

The Township



of Ignace

**Drinking Water System
Financial Plan**

July 16, 2016

**The Corporation of the Township
Drinking Water System Financial Plan**

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Financial Plan Schedules

1. Executive Summary

The financial plan contained herein has been prepared in accordance with Ontario Regulation 453/07, which is a regulation pursuant to the Safe Drinking Water Act, 2002. The Regulation requires that a long-term financial plan be done that demonstrates a water system will be “financially viable.” The financial plan therefore must project revenues and expenditures, as well as financing arrangements and capital investments, over the term in order to determine whether or not there will be enough money to maintain the water system.

This financial plan is the second plan for the Ignace water system, and covers six years starting with 2016. Production and consumption of water are not forecasted to vary over the term. Due to inflationary pressures that are expected to increase operating expenses, service fees charged to users will need to be raised to cover operating expenses. No capital investments are projected for the period, and no new debt will be incurred to finance the water system. After paying operating expenses and interest charges, revenues will have generated enough cash to start accumulating a significant surplus. Although the surplus will not be sufficient to fund amortization, the Township considers the water system to be financially viable.

The financial plan consists of projections that are based on assumptions. It is not an audited document that can be relied upon. It can be expected that actual results will vary from the plan, particularly for years further out in the future.

The financial plan is a living document. It will be reviewed on annual basis. It may need to be updated as new conditions and/or information affecting the water system arise. As well, the plan will be improved by adding features to increase the usefulness and accuracy of the plan’s projections.

2. Introduction

Readers of the financial plan should be aware of some background information that will help them to understand the context in which the plan was developed.

Legislative Requirements

The Safe Drinking Water Act, 2002 stipulates that the owners of any municipal drinking water system must obtain a municipal drinking water license. The licensing process replaces previous processes that covered the various elements of a drinking water system and consolidates those elements into one process. There are five elements to a municipal drinking water license:

1. A Drinking Water Works Permit to establish or alter a drinking water system.

2. An Operational Plan. Operational plans are based on the Drinking Water Quality Management Standard (DWQMS). The operational plan includes the operating authority's Quality Management System (QMS)
3. An Accredited Operating Authority. A third party audit of an operating authority's QMS is the basis for accreditation.
4. A Permit to take Water.
5. A Financial Plan that meets the requirements set out in O. Reg. 453/07.

The Township contracts Northern Waterworks Inc. (NWI) to operate its drinking water system and is the Operating Authority for the system. On behalf of the Township, NWI manages the licensing process. The Township received its first municipal drinking water license on August 23, 2011. Per O. Reg. 453/07, the Township had six months to prepare its first financial plan for the drinking water system and completed its initial drinking water system financial plan on February 23, 2012. This plan was revised on April 12, 2012. The Township is in the process of having its municipal drinking water license renewed on August 23, 2016. This second edition of the drinking water system financial plan will be an integral part of the pending municipal drinking water license.

An important requirement of O. Reg. 453/07 is the financial plan must be available to the public at no charge and posted on a municipality's website.

Financial Viability

While "financially viable" is a key term in O. Reg. 453/07, there is no definition for it in the Regulation. Section 2 of the Regulation refers a definition of "financial plans" in subsection 30 (1) (b) of the Safe Drinking Water Act, 2002, which in turn refers to the Sustainable Water and Sewage Systems Act for specification. The latter was repealed on December 31, 2012. The result is that while there are some discussion papers and other material from the Provincial Government that deal with financial viability and associated concepts like "full cost accounting" and "full cost recovery", there are no legislative or regulatory provisions spelling out what is required for a water system to be financially viable.

While the Provincial Government has not taken any legislative or regulatory steps to require that water systems are financially viable, most commentators agree that the objective is to have revenues from the water system cover the total expenses of the system. That means the system demonstrates both "full cost accounting," i.e., all of the water system costs are accounted for in the financial records, and "full cost recovery," i.e., the revenues from the water system are sufficient to cover all of the costs.

It follows that a financially viable system should be generating enough operating income to fund the replacement of the system's assets. Funding the replacement cost is sometimes equated to covering the amortization. O. Reg. 453/07 and other Provincial rules do not provide any direction on these matters.

Township Drinking Water System Description

The system is comprised of two subsystems: the treatment and distribution systems. The treatment system starts with the water source and ends with the treatment plant. The distribution system gets the water to Township users.

The source is Michelle Lake (a.k.a. Kekwanzik Lake) that is located in the northern portion of the Township. Water from the Lake is gravity-fed to the raw water pump station that pumps the water to the treatment facility. The treatment facility is a Class II membrane design water treatment plant having an approved capacity of 2,730 cubic metres per day. A multiple barrier treatment approach using coagulation, flocculation, membrane filtration, primary disinfection and secondary disinfection ensures consistently safe and clean drinking water.

The distribution system consists of over 24 km of subterranean water lines within the Township. There are 140 water valves that control the flow through the lines. There are approximately 142 fire hydrants that provide water for fire fighting as well as other purposes such as water line flushing. There are approximately 590 residential and 56 commercial and institutional water user accounts. There are 39 metered users, of which only 4 are residential.

Major Assumptions in the Financial Plan

There are several major assumptions used in the plan. The first and second are that there will be no changes in production or consumption during the six-year term. The third and fourth are that there will be no new capital projects undertaken or new debt borrowed during the period.

3. Financial Operating Plan

The financial operating plan includes all of the costs of operating the Ignace drinking water system on an ongoing basis and includes operating expenses, debt servicing (interest charges), amortization of capital assets and capital investments. The plan was developed using historical financial information as the basis to make operating cost projections. Future interest charges on servicing debt can be accurately calculated. Future capital needs, water production and assumption forecasts and inflation vary in their degree of reliability.

Operating Costs

The main operating expense of the drinking water system is contract payments made to the operating authority, NWI, to run the water treatment system. As shown on Schedule 4.1, there are fifteen expense lines for the NWI contract. One is a set amount the Township pays to NWI to provide “supervision” of the distribution system. Inflation rates for the six-year period are variable depending on the expense. The Township and NWI

are in a “cost plus” contract, which means that the Township has to pay an administrative fee calculated as a percentage of total expenses. The administrative fee percentage is 12%. The contract with NWI expires in June 2018. This drinking water system financial plan assumes that the contract with NWI will be renewed and in force to the end of the plan’s six year period under the same terms in the current contract.

A major operating expense is major equipment replacement that is shown on Schedule 4.2. These items are treated as operating rather than capital expenses, since they are existing asset replacements and not asset additions.

All of the operating expenses including those noted above are provided on Schedule 4. One significant expense is a waterline survey. The Township is required by the Provincial Government to survey the 2 km route over Crown land of the waterline from the water treatment plant (WTP) to the raw water pump house (RWPS) and on to the lakeshore, and then acquire an easement for the portion on an existing road right-of-way and purchase the other portion including the site of the RWPS. The forecasted cost of \$60,000 is allocated to the three year period from 2016 to 2018. Descriptions of the other costs on provided on Schedule 4.

Debt Servicing

At the start of 2016, the Township was indebted in the amount of \$1.85 million for the water system. This debt was incurred from the construction of a new water treatment plant and related infrastructure in 2009 that cost approximately \$16.8 million. The Township will be making payments that total \$131,536 per year for the next 21 years.

Council decided that taxpayers would be responsible to pay 15% of these payments that amounts to \$19,730 per year. The rationale is that all residents in Ignace, whether or not they have water service in their residences, derive benefit from living in a community with safe drinking water. Therefore, in this financial plan only 85% of the debt payments are included. The remaining 15% is paid by the taxpayer during the plan’s term.

The interest portion of the debt payments appears on the statement of revenue and expenses. Added to that is interest charges on bank indebtedness or interest income on cash.

Amortization of Capital Assets

At the start of 2016, the net book value of the water system capital assets was approximately \$15.98 million. Annual amortization for each year of the plan varies slightly during the six year period. It reduces the net book value of the capital assets by that amount every year.

The plan does not generate enough surpluses to cover the amortization of the capital assets. This is completely understandable given that the opening 2016 net book value of the water system capital assets is approximately \$15.98 million, most of which is due to

the 2009 construction of \$16.8 million water plant. Senior Government funding covered 85% of the cost of the new water plant. With its own financial means, the Township could not have constructed the new plant, and likewise, is unable to fund the significant amortization of this multi-million dollar asset.

4. Funding Plan

Funding for the plan is generated by revenues or debt. Revenues consist of a number of user fees and charges. Over the six-year term of this plan annual increases for revenues are projected. Obtaining funding through debt is not envisioned during the term.

5. Financial Plan (Refer to Schedules)

The Financial Plan consists of the following schedules, in their order of appearance, that describe the operating and funding elements of the plan as outlined above, and then tie together all of these elements:

1. (a) Income Statement and (b) Balance Sheet
2. Income Statement and Balance Sheet Schedules
3. Water Revenues
4. Water Expenses (also schedules 4.1 & 4.2)
5. Capital Assets
6. Debt

6. Conclusion

The Financial Plan indicates that the Ignace Drinking Water System is financially viable in that it generates sufficient operating income to cover operating expenses and interest expenses. It does not generate enough operating income to cover the amortization of the Water System's capital assets. Covering amortization is seen as a way to provide for the future replacement of the capital assets. This is beyond the capacity of the Township, just as the initial acquisition of the assets was. Senior Governments need to significantly help in the future as they have in the past.

		2015	2016	2017	2018	2019	2020	2021
1a. INCOME STATEMENT								
Revenue	Sch. #3		544,828	544,828	555,724	566,839	578,176	589,740
Operating Expenses	Sch. #4		436,028	440,683	450,722	441,107	451,850	462,971
Operating Income			108,800	104,145	105,002	125,732	126,326	126,769
Interest Expense (Revenue)	Sch. #2		72,399	70,982	69,741	68,415	66,002	63,457
Surplus (Deficit)			36,401	33,163	35,261	57,317	60,324	63,312
Amortization	Sch. #5		359,334	359,106	359,043	358,627	358,387	358,387
1b. BALANCE SHEET								
Cash			0	0	0	0	0	0
Capital Assets - NBV	Sch. #5	15,975,196	15,615,862	15,256,756	14,897,713	14,539,086	14,180,699	13,822,312
Total Assets		15,975,196	15,615,862	15,256,756	14,897,713	14,539,086	14,180,699	13,822,312
Bank Indebtedness **	Sch. #2	169,822	181,319	198,046	214,752	211,564	207,622	203,040
Long Term Debt	Sch. #6	1,559,631	1,511,733	1,461,843	1,409,876	1,355,747	1,299,365	1,240,635
Total Liabilities		1,729,453	1,693,052	1,659,889	1,624,628	1,567,311	1,506,987	1,443,675
Invst in C. Assets		15,975,196	15,615,862	15,256,756	14,897,713	14,539,086	14,180,699	13,822,312
Surplus (Deficit) **	Sch. #2	(1,729,453)	(1,693,052)	(1,659,889)	(1,624,628)	(1,567,311)	(1,506,987)	(1,443,675)
Total Equity		14,245,743	13,922,810	13,596,867	13,273,085	12,971,775	12,673,712	12,378,637
Total Liab. & Equity		15,975,196	15,615,862	15,256,756	14,897,713	14,539,086	14,180,699	13,822,312

Observations:

No Cash is being generated.

Capital Assets are declining by the amount of the Amortization.

Bank Indebtedness is first increasing since there is not enough cash being generated through operating income to fully make the debt payments and cover the interest on Bank Indebtedness, but positive cash flow starts in 2019.

Long Term Debt is being paid.

Total Liabilities are going down since there is positive operating income.

Invst in Capital Assets is declining by the amount of the Amortization.

The Deficit is going down since there is positive operating income

Total Equity is declining since although there is positive operating income, it is not sufficient to cover amortization. If that were the case the cash position would be better - generate cash for future asset replacement.

2. Income Statement and Balance Sheet Schedules

	2015	2016	2017	2018	2019	2020	2021
Bank Indebtedness							
Operating Income		108,800	104,145	105,002	125,732	126,326	126,769
Debt Payments		(111,806)	(111,806)	(111,806)	(111,806)	(111,806)	(111,806)
Overdraft Interest		(8,491)	(9,066)	(9,902)	(10,738)	(10,578)	(10,381)
Previous Balance	(169,822)	(169,822)	(181,319)	(198,046)	(214,752)	(211,564)	(207,622)
	<u>(169,822)</u>	<u>(181,319)</u>	<u>(198,046)</u>	<u>(214,752)</u>	<u>(211,564)</u>	<u>(207,622)</u>	<u>(203,040)</u>
Interest Expense							
Long Term Debt	Sch. #6	63,908	61,916	59,839	57,677	55,424	53,076
Bank Indebtedness		8,491	9,066	9,902	10,738	10,578	10,381
		<u>72,399</u>	<u>70,982</u>	<u>69,741</u>	<u>68,415</u>	<u>66,002</u>	<u>63,457</u>
Surplus (Deficit)							
Operating	(169,822)	36,401	33,163	35,261	57,317	60,324	63,312
Opening - net debt	(1,559,631)	(1,729,453)	(1,693,052)	(1,659,889)	(1,624,628)	(1,567,311)	(1,506,987)
	<u>(1,729,453)</u>	<u>(1,693,052)</u>	<u>(1,659,889)</u>	<u>(1,624,628)</u>	<u>(1,567,311)</u>	<u>(1,506,987)</u>	<u>(1,443,675)</u>

Township of Ignace
 Drinking Water System Financial Plan - 2016 to 2021

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3. WATER REVENUES	2015	2016 (1)	2017 (2)	2018 (3)	2019 (3)	2020 (3)	2021 (3)
Direct Residential Charges	18,522	21,300	21,300	21,726	22,161	22,604	23,056
Flat Rate Charges	393,792	452,861	452,861	461,918	471,156	480,579	490,191
Direct Commercial Charges	55,564	63,899	63,899	65,177	66,481	67,811	69,167
Water Turn On/Off Charges	5,885	6,768	6,768	6,903	7,041	7,182	7,326
TOTAL	473,763	544,828	544,828	555,724	566,839	578,176	589,740
Rate Increase		15.0%	0.0%	2.0%	2.0%	2.0%	2.0%

(1) A 15% rate increase took effect on Jan. 1/16.

(2) No increase is planned for 2017.

(3) A modest increase of 2% is planned for the last 4 years of the six year period.

4. WATER EXPENSES	2016	2017	2018	2019	2020	2021
Insurance Charges	19,476	20,450	21,473	22,547	23,674	24,858
Write-offs - water	5,000	5,100	5,202	5,306	5,412	5,520
Water Operator Contract - NW1	283,733	291,408	299,347	307,560	316,057	324,852
Eq. Replacement - Major	50,000	50,000	50,000	50,000	50,000	50,000
Eq. Replacement - Minor	5,000	5,000	5,000	5,000	5,000	5,000
Building Maintenance	7,500	2,500	2,550	2,601	2,653	2,706
Utilities Maintenance	20,000	20,400	20,808	21,224	21,648	22,081
Services from Public Works	25,319	25,825	26,342	26,869	27,406	27,954
Waterline Survey, Easement & Land Acq.	20,000	20,000	20,000			
TOTAL	436,028	440,683	450,722	441,107	451,850	462,971

(1) See Schedule #4.1 for this item.

(2) See Schedule #4.2 for this item.

(3) Line for small components that need replacement.

(4) In 2016 snow guards for the WTP roof; after that general provision.

(5) Provision for repairing and replacing curb stops, valves and hydrants.

(6) Represents time spent by public works crews on the water distribution system.

(7) Line from WTP to RWPS has to be surveyed for an easement along existing roads and acquisition of access road and RWPS site.

Cost Inflation (other than NW1) ***

Insurance Charges	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Write-offs - water	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Building Maintenance	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Utilities Maintenance	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Services from Public Works	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Waterline Survey, Easement & Land Acq.	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%

*** Amounts in table above are inflated by the percentages shown.

Township of Ignace
 Drinking Water System Financial Plan - 2016 to 2021

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4.1 Water Operator Contract - NWI	2016 NWI Budget	2017	2018	2019	2020	2021
Automotive	1,095	1,117	1,139	1,162	1,185	1,209
Chemicals	15,500	15,965	16,444	16,937	17,445	17,968
Dues, Fees and Licenses	4,157	4,178	4,199	4,220	4,241	4,262
Electricity	61,481	64,555	67,783	71,172	74,731	78,468
Eq. Repair & Maintenance	15,650	15,963	16,282	16,608	16,940	17,279
Fuel (Vehicles)	1,708	1,725	1,742	1,759	1,777	1,795
Heating (not incl. RWPS electricity)	5,980	6,100	6,222	6,346	6,473	6,602
Insurance	6,848	6,985	7,125	7,268	7,413	7,561
Laboratory Analysis (Accredited)	8,911	9,178	9,453	9,737	10,029	10,330
Materials and Supplies	6,584	6,650	6,717	6,784	6,852	6,921
Telephone and Communications	5,000	5,050	5,101	5,152	5,204	5,256
Travel	745	760	775	791	807	823
Wages and Benefits	114,317	116,603	118,935	121,314	123,740	126,215
Administration Fee (12%)	12.00% 29,757	30,579	31,430	32,310	33,220	34,163
	277,733	285,408	293,347	301,560	310,057	318,852
Supervision of Water Dist. System	6,000	6,000	6,000	6,000	6,000	6,000
	283,733	291,408	299,347	307,560	316,057	324,852

Cost Inflation	2017	2018	2019	2020	2021
Automotive	2.00%	2.00%	2.00%	2.00%	2.00%
Chemicals	3.00%	3.00%	3.00%	3.00%	3.00%
Dues, Fees and Licenses	0.50%	0.50%	0.50%	0.50%	0.50%
Electricity	5.00%	5.00%	5.00%	5.00%	5.00%
Eq. Repair and Replacement	2.00%	2.00%	2.00%	2.00%	2.00%
Fuel (Vehicles)	1.00%	1.00%	1.00%	1.00%	1.00%
Heating (not incl. RWPS electricity)	2.00%	2.00%	2.00%	2.00%	2.00%
Insurance	2.00%	2.00%	2.00%	2.00%	2.00%
Laboratory Analysis (Accredited)	3.00%	3.00%	3.00%	3.00%	3.00%
Materials and Supplies	1.00%	1.00%	1.00%	1.00%	1.00%
Telephone and Communications	1.00%	1.00%	1.00%	1.00%	1.00%
Travel	2.00%	2.00%	2.00%	2.00%	2.00%
Wages and Benefits	2.00%	2.00%	2.00%	2.00%	2.00%

Costs are increased by varying rates annually as shown in the table.

4.2 Equipment Replacement

		2016	2017	2018	2019	2020	2021	Total
Membrane filter banks	(1)	30,000	30,000	30,000	30,000			120,000
SCADA upgrades	(2)		25,000	15,000				40,000
Diesel generator load testing, inspection and servicing			5,000			5,000		10,000
WTP/RWPS communication system		5,500						5,500
Valve actuators						7,750	7,750	15,500
Filter effluent chlorine residual analyzer		6,000						6,000
Permeate pump (P-35)						5,000		5,000
Decant tank submersible pump							8,000	8,000
Contingency/Reserve	(3)	15,000	15,000	15,000	15,000	15,000	15,000	90,000
		<u>56,500</u>	<u>75,000</u>	<u>60,000</u>	<u>45,000</u>	<u>32,750</u>	<u>30,750</u>	<u>300,000</u>

Average per year 50,000

- (1) There are four banks or "trains" of membrane filters in the Water Treatment Plant (WTP) that require replacement.
- (2) SCADA (Supervisory Control and Data Acquisition) is the computer software that controls and monitors the WTP.
- (3) Provision to deal with unexpected needs and future acquisitions such as the replacement of PLCs in 2025 expected to cost \$80,000.

5. CAPITAL ASSETS	2015	2016	2017	2018	2019	2020	2021
Buildings - O. NBV	10,003,875	9,778,538	9,553,201	9,327,864	9,102,527	8,877,190	8,651,853
Amortization	(225,337)	(225,337)	(225,337)	(225,337)	(225,337)	(225,337)	(225,337)
Buildings - C. NBV	<u>9,778,538</u>	<u>9,553,201</u>	<u>9,327,864</u>	<u>9,102,527</u>	<u>8,877,190</u>	<u>8,651,853</u>	<u>8,426,516</u>
Hydrants - O. NBV	22,533	20,060	18,306	16,719	15,191	13,918	12,785
Amortization	(2,473)	(1,754)	(1,587)	(1,528)	(1,273)	(1,133)	(1,133)
Hydrants - C. NBV	<u>20,060</u>	<u>18,306</u>	<u>16,719</u>	<u>15,191</u>	<u>13,918</u>	<u>12,785</u>	<u>11,652</u>
Water lines - O. NBV	6,275,321	6,144,483	6,013,645	5,882,807	5,751,969	5,621,131	5,490,293
Amortization	(130,838)	(130,838)	(130,838)	(130,838)	(130,838)	(130,838)	(130,838)
Water lines - C. NBV	<u>6,144,483</u>	<u>6,013,645</u>	<u>5,882,807</u>	<u>5,751,969</u>	<u>5,621,131</u>	<u>5,490,293</u>	<u>5,359,455</u>
Water valves - O. NBV	33,802	32,115	30,710	29,366	28,026	26,847	25,768
Amortization	(1,687)	(1,405)	(1,344)	(1,340)	(1,179)	(1,079)	(1,079)
Water valves - C. NBV	<u>32,115</u>	<u>30,710</u>	<u>29,366</u>	<u>28,026</u>	<u>26,847</u>	<u>25,768</u>	<u>24,689</u>
O. NBV	16,335,531	15,975,196	15,615,862	15,256,756	14,897,713	14,539,086	14,180,699
Amortization	(360,335)	(359,334)	(359,106)	(359,043)	(358,627)	(358,387)	(358,387)
C. NBV	<u>15,975,196</u>	<u>15,615,862</u>	<u>15,256,756</u>	<u>14,897,713</u>	<u>14,539,086</u>	<u>14,180,699</u>	<u>13,822,312</u>

No capital additions are anticipated during the six year period.

6. Debt

	Water Plant (1)	Water Plant (2)
Water Plant - A	1,121,149.58	
Water Plant - B		917,500.00
Water Meters		
Total Debt	1,121,149.58	917,500.00
Interest Rate - Annual	2.21%	1.89%
Interest Rate - Semi-Annual		
Term - Years	50	50
Term - Half Years		
Annual Payments		
Semi-Annual Payment	37,271.62	28,496.42
Semi-Annual Payment	37,271.62	28,496.42
Total Payments	74,543.24	56,992.83
Total Payments	1,863,581.00	1,424,820.76
Total Interest	742,431.42	507,320.76
		1,249,752.18

(1) These arrangements made with creditor Infrastructure Ontario in 2011.
(2) These arrangements made with creditor Infrastructure Ontario in 2012.

Allocation of Debt Payment between Taxpayer and Water User	
Total Payment	<u>131,536</u>
	%
Tax Payer	15.0% 19,730 (1)
Water User	85.0% <u>111,806</u> (1)
	<u>131,536</u>

(1) A portion of the capital cost, i.e., debt payment for water plant, is charged to the taxpayer, since all taxpayers derive some benefit from residing in a community with municipal drinking water.
(2) If a water metering project is undertaken, water users will bear the cost alone.
Taxpayers do not pay for any of the operating costs of the water system.

Interest Expense and Debt Balance		
	Debt Balance	Interest Exp.
2016	1,511,733	63,908
2017	1,461,843	61,916
2018	1,409,876	59,839
2019	1,355,747	57,677
2020	1,299,365	55,424
2021	1,240,635	53,076

The above figures are for the water user alone, i.e., 85% of the totals.
Debt Balances are as of December 31st.