CITY OF THUNDER BAY
WASTEWATER SYSTEM

FINANCIAL PLAN 2022

This Financial Plan was prepared for:

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THE CITY OF THUNDER BAY
ENVIRONMENT DIVISION – WASTEWATER SYSTEM
FINANCIAL PLAN

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EXECUTIVE SUMMARY

This Wastewater System Financial Plan (Financial Plan) provides an update to the 2015 Financial Plan for the Wastewater operations which was originally developed as a part of the Debt Management Strategy outlined in Corporate Report No. 2014.019. In preparing this Financial Plan, the financial impacts of the Wastewater System (Wastewater) have been considered. Based on the Projected Statement of Operations and Reserve Balances and the assumptions herein, Wastewater will be financially viable, and will achieve full-cost recovery and affordability for consumers while maintaining the City's existing service levels for sewage collection and treatment for the next twenty years.

Assumptions

Appendix One of this Financial Plan includes a Projected Statement of Operations and Reserve Balances for the years ending from December 31, 2021 to 2042 for Wastewater. In developing the Financial Plan, the following key assumptions were applied:

- ✓ The sewer surcharge rate remains constant at 90% for the projected period;
- ✓ Based on the water consumption by the City over the past years, it is assumed that water consumption for 2022 onwards will remain stable at an annual consumption of 10.9 million cubic metres;
- ✓ Inflation for operating expenses is assumed to be 4% in 2023 and 2024, 3% from years 2025 to 2027 and 1.9% annually thereafter;
- ✓ Inflation for capital expenses is assumed to be 10% for 2023, 5% for 2024, 3% from 2025 to 2027 and 1.9% thereafter;
- ✓ Annual operating expenses including interest and principal repayments on long-term debt are projected to increase from approximately $20.3 million in 2022 to $27.7 million by 2042;
- ✓ Capital requirements will continue to be made in accordance with the Asset Management Plan's forecast for Wastewater capital infrastructure. Average annual wastewater capital expenses are projected to be $12.4 million per year through 2042, all adjusted annually for inflation;
- ✓ A debenture in the amount of $22.9 million is assumed to be approved by Council in 2022;
- ✓ While Wastewater actively seeks grants for its capital projects, to be conservative, it is assumed that no grants, unless confirmed prior to the date of this report, will be received;
- ✓ Additional debt financing of $68.0 million will be raised from 2022 through 2042 to meet infrastructure demands due to the capital-intensive nature of the operations and long life of the related assets; and

- ✓ The debt service ratio target for Wastewater operations should not exceed 30% and the upper limit target should be 15% in future years, as approved in the Corporate Debt Management Strategy. This Financial Plan achieves those targets.

Conclusion

In preparation of this Financial Plan, the financial impacts of the Wastewater system have been considered. Based on the projections and assumptions herein, Wastewater will continue to be financially viable, and will achieve full-cost recovery and affordability for consumers while maintaining the City's existing service levels for sewage collection and treatment for the next twenty years.

Operating revenues earned by the current sewer surcharge rate will help to accumulate sufficient surplus in the reserve fund. This reserve fund enables capital asset upgrades or expansions to meet continuing demands; considers climate change impacts and improvements to the effluent quality of the treatment plant; and maintains sustainability over the long-term. The forecast demonstrates that while the appropriate debt service ratios will continue to be maintained over the years through the issuance of new debt, the capital renewal requirements of the Wastewater operations will also be met.

It is recommended that this Financial Plan be updated as needed to reflect significant changes in operations, economic climate, capital expenditures, financing costs, consumption and pricing.

INTRODUCTION

This Wastewater System Financial Plan (Financial Plan) provides an update to the 2015 Financial Plan for Wastewater operations which was originally developed as a part of the Debt Management Strategy outlined in Corporate Report No. 2014.019.

In preparing this Financial Plan, the financial impacts of the Wastewater system operations have been considered. Based on the Projected Statement of Operations and Reserve Balances for the next twenty years, Wastewater will be financially viable, will meet its capital renewal requirements and will continue to treat wastewater meeting City's service levels for sewage collection and treatment.

It is important to note that the management of stormwater in the City currently receives its operating and maintenance, not including capital, funding through the sewer surcharge rate. This Financial Plan incorporates other relevant plans, including the ten-year capital forecast and the Water Pollution Control Plant (WPCP) Capital Plan.

WASTEWATER SYSTEM FINANCIAL PLAN

The goal of the plan is to achieve financial sustainability, full-cost recovery, and low cost for consumers while keeping the City's service levels for sewage collection and treatment.

WASTEWATER OPERATIONS

The Environment Division within the Infrastructure and Operations Department is responsible for wastewater collection and treatment in an environmentally conscious manner. The Wastewater Services system collects and treats residential, institutional, commercial and industrial wastewater which travels through the City's sanitary sewer system to the WPCP for treatment.

As per the City's Asset Management Plan: Phase One (2021 AMP), the Wastewater service system includes 526 kilometres (km) of Sanitary Sewers; one Wastewater Treatment Plant; and, four lift stations. Operating and maintenance activities, other than capital expenditures, for stormwater services are also funded from the sewer surcharge rate, until another source is identified.

The WPCP provides wastewater treatment for the entire sanitary sewer network within the City of Thunder Bay, providing service to over 108,000 people and treating over 21 billion litres of wastewater in 2021.[1] The plant generated a total of 7,290 tonnes of biosolids in the same year and is expecting to generate approximately 8,500 tonnes in 2022, assuming a similar wastewater flow. [2]

2021 WASTEWATER SYSTEM HIGHLIGHTS

- 2,950 MWh of electricity generated on-site
- Over 91% of digester gas used to generate electricity/ heat
- 5,000+ samples analyzed by in house lab
- 64 licensed Operators
- 100% of effluent limits achieved
- Over 90% removal efficiency for ammonia, suspended solids, phosphorus and other chemicals
- Over 7,000 tonnes of solids removed from effluent stream

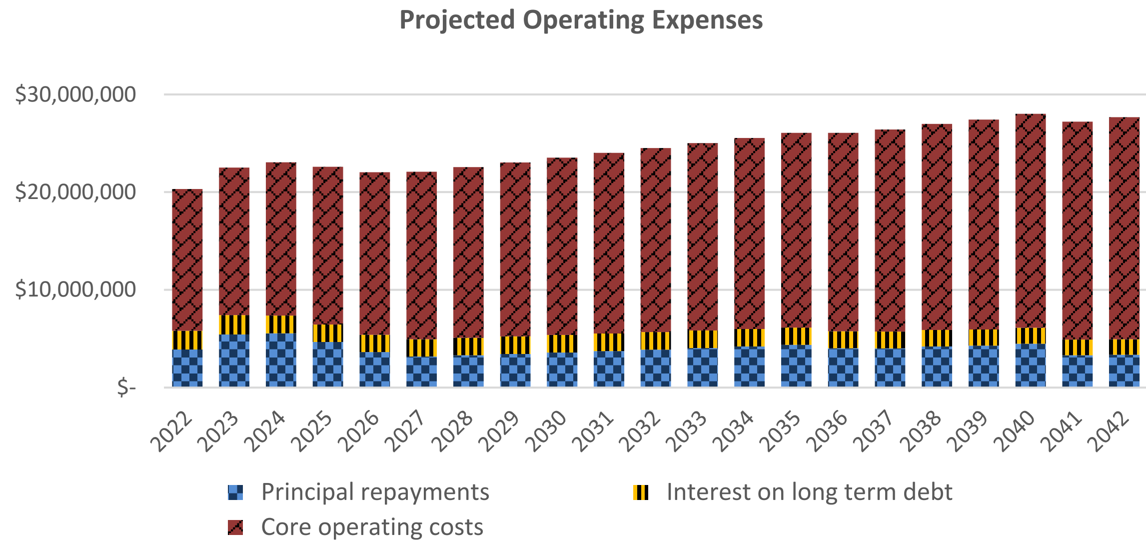
The WPCP has also undertaken several projects aimed at lowering operating costs and reducing the City's carbon footprint and emissions. These actions directly supports the fifth goal under the Lead pillar of the City of Thunder Bay's Corporate 2019-2022 Strategic Plan to "Further [previous] commitments to sustainability and climate adaptiation" and the Corporate Energy Management Plan (2019-2024). Further, these actions support the Climate-Forward City: Thunder Bay Net-Zero Strategy (2021), which is a guiding document to reach the overall goal of net-zero emissions by 2050, through reducing energy use and greenhouse gas emissions. Total savings as of October, 2016 for these projects was estimated at $533,300 per year.[3]

A detailed summary of plant operations, processes, capital projects and the Ontario Ministry of the Environment, Conservation and Parks' requirements in terms of compliance limits and objectives is available and published annually as part of the City of Thunder Bay's "Wastewater Treatment Annual Report."

OPERATING BUDGET

Some of Wastewater's key operating expenses include personnel services, utilities, materials including maintenance, parts and supplies, purchased services, and long-term debt interest and principal payments. Due to rising inflation, it is assumed that operating costs will increase by 4% in 2023 and 2024, 3% from 2025 to 2027, and 1.9% annually thereafter. Annual operating expenses, excluding interest and principal repayments on long-term debt are projected to be approximately $14.5 million in 2022 and increasing to $22.7 million in 2042. Interest on long-term debt charges and principal repayments made up an average of 28.9% of Wastewater's operating costs in 2021. More details on the operating expenses are included in the Projected Statement of Operations and Reserve Balance shown in Appendix One.

The projected operating expenses are set out below:



Operating Revenues

The majority of the operating revenues to cover the cost of operations and capital infrastructure requirements are sewer surcharge revenues. Currently, Wastewater billings are based on a fixed sewer surcharge rate of 90% on water consumption and access charges. Further, based on historic data, it is projected that only 89% of the water billings are subject to the sewer surcharge as some customers are serviced with water only while their wastewater is treated by private sewage systems.

The average six-year water consumption by the City from the years 2016 to 2021 has been stable at approximately 10.9 million cubic metres. Based on the water consumption by the City over the past years, it is assumed that water consumption for 2022 onwards will remain stable at an annual consumption of 10.9 million cubic metres. It is expected that the surcharge rate will remain constant at 90% through 2042. The projected water rates charged by the City will continue to increase by 3% year on year until 2027 and by 2.5% thereafter based on the Water Authority Financial Plan dated July, 2018. In addition to the sewer surcharge rate, operating revenues also include program revenues and other miscellaneous income.

Over the projected period, operating revenues are expected to increase from $26.6 million in 2022 to $44.6 million in 2042, offsetting the operating and a portion of the capital expenditures.

Capital Budget

To treat approximately 84.5 million litres of wastewater per day,[4] City of Thunder Bay Wastewater Service system comprises of three main assets including: 1 Atlantic Avenue Water Pollution Control Plant (WPCP), 4 lift stations and 526 kilometres of sanitary sewers.

As per the 2021 AMP, approximately 40 kms of the City's 526 kms of sewers are inspected yearly to ensure regular maintenance of the infrastructure. As set out in the 2021 AMP, the annual sustainable funding is estimated to be $12.6 million in order to maintain the proper level of repair, renewal, and replacement of the Wastewater Service systems. However, the annual funding allocated to Wastewater Services was $8.1 million in 2020. This shows that there was an infrastructure deficit, or shortfall, of $4.5 million. This shortfall is being addressed through the implementation of the Wastewater System Financial Plan. The replacement value of the Wastewater System in 2021 dollars totals to $647 million.[5]

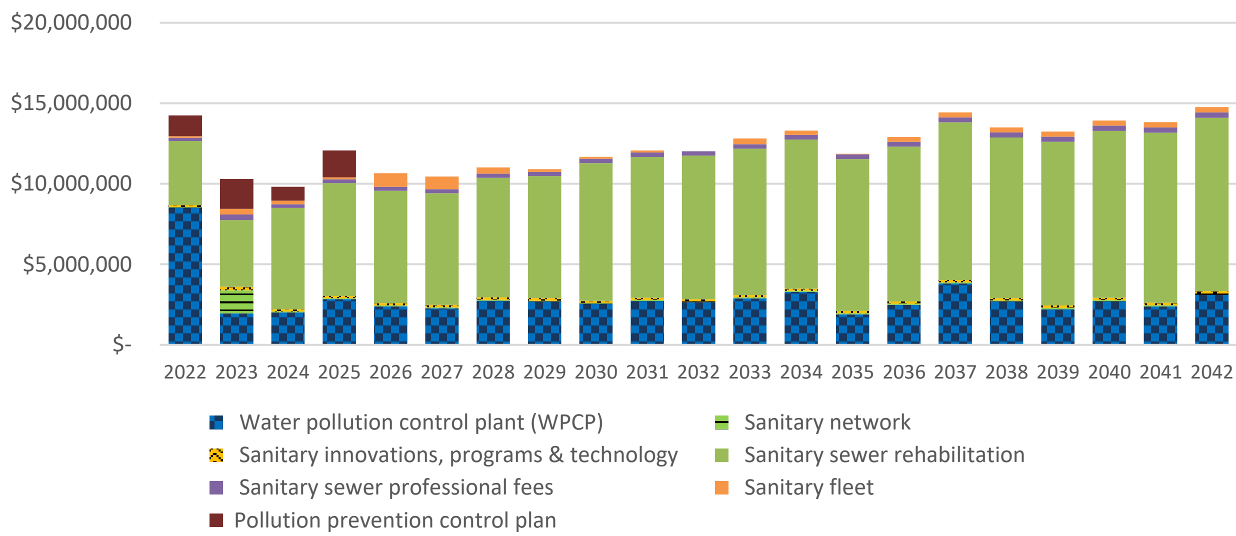
Ten-Year Capital Plan

The ten-year detailed capital forecast for Wastewater for fiscal years 2022 to 2031 estimated costs relating to maintaining, replacing and/or upgrading the Sanitary Sewer Network, Fleet, Sanitary Innovations, and other assets as set out in the Pollution Prevention, and Control Plan and 2021 AMP, except where certain projects are tax supported.

Over the projected period, approximately $270.7 million will be spent related to capital infrastructure. All capital expenses have been adjusted for inflation by 10% for 2023, 5% in 2024, 3% from years 2025 to 2027 and 1.9% annually thereafter.

The capital plan forecast includes $8.5 million of capital costs related to the WPCP in the year 2022, which includes a new emergency power generator system costing $5.0 million. Annual capital investments for wastewater will remain relatively stable, estimated to be from $14.2 million in 2022, declining in subsequent years, then increasing to $14.8 million in 2042. This includes capital expenditures in the Pollution Prevention, and Control Plan until 2025 which is supported by wastewater operations.

Capital Budget by Project Type



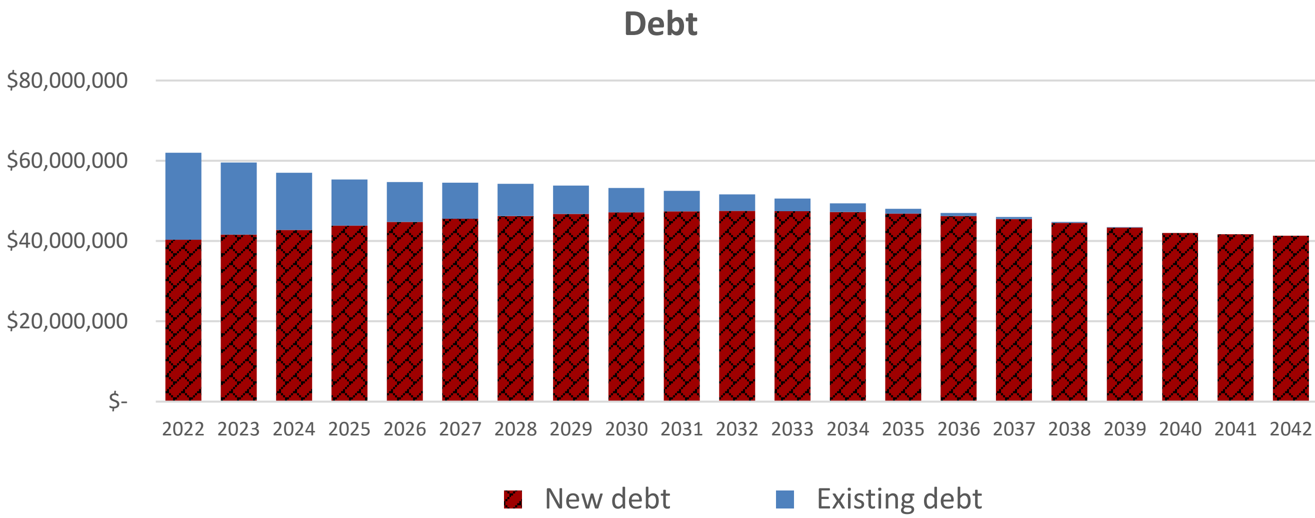
DEBT FINANCING

The City of Thunder Bay has strategically been incurring debt financing to fund capital expenditures for many years. As part of the Asset Management Plan, many projects were carried out during 2021 to protect and improve the equipment and infrastructure. Wastewater system assets include those relating to collection, transmission, treatment, or disposal of wastewater along with assets that help to manage stormwater, including maintenance of Influent Pump Stations, Primary Treatment, Sludge and Dewatering System, Biological Aeration Filtration, Heating and Ventilation, Cogeneration, Electrical and Instrumentation Systems, Disinfection System, Building and Grounds and Pollution Prevention Control Plan.

At the end of fiscal year 2021, the City was holding total debt of $57.9 million, made up of internal and/or construction financing, and nine debentures, whose terms are generally fixed interest, payable semi-annually. It is projected that total debt will be approximately $62.0 million by end of fiscal year 2022.

As recommended in the Debt Management Strategy, the debt service ratio target for Wastewater operations should not exceed 30% in future years. The debt service ratios in the current financial plan are projected to increase to 27% in fiscal year 2023 after which it is projected that the ratio will continue to decline from 18.0% to 11.1% from 2026 through 2042. It is assumed that all new debt will be incurred over 20 year terms with semi-annual payments and an interest rate of 4% compounded semi-annually.

Over the next twenty years, new debt of $68.0 million will be raised to fund Wastewater's capital expenditures. On average, annual debt raised will be $3.4 million. The following chart illustrates the projected annual debt balance from fiscal years 2022 to 2042:



AFFORDABILITY FOR CONSUMERS

As recognized in the 2015 Wastewater System Financial Plan, sewer and water rates are considered affordable when the combined sewer and water costs are 4% of median household income. In Thunder Bay, the estimated household average income was $82,257 in 2016.[6] Under this Financial Plan, the residential water and wastewater costs for 200m^3 are projected to total $1,315[7] in 2022, which is equal to 1.6% of household income.

In comparing the proposed 2022 rates to municipalities in Ontario, in 2021 the cost for the same volume of water and sewer across Ontario ranged from $902 to $1,762 in Sault Ste. Marie and Kenora,[8] respectively.

RESERVE BALANCE

The reserve balance is essentially the accumulation of Wastewater's excess of revenues over expenses over time. The City's Wastewater reserve balance as of fiscal year ending December 2021 is $17.5 million, which is an indicator of the net resources that the City has to provide future services.

In the projected period, there are only four years (2023 to 2026), where it will be necessary to use funds accumulated in the reserve fund to finance capital expenditures when operating revenues in the same period are not sufficient to fund both operating and capital expenses of that year.

Based on the assumptions used in the projections, the City's Wastewater operations will accumulate a sufficient reserve fund balance which will increase from $1.0 million from 2025 to $37.7 million by 2042 that can be used for significant capital requirements.

CONCLUSION

In preparation of this Financial Plan, the financial impacts of the wastewater system have been considered. Inline with the 2015 Wastewater System Financial Plan, Wastewater will be financially viable, and will achieve full-cost recovery and affordability for consumers while maintaining the City's existing service levels for sewage collection and treatment for the next twenty years.

Operating revenues earned by the current sewer surcharge rate will help to accumulate sufficient surplus in the reserve fund. This reserve fund enables capital asset upgrades or expansions to meet continuing demands; considers climate change impacts and improvements in effluent quality of the treatment plant; and, continues to be sustainable over the long-term. The forecast demonstrates that appropriate debt service ratios will be maintained over the years through the issuance of new debt which will also meet the capital renewal requirements of the Wastewater operations.

Given the projections are based on a number of assumptions, actual results may vary significantly from projections. Therefore, it is important to monitor annual results and compare them to the long-term Financial Plan as well as update the plan accordingly should there be any potential changes to the assumptions used in the projections.

[1] 2021 wastewater Report by City of Thunder Bay, retrieved from https://www.thunderbay.ca/en/city-services/resources/Documents/Water-and-Sewer-Services/4961_COTB_WastewaterReport_2021_FINAL.pdf

[2] 2021 Wastewater Treatment Report by City of Thunder Bay, retrieved from https://www.thunderbay.ca/en/city-services/resources/Documents/Water-and-Sewer-Services/4961_COTB_WastewaterReport_2021_FINAL.pdf

[3] Water Pollution Control Plant Savings and Energy Conservation, retrieved from https://www.thunderbay.ca/en/city-services/water-pollution-control-plant-savings-and-energy-conservation.aspx

[4] 2021 Wastewater Treatment Report by City of Thunder Bay, retrieved from https://www.thunderbay.ca/en/city-services/resources/Documents/Water-and-Sewer-Services/4961_COTB_WastewaterReport_2021_FINAL.pdf

[5] Long-term Financial Overview, 2021 and Beyond, dated January 12, 2021 retrieved from https://www.thunderbay.ca/en/city-hall/resources/Documents/FinanceandBudget/2021/Long-Term-Financial-Plan-2021-FINAL-Jan-11.pdf

[6] Thunder Bay Population Statistics, Census 2016, Statistics Canada, retrieved from https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=3558004&Geo2=PR&Code2=01&SearchText=tHUNDER%20BAY&SearchType=Begins&SearchPR=01&B1=All&TABID=1&type=0

[7] City of Thunder Bay Fact Sheet, 2022 Rate-Supported Budget Highlights, dated February 8, 2022,

[8] BMA Management Consulting Inc., Municipal Study 2021

APPENDIX ONE

PROJECTED STATEMENT OF OPERATIONS AND RESERVE BALANCE

AND

PROJECTED STATEMENT OF LONG TERM DEBT

THE CORPORATION OF THE CITY OF THUNDER BAY
ENVIRONMENT DIVISION - WASTEWATER OPERATIONS
PROJECTED STATEMENT OF OPERATIONS AND RESERVE BALANCE

FOR THE YEARS ENDING DECEMBER 31, 2021 TO 2042

		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
		Note 1	*Note 1*									
REVENUES												
Wastewater operating revenues												
Sewer surcharge	2	$ 25,530,970	$ 26,280,000	$ 27,068,400	$ 27,880,452	$ 28,716,865	$ 29,578,371	$ 30,465,723	$ 31,227,366	$ 32,008,051	$ 32,808,252	$ 33,628,458
Program revenue	3	252,022	175,000	180,250	185,658	191,228	196,965	202,874	207,946	213,145	218,474	223,936
Other	4	465,849	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000
Total wastewater revenues		26,248,841	26,635,000	27,428,650	28,246,110	29,088,093	29,955,336	30,848,597	31,615,312	32,401,196	33,206,726	34,032,394
Stormwater revenues		-	-	-	-	-	-	-	-	-	-	-
		26,248,841	26,635,000	27,428,650	28,246,110	29,088,093	29,955,336	30,848,597	31,615,312	32,401,196	33,206,726	34,032,394
EXPENSES												
Wastewater expenses												
Personnel services	5	3,235,707	4,667,640	4,854,346	5,048,520	5,199,976	5,355,975	5,516,654	5,621,470	5,728,278	5,837,115	5,948,020
Interdepartmental charges												
Administrative	5	982,537	1,196,500	1,244,360	1,294,134	1,332,958	1,372,947	1,414,135	1,441,004	1,468,383	1,496,282	1,524,711
Utilities	5	1,928,291	2,048,760	2,130,710	2,215,938	2,282,416	2,350,888	2,421,415	2,467,422	2,514,303	2,562,075	2,610,754
Insurance	5	228,944	249,400	259,376	269,751	277,844	286,179	294,764	300,365	306,072	311,887	317,813
Fleet	5	86,284	217,100	225,784	234,815	241,859	249,115	256,588	261,463	266,431	271,493	276,651
Engineering	5	257,280	264,640	275,226	286,235	294,822	303,667	312,777	318,720	324,776	330,947	337,235
Landfill	5	871,741	816,800	849,472	883,451	909,955	937,254	965,372	983,714	1,002,405	1,021,451	1,040,859
Utility cuts	5	276,903	245,000	254,800	264,992	272,942	281,130	289,564	295,066	300,672	306,385	312,206
Other and recoveries	5	84,073	96,020	99,861	103,855	106,971	110,180	113,485	115,641	117,838	120,077	122,358
Equipment rental	5	43,503	23,600	24,544	25,526	26,292	27,081	27,893	28,423	28,963	29,513	30,074
Interest on long term debt	6	1,385,005	1,909,600	1,984,700	1,813,222	1,777,304	1,764,892	1,773,404	1,792,594	1,805,045	1,812,761	1,814,780
Long term debt principal repayment	7	3,716,213	3,899,962	5,439,725	5,551,798	4,667,462	3,637,800	3,170,803	3,301,059	3,436,579	3,577,573	3,724,263
Materials	5	1,671,588	1,692,080	1,759,763	1,830,154	1,885,059	1,941,611	1,999,859	2,037,856	2,076,575	2,116,030	2,156,235
Municipal taxes	5	418,132	456,000	474,240	493,210	508,006	523,246	538,943	549,183	559,617	570,250	581,085
Purchased services	5	1,259,887	869,160	903,926	940,083	968,285	997,334	1,027,254	1,046,772	1,066,661	1,086,928	1,107,580
Total wastewater expenses		16,446,088	18,652,262	20,780,833	21,255,684	20,752,151	20,139,299	20,122,910	20,560,752	21,002,598	21,450,767	21,904,624
Stormwater expenses												
Personnel services	5	136,621	389,360	404,934	421,131	433,765	446,778	460,181	468,924	477,834	486,913	496,164
Interdepartmental charges												
Administrative	5	225,171	251,300	261,352	271,806	279,960	288,359	297,010	302,653	308,403	314,263	320,234
Utilities	5	42,702	47,040	48,922	50,879	52,405	53,977	55,596	56,652	57,728	58,825	59,943
Insurance	5	5,750	6,100	6,344	6,598	6,796	7,000	7,210	7,347	7,487	7,629	7,774
Fleet	5	13,550	48,500	50,440	52,458	54,032	55,653	57,323	58,412	59,522	60,653	61,805
Engineering	5	318,920	328,060	341,182	354,829	365,474	376,438	387,731	395,098	402,605	410,254	418,049
Landfill	5	42,462	47,000	48,880	50,835	52,360	53,931	55,549	56,604	57,679	58,775	59,892
Other	5	9,784	13,180	13,707	14,255	14,683	15,123	15,577	15,873	16,175	16,482	16,795
Equipment rental	5	3,170	12,600	13,104	13,628	14,037	14,458	14,892	15,175	15,463	15,757	16,056
Materials	5	68,780	167,020	173,701	180,649	186,068	191,650	197,400	201,151	204,973	208,867	212,835
Purchased services	5	335,573	347,740	361,650	376,116	387,399	399,021	410,992	418,801	426,758	434,866	443,128
Total stormwater expenses		1,202,483	1,657,900	1,724,216	1,793,184	1,846,979	1,902,388	1,959,461	1,996,690	2,034,627	2,073,284	2,112,675
Total operating expenses		17,648,571	20,310,162	22,505,049	23,048,868	22,599,130	22,041,687	22,082,371	22,557,442	23,037,225	23,524,051	24,017,299
ANNUAL OPERATING SURPLUS BEFORE CAPITAL EXPENSES		$ 8,600,270	$ 6,324,838	$ 4,923,601	$ 5,197,242	$ 6,488,963	$ 7,913,649	$ 8,766,226	$ 9,057,870	$ 9,363,971	$ 9,682,675	$ 10,015,095

		2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
REVENUES												
Wastewater operating revenues												
Sewer surcharge	2	$ 34,469,170	$ 35,330,898	$ 36,214,170	$ 37,119,525	$ 38,047,512	$ 38,998,701	$ 39,973,669	$ 40,973,010	$ 41,997,335	$ 43,047,269	$ 44,123,450
Program revenue	3	229,534	235,272	241,154	247,183	253,363	259,697	266,189	272,844	279,665	286,657	293,823
Other	4	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000	180,000
Total wastewater revenues		34,878,704	35,746,170	36,635,324	37,546,708	38,480,875	39,438,398	40,419,858	41,425,854	42,457,000	43,513,926	44,597,273
Stormwater revenues		-	-	-	-	-	-	-	-	-	-	-
		34,878,704	35,746,170	36,635,324	37,546,708	38,480,875	39,438,398	40,419,858	41,425,854	42,457,000	43,513,926	44,597,273
EXPENSES												
Wastewater expenses												
Personnel services	5	6,061,032	6,176,192	6,293,540	6,413,117	6,534,966	6,659,130	6,785,653	6,914,580	7,045,957	7,179,830	7,316,247
Interdepartmental charges												
Administrative	5	1,553,681	1,583,201	1,613,282	1,643,934	1,675,169	1,706,997	1,739,430	1,772,479	1,806,156	1,840,473	1,875,442
Utilities	5	2,660,358	2,710,905	2,762,412	2,814,898	2,868,381	2,922,880	2,978,415	3,035,005	3,092,670	3,151,431	3,211,308
Insurance	5	323,851	330,004	336,274	342,663	349,174	355,808	362,568	369,457	376,477	383,630	390,919
Fleet	5	281,907	287,263	292,721	298,283	303,950	309,725	315,610	321,607	327,718	333,945	340,290
Engineering	5	343,642	350,171	356,824	363,604	370,512	377,552	384,725	392,035	399,484	407,074	414,808
Landfill	5	1,060,635	1,080,787	1,101,322	1,122,247	1,143,570	1,165,298	1,187,439	1,210,000	1,232,990	1,256,417	1,280,289
Utility cuts	5	318,138	324,183	330,342	336,618	343,014	349,531	356,172	362,939	369,835	376,862	384,022
Other and recoveries	5	124,683	127,052	129,466	131,926	134,433	136,987	139,590	142,242	144,945	147,699	150,505
Equipment rental	5	30,645	31,227	31,820	32,425	33,041	33,669	34,309	34,961	35,625	36,302	36,992
Interest on long term debt	6	1,811,285	1,800,797	1,784,310	1,761,148	1,735,178	1,715,521	1,693,278	1,664,320	1,630,539	1,598,469	1,589,426
Long term debt principal repayment	7	3,876,879	4,035,661	4,200,858	4,372,728	4,027,411	4,013,472	4,207,027	4,283,493	4,493,003	3,313,754	3,356,786
Materials	5	2,197,203	2,238,950	2,281,490	2,324,838	2,369,010	2,414,021	2,459,887	2,506,625	2,554,251	2,602,782	2,652,235
Municipal taxes	5	592,126	603,376	614,840	626,522	638,426	650,556	662,917	675,512	688,347	701,426	714,753
Purchased services	5	1,128,624	1,150,068	1,171,919	1,194,185	1,216,875	1,239,996	1,263,556	1,287,564	1,312,028	1,336,957	1,362,359
Total wastewater expenses		22,364,689	22,829,837	23,301,420	23,779,136	23,743,110	24,051,143	24,570,576	24,972,819	25,510,025	24,667,051	25,076,381
Stormwater expenses												
Personnel services	5	505,591	515,197	524,986	534,961	545,125	555,482	566,036	576,791	587,750	598,917	610,296
Interdepartmental charges												
Administrative	5	326,318	332,518	338,836	345,274	351,834	358,519	365,331	372,272	379,345	386,553	393,898
Utilities	5	61,082	62,243	63,426	64,631	65,859	67,110	68,385	69,684	71,008	72,357	73,732
Insurance	5	7,922	8,073	8,226	8,382	8,541	8,703	8,868	9,036	9,208	9,383	9,561
Fleet	5	62,979	64,176	65,395	66,638	67,904	69,194	70,509	71,849	73,214	74,605	76,022
Engineering	5	425,992	434,086	442,334	450,738	459,302	468,029	476,922	485,984	495,218	504,627	514,215
Landfill	5	61,030	62,190	63,372	64,576	65,803	67,053	68,327	69,625	70,948	72,296	73,670
Other	5	17,114	17,439	17,770	18,108	18,452	18,803	19,160	19,524	19,895	20,273	20,658
Equipment rental	5	16,361	16,672	16,989	17,312	17,641	17,976	18,318	18,666	19,021	19,382	19,750
Materials	5	216,879	221,000	225,199	229,478	233,838	238,281	242,808	247,421	252,122	256,912	261,793
Purchased services	5	451,547	460,126	468,868	477,776	486,854	496,104	505,530	515,135	524,923	534,897	545,060
Total stormwater expenses		2,152,815	2,193,720	2,235,401	2,277,874	2,321,153	2,365,254	2,410,194	2,455,987	2,502,652	2,550,202	2,598,655
Total operating expenses		24,517,504	25,023,557	25,536,821	26,057,010	26,064,263	26,416,397	26,980,770	27,428,806	28,012,677	27,217,253	27,675,036
ANNUAL OPERATING SURPLUS BEFORE CAPITAL EXPENSES		$ 10,361,200	$ 10,722,613	$ 11,098,503	$ 11,489,698	$ 12,416,612	$ 13,022,001	$ 13,439,088	$ 13,997,048	$ 14,444,323	$ 16,296,673	$ 16,922,237

See accompanying notes and assumptions to these projected financial statements.

THE CORPORATION OF THE CITY OF THUNDER BAY
ENVIRONMENT DIVISION - WASTEWATER OPERATIONS
PROJECTED STATEMENT OF OPERATIONS AND RESERVE BALANCE

FOR THE YEARS ENDING DECEMBER 31, 2021 TO 2042

		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
PROJECTED CAPITAL SURPLUS (SHORTFALL)												
SOURCES OF CAPITAL FINANCING												
New debt, net of amounts replacing existing temporary financing	8	$ 3,674,984	$ 3,932,500	$ 2,000,000	$ 8,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000
Grant sources		530,000	508,000	508,000	84,000	-	-	-	-	-	-	-
Total sources of capital financing	A	$ 4,204,984	$ 4,440,500	$ 2,508,000	$ 8,084,000	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000
CAPITAL EXPENSES												
Water pollution control plant	9	$ -	$ 8,512,500	$ 1,955,800	$ 2,010,280	$ 2,833,630	$ 2,389,530	$ 2,271,960	$ 2,733,180	$ 2,673,620	$ 2,537,450	$ 2,721,800
Pollution prevention control plan - Rate supported	9	1,039,800	1,290,000	1,855,000	862,000	1,666,700	-	-	-	-	-	-
Sanitary network	9	500	50,000	1,430,000	57,750	59,490	61,270	63,110	64,310	65,530	66,780	68,050
Sanitary innovations, programs & technology	9	3,000	120,000	213,510	143,220	130,870	137,240	143,890	147,910	154,650	120,200	122,480
Sanitary sewer rehabilitation	9	1,559,800	3,974,000	4,149,000	6,288,980	7,017,680	6,976,940	6,934,150	7,420,990	7,583,000	8,561,220	8,750,310
Sanitary sewer professional fees	9	82,000	200,000	350,000	231,000	237,940	245,080	252,440	257,240	262,120	267,100	272,180
Sanitary fleet	9	-	93,000	344,300	219,450	121,350	849,200	778,780	396,150	163,830	117,520	129,290
		2,685,100	14,239,500	10,297,610	9,812,680	12,067,660	10,659,260	10,444,330	11,019,780	10,902,750	11,670,270	12,064,110
Wastewater capital carryforward	10	-	2,193,240	4,386,480	4,386,480	-	-	-	-	-	-	-
Total capital expenses	B	$ 2,685,100	$ 16,432,740	$ 14,684,090	$ 14,199,160	$ 12,067,660	$ 10,659,260	$ 10,444,330	$ 11,019,780	$ 10,902,750	$ 11,670,270	$ 12,064,110
CAPITAL SURPLUS												
Operating surplus available for capital, from page 1		8,600,270	6,324,838	4,923,601	5,197,242	6,488,963	7,913,649	8,766,226	9,057,870	9,363,971	9,682,675	10,015,095
Annual capital surplus (shortfall)	A-B	1,519,884	(11,992,240)	(12,176,090)	(6,115,160)	(9,067,660)	(7,659,260)	(7,444,330)	(8,019,780)	(7,902,750)	(8,670,270)	(9,064,110)
Transfer from reserve balance		-	5,667,402	7,252,489	917,918	2,578,697	-	-	-	-	-	-
Surplus or balance to be transferred to reserve		$ 10,120,154	$ -	$ -	$ -	$ -	$ 254,389	$ 1,321,896	$ 1,038,090	$ 1,461,221	$ 1,012,405	$ 950,985
PROJECTED RESERVE BALANCE												
	sanitu											
Balance, beginning of the year			$ 17,455,803	$ 11,788,401	$ 4,535,912	$ 3,617,994	$ 1,039,297	$ 1,293,686	$ 2,615,582	$ 3,653,672	$ 5,114,893	$ 6,127,298
Cover operating deficit			-	-	-	-	-	-	-	-	-	-
Deduct: Transfer to capital			(5,667,402)	(7,252,489)	(917,918)	(2,578,697)	-	-	-	-	-	-
Add: operating and capital surplus			-	-	-	-	254,389	1,321,896	1,038,090	1,461,221	1,012,405	950,985
Balance, end of the year	11		$ 11,788,401	$ 4,535,912	$ 3,617,994	$ 1,039,297	$ 1,293,686	$ 2,615,582	$ 3,653,672	$ 5,114,893	$ 6,127,298	$ 7,078,283

	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
PROJECTED CAPITAL SURPLUS (SHORTFALL)											
SOURCES OF CAPITAL FINANCING											
New debt, net of amounts replacing existing temporary financing	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000
Grant sources	-	-	-	-	-	-	-	-	-	-	-
Total sources of capital financing	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000	$ 3,000,000
CAPITAL EXPENSES											
Water pollution control plant	$ 2,634,920	$ 2,889,790	$ 3,282,970	$ 1,892,820	$ 2,482,030	$ 3,809,000	$ 2,678,060	$ 2,214,800	$ 2,692,210	$ 2,381,920	$ 3,096,720
Pollution prevention control plan - Rate supported	-	-	-	-	-	-	-	-	-	-	-
Sanitary network	69,340	70,660	72,000	73,370	74,760	76,180	77,630	79,100	80,610	82,140	83,700
Sanitary innovations, programs & technology	124,810	127,180	129,590	132,060	134,570	137,120	139,730	142,380	145,090	147,840	150,650
Sanitary sewer rehabilitation	8,916,850	9,085,950	9,258,270	9,434,450	9,613,840	9,796,440	9,982,260	10,171,940	10,365,480	10,562,230	10,762,840
Sanitary sewer professional fees	277,360	282,620	287,980	293,460	299,040	304,720	310,500	316,400	322,420	328,540	334,780
Sanitary fleet	-	356,100	266,380	36,680	299,040	304,720	310,500	316,400	322,420	328,540	334,780
	12,023,280	12,812,300	13,297,190	11,862,840	12,903,280	14,428,180	13,498,680	13,241,020	13,928,230	13,831,210	14,763,470
Wastewater capital carryforward	-	-	-	-	-	-	-	-	-	-	-
Total capital expenses	$ 12,023,280	$ 12,812,300	$ 13,297,190	$ 11,862,840	$ 12,903,280	$ 14,428,180	$ 13,498,680	$ 13,241,020	$ 13,928,230	$ 13,831,210	$ 14,763,470
CAPITAL SURPLUS											
Operating surplus available for capital, from page 1	10,361,200	10,722,613	11,098,503	11,489,698	12,416,612	13,022,001	13,439,088	13,997,048	14,444,323	16,296,673	16,922,237
Annual capital surplus (shortfall)	(9,023,280)	(9,812,300)	(10,297,190)	(8,862,840)	(9,903,280)	(11,428,180)	(10,498,680)	(10,241,020)	(10,928,230)	(10,831,210)	(11,763,470)
Transfer from reserve balance	-	-	-	-	-	-	-	-	-	-	-
Surplus or balance to be transferred to reserve	$ 1,337,920	$ 910,313	$ 801,313	$ 2,626,858	$ 2,513,332	$ 1,593,821	$ 2,940,408	$ 3,756,028	$ 3,516,093	$ 5,465,463	$ 5,158,767
PROJECTED RESERVE BALANCE											
Balance, beginning of the year	$ 7,078,283	$ 8,416,203	$ 9,326,516	$ 10,127,829	$ 12,754,687	$ 15,268,019	$ 16,861,840	$ 19,802,248	$ 23,558,276	$ 27,074,369	$ 32,539,832
Cover operating deficit	-	-	-	-	-	-	-	-	-	-	-
Deduct: Transfer to capital	-	-	-	-	-	-	-	-	-	-	-
Add: operating and capital surplus	1,337,920	910,313	801,313	2,626,858	2,513,332	1,593,821	2,940,408	3,756,028	3,516,093	5,465,463	5,158,767
Balance, end of the year	$ 8,416,203	$ 9,326,516	$ 10,127,829	$ 12,754,687	$ 15,268,019	$ 16,861,840	$ 19,802,248	$ 23,558,276	$ 27,074,369	$ 32,539,832	$ 37,698,599

See accompanying notes and assumptions to these projected financial statements.

THE CORPORATION OF THE CITY OF THUNDER BAY
ENVIRONMENT DIVISION - WASTEWATER OPERATIONS
PROJECTED STATEMENT OF OPERATIONS AND RESERVE BALANCE
FOR THE YEARS ENDING DECEMBER 31, 2021 TO 2042

Notes and Assumptions:

Actual results achieved for the period covered will vary from this information presented. The differences may be material. These projections are not prepared in accordance with GAAP.

See City of Thunder Bay Annual Reports for the Year ended December 31, 2020 and 2021 for the City's accounting policies.

1. The revenues and expenses for 2021 and 2022 are derived from the document entitled, Wastewater and stormwater budget for 2022 and actuals for the years 2018 to 2021, provided by the Wastewater Division.
2. Operating wastewater revenues are derived as 90% of water revenues, for which the projected water revenues are below. It is further assumed that only 89% of all water billings have sewer or wastewater systems.

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Annual increase (decrease)			*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Projected water treated (m3)	10,900,135	10,900,135	10,900,135	10,900,135	10,900,135	10,900,135	10,900,135	10,900,135	10,900,135	10,900,135	10,900,135
Projected user rate	2.924	3.010	3.100	3.193	3.289	3.388	3.489	3.577	3.666	3.758	3.852
Projected operating revenues	$ 31,873,870	$ 32,808,989	$ 33,793,259	$ 34,807,056	$ 35,851,268	$ 36,926,806	$ 38,034,610	$ 38,985,476	$ 39,960,113	$ 40,959,115	$ 41,983,093
Projected percentage increase of water rates			*3.0%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*	*2.5%*	*2.5%*	*2.5%*	*2.5%*
Sewer surcharge @90%	$ 28,686,483	$ 29,528,090	$ 30,413,933	$ 31,326,350	$ 32,266,141	$ 33,234,125	$ 34,231,149	$ 35,086,928	$ 35,964,102	$ 36,863,204	$ 37,784,784
Only 89% of Water Billings subject to Sewer Surcharge	$ 25,530,970	$ 26,280,000	$ 27,068,400	$ 27,880,452	$ 28,716,865	$ 29,578,371	$ 30,465,723	$ 31,227,366	$ 32,008,051	$ 32,808,252	$ 33,628,458

	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Annual increase (decrease)	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Projected water treated (m3)	10,900,135	10,900,135	10,900,135	10,900,135	10,900,135	10,900,135	10,900,135	10,900,135	10,900,135	10,900,135	10,900,135
Projected user rate	3.948	4.047	4.148	4.251	4.358	4.467	4.578	4.693	4.810	4.930	5.054
Projected operating revenues	$ 43,032,671	$ 44,108,487	$ 45,211,199	$ 46,341,479	$ 47,500,016	$ 48,687,517	$ 49,904,705	$ 51,152,322	$ 52,431,130	$ 53,741,909	$ 55,085,456
Projected percentage increase of water rates	*2.5%*	*2.5%*	*2.5%*	*2.5%*	*2.5%*	*2.5%*	*2.5%*	*2.5%*	*2.5%*	*2.5%*	*2.5%*
Sewer surcharge @90%	$ 38,729,404	$ 39,697,638	$ 40,690,079	$ 41,707,331	$ 42,750,014	$ 43,818,765	$ 44,914,235	$ 46,037,090	$ 47,188,017	$ 48,367,718	$ 49,576,910
Only 89% of Water Billings subject to Sewer Surcharge	$ 34,469,170	$ 35,330,898	$ 36,214,170	$ 37,119,525	$ 38,047,512	$ 38,998,701	$ 39,973,669	$ 40,973,010	$ 41,997,335	$ 43,047,269	$ 44,123,450

3. Program revenues are projected to increase by 3% annually until 2027 and 2.5% annually from 2028 and thereafter.
4. Other revenue includes miscellaneous revenues including wage and benefit revenue, sale of surplus equipment etc. These revenues are assumed to remain constant over the years.
5. Operating expenses will increase by inflation of 4.0% in 2023 and 2024, 3.0% from 2025 to 2027 and 1.9% annually thereafter.
6. Interest on long-term debt, includes interest on the existing debentures, new debentures purchased and construction financing during the projected period.

	2021 (Actual)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Existing debentures	$ 1,235,611	$ 1,395,952	$ 607,421	$ 505,141	$ 406,579	$ 336,195	$ 291,598	$ 262,737	$ 232,399	$ 202,800	$ 173,201
New debentures	-	99,799	1,095,404	1,163,706	1,226,350	1,284,322	1,337,431	1,385,482	1,428,271	1,465,586	1,497,204
Construction and other financing	149,394	413,849	281,875	144,375	144,375	144,375	144,375	144,375	144,375	144,375	144,375
	$ 1,385,005	$ 1,909,600	$ 1,984,700	$ 1,813,222	$ 1,777,304	$ 1,764,892	$ 1,773,404	$ 1,792,594	$ 1,805,045	$ 1,812,761	$ 1,814,780

	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Existing debentures	$ 144,015	$ 114,002	$ 84,403	$ 54,804	$ 29,341	$ 17,414	$ 10,418	$ 4,526	$ 1,946	$ -	$ -
New debentures	1,522,895	1,542,420	1,555,532	1,561,969	1,561,462	1,553,732	1,538,485	1,515,419	1,484,218	1,454,094	1,445,051
Construction and other financing	144,375	144,375	144,375	144,375	144,375	144,375	144,375	144,375	144,375	144,375	144,375
	$ 1,811,285	$ 1,800,797	$ 1,784,310	$ 1,761,148	$ 1,735,178	$ 1,715,521	$ 1,693,278	$ 1,664,320	$ 1,630,539	$ 1,598,469	$ 1,589,426

7. Long term debt principal repayment includes principal payments made towards existing debentures and any new debentures purchased during the projected period.

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Existing debentures, excluding any temporary construction financing that was secured	$ 3,716,213	$ 3,716,213	$ 3,716,213	$ 3,716,213	$ 2,716,213	$ 1,566,213	$ 974,018	$ 974,018	$ 974,018	$ 974,018	$ 974,018
New debentures	-	183,749	1,723,512	1,835,585	1,951,249	2,071,587	2,196,785	2,327,041	2,462,561	2,603,555	2,750,245
	$ 3,716,213	$ 3,899,962	$ 5,439,725	$ 5,551,798	$ 4,667,462	$ 3,637,800	$ 3,170,803	$ 3,301,059	$ 3,436,579	$ 3,577,573	$ 3,724,263

	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Existing debentures, excluding any temporary construction financing that was secured	$ 974,018	$ 974,018	$ 974,018	$ 974,017	$ 449,885	$ 249,907	$ 249,908	$ 125,000	$ 125,000	$ -	$ -
New debentures	2,902,861	3,061,643	3,226,840	3,398,711	3,577,526	3,763,565	3,957,119	4,158,493	4,368,003	3,313,754	3,356,786
	$ 3,876,879	$ 4,035,661	$ 4,200,858	$ 4,372,728	$ 4,027,411	$ 4,013,472	$ 4,207,027	$ 4,283,493	$ 4,493,003	$ 3,313,754	$ 3,356,786

8. See Projected Long Term Debt schedule. New debentures are considered the ultimate source of capital funding, generally two years after the capital project has been completed. However, construction financing is secured through the City for that same amount during the construction period.
9. Wastewater capital expenditures are in accordance with Wastewater Capital Forecast for 10 years from 2022 to 2031 provided by the Environment Division, adjusted for inflation of 10.0% in 2023, 5.0% in 2024, 3.0% in 2025 to 2027 and 1.9% thereafter.
   An additional $200,000 of capital expenses has been allocated to sanitary rehabilitation from 2023 onwards as per Management to account for trunk sewer inspections.
10. For the purposes of this projection, the capital carryforward existing at the end of 2021 is allocated over a 3 year time frame with 20% allocated in 2022, and 40% allocated in each 2023 and 2024.
11. Interest earned on reserve fund balance has not been calculated.

THE CORPORATION OF THE CITY OF THUNDER BAY
ENVIRONMENT DIVISION - WASTEWATER OPERATIONS
PROJECTED LONG TERM DEBT

FOR THE YEARS ENDING DECEMBER 31, 2021 TO 2042

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
EXISTING DEBT 1																						
IC Temporary Financing																						
Outstanding balance, beg of year	$ 22,900,000	$ 22,900,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Transfer to debentures	-	(22,900,000)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total outstanding, end of year	$ 22,900,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Interest	*$ 420,729*	*$ 684,800*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*
OILC (2004) - $10,000,000																						
2015, revised in 2014, maturing 2024																						
Outstanding balance, beg of year	$ 4,000,000	$ 3,000,000	$ 2,000,000	$ 1,000,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Principal	(1,000,000)	(1,000,000)	(1,000,000)	(1,000,000)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total outstanding, end of year	$ 3,000,000	$ 2,000,000	$ 1,000,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Interest	*$ 98,982*	*$ 72,582*	*$ 46,182*	*$ 19,854*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*
OILC (2005) - $12,650,000																						
2015, revised in 2014, maturing 2025																						
Outstanding balance, beg of year	$ 5,750,000	$ 4,600,000	$ 3,450,000	$ 2,300,000	$ 1,150,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Principal	(1,150,000)	(1,150,000)	(1,150,000)	(1,150,000)	(1,150,000)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total outstanding, end of year	$ 4,600,000	$ 3,450,000	$ 2,300,000	$ 1,150,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Interest	*$ 131,627*	*$ 103,912*	*$ 76,197*	*$ 48,634*	*$ 20,767*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*
OILC - $8,882,924																						
2011, maturing 2026																						
Outstanding balance, beg of year	$ 3,553,170	$ 2,960,975	$ 2,368,780	$ 1,776,585	$ 1,184,390	$ 592,195	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Principal	(592,195)	(592,195)	(592,195)	(592,195)	(592,195)	(592,195)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total outstanding, end of year	$ 2,960,975	$ 2,368,780	$ 1,776,585	$ 1,184,390	$ 592,195	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Interest	*$ 115,079*	*$ 95,063*	*$ 75,047*	*$ 55,195*	*$ 35,015*	*$ 14,998.00*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*
OILC - $5,995,807																						
2014, maturing 2035																						
Outstanding balance, beg of year	$ 4,496,856	$ 4,197,065	$ 3,897,275	$ 3,597,484	$ 3,297,694	$ 2,997,904	$ 2,698,113	$ 2,398,323	$ 2,098,532	$ 1,798,742	$ 1,498,952	$ 1,199,161	$ 899,371	$ 599,581	$ 299,790	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Principal	(299,790)	(299,790)	(299,790)	(299,790)	(299,790)	(299,790)	(299,790)	(299,790)	(299,790)	(299,790)	(299,790)	(299,790)	(299,790)	(299,790)	(299,790)	-	-	-	-	-	-	-
Total outstanding, end of year	$ 4,197,065	$ 3,897,275	$ 3,597,484	$ 3,297,694	$ 2,997,904	$ 2,698,113	$ 2,398,323	$ 2,098,532	$ 1,798,742	$ 1,498,952	$ 1,199,161	$ 899,371	$ 599,581	$ 299,790	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Interest	*$ 136,188*	*$ 126,955*	*$ 117,721*	*$ 108,791*	*$ 99,254*	*$ 90,021*	*$ 80,787*	*$ 71,756*	*$ 62,320*	*$ 53,087*	*$ 43,853*	*$ 34,721*	*$ 25,386*	*$ 16,152*	*$ 6,919*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*
OILC - $4,486,839																						
2015, maturing 2035																						
Outstanding balance, beg of year	$ 3,365,129	$ 3,140,787	$ 2,916,445	$ 2,692,103	$ 2,467,762	$ 2,243,420	$ 2,019,078	$ 1,794,736	$ 1,570,394	$ 1,346,052	$ 1,121,710	$ 897,368	$ 673,026	$ 448,684	$ 224,342	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Principal	(224,342)	(224,342)	(224,342)	(224,342)	(224,342)	(224,342)	(224,342)	(224,342)	(224,342)	(224,342)	(224,342)	(224,342)	(224,342)	(224,342)	(224,342)	-	-	-	-	-	-	-
Total outstanding, end of year	$ 3,140,787	$ 2,916,445	$ 2,692,103	$ 2,467,762	$ 2,243,420	$ 2,019,078	$ 1,794,736	$ 1,570,394	$ 1,346,052	$ 1,121,710	$ 897,368	$ 673,026	$ 448,684	$ 224,342	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Interest	*$ 101,914*	*$ 95,004*	*$ 88,094*	*$ 81,412*	*$ 74,275*	*$ 67,365*	*$ 60,455*	*$ 53,697*	*$ 46,636*	*$ 39,726*	*$ 32,816*	*$ 25,982*	*$ 18,997*	*$ 12,087*	*$ 5,178*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*
OILC - $3,999,556																						
2016, maturing 2036																						
Outstanding balance, beg of year	$ 3,199,645	$ 2,999,667	$ 2,799,689	$ 2,599,711	$ 2,399,734	$ 2,199,756	$ 1,999,778	$ 1,799,800	$ 1,599,822	$ 1,399,845	$ 1,199,867	$ 999,889	$ 799,911	$ 599,933	$ 399,956	$ 199,978	$ -	$ -	$ -	$ -	$ -	$ -
Principal	(199,978)	(199,978)	(199,978)	(199,978)	(199,978)	(199,978)	(199,978)	(199,978)	(199,978)	(199,978)	(199,978)	(199,978)	(199,978)	(199,978)	(199,978)	(199,978)	-	-	-	-	-	-
Total outstanding, end of year	$ 2,999,667	$ 2,799,689	$ 2,599,711	$ 2,399,734	$ 2,199,756	$ 1,999,778	$ 1,799,800	$ 1,599,822	$ 1,399,845	$ 1,199,867	$ 999,889	$ 799,911	$ 599,933	$ 399,956	$ 199,978	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Interest	*$ 101,729*	*$ 95,270*	*$ 88,811*	*$ 82,581*	*$ 75,892*	*$ 69,433*	*$ 62,974*	*$ 56,674*	*$ 50,055*	*$ 43,596*	*$ 37,136*	*$ 30,766*	*$ 24,218*	*$ 17,759*	*$ 11,299*	*$ 4,858*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*
OILC - $2,498,156																						
2018, maturing 2038																						
Outstanding balance, beg of year	$ 2,248,340	$ 2,123,433	$ 1,998,525	$ 1,873,617	$ 1,748,709	$ 1,623,801	$ 1,498,894	$ 1,373,986	$ 1,249,078	$ 1,124,170	$ 999,262	$ 874,355	$ 749,447	$ 624,539	$ 499,631	$ 374,723	$ 249,816	$ 124,908	$ -	$ -	$ -	$ -
Principal	(124,908)	(124,908)	(124,908)	(124,908)	(124,908)	(124,908)	(124,908)	(124,908)	(124,908)	(124,908)	(124,908)	(124,908)	(124,908)	(124,908)	(124,908)	(124,908)	(124,908)	(124,908)	-	-	-	-
Total outstanding, end of year	$ 2,123,433	$ 1,998,525	$ 1,873,617	$ 1,748,709	$ 1,623,801	$ 1,498,894	$ 1,373,986	$ 1,249,078	$ 1,124,170	$ 999,262	$ 874,355	$ 749,447	$ 624,539	$ 499,631	$ 374,723	$ 249,816	$ 124,908	$ -	$ -	$ -	$ -	$ -
Interest	*$ 78,261*	*$ 73,852*	*$ 69,443*	*$ 65,215*	*$ 60,624*	*$ 56,215*	*$ 51,806*	*$ 47,529*	*$ 42,987*	*$ 38,578*	*$ 34,169*	*$ 29,844*	*$ 25,350*	*$ 20,941*	*$ 16,532*	*$ 12,159*	*$ 7,713*	*$ 3,304*	*$ -*	*$ -*	*$ -*	*$ -*
OILC - $2,499,993																						
2020, maturing 2040																						
Outstanding balance, beg of year	$ 2,499,993	$ 2,374,994	$ 2,249,994	$ 2,124,994	$ 1,999,995	$ 1,874,995	$ 1,749,995	$ 1,624,996	$ 1,499,996	$ 1,374,996	$ 1,249,997	$ 1,124,997	$ 999,997	$ 874,998	$ 749,998	$ 624,998	$ 499,999	$ 374,999	$ 249,999	$ 125,000	$ -	$ -
Principal	(125,000)	(125,000)	(125,000)	(125,000)	(125,000)	(125,000)	(125,000)	(125,000)	(125,000)	(125,000)	(125,000)	(125,000)	(125,000)	(125,000)	(125,000)	(125,000)	(125,000)	(125,000)	(125,000)	(125,000)	-	-
Total outstanding, end of year	$ 2,374,994	$ 2,249,994	$ 2,124,994	$ 1,999,995	$ 1,874,995	$ 1,749,995	$ 1,624,996	$ 1,499,996	$ 1,374,996	$ 1,249,997	$ 1,124,997	$ 999,997	$ 874,998	$ 749,998	$ 624,998	$ 499,999	$ 374,999	$ 249,999	$ 125,000	$ -	$ -	$ -
Interest	*$ 51,101*	*$ 48,514*	*$ 45,926*	*$ 43,459*	*$ 40,751*	*$ 38,164*	*$ 35,576*	*$ 33,081*	*$ 30,401*	*$ 27,814*	*$ 25,226*	*$ 22,703*	*$ 20,051*	*$ 17,464*	*$ 14,876*	*$ 12,324*	*$ 9,701*	*$ 7,114*	*$ 4,526*	*$ 1,946*	*$ -*	*$ -*
Total existing debt																						
Outstanding balance, beg of year	$ 52,013,133	$ 48,296,921	$ 21,680,708	$ 17,964,495	$ 14,248,283	$ 11,532,070	$ 9,965,858	$ 8,991,840	$ 8,017,822	$ 7,043,805	$ 6,069,787	$ 5,095,770	$ 4,121,752	$ 3,147,734	$ 2,173,717	$ 1,199,700	$ 749,814	$ 499,907	$ 249,999	$ 125,000	$ -	$ -
Transfer to debentures	-	(22,900,000)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Principal	(3,716,213)	(3,716,213)	(3,716,213)	(3,716,213)	(2,716,213)	(1,566,213)	(974,018)	(974,018)	(974,018)	(974,018)	(974,018)	(974,018)	(974,018)	(974,018)	(974,017)	(449,885)	(249,907)	(249,908)	(125,000)	(125,000)	-	-
Total outstanding, end of year	$ 48,296,920	$ 21,680,708	$ 17,964,495	$ 14,248,282	$ 11,532,070	$ 9,965,857	$ 8,991,840	$ 8,017,822	$ 7,043,804	$ 6,069,787	$ 5,095,769	$ 4,121,752	$ 3,147,734	$ 2,173,716	$ 1,199,700	$ 749,815	$ 499,907	$ 249,999	$ 124,999	$ -	$ -	$ -
Interest	*$ 1,235,611*	*$ 1,395,952*	*$ 607,421*	*$ 505,141*	*$ 406,579*	*$ 336,195*	*$ 291,598*	*$ 262,737*	*$ 232,399*	*$ 202,800*	*$ 173,201*	*$ 144,015*	*$ 114,002*	*$ 84,403*	*$ 54,804*	*$ 29,341*	*$ 17,414*	*$ 10,418*	*$ 4,526*	*$ 1,946*	*$ -*	*$ -*
NEW DEBENTURES 2																						
Outstanding balance, beg of year	$ -	$ 3,674,984	$ 30,323,735	$ 30,600,223	$ 36,764,638	$ 37,813,389	$ 38,741,802	$ 39,545,016	$ 40,217,975	$ 40,755,414	$ 41,151,859	$ 41,401,614	$ 41,498,754	$ 41,437,110	$ 41,210,270	$ 40,811,559	$ 40,234,033	$ 39,470,468	$ 38,513,349	$ 37,354,856	$ 35,986,853	$ 35,673,099
New debt additions	3,674,984	26,832,500	2,000,000	8,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
Principal	-	(183,749)	(1,723,512)	(1,835,585)	(1,951,249)	(2,071,587)	(2,196,785)	(2,327,041)	(2,462,561)	(2,603,555)	(2,750,245)	(2,902,861)	(3,061,643)	(3,226,840)	(3,398,711)	(3,577,526)	(3,763,565)	(3,957,119)	(4,158,493)	(4,368,003)	(3,313,754)	(3,356,786)
Total outstanding, end of year	$ 3,674,984	$ 30,323,735	$ 30,600,223	$ 36,764,638	$ 37,813,389	$ 38,741,802	$ 39,545,016	$ 40,217,975	$ 40,755,414	$ 41,151,859	$ 41,401,614	$ 41,498,754	$ 41,437,110	$ 41,210,270	$ 40,811,559	$ 40,234,033	$ 39,470,468	$ 38,513,349	$ 37,354,856	$ 35,986,853	$ 35,673,099	$ 35,316,313
Interest	*$ -*	*$ 99,799*	*$ 1,095,404*	*$ 1,163,706*	*$ 1,226,350*	*$ 1,284,322*	*$ 1,337,431*	*$ 1,385,482*	*$ 1,428,271*	*$ 1,465,586*	*$ 1,497,204*	*$ 1,522,895*	*$ 1,542,420*	*$ 1,555,532*	*$ 1,561,969*	*$ 1,561,462*	*$ 1,553,732*	*$ 1,538,485*	*$ 1,515,419*	*$ 1,484,218*	*$ 1,454,094*	*$ 1,445,051*
TEMPORARY CONSTRUCTION FINANCING																						
Outstanding balance, beg of year	$ 3,932,500	$ 5,932,500	$ 10,000,000	$ 11,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000
New debt additions	2,000,000	8,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
Transfer to debentures	-	(3,932,500)	(2,000,000)	(8,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)
Total outstanding, end of year	$ 5,932,500	$ 10,000,000	$ 11,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000
Interest of 2.75%	*$ 149,394*	*$ 220,000*	*$ 281,875*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*
TOTAL DEBT																						
Outstanding balance, beg of year	$ 55,945,633	$ 57,904,405	$ 62,004,443	$ 59,564,718	$ 57,012,921	$ 55,345,459	$ 54,707,660	$ 54,536,856	$ 54,235,797	$ 53,799,219	$ 53,221,646	$ 52,497,384	$ 51,620,506	$ 50,584,844	$ 49,383,987	$ 48,011,259	$ 46,983,847	$ 45,970,375	$ 44,763,348	$ 43,479,856	$ 41,986,853	$ 41,673,099
New debt additions or transfer to new debt type	5,674,984	34,832,500	5,000,000	11,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000
Transfer to debentures	-	(26,832,500)	(2,000,000)	(8,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)
Principal	(3,716,213)	(3,899,962)	(5,439,725)	(5,551,798)	(4,667,462)	(3,637,800)	(3,170,803)	(3,301,059)	(3,436,579)	(3,577,573)	(3,724,263)	(3,876,879)	(4,035,661)	(4,200,858)	(4,372,728)	(4,027,411)	(4,013,472)	(4,207,027)	(4,283,493)	(4,493,003)	(3,313,754)	(3,356,786)
Total outstanding, end of year	$ 57,904,404	$ 62,004,443	$ 59,564,718	$ 57,012,920	$ 55,345,459	$ 54,707,659	$ 54,536,856	$ 54,235,797	$ 53,799,218	$ 53,221,646	$ 52,497,383	$ 51,620,506	$ 50,584,844	$ 49,383,986	$ 48,011,259	$ 46,983,848	$ 45,970,375	$ 44,763,348	$ 43,479,855	$ 41,986,853	$ 41,673,099	$ 41,316,313
Interest	*$ 1,385,005*	*$ 1,715,751*	*$ 1,984,700*	*$ 1,813,222*	*$ 1,777,304*	*$ 1,764,892*	*$ 1,773,404*	*$ 1,792,594*	*$ 1,805,045*	*$ 1,812,761*	*$ 1,814,780*	*$ 1,811,285*	*$ 1,800,797*	*$ 1,784,310*	*$ 1,761,148*	*$ 1,735,178*	*$ 1,715,521*	*$ 1,693,278*	*$ 1,664,320*	*$ 1,630,539*	*$ 1,598,469*	*$ 1,589,426*

PROJECTED WASTEWATER DEBT SERVICE RATIO

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
REVENUES 3																						
Sewer surcharge	$ 25,530,970	$ 26,280,000	$ 27,068,400	$ 27,880,452	$ 28,716,865	$ 29,578,371	$ 30,465,723	$ 31,227,366	$ 32,008,051	$ 32,808,252	$ 33,628,458	$ 34,469,170	$ 35,330,898	$ 36,214,170	$ 37,119,525	$ 38,047,512	$ 38,998,701	$ 39,973,669	$ 40,973,010	$ 41,997,335	$ 43,047,269	$ 44,123,450
Other	717,871	355,000	360,250	365,658	371,228	376,965	382,874	387,946	393,145	398,474	403,936	409,534	415,272	421,154	427,183	433,363	439,697	446,189	452,844	459,665	466,657	473,823
	$ 26,248,841	$ 26,635,000	$ 27,428,650	$ 28,246,110	$ 29,088,093	$ 29,955,336	$ 30,848,597	$ 31,615,312	$ 32,401,196	$ 33,206,726	$ 34,032,394	$ 34,878,704	$ 35,746,170	$ 36,635,324	$ 37,546,708	$ 38,480,875	$ 39,438,398	$ 40,419,858	$ 41,425,854	$ 42,457,000	$ 43,513,926	$ 44,597,273
Wastewater debt service ratio	19.43%	21.08%	27.07%	26.07%	22.16%	18.04%	16.03%	16.11%	16.18%	16.23%	16.28%	16.31%	16.33%	16.34%	16.34%	14.98%	14.53%	14.60%	14.36%	14.42%	11.29%	11.09%

See accompanying notes and assumptions to these projected financial statements.

THE CORPORATION OF THE CITY OF THUNDER BAY
ENVIRONMENT DIVISION - WASTEWATER OPERATIONS
PROJECTED LONG TERM DEBT - NOTES AND ASSUMPTIONS

FOR THE YEARS ENDING DECEMBER 31, 2021 TO 2042

Notes and Assumptions :

Actual results achieved for the period covered will vary from this information presented. The differences may be material. These projections are not prepared in accordance with GAAP.

See City of Thunder Bay Annual Reports for the Year ended December 31, 2020 and 2021 for the City's accounting policies.

1 Currently, the Wastewater Division holds 8 debentures. The terms of these debentures are generally fixed interest, payable semi-annually .

2 The Wastewater Division will require new debt to fund its future capital costs. New debentures will have an estimated interest rate of 4.00% repayable over 20 years.
The OIPC Wastewater $3.6 million debenture financed in 2021 and the Wastewater $22.9 million debenture financed in 2022 have already been raised by the Environment Dvision.

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
OILC financed in 2021																						
Opening balance	-	3,674,984	3,491,235	3,307,486	3,123,737	2,939,987	2,756,238	2,572,489	2,388,740	2,204,991	2,021,241	1,837,492	1,653,743	1,469,994	1,286,244	1,102,495	918,746	734,997	551,247	367,498	183,749	-
New additions	3,674,984																					
Principal payment	-	(183,749)	(183,749)	(183,749)	(183,749)	(183,749)	(183,749)	(183,749)	(183,749)	(183,749)	(183,749)	(183,749)	(183,749)	(183,749)	(183,749)	(183,749)	(183,749)	(183,749)	(183,749)	(183,749)	(183,749)	-
Ending balance	3,674,984	3,491,235	3,307,486	3,123,737	2,939,987	2,756,238	2,572,489	2,388,740	2,204,991	2,021,241	1,837,492	1,653,743	1,469,994	1,286,244	1,102,495	918,746	734,997	551,247	367,498	183,749	-	-
Interest payment	-	99,799	94,746	89,693	84,639	79,586	74,533	69,480	64,427	59,374	54,321	49,268	44,215	39,162	34,108	29,055	24,002	18,949	13,896	8,843	3,790	-
Wastewater debenture financed in 2022																						
Opening balance	-	-	22,900,000	21,627,778	20,355,556	19,083,333	17,811,111	16,538,889	15,266,667	13,994,444	12,722,222	11,450,000	10,177,778	8,905,556	7,633,333	6,361,111	5,088,889	3,816,667	2,544,444	1,272,222	-	-
New additions	-	22,900,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Principal payment	-	-	(1,272,222)	(1,272,222)	(1,272,222)	(1,272,222)	(1,272,222)	(1,272,222)	(1,272,222)	(1,272,222)	(1,272,222)	(1,272,222)	(1,272,222)	(1,272,222)	(1,272,222)	(1,272,222)	(1,272,222)	(1,272,222)	(1,272,222)	(1,272,222)	-	-
Ending balance	-	22,900,000	21,627,778	20,355,556	19,083,333	17,811,111	16,538,889	15,266,667	13,994,444	12,722,222	11,450,000	10,177,778	8,905,556	7,633,333	6,361,111	5,088,889	3,816,667	2,544,444	1,272,222	-	-	-
Interest payment	-	-	677,458	639,292	601,125	562,958	524,792	486,625	448,458	410,292	372,125	333,958	295,792	257,625	219,458	181,292	143,125	104,958	66,792	28,625	-	-
Financed in 2022																						
Opening balance	-	-	3,932,500	3,664,959	3,386,610	3,097,015	2,795,720	2,482,253	2,156,123	1,816,816	1,463,802	1,096,525	714,411	316,859	(96,753)	(527,076)	(974,784)	(1,440,579)	(1,925,192)	(2,429,384)	(2,953,945)	(3,499,698)
New additions	-	3,932,500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Principal payment	-	-	(267,541)	(278,350)	(289,595)	(301,294)	(313,467)	(326,131)	(339,307)	(353,015)	(367,276)	(382,114)	(397,552)	(413,613)	(430,323)	(447,708)	(465,795)	(484,613)	(504,192)	(524,561)	(545,753)	(567,802)
Ending balance	-	3,932,500	3,664,959	3,386,610	3,097,015	2,795,720	2,482,253	2,156,123	1,816,816	1,463,802	1,096,525	714,411	316,859	(96,753)	(527,076)	(974,784)	(1,440,579)	(1,925,192)	(2,429,384)	(2,953,945)	(3,499,698)	(4,067,500)
Interest payment	-	-	323,200	312,391	301,146	289,446	277,274	264,610	251,434	237,726	223,465	208,627	193,189	177,128	160,418	143,033	124,946	106,128	86,549	66,180	44,988	22,939
Financed in 2023																						
Opening balance	-	-	-	2,000,000	1,898,736	1,793,381	1,683,769	1,569,729	1,451,082	1,327,641	1,199,213	1,065,597	926,583	781,953	631,480	474,928	312,051	142,594	(33,709)	(217,135)	(407,972)	(606,518)
New additions	-	-	2,000,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Principal payment	-	-	-	(101,264)	(105,355)	(109,612)	(114,040)	(118,647)	(123,441)	(128,428)	(133,616)	(139,014)	(144,630)	(150,473)	(156,552)	(162,877)	(169,457)	(176,303)	(183,426)	(190,837)	(198,546)	(206,568)
Ending balance	-	-	2,000,000	1,898,736	1,793,381	1,683,769	1,569,729	1,451,082	1,327,641	1,199,213	1,065,597	926,583	781,953	631,480	474,928	312,051	142,594	(33,709)	(217,135)	(407,972)	(606,518)	(813,086)
Interest payment	-	-	-	122,331	118,240	113,984	109,555	104,948	100,155	95,168	89,979	84,581	78,965	73,122	67,043	60,718	54,138	47,292	40,169	32,759	25,049	17,028
Financed in 2024																						
Opening balance	-	-	-	-	8,000,000	7,899,672	7,795,291	7,686,693	7,573,708	7,456,158	7,333,859	7,206,619	7,074,239	6,936,510	6,793,217	6,644,135	6,489,030	6,327,659	6,159,769	5,985,096	5,803,366	5,614,294
New additions	-	-	-	8,000,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Principal payment	-	-	-	-	(100,328)	(104,381)	(108,598)	(112,985)	(117,550)	(122,299)	(127,240)	(132,380)	(137,729)	(143,293)	(149,082)	(155,105)	(161,371)	(167,890)	(174,673)	(181,730)	(189,072)	(196,710)
Ending balance	-	-	-	8,000,000	7,899,672	7,795,291	7,686,693	7,573,708	7,456,158	7,333,859	7,206,619	7,074,239	6,936,510	6,793,217	6,644,135	6,489,030	6,327,659	6,159,769	5,985,096	5,803,366	5,614,294	5,417,584
Interest payment	-	-	-	-	121,200	117,147	112,930	108,542	103,978	99,229	94,288	89,147	83,799	78,235	72,446	66,423	60,157	53,637	46,855	39,798	32,456	24,817
Financed in 2025																						
Opening balance	-	-	-	-	-	3,000,000	2,899,672	2,795,291	2,686,693	2,573,708	2,456,158	2,333,859	2,206,619	2,074,239	1,936,510	1,793,217	1,644,135	1,489,030	1,327,659	1,159,769	985,096	803,366
New additions	-	-	-	-	3,000,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Principal payment	-	-	-	-	-	(100,328)	(104,381)	(108,598)	(112,985)	(117,550)	(122,299)	(127,240)	(132,380)	(137,729)	(143,293)	(149,082)	(155,105)	(161,371)	(167,890)	(174,673)	(181,730)	(189,072)
Ending balance	-	-	-	-	3,000,000	2,899,672	2,795,291	2,686,693	2,573,708	2,456,158	2,333,859	2,206,619	2,074,239	1,936,510	1,793,217	1,644,135	1,489,030	1,327,659	1,159,769	985,096	803,366	614,294
Interest payment	-	-	-	-	-	121,200	117,147	112,930	108,542	103,978	99,229	94,288	89,147	83,799	78,235	72,446	66,423	60,157	53,637	46,855	39,798	32,456
Financed in 2026																						
Opening balance	-	-	-	-	-	-	3,000,000	2,899,672	2,795,291	2,686,693	2,573,708	2,456,158	2,333,859	2,206,619	2,074,239	1,936,510	1,793,217	1,644,135	1,489,030	1,327,659	1,159,769	985,096
New additions	-	-	-	-	-	3,000,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Principal payment	-	-	-	-	-	-	(100,328)	(104,381)	(108,598)	(112,985)	(117,550)	(122,299)	(127,240)	(132,380)	(137,729)	(143,293)	(149,082)	(155,105)	(161,371)	(167,890)	(174,673)	(181,730)
Ending balance	-	-	-	-	-	3,000,000	2,899,672	2,795,291	2,686,693	2,573,708	2,456,158	2,333,859	2,206,619	2,074,239	1,936,510	1,793,217	1,644,135	1,489,030	1,327,659	1,159,769	985,096	803,366
Interest payment	-	-	-	-	-	-	121,200	117,147	112,930	108,542	103,978	99,229	94,288	89,147	83,799	78,235	72,446	66,423	60,157	53,637	46,855	39,798
Financed in 2027																						
Opening balance	-	-	-	-	-	-	-	3,000,000	2,899,672	2,795,291	2,686,693	2,573,708	2,456,158	2,333,859	2,206,619	2,074,239	1,936,510	1,793,217	1,644,135	1,489,030	1,327,659	1,159,769
New additions	-	-	-	-	-	-	3,000,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Principal payment	-	-	-	-	-	-	-	(100,328)	(104,381)	(108,598)	(112,985)	(117,550)	(122,299)	(127,240)	(132,380)	(137,729)	(143,293)	(149,082)	(155,105)	(161,371)	(167,890)	(174,673)
Ending balance	-	-	-	-	-	-	3,000,000	2,899,672	2,795,291	2,686,693	2,573,708	2,456,158	2,333,859	2,206,619	2,074,239	1,936,510	1,793,217	1,644,135	1,489,030	1,327,659	1,159,769	985,096
Interest payment	-	-	-	-	-	-	-	121,200	117,147	112,930	108,542	103,978	99,229	94,288	89,147	83,799	78,235	72,446	66,423	60,157	53,637	46,855
Financed in 2028																						
Opening balance	-	-	-	-	-	-	-	-	3,000,000	2,899,672	2,795,291	2,686,693	2,573,708	2,456,158	2,333,859	2,206,619	2,074,239	1,936,510	1,793,217	1,644,135	1,489,030	1,327,659
New additions	-	-	-	-	-	-	-	3,000,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Principal payment	-	-	-	-	-	-	-	-	(100,328)	(104,381)	(108,598)	(112,985)	(117,550)	(122,299)	(127,240)	(132,380)	(137,729)	(143,293)	(149,082)	(155,105)	(161,371)	(167,890)
Ending balance	-	-	-	-	-	-	-	3,000,000	2,899,672	2,795,291	2,686,693	2,573,708	2,456,158	2,333,859	2,206,619	2,074,239	1,936,510	1,793,217	1,644,135	1,489,030	1,327,659	1,159,769
Interest payment	-	-	-	-	-	-	-	-	121,200	117,147	112,930	108,542	103,978	99,229	94,288	89,147	83,799	78,235	72,446	66,423	60,157	53,637

THE CORPORATION OF THE CITY OF THUNDER BAY
ENVIRONMENT DIVISION - WASTEWATER OPERATIONS
PROJECTED LONG TERM DEBT - NOTES AND ASSUMPTIONS

FOR THE YEARS ENDING DECEMBER 31, 2021 TO 2042

Financed in 2029																						
Opening balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 2,899,672	$ 2,795,291	$ 2,686,693	$ 2,573,708	$ 2,456,158	$ 2,333,859	$ 2,206,619	$ 2,074,239	$ 1,936,510	$ 1,793,217	$ 1,644,135	$ 1,489,030
New additions	-	-	-	-	-	-	-	-	3,000,000	-	-	-	-	-	-	-	-	-	-	-	-	-
Principal payment	-	-	-	-	-	-	-	-	-	(100,328)	(104,381)	(108,598)	(112,985)	(117,550)	(122,299)	(127,240)	(132,380)	(137,729)	(143,293)	(149,082)	(155,105)	(161,371)
Ending balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 2,899,672	$ 2,795,291	$ 2,686,693	$ 2,573,708	$ 2,456,158	$ 2,333,859	$ 2,206,619	$ 2,074,239	$ 1,936,510	$ 1,793,217	$ 1,644,135	$ 1,489,030	$ 1,327,659
Interest payment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 121,200	$ 117,147	$ 112,930	$ 108,542	$ 103,978	$ 99,229	$ 94,288	$ 89,147	$ 83,799	$ 78,235	$ 72,446	$ 66,423	$ 60,157
Financed in 2030																						
Opening balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 2,899,672	$ 2,795,291	$ 2,686,693	$ 2,573,708	$ 2,456,158	$ 2,333,859	$ 2,206,619	$ 2,074,239	$ 1,936,510	$ 1,793,217	$ 1,644,135
New additions	-	-	-	-	-	-	-	-	-	3,000,000	-	-	-	-	-	-	-	-	-	-	-	-
Principal payment	-	-	-	-	-	-	-	-	-	-	(100,328)	(104,381)	(108,598)	(112,985)	(117,550)	(122,299)	(127,240)	(132,380)	(137,729)	(143,293)	(149,082)	(155,105)
Ending balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 2,899,672	$ 2,795,291	$ 2,686,693	$ 2,573,708	$ 2,456,158	$ 2,333,859	$ 2,206,619	$ 2,074,239	$ 1,936,510	$ 1,793,217	$ 1,644,135	$ 1,489,030
Interest payment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 121,200	$ 117,147	$ 112,930	$ 108,542	$ 103,978	$ 99,229	$ 94,288	$ 89,147	$ 83,799	$ 78,235	$ 72,446	$ 66,423
Financed in 2031																						
Opening balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 2,899,672	$ 2,795,291	$ 2,686,693	$ 2,573,708	$ 2,456,158	$ 2,333,859	$ 2,206,619	$ 2,074,239	$ 1,936,510	$ 1,793,217
New additions	-	-	-	-	-	-	-	-	-	-	3,000,000	-	-	-	-	-	-	-	-	-	-	-
Principal payment	-	-	-	-	-	-	-	-	-	-	-	(100,328)	(104,381)	(108,598)	(112,985)	(117,550)	(122,299)	(127,240)	(132,380)	(137,729)	(143,293)	(149,082)
Ending balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 2,899,672	$ 2,795,291	$ 2,686,693	$ 2,573,708	$ 2,456,158	$ 2,333,859	$ 2,206,619	$ 2,074,239	$ 1,936,510	$ 1,793,217	$ 1,644,135
Interest payment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 121,200	$ 117,147	$ 112,930	$ 108,542	$ 103,978	$ 99,229	$ 94,288	$ 89,147	$ 83,799	$ 78,235	$ 72,446
Financed in 2032																						
Opening balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 2,899,672	$ 2,795,291	$ 2,686,693	$ 2,573,708	$ 2,456,158	$ 2,333,859	$ 2,206,619	$ 2,074,239	$ 1,936,510
New additions	-	-	-	-	-	-	-	-	-	-	-	3,000,000	-	-	-	-	-	-	-	-	-	-
Principal payment	-	-	-	-	-	-	-	-	-	-	-	-	(100,328)	(104,381)	(108,598)	(112,985)	(117,550)	(122,299)	(127,240)	(132,380)	(137,729)	(143,293)
Ending balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 2,899,672	$ 2,795,291	$ 2,686,693	$ 2,573,708	$ 2,456,158	$ 2,333,859	$ 2,206,619	$ 2,074,239	$ 1,936,510	$ 1,793,217
Interest payment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 121,200	$ 117,147	$ 112,930	$ 108,542	$ 103,978	$ 99,229	$ 94,288	$ 89,147	$ 83,799	$ 78,235
Financed in 2033																						
Opening balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 2,899,672	$ 2,795,291	$ 2,686,693	$ 2,573,708	$ 2,456,158	$ 2,333,859	$ 2,206,619	$ 2,074,239
New additions	-	-	-	-	-	-	-	-	-	-	-	-	3,000,000	-	-	-	-	-	-	-	-	-
Principal payment	-	-	-	-	-	-	-	-	-	-	-	-	-	(100,328)	(104,381)	(108,598)	(112,985)	(117,550)	(122,299)	(127,240)	(132,380)	(137,729)
Ending balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 2,899,672	$ 2,795,291	$ 2,686,693	$ 2,573,708	$ 2,456,158	$ 2,333,859	$ 2,206,619	$ 2,074,239	$ 1,936,510
Interest payment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 121,200	$ 117,147	$ 112,930	$ 108,542	$ 103,978	$ 99,229	$ 94,288	$ 89,147	$ 83,799
Financed in 2034																						
Opening balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 2,899,672	$ 2,795,291	$ 2,686,693	$ 2,573,708	$ 2,456,158	$ 2,333,859	$ 2,206,619
New additions	-	-	-	-	-	-	-	-	-	-	-	-	-	3,000,000	-	-	-	-	-	-	-	-
Principal payment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(100,328)	(104,381)	(108,598)	(112,985)	(117,550)	(122,299)	(127,240)	(132,380)
Ending balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 2,899,672	$ 2,795,291	$ 2,686,693	$ 2,573,708	$ 2,456,158	$ 2,333,859	$ 2,206,619	$ 2,074,239
Interest payment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 121,200	$ 117,147	$ 112,930	$ 108,542	$ 103,978	$ 99,229	$ 94,288	$ 89,147
Financed in 2035																						
Opening balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 2,899,672	$ 2,795,291	$ 2,686,693	$ 2,573,708	$ 2,456,158	$ 2,333,859
New additions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,000,000	-	-	-	-	-	-	-
Principal payment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(100,328)	(104,381)	(108,598)	(112,985)	(117,550)	(122,299)	(127,240)
Ending balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 2,899,672	$ 2,795,291	$ 2,686,693	$ 2,573,708	$ 2,456,158	$ 2,333,859	$ 2,206,619
Interest payment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 121,200	$ 117,147	$ 112,930	$ 108,542	$ 103,978	$ 99,229	$ 94,288
Financed in 2036																						
Opening balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 2,899,672	$ 2,795,291	$ 2,686,693	$ 2,573,708	$ 2,456,158
New additions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,000,000	-	-	-	-	-	-
Principal payment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(100,328)	(104,381)	(108,598)	(112,985)	(117,550)	(122,299)
Ending balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 2,899,672	$ 2,795,291	$ 2,686,693	$ 2,573,708	$ 2,456,158	$ 2,333,859
Interest payment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 121,200	$ 117,147	$ 112,930	$ 108,542	$ 103,978	$ 99,229
Financed in 2037																						
Opening balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 2,899,672	$ 2,795,291	$ 2,686,693	$ 2,573,708
New additions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,000,000	-	-	-	-	-
Principal payment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(100,328)	(104,381)	(108,598)	(112,985)	(117,550)
Ending balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 2,899,672	$ 2,795,291	$ 2,686,693	$ 2,573,708	$ 2,456,158
Interest payment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 121,200	$ 117,147	$ 112,930	$ 108,542	$ 103,978
Financed in 2038																						
Opening balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 2,899,672	$ 2,795,291	$ 2,686,693
New additions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,000,000	-	-	-	-
Principal payment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(100,328)	(104,381)	(108,598)	(112,985)
Ending balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 2,899,672	$ 2,795,291	$ 2,686,693	$ 2,573,708
Interest payment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 121,200	$ 117,147	$ 112,930	$ 108,542

THE CORPORATION OF THE CITY OF THUNDER BAY
ENVIRONMENT DIVISION - WASTEWATER OPERATIONS
PROJECTED LONG TERM DEBT - NOTES AND ASSUMPTIONS

FOR THE YEARS ENDING DECEMBER 31, 2021 TO 2042

Financed in 2039																						
Opening balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 2,899,672	$ 2,795,291
New additions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,000,000	-	-	-
Principal payment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(100,328)	(104,381)	(108,598)
Ending balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 2,899,672	$ 2,795,291	$ 2,686,693
Interest payment	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ 121,200*	*$ 117,147*	*$ 112,930*
Financed in 2040																						
Opening balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 2,899,672
New additions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,000,000	-	-
Principal payment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(100,328)	(104,381)
Ending balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 2,899,672	$ 2,795,291
Interest payment	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ 121,200*	*$ 117,147*
Financed in 2041																						
Opening balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000
New additions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,000,000	-
Principal payment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(100,328)
Ending balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000	$ 2,899,672
Interest payment	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ 121,200*
Financed in 2042																						
Opening balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
New additions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,000,000
Principal payment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ending balance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,000,000
Interest payment	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*	*$ -*
Total new debentures																						
Opening balance	$ -	$ 3,674,984	$ 30,323,735	$ 30,600,223	$ 36,764,638	$ 37,813,389	$ 38,741,802	$ 39,545,016	$ 40,217,975	$ 40,755,414	$ 41,151,859	$ 41,401,614	$ 41,498,754	$ 41,437,110	$ 41,210,270	$ 40,811,559	$ 40,234,033	$ 39,470,468	$ 38,513,349	$ 37,354,856	$ 35,986,853	$ 35,673,099
New additions	3,674,984	26,832,500	2,000,000	8,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
Principal payment	-	(183,749)	(1,723,512)	(1,835,585)	(1,951,249)	(2,071,587)	(2,196,785)	(2,327,041)	(2,462,561)	(2,603,555)	(2,750,245)	(2,902,861)	(3,061,643)	(3,226,840)	(3,398,711)	(3,577,526)	(3,763,565)	(3,957,119)	(4,158,493)	(4,368,003)	(3,313,754)	(3,356,786)
Ending balance	$ 3,674,984	$ 30,323,735	$ 30,600,223	$ 36,764,638	$ 37,813,389	$ 38,741,802	$ 39,545,016	$ 40,217,975	$ 40,755,414	$ 41,151,859	$ 41,401,614	$ 41,498,754	$ 41,437,110	$ 41,210,270	$ 40,811,559	$ 40,234,033	$ 39,470,468	$ 38,513,349	$ 37,354,856	$ 35,986,853	$ 35,673,099	$ 35,316,313
Interest payment	*$ -*	*$ 99,799*	*$ 1,095,404*	*$ 1,163,706*	*$ 1,226,350*	*$ 1,284,322*	*$ 1,337,431*	*$ 1,385,482*	*$ 1,428,271*	*$ 1,465,586*	*$ 1,497,204*	*$ 1,522,895*	*$ 1,542,420*	*$ 1,555,532*	*$ 1,561,969*	*$ 1,561,462*	*$ 1,553,732*	*$ 1,538,485*	*$ 1,515,419*	*$ 1,484,218*	*$ 1,454,094*	*$ 1,445,051*
Temporary financing																						
Outstanding balance, beg of year	$ 3,932,500	$ 5,932,500	$ 10,000,000	$ 11,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000
New additions	2,000,000	8,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
Principal payment	-	(3,932,500)	(2,000,000)	(8,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)	(3,000,000)
Total outstanding, end of year	$ 5,932,500	$ 10,000,000	$ 11,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000
Interest payment *2.75%*	*$ 149,394*	*$ 220,000*	*$ 281,875*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*	*$ 144,375*

3 See Statement of Operations and Reserve Balance, Page 1 for revenues. These revenues will be used to meet the debt obligations including principal and interest payments over the years.

4 From the Projected Statement of Operations and Reserve Balance Schedule.