\$210,826	-\$181,495	-\$29,554	
Other							
Loan - Two Water Towers Rehab	\$0	\$1,500,000	\$0	\$0	\$0	\$0	
Loan - Longlac WTP Filters Replacement	\$0	\$0	\$2,000,000	\$0	\$0	\$0	
Working Deficit	\$0	\$0	\$0	\$0	\$0	\$0	
Contribution From General Capital Reserve	\$1,417,067	\$110,730	\$474,204	\$210,826	\$181,495	\$29,554	
Total Other	\$1,417,067	\$1,610,730	\$2,474,204	\$210,826	\$181,495	\$29,554	
Total Revenue	\$3,631,487	\$3,933,471	\$4,910,682	\$2,766,727	\$2,862,791	\$2,842,516	
Revenue less Expenditures	\$0	\$0	\$0	\$0	\$0	\$0	
Rate Increase	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	

Note: All amounts are projections

Beardmore Water System
Major Maintenance and Capital Plan

Category	Asset	Characteristics (from Permit/CofA)	Notes	2021	2022	2023	2024	2025	2026	Total
Beardmore Water Treatment Plant										
Process	Intake Crib	Intake Structure with a design capacity of 1360 m ³ /day and intake screen velocity of 0.22 m/s	Cleanwell Gate Valve and Pipe Replacement (2021). Cleanwell piping replacement (2023)	\$22,674		\$50,000				\$72,674
Process	Intake Pipe	From intake structure to raw water pump chamber in the WTP, 40 m of 200 mm diameter series 100 HDPE pipe								\$0
Process	Low Lift Pumps	Two (2) four stage vertical turbine pumps each rates at 15.8 L/s at a TDH of 26.5 m with 10 HP motors	low lift pump			\$50,000				\$50,000
Process	Package Plant	Package plant has a 1363 m ³ /day capacity with draft tube flocculator, solids contact clarifier with tube settlers and two (2) compartment dual media rapid sand filter (sand/antracite)	Paint process interior tank						\$120,000	\$120,000
Process	Package Plant - Flocculation/Sedimentation	Flocculation stage provides average mixing time of 13 minutes in a 12.3 m ³ chamber containing a 750 mm dia x 1350 mm high draft tube mixer								\$0
Process	Package Plant - Upflow Clarifier	3.6 m dia x 3.9 m deep, volume of 31 m ³ and surface area of 10 m ²								\$0
Process	Package Plant - Dual Media Filter	A two (2) compartment filter tank with each side having a surface area of 3.18 m ² . With a design filtration rate of 8.91 m/hr (sand/antracite)								\$0
Process	Aluminum Sulfate Pump	One 0.19 kW chemical feed pump rated at 94.6 L/hr at a TDH of 87.8m with a 9100 L storage tank								\$0
Process	Sodium Hypo Pump	Two (2) sodium hypochlorite metering pumps (duty/standby) each rated at 1.4 L/hr with 205 L storage drums								\$0
Process	Polymer Chemical Pump	One 0.19 kW chemical feed pump rated at 94.6 L/hr at a TDH of 87.8m with mixing and dispensing tanks	metering chemical pumps		\$15,000			\$15,000		\$30,000
Process	Ortho-polyphosphate Pump	One pump rated at 106 L/hr, with the polymer pumped from a 4.6 L graduated cylinder								\$0
Process	Caustic Soda Pump	One 0.19 kW chemical feed pump rated at 94.6 L/hr at a TDH of 87.8m with mixing tank								\$0
Process	Cleanwell/Reservoir	Capacity of 682 m ³ under the process floor								\$0
Process	High Lift Pumps	Two (2) 7-stage vertical turbine pumps each rated at 15.8 L/s at a TDH of 45.72 m with 15 HP motors								\$0
Process	Fire Pump	One (1) 7-stage vertical turbine pump rated at 85.5 L/s with a 75 HP motor	High Capacity (Fire) Pump replacement	\$80,000						\$80,000
Process	Backwash Wastewater Tank	A 27 m ³ waste water storage tank before being pumps to the collection system, accompanied with a 1.5 HP sewage pump to transfer the waste								\$0
Instrumentation	Flow Control									\$0
Instrumentation	Turbidity Meter	Two (2) meters for continuous online monitoring at inlet and outlet of filter	Replace turbidity meters					\$10,000		\$10,000
Instrumentation	pH monitor	One (1) pH monitor for continuous on-line monitoring of treated water								\$0
Instrumentation	Chlorine Analyzer	One (1) chlorine analyzer for continuous monitoring of free chlorine residual in treated water								\$0
Instrumentation	Chlorine Recorder	One (1) chlorine residual recorder complete with high and low alarms								\$0
Instrumentation	Electrical Works									\$0
Instrumentation	Relays, starter panels, controls									\$0
Building and Grounds	Water Treatment Plant	20 m x 20 m concrete block building								\$0
Building and Grounds	Water Treatment Plant	20 m x 20 m concrete block building								\$0
	Backup Power	One (1) diesel engine driven generator rated at 150 kW with a 900 L capacity fuel tank								\$0
	Other Works		WTP Butterfly valve replacement	\$8,540		\$10,000			\$10,000	\$28,540
	Other Works		Replace Fire pump valves				\$9,000			\$9,000
	Other Works		MCC/PLC Replacement Construction Project	\$345,900						\$345,900
	Yearly replacements/maintenance			\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$60,000
Sub-total - Major Maintenance and Capital Costs				\$467,114	\$25,000	\$120,000	\$19,000	\$35,000	\$140,000	\$806,114
Beardmore Distribution System										
	Local distribution system	6-inch and 4-inch plastic pipe	Misc maintenance	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$60,000
	Distribution Valves		Valve repair and maintenance	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$60,000
	Hydrants, Valves, Curb stops, etc.									\$0
Sub-total - Major Maintenance and Capital Costs				\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$120,000
Beardmore Other Works										
	Financial Plan		Financial Plan to updated 2021, 2026	\$2,000					\$2,000	\$4,000
	DWQMS external audit		Regulatory requirement, on site audit every 3 years, desktop audit every year	\$250	\$800	\$250	\$250	\$800	\$250	\$2,600
	DWQMS internal audit		Yearly internal audit completed	\$1,400	\$1,400	\$1,400	\$1,400	\$1,400	\$1,400	\$8,400
	Training									\$0
	Lead sampling		No required lead sampling projected at this time.							\$0
	Source Protection		No allowance at this point.							\$0
Sub-total - Other Works				\$3,650	\$2,200	\$1,650	\$1,650	\$2,200	\$3,650	\$15,000
Total Major Maintenance and Capital Costs for the Drinking Water System				\$490,764	\$47,200	\$141,650	\$40,650	\$57,200	\$163,650	\$941,114
Contingency 15%				\$73,615	\$7,080	\$21,248	\$6,098	\$8,580	\$24,548	\$141,167
Total with contingency				\$564,379	\$54,280	\$162,898	\$46,748	\$65,780	\$188,198	\$1,082,281

Note:

- cost estimates includes cost to acquire and install asset (including material and labour)
- cost estimates do not include HST
- costs are in 2021 dollars, inflation not accounted for
- 15% contingency aimed at covering uncertainties in cost estimates and unforeseen equipment breakdowns
- Items highlighted in yellow are items that are capitalized according to the PSAB spreadsheets

Caramat Water System
Major Maintenance and Capital Plan

Category	Asset	Characteristics (from Permit/CofA)	Notes	2021	2022	2023	2024	2025	2026	Total
Caramat Water Treatment Plant										
Process	Intake Crib	In Caramat Lake								\$0
Process	Intake Pipe	200 mm dia, 61 m long pipe from inlet bell to wet well								\$0
Process	Low Lift Pumps	Two (2) low lift pumps (duty/standby) each rated 0.87 L/s at 40.5 m TDH	Low Lift Pump					\$6,500		\$6,500
Process	Filtration System - Filter Tank	Two (2) trains consisting of roughing filter, slow sand filter and GAC contactor each rated at 0.43 L/s (75.2 m ³ /day)								\$0
Process	Primary Chlorination	Two (2) metering pumps (one duty, one standby) each rated at 0.4 L/hr with automatic switchover, storage tank and spill containment, located upstream of clearwells	chlorine metering pump		\$10,500	\$10,500				\$21,000
Process	Ozone Equipment	Six (6) ozone generators with a combined capacity of 120 g/hr								\$0
Process	Ozone Equipment	Three (3) ozone injectors								\$0
Process	Ozone Equipment	Two (2) ozone contactors each with a volume of 145 L								\$0
Process	Oxygen Concentrator System	Consists of two air compressors, two oxygen generators and two surge tanks	Compressor overhaul and maintenance (2021). Ozone generator system (2023 and 2026)	\$10,000		\$10,000			\$10,000	\$30,000
Process	Contacting Equipment	Contacting with granulated activated carbon (GAC)								\$0
Process	Reservoir/Clearwell	Two (2) concrete tank with a total volume of 57 m ³								\$0
Process	Backwash Pump	One (1) pump drawing from the reservoir to backwash the filtration system								\$0
Process	High Lift Pumps	Two (2) high lift pumps (duty/standby) each rated at 2.48 L/s at 42.8m TDH	High lift pump			\$10,000				\$10,000
Process	High Lift Pressure Tanks	Four (4) high lift pressure tanks each with a nominal capacity of 454 L								\$0
Process	Secondary Chlorination	Two (2) metering pumps (one duty, one standby) each rated at 0.4 L/hr with automatic switchover, storage tank and spill containment, located at the high lift pump common header								\$0
Process	Valves and Piping									\$0
Process	Waste Holding Tanks	One (1) 22m ³ holding tank equipped with two (2) submersible wastewater pumps discharging to collection								\$0
Instrumentation	Online Chlorine Analyzer	Recorded to the PLC								\$0
Instrumentation	Flow Meters	Magnetic flow meter measuring the treated water flow to the distribution system, recorded in the PLC								\$0
Instrumentation	Oxygen Sensors									\$0
Instrumentation	HMI									\$0
Instrumentation	Computer									\$0
Building and Grounds	Building	11.5 m x 14.0 m								\$0
Building and Grounds	Fencing									\$0
	Backup Power	Diesel generator rated at 60 kW								\$0
	Other Works		SCADA PC system upgrade		\$11,000					\$11,000
	Other Works		Turbidity Analyzer Replacement			\$10,000	\$10,000			\$20,000
	Other Works									\$0
	Yearly replacements/maintenance			\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$60,000
Sub-total - Major Maintenance and Capital Costs				\$20,000	\$31,500	\$50,500	\$20,000	\$16,500	\$20,000	\$138,500
Caramat Distribution System										
	Local distribution system	Mostly 6-inch PVC	Misc maintenance	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$60,000
	Hydrants, Valves, Curb stops, etc.		valve replacement and repairs	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$60,000
Sub-total - Major Maintenance and Capital Costs				\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$120,000
Caramat Other Works										
	Financial Plan		Financial Plan to be updated 2021 and 2026	\$2,000					\$2,000	\$4,000
	DWQMS external audit		Regulatory requirement, on site audit every 3 years, desktop audit every year	\$250	\$800	\$250	\$250	\$800	\$250	\$2,600
	DWQMS internal audit		Yearly internal audit completed	\$1,400	\$1,400	\$1,400	\$1,400	\$1,400	\$1,400	\$8,400
	Training									\$0
	Lead sampling									\$0
	Source Protection									\$0
Sub-total - Other Works				\$3,650	\$2,200	\$1,650	\$1,650	\$2,200	\$3,650	\$15,000
Total Major Maintenance and Capital Costs for the Drinking Water System				\$43,650	\$53,700	\$72,150	\$41,650	\$38,700	\$43,650	\$273,500
Contingency 15%				\$6,548	\$8,055	\$10,823	\$6,248	\$5,805	\$6,548	\$41,025
Total with contingency				\$50,198	\$61,755	\$82,973	\$47,898	\$44,505	\$50,198	\$314,525

Note:

1. cost estimates includes cost to acquire and install asset (including material and labour)
2. cost estimates do not include HST
3. costs are in 2021 dollars, inflation not accounted for
4. 15% contingency aimed at covering uncertainties in cost estimates and unforeseen equipment breakdowns
5. Items highlighted in yellow are items that are capitalized according to the PSAB spreadsheets

Geraldton Water System
Major Maintenance and Capital Plan

Category	Asset	Characteristics (from Permit/CofA)	Notes	2021	2022	2023	2024	2025	2026	Total
Geraldton Water Treatment Plant										
Intake	Intake Piping and Screens	Intake structure fabricated from Series 60 PE with reducing elbow, 1.5 m intake bell with 50mm mesh debris screen								\$0
Intake	Intake Pipe	PE pipe with concrete collars and 40 m of 450 mm dia ductile iron pipe from intake structure in Cecile Lake to raw water pumping chamber								\$0
Intake	Valve	450 mm diameter manually controlled isolation valve for the intake located in the low lift pump chamber	10" Raw Water Isolation Valve		\$10,000					\$10,000
Intake	Low Lift Pumping Chamber		clearwell inspection		\$10,000					\$10,000
Process	Low Lift Pumps	Three (3) vertical turbine pumps each rated at 34.7 L/s at a TDH of 12.95 m each equipped with a 10 HP motor	Low lift pump (2025).					\$50,000		\$50,000
Process	Treatment Unit	A 6045 m ³ /day package WTP with twin (2) treatment streams								\$0
Process	Treatment Unit (each stream) - Mixing Flocculation	43.8 m ³ chamber for mixing/flocculation	Chemical mixer replacement						\$15,000	\$15,000
Process	Treatment Unit (each stream) - Flocc Tank	Equipped with paddle mixers (steel shaft with wooden paddles) complete with DC motor 90-100V, variable speed, AC/DC converter and speed reducer	12" Butterfly Valve, Filters					\$15,000		\$15,000
Process	Treatment Unit (each stream) - Settling Chamber	Complete with tube settlers, volume of 45.7 m ³ and total surface area of 16.5 m ² . Rise rate of 10.2 m/hr and retention time of 75 minutes (at design flow)								\$0
Process	Treatment Unit (each stream) - Media Filter Tank	A nonvalve mixed media (sand and anthracite) filter tank with a surface area of 11.15 m ² per filter with design filtration rate of 11.3 m/hr								\$0
Process	Backwash Pump	Two (2) vertical turbine pumps, each rated at 113.6 L/s at a TDH of 16.2 m and a 30 HP motor								\$0
Process	Backwash Wastewater Storage Tank	Tank (437.6 m ³) holds process waste before pumping to a lagoon for settling	Davit Arm for Waste Pit (2021) Replacement Waste Pit Pump (2026)	\$13,200					\$10,000	\$23,200
Process	Sludge Transfer Pump	Two (2) sewage pumps each rated 5.36 L/s at a TDH of 7.56 m to transfer waste to the lagoon								\$0
Process	Aluminum Sulphate Pump	Two (2) chemical feed pumps each rated at 1.58 L/min at a discharge pressure of 862 kPa	Alum Feed System (2021)	\$32,400						\$32,400
Process	Coagulant Storage Tank	Volume of 28 m ³								\$0
Process	Magnafloc LT-20 Polymer Pump	One (1) chemical feed pump rated at 1.58 L/min at a discharge pressure of 862 kPa and two (2) (one duty, one spare) mixers								\$0
Process	Potassium Permanganate Pump	One (1) chemical feed pump rated at 1.58 L/min at a discharge pressure of 862 kPa with one mixer and four (4) 25 kg drums								\$0
Process	Chlorine Gas disinfection	Two gas chlorinators complete with 22.7 kg/day capacity rotameters with space for eight (8) 88 kg chlorine gas cylinders								\$0
Process	Storage Reservoirs/Clearwell	Two (2) clearwells with a combined capacity of 556 m ³								\$0
Process	High Lift Pumps	Three (3) 13-stage vertical turbine pumps, each rated at 34.7 L/s at a TDH of 52.43m, each equipped with a 40 HP motor	high lift pump				\$50,000			\$50,000
Instrumentation	Turbidimeter	Two (2) continuous-monitoring turbidimeters	Turbidity Meter Replacement		\$10,000					\$10,000
Instrumentation	Chlorine Analyzer	One (1) continuous, on-line, free chlorine residual analyzer on the plant discharge with recording device	chlorine analyzer replacement			\$10,000				\$10,000
Instrumentation	Flow Meters	Two (2) 65 mm dia flowmeters to monitor in-plant domestic use and the flow rate delivered to the distribution system								\$0
Instrumentation	Flow Meters	One (1) 150 mm dia flowmeter to monitor raw water flow rate								\$0
Instrumentation	Computer									\$0
Building and Grounds	Building	21m by 34m concrete building								\$0
	Emergency Power	Diesel generator rated at 393 kVA with two (2) 1100L fuel tanks								\$0
	Other Works									\$0
	Other Works		valve/piping replacement		\$10,000					\$10,000
	Other Works		12" Treated Water Isolation Valve				\$12,000			\$12,000
	Other Works		MCC/PLC Replacement Construction Project	\$355,200						\$355,200
	Other Works		Annual miscellaneous repairs/replacements							\$0
	Yearly replacements/maintenance			\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$60,000
Sub-total - Major Maintenance and Capital Costs				\$410,800	\$50,000	\$20,000	\$72,000	\$75,000	\$35,000	\$662,800
Geraldton Distribution System										
	Local distribution system		Misc maintenance	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$60,000
	Local distribution system									\$0
	Water Tower	Elevated tank with 2273 m ³ storage	Water tower exterior recoating/rehab		\$750,000					\$750,000
	Hydrants, Valves, Curb stops, etc.		Valve replacement/hydrant repair	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$60,000
Sub-total - Major Maintenance and Capital Costs				\$20,000	\$770,000	\$20,000	\$20,000	\$20,000	\$20,000	\$870,000
Geraldton Other Works										
	Financial Plan		Financial Plan to be completed in 2013 with updates to occur in 2016 and 2021	\$2,000					\$2,000	\$2,000
	DWQMS external audit		Regulatory requirement, on site audit every 3 years, desktop audit every year	\$250	\$800	\$250	\$250	\$800	\$250	\$1,050
	DWQMS internal audit		Yearly internal audit completed	\$1,400	\$1,400	\$1,400	\$1,400	\$1,400	\$1,400	\$2,800
	Training									
	Lead sampling									
	Source Protection									
Sub-total - Other Works				\$3,650	\$2,200	\$1,650	\$1,650	\$2,200	\$3,650	\$5,850
Total Major Maintenance and Capital Costs for the Drinking Water System				\$434,450	\$822,200	\$41,650	\$93,650	\$97,200	\$58,650	\$1,538,650
Contingency 15%				\$65,168	\$123,330	\$6,248	\$14,048	\$14,580	\$8,798	\$230,798
Total with contingency				\$499,618	\$945,530	\$47,898	\$107,698	\$111,780	\$67,448	\$1,769,448

Note:

- cost estimates includes cost to acquire and install asset (including material and labour)
- cost estimates do not include HST
- costs are in 2021 dollars, inflation not accounted for
- 15% contingency aimed at covering uncertainties in cost estimates and unforeseen equipment breakdowns
- Items highlighted in yellow are items that are capitalized according to the PSAB spreadsheets

Longlac Water System
Major Maintenance and Capital Plan

Category	Asset	Characteristics (from Permit/CofA)	Notes	2021	2022	2023	2024	2025	2026	Total
Longlac Water Treatment Plant										
Intake	Intake Crib	Consists of 2.4 m dia pre-cast concrete pipe with 0.9m x 0.9 m man way cover and protective grating with a 6050 m ³ /day capacity								\$0
Intake	Piping	245 m of 450 mm diameter Series 100 HDPE intake piping, water flows through two coarse screens by gravity to the intake well and low lift pumping chamber								\$0
Intake	Valve	Manual control valve for the intake in the low lift pump chamber								\$0
Process	Low Lift Pumps	Three (3) single stage vertical turbine pumps rates at 34 L/s at a TDH of 12.92 m with 10 HP motors	low lift pump					\$55,000		\$55,000
Process	Aluminum Sulphate Pump	Two (2) metering pumps and storage tank	Chemical dosing pumps		\$10,000				\$10,000	\$20,000
Process	Nacliclear 8181 (polymer) pump	Two (2) metering pumps and 25L drums for storage								\$0
Process	Orthophosphate Pump	One (1) corrosion control metering pump with 200L plastic containers								\$0
Process	Chlorination	Two (2) chlorinators complete with 50 lb capacity rotometers and automatic switch-over between cylinders								\$0
Process	Package Plant	A 4050 m ³ /day package plant with flocculation, solid contact clarifier with tube settlers and two (2) compartment dual media (sand/antracite) rapid sand filter	Filter To Waste Conversion	\$42,650						\$42,650
Process	Package Plant - Flocculation/mixing	Inside two clarifier tanks with average mixing time of 15-20 minutes								\$0
Process	Package Plant - Contact Upflow Clarifiers	Two (2) clarifiers each 6.1 m x 6.1 m with volume of 165 m ³ and surface area of 37 m ² . Retention time of 75 min and upward rise rate of 1.25 L/s/m ²	clarifier relining - tank 1 (2022), clarifier relining tank 2 (2023)				\$75,000	\$75,000		\$150,000
Process	Package Plant - In-line Mixer	One (1) in-line flash mixer on the common header for the clarifiers								\$0
Process	Package Plant - Filter Tanks	Two (2) compartment filter tank each having a surface area of 10.51 m ²	Filter tanks replacement			\$2,000,000				\$2,000,000
Process	Package Plant - Filter Media	300mm of anthracite and 300mm of sand								\$0
Process	Package Plant - Weir Troughs									\$0
Process	Carus 8500 orthophosphate	Added for corrosion control								\$0
Process	Reservoir	Located beneath the process floor, divided into three compartments with a total capacity of 705 m ³ .								\$0
Process	High Lift Pumps	Three (3) 5 stage vertical turbine pumps each rated at 34 L/s at a TDH of 66 m with 40 HP motors	high lift pump	\$51,462		\$55,000				\$106,462
Process	Backwash Storage Tanks	Capacity of 16 m ³ with a backwash rate of 10.17 L/s/m ²								\$0
Process	Backwash Wastewater Tank	Storage tank to hold process waste before pumping to collection system with a capacity of 308 m ³	waste pit replacement	\$20,000						\$20,000
Process	Waste Transfer Pumps	One (1) pump rated at 463 m ³ /day at a TDH of 7.56m with a 3/4 HP motor to transfer surge put waste to sanitary sewer system								\$0
Process	Waste Transfer Pumps	Two (2) single stage 1 HP pumps to transfer domestic waste to the sanitary sewer system								\$0
Process	Dechlorination									\$0
Instrumentation	Turbidimeters	Two (2) continuous on-line monitoring turbidimeters with data logger recording device								\$0
Instrumentation	Free Chlorine Residual Analyzer	Continuous on-line monitoring analyzer at plant discharge complete with chart recorder								\$0
Instrumentation	Flow Meters	Three (3) flow meters to monitor influent flow, inplant domestic use and effluent flow								\$0
Instrumentation	Phosphate Analyzer	On site for grab samples								\$0
Instrumentation	Computer									\$0
Buildings and Grounds	Gate									\$0
Buildings and Grounds	Building	40 m x 20 m concrete building								\$0
	Diesel Generator	393-kVa- diesel generator with two (2) 1100 L fuel tanks								\$0
	Chlorine Gas Detector	One (1) chlorine gas detector, 120 V, 60 Hz, 4 amps								\$0
	Other Works		filter control valves		\$10,000					\$10,000
	Other Works									\$0
	Other Works		MCC/PLC Replacement Construction Project	\$382,000	\$68,000					\$450,000
	Other Works									\$0
	Other Works									\$0
	Yearly replacements/maintenance			\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$60,000
Sub-total - Major Maintenance and Capital Costs				\$506,112	\$98,000	\$2,065,000	\$85,000	\$140,000	\$20,000	\$2,914,112
Longlac Distribution System										
	Local distribution system	Approx 5 km of PVC and 11 km of Ductile Iron	Misc maintenance	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$60,000
	Elevated Storage Tank	Capacity of 2273 m ³	Water tower exterior recoating/rehab		\$750,000					\$750,000
	Elevated Storage Tank		Water Tower Control Panel Replacement	\$31,250						\$31,250
	Valves		valves repairs and maintenance	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$60,000
	Hydrants									\$0
Sub-total - Major Maintenance and Capital Costs				\$51,250	\$770,000	\$20,000	\$20,000	\$20,000	\$20,000	\$901,250
Longlac Other Works										
	Financial Plan		Financial Plan to be updated in 2021 and 2026	\$2,000					\$2,000	\$4,000
	DWQMS external audit		Regulatory requirement, on site audit every 3 years, desktop audit every year	\$250	\$800	\$250	\$250	\$800	\$250	\$2,600
	DWQMS internal audit		Yearly internal audit completed	\$1,400	\$1,400	\$1,400	\$1,400	\$1,400	\$1,400	\$8,400
	Training									\$0
	Lead sampling									\$0
	Source Protection									\$0
Sub-total - Other Works				\$3,650	\$2,200	\$1,650	\$1,650	\$2,200	\$3,650	\$15,000
Total Major Maintenance and Capital Costs for the Drinking Water System				\$561,012	\$870,200	\$2,086,650	\$106,650	\$162,200	\$43,650	\$3,830,362
Contingency 15%				\$84,152	\$130,530	\$312,998	\$15,998	\$24,330	\$6,548	\$74,554
Total with contingency				\$645,164	\$1,000,730	\$2,399,648	\$122,648	\$186,530	\$50,198	\$4,404,916

Note:

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- cost estimates do not include HST
- costs are in 2021 dollars, inflation not accounted for
- 15% contingency aimed at covering uncertainties in cost estimates and unforeseen equipment breakdowns
- Items highlighted in yellow are items that are capitalized according to the PSAB spreadsheets

Nakina Water System
Major Maintenance and Capital Plan

Category	Asset	Characteristics (from Permit/CofA)	Notes	2021	2022	2023	2024	2025	2026	Total
Nakina Water Treatment Plant										
Well	Well #1	Well is capable of 18.9 L/s at 27.4 m TDH and is equipped with a 15 HP vertical turbine pump 30.6 m deep with water supply coming from an aquifer 72m from the southeastern shore of Rounds Lake								\$0
Well	Well #2	Well is capable of 18.9 L/s at 27.4 m TDH and is equipped with a 15 HP vertical turbine pump 30.6 m deep with water supply coming from an aquifer 72m from the southeastern shore of Rounds Lake								\$0
Pumping Station	Nakina Well Pumping Stations	Two vertical turbine pumps each rated at 18.9 L/s with 15 HP motors								\$0
Process	Sodium Hypochlorite Addition - Primary	Prior to reservoir, two (2) chemical pumps operating as duty/standby, duty pump rates 0.59 L/hr and standby pump capable of 3.6 L/hr	chemical dosing pumps				\$20,000			\$20,000
Process	Sodium Hypochlorite Storage	A 205 L drum of 12 % sodium hypochlorite solution								\$0
Process	Sodium Hypochlorite Addition - Secondary	Two (2) chemical pumps operating as duty/standby, duty pump rates 0.59 L/hr and standby pump capable of 3.6 L/hr								\$0
Process	On-site Storage	Twin celled reservoir with a capacity of 1591 m ³								\$0
Process	High Lift Works	Four (4) high lift pumps - Three (3) 4 stage vertical turbine pumps rated 18.9L/s at a TDH of 52.43 m with 25 HP motors - One (1) 2 stage vertical turbine pumps rated 99.6 L/s at a TDH of 41.45 m with a 75 HP motor (fire pump)	High Lift Pump - Staged Replacement (3 of 3)	\$53,500						\$53,500
Instrumentation	Electrical Controls									\$0
Instrumentation	Turbidity Meter	In-line turbidity meter								\$0
Instrumentation	On-line Chlorine Analyzer	On-line chlorine residual analyzer								\$0
Instrumentation	Flow Meter - Raw Water									\$0
Instrumentation	Flow Meter - Treated Water									\$0
Instrumentation	Relays, starter panels, controls									\$0
Emergency Power	Diesel Generator - Pumping Station	One (1) 60 kW diesel engine driven generator rated at 60 kW that operates the lights, well pumps and the electrical outlets								\$0
Emergency Power	Diesel Generator - WTP	One (1) 150 kW diesel engine driven generator for chemical feed system, high lift pumps and fire pumps								\$0
Building and Grounds	Floor									\$0
Building and Grounds	Water Treatment Plant	An 18 m x 10 m concrete block building								\$0
Building and Grounds	Well Pumping Station	7.7 m x 5.9 m concrete block building								\$0
	Other Works		plant plumbing - raw water	\$10,000						\$10,000
	Other Works		turbidity analyzer				\$10,000			\$10,000
	Other Works		Annual miscellaneous repairs/replacements							\$0
	Yearly replacements/maintenance			\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$60,000
Sub-total - Major Maintenance and Capital Costs				\$73,500	\$10,000	\$10,000	\$40,000	\$10,000	\$10,000	\$153,500
Nakina Distribution System										
	Local distribution system	Approximately 10 km of pipe, mostly PVC	valve replacement and maintenance	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$60,000
	Local distribution system		Misc maintenance	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$60,000
Sub-total - Major Maintenance and Capital Costs				\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$120,000
Nakina Other Works										
	Financial Plan		Financial Plan to be updated to occur in 2021 and 2026	\$2,000					\$2,000	\$4,000
	DWQMS external audit		Regulatory requirement, on site audit every 3 years, desktop audit every year	\$250	\$800	\$250	\$250	\$800	\$250	\$2,600
	DWQMS internal audit		Yearly internal audit completed	\$1,400	\$1,400	\$1,400	\$1,400	\$1,400	\$1,400	\$8,400
	Training									\$0
	Lead sampling									\$0
	Source Protection									\$0
Sub-total - Other Works				\$3,650	\$2,200	\$1,650	\$1,650	\$2,200	\$3,650	\$15,000
Total Major Maintenance and Capital Costs for the Drinking Water System				\$97,150	\$32,200	\$31,650	\$61,650	\$32,200	\$33,650	\$288,500
Contingency 15%				\$14,573	\$4,830	\$4,748	\$9,248	\$4,830	\$5,048	\$43,275
Total with contingency				\$111,723	\$37,030	\$36,398	\$70,898	\$37,030	\$38,698	\$331,775

- Note:
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 - cost estimates do not include HST
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 - 15% contingency aimed at covering uncertainties in cost estimates and unforeseen equipment breakdowns
 - Items highlighted in yellow are items that are capitalized according to the PSAB spreadsheets