

## TOWN OF MISSISSIPPI MILLS

### WATER AND WASTEWATER RATE STUDY UPDATE

JANUARY 28, 2015



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 Planning for growth

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## 1. INTRODUCTION

In 2012, the “Master Plan Report, Town of Mississippi Mills – Almonte Ward, Water and Wastewater Infrastructure” (Master Plan Report) was prepared by J.L. Richards & Associates Limited and Golder Associates Ltd. The Master Plan Report identified significantly higher capital needs than what was captured by the Town’s 2009 Water and Wastewater Rate Study and DC By-law at the time. Subsequently, Watson was retained to update the Town’s Water and Wastewater Rate Study and to provide comments on the potential impacts to the Town’s DC By-law. The water and wastewater rates currently in place, and projected to 2021 by the prior updates, are provided below.

**Table 1**  
**Town of Mississippi Mills**  
**Combined Water and Wastewater Services**  
**Rate Forecast per 2012 Rate Study Update**

Description	Existing	2015	2016	2017	2018	2019	2020	2021
Base Charge (annually)	\$ 486.96	\$ 535.66	\$ 589.23	\$ 648.15	\$ 712.96	\$ 784.26	\$ 862.69	\$ 948.96
Volume Charge (per 1,000 gallons)	\$ 10.89	\$ 11.44	\$ 12.01	\$ 12.61	\$ 13.24	\$ 14.64	\$ 15.56	\$ 16.39

Since 2012, the Town has continued to refine capital plans based on infrastructure needs and also undertook a new Development Charges Background Study in 2014. As a result, Watson was retained to undertake an update to the Water and Wastewater Rate Study. The process undertaken for the update study included:

- Review of water and wastewater demand assumptions, whereby the historic customer and consumption records were reviewed to assist in the forecast for service demands over the 2015-2024 forecast period;
- Update the capital needs forecast for water and wastewater services, which was undertaken by reviewing the Town’s draft 2015 Capital Budget, risk-rated inventory of linear infrastructure, and Town’s long-range (i.e. 2015-2024) capital plan;
- Develop a capital funding plan for the 2015-2024 capital needs forecast, including a review of the Town’s DC Bylaw;
- Review and update of the net operating expenditures for the water and wastewater system reflecting draft 2015 budget estimates and forecast operating costs over the 2015-2024 period, incorporating associated capital plan requirements;
- Provide recommended water and wastewater rate adjustments to address the needs of the long-term financial plan; and
- Providing an impact assessment of the recommended rates.

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The following sections of this report summarize the findings for each of the above referenced process steps.

## **2. SERVICE DEMAND FORECAST**

The Town provided Watson with historical water consumption records for the period 2002-2013 for the entire system as well as the 5 largest water consuming customers. This information was analyzed to develop a forecast of water demand for the period 2015-2024.

Based on the information provided and the information contained in previous rate studies, total water consumption has decreased since 2002, averaging approximately 111.4 million gallons annually. Furthermore, during this period the number of water and wastewater customers has increased by 32% from 2,048 in 2002 to about 2,697 currently. This is reflective of the water conservation efforts exhibited by the largely residential customer base, as well as a general decline in housing occupancy.

Annual water demand per residential customer was approximately 32,285 gallons (i.e. 147 m<sup>3</sup>) in 2013. This is lower than the consumption assumption used in the 2012 Update Study of 40,900 (i.e. 186 m<sup>3</sup> per year) due to conservation efforts and a decline in average housing occupancy. The growth rate for the forecast period is based on the Town of Mississippi Mills 2014 Development Charges Background Study (DC Study), which identifies growth of approximately 72 residential units and 8 non-residential customers per year within the urban serviced area. It is noted that the 54 high-density residential units identified in the Town's 2014 DC Study were assumed to result in an additional 3 residential customers during the forecast period. This represents an annual rate of customer growth for the forecast period of 2.6%. As a result, the forecasted water demand for the system is estimated at a slightly lower annual growth rate of 2.4% annually, increasing from 98.4 million gallons in 2015 to 121.1 million gallons in 2024.

**Table 2**  
**Town of Mississippi Mills**  
**2013-2021 Water and Wastewater Demand Forecast**

RESIDENTIAL	Forecast									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
TOTAL - All Users	2,464	2,536	2,608	2,680	2,751	2,824	2,895	2,967	3,039	3,111
Total Consumption	79,565,048	81,871,819	84,210,875	86,517,647	88,824,418	91,163,475	93,470,246	95,777,017	98,116,074	100,422,845
Avg. Consumption User	32,285	32,285	32,285	32,285	32,285	32,285	32,285	32,285	32,285	32,285

  

NON-RESIDENTIAL	Forecast									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
TOTAL - All Users	312	320	329	337	345	353	361	370	378	386
Total Consumption	18,831,794	19,039,868	19,247,943	19,456,017	19,664,092	19,872,167	20,080,241	20,288,316	20,496,390	20,704,465
Avg. Consumption User	60,321	59,429	58,580	57,773	57,005	56,272	55,572	54,903	54,263	53,651
Adjusted Average Consumption Per User	25,402	25,402	25,402	25,402	25,402	25,402	25,402	25,402	25,402	25,402

  

TOWN-WIDE TOTAL USERS	2,777	2,856	2,937	3,017	3,096	3,177	3,256	3,336	3,417	3,496
TOWN-WIDE TOTAL CONSUMPTION	98,396,841	100,911,687	103,458,818	105,973,664	108,488,510	111,035,641	113,550,487	116,065,333	118,612,464	121,127,310

### 3. CAPITAL NEEDS FORECAST AND FUNDING PLAN

The capital needs forecast was derived from multiple sources, including the Town's draft 2015 Capital Budget, and the Town's long-range (i.e. 2015-2024) capital plan. The lifecycle replacement needs of existing linear water and wastewater infrastructure were derived from a risk-rated asset inventory of these assets provided by the Town.

The Town's draft 2015 budget totals approximately \$1.54 million in capital needs. These projects include lifecycle capital needs, major maintenance and studies. The projects will be funded by the water and wastewater rate base sources (i.e. reserves and debt).

The Master Plan Report identified the anticipated capital needs for water and wastewater services to provide municipal services to accommodate future growth over the buildout of the service area. These works have been incorporated into the Town's 2014 DC Background Study to summarize the total growth-related capital spending and to measure the impacts on the Town's DC by-law. The wastewater capital projects identified in the Town's 2014 DC Study include the outstanding growth share of debt payments for the Wastewater Treatment Plant which has already been constructed and financed. In addition to these debt payments, the Town anticipates the expansions to the Spring Street and Gemmill's Bay pumping stations, as well as a number of sewer upgrades to accommodate future growth. Some of the most significant works identified for water services include the following:

- Medium and long-term water supply and treatment improvements to Wells 7 & 8 to address future demands;
- Construction of a new storage reservoir to provide additional capacity for future growth; and
- Transmission water mains and pressure zone development required to convey water to ensure adequate service in the short, medium and long term.

In total, these growth-related works amount to approximately \$14.1 million, of which \$10.8 million or 77% has been identified as eligible for funding through the Town's DC by-law. All of these growth-related capital works are anticipated to be constructed during the 2015-2024 period.

The lifecycle replacement capital needs were determined by incorporating the Town's long-range capital plan for water and wastewater services. Furthermore, the Town provided risk-rated inventories of linear water and wastewater infrastructure which formed the basis for lifecycle replacement needs for water mains and sanitary sewers.

As summarized in Tables 3 and 4, the 2015-2024 capital forecast for water and wastewater services totals \$19.4 million, with approximately \$13.3 million in capital needs for water services and \$6.1 million for wastewater services. By comparison the capital needs forecast in the previous rate update study totaled \$54.1 million, with \$17.5 million forecast for water services and \$36.6 million for wastewater services. The most significant change from the previous update is the completion of the Sewage Treatment Plant, which removed approximately \$27 million from wastewater capital needs.

To undertake the capital needs review, the first step was to determine the capital needs for the forecast period. For rate calculation purposes, these capital needs have been adjusted for capital cost inflation of 2% annually, reflecting the historical Statistics Canada Construction Price Statistics Index. The water and wastewater financial plan requires annual rate based capital spending of approximately \$2.6 million by 2024. This compares with projected 2015 rate based spending of approximately \$1.2 million. This would suggest that the water and wastewater rates need to be increased to generate incremental capital funding capacity equivalent to roughly \$1.4 million annually to adequately sustain future lifecycle demands.

A rate analysis was conducted to assess an appropriate funding plan to accommodate the anticipated capital spending. Consideration was given to maintaining a minimum reserve balance of \$0.5 million for unforeseen expenditures at all times, and to keeping the utilization of debt minimal. Under this scenario, water and wastewater rates would be increased sufficiently to fund capital spending directly from revenues and reserves. Debt financing was utilized to reduce the rate impacts by phasing in the rate funding over the term of the debt. Debt financing is assumed at 5% for a 10-year term. Approximately \$0.9 million in rate based debt would be required. Moreover, the rate calculations assume DC debt financing, either from internal or external sources, of approximately \$5.7 million.

**Table 3**  
**Town of Mississippi Mills**  
**Water Service**  
**Capital Budget Forecast**  
 Uninflated \$

Description	Total	Forecast									
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
<b>Capital Expenditures</b>											
<b>2015 Capital Budget</b>											
OCWA-Water Treatment Capital	39,500	39,500									
Watermain Loop-Gomme Street (State To Gore)	165,000	165,000									
Winter Freeze List-Dig Insulate & Services	40,000	40,000									
Replacement Of Well Pump 7-44 L/S	200,000	200,000									
Sample Monitoring Wells Upstream Of Well 5 (Regulatory)	15,000	15,000									
Annual Cleaning and CCTV Program-Infiltration	20,000	20,000									
Radio Frequency Meter Conversions	25,000	25,000									
Master Plan-Municipal Class EA/Drinking Water Permit & Licence Fee	30,500	30,500									
Master Plan-Scada Computer, PLC Upgrades and UPS (All Wells)	455,000	455,000									
Trimble RF Meter Reader (Handheld Unit) Software and Support	4,000	4,000									
Update Rate Study/Financial Plan	10,000	10,000									
Pre-Engineering Water and Sewer Replacements (Carryforward from 2014)	15,000	15,000									
EAC Water Filling Stations-Aoth, Library, Arena	7,500	7,500									
Almonte Downtown Class EA (W&S Share)	7,500	7,500									
OCWA Capital Allowance - Water Treatment	324,000		36,000	36,000	36,000	36,000	36,000	36,000	36,000	36,000	36,000
Municipal Class EA - Upgrade to Well Pump 7 / Increased Water Treatment	-		-	-	-	-	-	-	-	-	-
Monitoring Wells Upgradient of WELL 5 (Source Water Protection)	135,000		15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
Engineering Design / MOE Approvals (Linear Replacements)	315,000		35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000
<b>Growth Related:</b>											
Mid-Term Supply Option W2 (wells 7 & 8)	1,475,968		147,597	1,328,371							
Long-Term Supply Option W3 (wells 7 & 8)	219,331									219,331	
Mid-Term Storage Option W2 (new reservoir)	4,128,582				206,429			3,922,153			
County Road 29 Looping	74,572							74,572			
Bridge Street Extension	178,561		178,561								
Ottawa Street and Sadler Estates Looping	331,319				331,319						
Victoria Street Watermain	1,021,824			1,021,824							
Ottawa Street and Industrial Street Looping	695,666								695,666		
Create Pressure Zone 3	54,704										54,704
Modify Pressure Zone 2	103,215										103,215
<b>Studies:</b>											
Update to Water/Sewer Master Plan	25,000				25,000						
<b>Lifecycle:</b>											
Radio Frequency Meter Replacements	315,000		35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000
Water Tower	85,000		15,000	-	-	55,000	-	-	15,000	-	-
Structural/Architectural - Well Sites (3, 5, 6, 7 & 8)	35,250		10,000	11,250	8,000	6,000	-	-	-	-	-
Mechanical - Well Sites (3, 5, 6, 7 & 8)	140,000		-	45,000	-	40,000	-	-	55,000	-	-
Electrical/Instrumentation/Controls - Well Sites (3, 5, 6, 7 & 8)	65,000		-	25,000	-	15,000	-	-	25,000	-	-
Water Mains	2,546,912		318,364	-	318,364	318,364	318,364	318,364	318,364	318,364	318,364
<b>Total Capital Expenditures</b>	<b>13,303,904</b>	<b>1,034,000</b>	<b>790,522</b>	<b>2,552,445</b>	<b>1,010,112</b>	<b>555,364</b>	<b>439,364</b>	<b>4,436,089</b>	<b>1,230,030</b>	<b>658,695</b>	<b>597,283</b>

**Table 4**  
**Town of Mississippi Mills**  
**Wastewater Service**  
**Capital Budget Forecast**  
 Uninflated \$

Description	Total	Forecast									
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
<b>Capital Expenditures</b>											
<b>2015 Capital Budget</b>											
OCWA-Sanitary Pump Station Capital	28,500	28,500									
OCWA-Wastewater Treatment Plant Capital	86,000	86,000									
Master Plan Sewer Deficit-Trenchless Sewer Lining Program 1 km	250,000	250,000									
Annual Cleaning And CCTV Program-Infiltration	20,000	20,000									
Radio Frequency Meter Conversions	25,000	25,000									
Master Plan-Robert St SPS-Controls and Pump Replacement	30,000	30,000									
Trimble RF Meter Reader (Handheld Unit) Software And Support	4,000	4,000									
Lagoon Sludge Removal (Carryforward From 2014)	25,000	25,000									
Update Rate Study/Financial Plan	10,000	10,000									
Pre-Engineering Water and Sewer Replacements (Carryforward From 2014)	15,000	15,000									
Almonte Downtown Class EA (W&S Share)	7,500	7,500									
OCWA Capital Allowance - Sewage Pump Stations	238,500		26,500	26,500	26,500	26,500	26,500	26,500	26,500	26,500	26,500
OCWA Capital Allowance - Wastewater Treatment Plant	736,500		82,500	86,000	81,000	78,500	84,000	78,500	81,000	82,000	83,000
Engineering Design / MOE Approvals (Linear Replacements)	315,000		35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000
Annual Sewer Inspections, CCTV and Infiltration Assessments	360,000		40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
<b>Growth Related:</b>											
Gemmill's Bay SPS Expansion	309,644										309,644
Spring street, State Street, Clyde Street Upgrades	147,000		147,000								
Victoria Street Trunk Sewer Upgrade	769,980			769,980							
Union Street Upgrades	168,240									168,240	
<b>Studies:</b>											
Update to Water/Sewer Master Plan	25,000				25,000						
<b>Lifecycle:</b>											
Wastewater Treatment Plant	92,000		27,000	10,000	10,000	-	15,000	15,000	15,000	-	-
Structural/Architectural - Sanitary Pumpstations	-		-	-	-	-	-	-	-	-	-
Mechanical - Sanitary Pumpstations	80,000		-	-	15,000	-	-	30,000	5,000	-	30,000
Electrical/Instrumentation/Controls - Sanitary Pumpstations	420,000		-	-	205,000	10,000	205,000	-	-	-	-
Sanitary Sewers	1,950,843		230,976	-	230,976	230,976	230,976	230,976	230,976	230,976	334,015
<b>Total Capital Expenditures</b>	<b>6,113,707</b>	<b>501,000</b>	<b>588,976</b>	<b>967,480</b>	<b>668,476</b>	<b>420,976</b>	<b>636,476</b>	<b>455,976</b>	<b>433,476</b>	<b>582,716</b>	<b>858,159</b>



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## 4. NET OPERATING EXPENDITURE FORECAST

The Town provided the draft 2015 operating budget which formed the basis for the water and wastewater services net operating expenditure forecast. The 2015 operating expenditure estimates were inflated at 2.5% annually, reflecting historical Consumer Price Index (CPI) rates. As a result, annual operating expenditures are expected to increase from 2015 levels of \$1.9 million to \$2.1 million by 2024. In addition, the transfers to capital reserves to address future capital spending would increase from \$0.9 million in 2015 to \$2.2 million by 2024 reflective of the recommended capital funding plan.

## 5. FORECAST WATER AND WASTEWATER RATES

The recommended water and wastewater rates are provided to address full costs of the municipal systems, including annual operating and capital expenditures from both a lifecycle and growth-related perspective. The capital and operating forecast provided above requires an increase in water and wastewater billing revenues over the 2015-2024 period of \$0.2 million or 5.6% annually. To achieve full cost recovery, water and wastewater base charge rates would be required to increase by 10% in 2015, with 4% increases annually thereafter; consumptive rates would have to be increased by 2.6% in 2015 and by 1.6% annually between 2016 and 2024. By 2024 the annual base charge rate would be \$762.43 and the consumptive rate would be \$12.88 per 1,000 gallons. In addition to increasing rates to achieve this sustainable position, the recommendations also considered the structure of the rate recommendations.

Budgeted 2015 operating expenditures represent 62% of total costs, with capital-related expenditures accounting for 38% of total costs. Based on the financial plan forecast, by 2024 the distribution of costs is projected to be 44% operating and 56% capital. The increase in need for funding is therefore required to sustain operations through increased capital spending. As these capital-related costs are fixed, the source of funding should be certain and secure and not susceptible to fluctuations in demands for water services. As such, it is recommended that the rate increase be more heavily focused on the base charge component of the rate. It is therefore recommended that the Town consider an increase of 4% annually to the base charge component of the rate and an increase of 1.6% annually for the consumptive component of the rate for 2016 and beyond.

The details of the financial plan forecast are contained in Appendix A to this letter report and a summary of the forecast rates is provided below.

**Table 5**  
**Town of Mississippi Mills**  
**2015-2024 Water and Wastewater Rate Forecast**

Description	Existing	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Base Charge (annually)	\$ 486.96	\$ 535.66	\$ 557.09	\$ 579.38	\$ 602.55	\$ 626.65	\$ 651.72	\$ 677.79	\$ 704.90	\$ 733.10	\$ 762.43
Volume Charge (per 1,000 gallons)	\$ 10.89	\$ 11.17	\$ 11.35	\$ 11.53	\$ 11.71	\$ 11.90	\$ 12.09	\$ 12.28	\$ 12.48	\$ 12.68	\$ 12.88

## 6. FORECAST WATER AND WASTEWATER RATE IMPACTS

Table 6 summarizes the impact of the recommended rates on a typical residential water and wastewater customer consuming 32,285 gallons per year (i.e. 147 m<sup>3</sup> per year). In 2014 the annual water bill for this customer would have been \$839. With the proposed monthly base charge and consumptive charge rates, the 2015 annual bill would be approximately \$895. This represents a \$58 annual increase in the bill, or an increase of less than \$5/month. Over the remainder of the forecast period the annual water bill would increase at an annual rate of approximately 3%.

**Table 6**  
**Town of Mississippi Mills**  
**2015-2024 Annual Water and Wastewater Bill Impact**

Description	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Base Charge (\$ annually)	\$ 486.96	\$ 535.66	\$ 557.09	\$ 579.38	\$ 602.55	\$ 626.65	\$ 651.72	\$ 677.79	\$ 704.90	\$ 733.10	\$ 762.43
Water and Wastewater Rate (\$/1,000 gallons)	\$ 10.89	\$ 11.17	\$ 11.35	\$ 11.53	\$ 11.71	\$ 11.90	\$ 12.09	\$ 12.28	\$ 12.48	\$ 12.68	\$ 12.88
Annual Water Consumption (gallons)	32,285	32,285	32,285	32,285	32,285	32,285	32,285	32,285	32,285	32,285	32,285
Annual Base Charge Component	\$ 487	\$ 536	\$ 557	\$ 579	\$ 603	\$ 627	\$ 652	\$ 678	\$ 705	\$ 733	\$ 762
Annual Consumptive Component	\$ 352	\$ 361	\$ 366	\$ 372	\$ 378	\$ 384	\$ 390	\$ 396	\$ 403	\$ 409	\$ 416
<b>Total Water and Wastewater Bill</b>	<b>\$ 839</b>	<b>\$ 896</b>	<b>\$ 924</b>	<b>\$ 952</b>	<b>\$ 981</b>	<b>\$ 1,011</b>	<b>\$ 1,042</b>	<b>\$ 1,074</b>	<b>\$ 1,108</b>	<b>\$ 1,142</b>	<b>\$ 1,178</b>
Annual Bill Increase (\$)		\$ 58	\$ 27	\$ 28	\$ 29	\$ 30	\$ 31	\$ 32	\$ 34	\$ 35	\$ 36
Annual Bill Increase (%)		6.9%	3.0%	3.0%	3.0%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%

To further measure the impact of the recommended rates, a municipal survey of water and wastewater rates was prepared. The survey includes the Town of Mississippi Mills and surrounding area municipalities. The survey is for a typical residential customer consuming 147 m<sup>3</sup> annually with a 5/8" water meter. Presently, the Town of Mississippi Mills ranks 8<sup>th</sup> out of the 16 surveyed municipalities with an annual water bills at \$839. This compares with annual bills in the municipalities of Kingston and Perth. The proposed 2015 rates would maintain the Town's ranking unchanged.

**Table 7**  
**Town of Mississippi Mills**  
**Annual Water Municipal Comparison**  
**(based on 147m<sup>3</sup> annual water consumption and 5/8" meter)**

Municipality	Annual Water & Wastewater Bill	Rank
Merrickville - Wolford	\$ 1,194	1
Renfrew	\$ 1,065	2
Russell	\$ 1,050	3
North Grenville	\$ 942	4
Smith Falls	\$ 910	5
Kingston	\$ 906	6
Mississippi Mills - Proposed	\$ 897	7
Mississippi Mills - Current	\$ 839	8
Perth	\$ 833	9
Casselman	\$ 814	10
Hawkesbury	\$ 680	11
Carleton Place	\$ 668	12
Arnprior	\$ 650	13
Clarence - Rockland	\$ 623	14
Ottawa	\$ 547	15
Brockville	\$ 544	16
North Dundas (Winchester)	\$ 540	17

## 7. RECOMMENDATIONS

Based on the analysis contained herein, the following recommendations are provided for Council's consideration:

- That the Financial Plan contained herein be approved; and
- That Council consider the proposed rates presented in Section 5 herein for adoption.

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**APPENDIX A**

**2015-2024 WATER AND WASTEWATER RATE FORECAST  
CALCULATIONS**

**Table A-1**  
**Town of Mississippi Mills**  
**Combined Water and Wastewater Services**  
**Capital Budget Forecast**  
 Inflated \$

Description	Total	Forecast									
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
<b>Capital Expenditures</b>											
Water	14,548,000	1,034,000	807,000	2,655,000	1,072,000	601,000	486,000	4,996,000	1,412,000	772,000	713,000
Wastewater	6,355,000	501,000	613,000	1,018,000	504,000	456,000	489,000	527,000	511,000	697,000	1,039,000
<b>Total Capital Expenditures</b>	<b>20,903,000</b>	<b>1,535,000</b>	<b>1,420,000</b>	<b>3,673,000</b>	<b>1,576,000</b>	<b>1,057,000</b>	<b>975,000</b>	<b>5,523,000</b>	<b>1,923,000</b>	<b>1,469,000</b>	<b>1,752,000</b>
<b>Capital Financing</b>											
Provincial/Federal Grants	-	-	-	-	-	-	-	-	-	-	-
Development Charges Reserve Fund	395,750	-	75,000	300,500	20,250	-	-	-	-	-	-
Non-Growth Related Debenture Requirements	940,967	455,000	-	149,130	63,972	-	-	272,865	-	-	-
Growth Related Debenture Requirements	5,655,408	-	225,957	1,203,941	306,178	-	-	2,785,283	339,575	316,950	477,525
Operating Contributions	514,500	514,500	-	-	-	-	-	-	-	-	-
Lifecycle Reserve Fund	-	-	-	-	-	-	-	-	-	-	-
Water/Wastewater Reserve	13,396,376	565,500	1,119,043	2,019,430	1,185,600	1,057,000	975,000	2,464,853	1,583,425	1,152,050	1,274,475
Long Term Debt Charges	-	-	-	-	-	-	-	-	-	-	-
<b>Total Capital Financing</b>	<b>20,903,000</b>	<b>1,535,000</b>	<b>1,420,000</b>	<b>3,673,000</b>	<b>1,576,000</b>	<b>1,057,000</b>	<b>975,000</b>	<b>5,523,000</b>	<b>1,923,000</b>	<b>1,469,000</b>	<b>1,752,000</b>

**Table A-2**  
**Town of Mississippi Mills**  
**Combined Water and Wastewater Services**  
**Schedule of Non-Growth Related Debenture Repayments**  
 Inflated \$

Debenture Year	Principal (Inflated)	Forecast									
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
2015	455,000		58,925	58,925	58,925	58,925	58,925	58,925	58,925	58,925	58,925
2016	-			-	-	-	-	-	-	-	-
2017	149,130				19,313	19,313	19,313	19,313	19,313	19,313	19,313
2018	63,972					8,285	8,285	8,285	8,285	8,285	8,285
2019	-										
2020	-										
2021	272,865										
2022	-								35,337	35,337	35,337
2023	-										
2024	-										
<b>Total Annual Debt Charges</b>	<b>940,967</b>	-	58,925	58,925	78,238	86,522	86,522	86,522	121,859	121,859	121,859

**Table A-3**  
**Town of Mississippi Mills**  
**Combined Water and Wastewater Services**  
**Schedule of Growth Related Debenture Repayments**  
 Inflated \$

Debenture Year	Principal (Inflated)	Forecast									
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
2015	-										
2016	225,957										
2017	1,203,941			29,262	29,262	29,262	29,262	29,262	29,262	29,262	29,262
2018	306,178				155,916	155,916	155,916	155,916	155,916	155,916	155,916
2019	-					39,651	39,651	39,651	39,651	39,651	39,651
2020	-										
2021	2,785,283										
2022	339,575								360,707	360,707	360,707
2023	316,950									43,977	43,977
2024	477,525										41,046
<b>Total Annual Debt Charges</b>	<b>5,655,408</b>	-	-	29,262	185,178	224,830	224,830	224,830	585,537	629,513	670,559

**Table A-4**  
**Town of Mississippi Mills**  
**Combined Water and Wastewater Services**  
**Reserve Continuity Schedules**  
 Inflated \$

<b>Water/Wastewater Reserve</b>	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Opening Balance	1,810,925	1,633,439	1,448,798	500,000	500,000	774,772	1,295,448	500,000	719,955	1,568,882
Transfer from Operating	388,014	934,402	1,070,631	1,185,600	1,331,772	1,495,676	1,669,405	1,803,380	2,000,978	2,205,722
Transfer to Capital	565,500	1,119,043	2,019,430	1,185,600	1,057,000	975,000	2,464,853	1,583,425	1,152,050	1,274,475
Transfer to Operating										
Closing Balance	1,633,439	1,448,798	500,000	500,000	774,772	1,295,448	500,000	719,955	1,568,882	2,500,129
Interest	-	-	-	-	-	-	-	-	-	-

<b>Water/Wastewater Development Charge Reserve Fund</b>	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Opening Balance	696,900	876,607	1,027,685	931,528	968,764	995,722	1,032,065	1,078,127	769,731	423,385
Development Charge Proceeds	381,102	388,724	396,493	404,410	412,484	420,706	429,148	437,738	446,478	455,380
Transfer from Rates	-	37,201	37,945	38,703	39,478	40,267	41,072	41,894	42,732	43,586
Transfer to Capital	-	75,000	300,500	20,250	-	-	-	-	-	-
Transfer to Operating	210,385	210,385	239,647	395,563	435,215	435,215	435,215	795,921	839,898	880,944
Closing Balance	867,617	1,017,146	921,975	958,829	985,511	1,021,481	1,067,070	761,838	419,043	41,406
Interest	8,990	10,539	9,553	9,935	10,211	10,584	11,056	7,894	4,342	429
Required from Development Charges	-	300,957	1,504,441	326,428	-	-	2,785,283	339,575	316,950	477,525

**Table A-5  
Town of Mississippi Mills  
Combined Water and Wastewater Services  
Operating Budget Forecast  
Inflated \$**

Description	Forecast									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
<b>Expenditures</b>										
<b>Operating Costs</b>										
Water	577,716	583,800	589,600	595,500	601,500	607,500	613,600	619,700	625,800	632,000
Wastewater	1,301,003	1,314,700	1,328,200	1,342,000	1,355,800	1,369,900	1,383,900	1,398,200	1,412,900	1,427,300
<b>Sub Total Operating</b>	<b>1,878,719</b>	<b>1,898,500</b>	<b>1,917,800</b>	<b>1,937,500</b>	<b>1,957,300</b>	<b>1,977,400</b>	<b>1,997,500</b>	<b>2,017,900</b>	<b>2,038,700</b>	<b>2,059,300</b>
<b>Capital-Related</b>										
Existing Debt (Principal) Growth	63,642	66,297	69,064	71,945	74,947	78,075	81,333	84,726	88,262	91,944
Existing Debt (Interest) Growth	146,743	144,088	141,321	138,440	135,437	132,310	129,052	125,659	122,123	118,441
Existing Debt (Growth-Total)	-	-	-	-	-	-	-	-	-	-
Existing Debt (Principal)	82,391	85,943	89,651	93,520	97,559	101,774	106,173	110,765	107,753	112,297
Existing Debt (Interest)	178,897	175,345	171,637	167,768	163,730	159,515	155,115	150,524	145,842	141,298
Existing Debt (Non-Growth -Total)	-	-	-	-	-	-	-	-	-	-
New Growth Related Debt (Principal)	-	-	17,965	114,582	144,653	151,886	159,480	388,897	435,340	482,305
New Growth Related Debt (Interest)	-	-	11,298	70,597	80,176	72,944	65,349	196,640	194,174	188,254
New Non-Growth Related Debt (Principal)	-	33,580	34,071	46,445	52,671	54,125	55,655	78,959	81,738	84,660
New Non-Growth Related Debt (Interest)	-	25,345	24,854	31,793	33,851	32,397	30,867	42,901	40,122	37,200
Transfer to DC Reserve Fund	-	37,201	37,945	38,703	39,478	40,267	41,072	41,894	42,732	43,586
Transfer to Capital	514,500	-	-	-	-	-	-	-	-	-
Transfer to Capital Reserve	388,014	934,402	1,070,631	1,185,600	1,331,772	1,495,676	1,669,405	1,803,380	2,000,978	2,205,722
<b>Sub Total Capital Related</b>	<b>1,374,187</b>	<b>1,502,200</b>	<b>1,668,436</b>	<b>1,959,393</b>	<b>2,154,275</b>	<b>2,318,968</b>	<b>2,493,502</b>	<b>3,024,343</b>	<b>3,259,062</b>	<b>3,505,708</b>
<b>Total Expenditures</b>	<b>3,252,906</b>	<b>3,400,700</b>	<b>3,586,236</b>	<b>3,896,893</b>	<b>4,111,575</b>	<b>4,296,368</b>	<b>4,491,002</b>	<b>5,042,243</b>	<b>5,297,762</b>	<b>5,565,008</b>
<b>Revenues</b>										
Base Charge	1,486,505	1,590,343	1,700,697	1,816,697	1,939,266	2,069,405	2,206,165	2,350,545	2,503,698	2,664,588
Interest-ORPC Note	100,100	83,500	83,500	83,500	83,500	83,500	83,500	83,500	83,500	83,500
Interest-MRPC Note	241,500	99,300	99,300	99,300	99,300	99,300	99,300	99,300	99,300	99,300
Rental Income-MRPC	25,200	25,200	25,200	25,200	25,200	25,200	25,200	25,200	25,200	25,200
Miscellaneous Waterworks	-	-	-	-	-	-	-	-	-	-
Waterworks-Remote meters	30,000	30,200	30,300	30,500	31,600	31,800	32,000	32,100	32,300	32,500
Waterworks-W&S Connections	7,500	7,800	7,800	7,900	7,900	7,900	8,000	8,000	8,100	8,100
Waterworks-Hydrant Rental	3,500	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
Waterworks-Other Fees & S/C	100	100	100	100	100	100	100	100	100	100
Interest on overdue water accounts	30,000	30,100	30,300	30,500	31,800	32,000	32,200	32,400	32,700	32,900
Interest Income	18,764	16,925	15,012	5,181	5,181	8,028	13,423	5,181	7,460	16,256
Contributions from Development Charges Reserve Fund	210,385	210,385	239,647	395,563	435,215	435,215	435,215	795,921	839,898	880,944
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-
MRPC Dividends	-	157,500	157,500	157,500	157,500	157,500	157,500	157,500	157,500	157,500
<b>Total Operating Revenue</b>	<b>2,153,554</b>	<b>2,255,353</b>	<b>2,393,356</b>	<b>2,655,941</b>	<b>2,820,562</b>	<b>2,953,947</b>	<b>3,096,602</b>	<b>3,593,747</b>	<b>3,793,756</b>	<b>4,004,888</b>
<b>Combined Billing Recovery - Total</b>	<b>1,099,352</b>	<b>1,145,348</b>	<b>1,192,880</b>	<b>1,240,952</b>	<b>1,291,013</b>	<b>1,342,421</b>	<b>1,394,400</b>	<b>1,448,495</b>	<b>1,504,006</b>	<b>1,560,120</b>

**Table A-6  
Town of Mississippi Mills  
Combined Water and Wastewater Services  
Rate Forecast  
Inflated \$**

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
<b>FORECAST CONSUMPTION (Gallons)</b>	<b>98,396,841</b>	<b>100,911,687</b>	<b>103,458,818</b>	<b>105,973,664</b>	<b>108,488,510</b>	<b>111,035,641</b>	<b>113,550,487</b>	<b>116,065,333</b>	<b>118,612,464</b>	<b>121,127,310</b>
Current Water/Wastewater Rate/1,000 gallons										
Calculated Water/Wastewater Rate/1,000 gallons	11.17	11.35	11.53	11.71	11.90	12.09	12.28	12.48	12.68	12.88