TOWN OF MISSISSIPPI MILLS

SEPTAGE BUSINESS PLAN

Draft – For Discussion Purposes

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Planning for growth

CONTENTS

1. INTRODUCTION

1. INTRODUCTION

1.1 Introduction

The Town of Mississippi Mills is currently in the process of designing a new sewage treatment plant to replace the existing lagoon system within the Almonte Ward. The proposed sewage treatment plant solution would include a septage receiving facility to accommodate the treatment of septage from private service developments within the rural wards of the Town. The treatment of septage at the sewage treatment plant is in direct response to Provincial legislation that will prevent the land application of untreated septage in the future.

The Town has retained Watson & Associates Economists Ltd. to review the current sewage treatment design reports, legislation and municipal practices with respect to septage treatment services and develop a business plan. The business plan herein summarizes the legislative context for septage treatment services, provides survey results on municipal approaches, and identifies options for the recovery of capital and operating costs of septage treatment services from the benefiting system users.

1.2 Legislative Context

Septage is the term used to define all waste that is pumped out of septic tanks and holding tanks. The transportation, storage, and disposal of septage is regulated by Part V of the Environmental Protection Act and Section 53 of the Ontario Water Resources Act. Septage may be temporarily stored at an approved waste disposal (transfer) site – generally storage lagoons and tanks. Septage is either disposed of at Sewage Treatment Plants, landfill sites, dewatering trenches, waste stabilization lagoons or it is land applied.

The Ministry of the Environment estimates that approximately 60% of all septage, including untreated septage, within the province is land applied. While this disposal method can have beneficial impacts on the soil, it can also result in a degradation of the surrounding environment if not properly monitored and controlled. In light of the Walkerton tragedy, concerns over the land application of untreated septage have been brought to the forefront.

The Nutrient Management Act (NMA) was passed in June 2002 and was intended to provide Ontario's agricultural industry with a framework for managing the nutrients deposited on Ontario farmlands. The stated purpose of the Act is "to provide for the management of materials containing nutrients in ways that will enhance protection of the natural environment and provide a sustainable future for agricultural operations and rural development."

With the enforcement of the Act came a proposed ban on the land application of untreated septage however, as of the date of this writing, no specific regulations in this regard have come into force. One of the major obstacles to enacting such restrictions is the lack of septage treatment capacity within the province to the extent that a complete ban on land application would be impractical at this time. As a result, the current practice of land application remains an acceptable or in some instances, the only alternative for dealing with septage various jurisdictions.

To this end, the province has taken steps to address the capacity issue. Section 1.4.6.1 (e) of the Provincial Policy Statement, 2005 states that a new lot can be created:

"only if there is confirmation of sufficient reserve sewage system capacity and reserve water system capacity within municipal sewage services and municipal water services or private communal sewage services and private communal water services. The determination of sufficient reserve sewage system capacity shall include treatment capacity for hauled sewage from private communal services and individual on-site sewage services"

While it appears that the burden of creating additional septage treatment capacity rests with municipalities, the province has taken additional steps in the form of grants (i.e. COMRIF, Build Canada Fund, etc.) and pilot projects to assist municipalities to the extent that many have begun to move forward with various septage treatment initiatives. Two such pilot projects are currently underway within the County of Renfrew to test the viability of alternate technologies such as Geotubes and Lime Stabilization within the Townships of Bonneshere Valley and Horton respectively.

Based on discussions with the MOE, it remains committed to ending the land application of all untreated septage and it is anticipated that requirements will be established to treat septage before it can be land applied however; the timing of this is not yet known.

1.3 Municipal Survey on Septage Services

Approximately thirteen municipalities within the surrounding areas were contacted regarding the septage services they are currently offering and/or considering (if any) in response to the expected legislative changes regarding the land application of untreated septage. In general, there is acknowledgement that septage management is a significant issue that municipalities will need to address going forward. At present, the response and strategies for dealing with the issue can be described as fragmented at best. Some municipalities have chosen proactive approaches such as the undertaking of master plan studies, pilot projects, and in some cases, have either upgraded or installed facilities capable of receiving and treating septage. While others have elected to defer responsibility for the septage issue until it is mandated by law primarily because the cost of doing so is prohibitive. It was noted by some that they have solicited partnerships with haulers to assist in the acquisition of the required infrastructure and found them to be sympathetic but unwilling to commit to significant investments in this regard due to the uncertainty regarding the regulations. Finally, the collaboration of efforts between municipalities seems to be a logical approach to sharing the burden however, capacity issues and concern over receiving septage from unknown sources undermine such efforts and in some instances, leave available capacity unused.

Responses from the municipalities contacted are summarized below. Attempts at contact with the Town of Petawawa were not successful.

1.3.1 County of Renfrew – Area Municipalities

In 2005, the County of Renfrew conducted a master planning study to determine the most cost-effective and socio-economically beneficial alternative for treating and disposing of septage within the County. The plan put forward recommendations towards meeting the stated objective but acknowledged that implementation would require significant coordination within the County and between major stakeholders (i.e. haulers, the MOE). As noted earlier, the MOE partnered with the County to evaluate and demonstrate the use of Lime Stabilization and Geotube de-watering technologies to manage septage within the Townships of Bonneshere valley and Horton.

Township of Bonnechere Valley

In partnership with the County and the MOE, the Township is undertaking a pilot project which utilizes Geotube bags to de-water and store septage. The current capacity is sufficient to handle the current Township population (i.e. 3,300) plus the population of a similar sized municipality. The main issue with this form of treatment is storage and disposal of the resulting biosolids. The Geotube is currently ¾ full but the Township does not have permission from the MOE to haul it out to a field for spreading as of yet. This will require testing and analysis to ensure that the quality of the biosolids is within required standards. Based on our discussions with the Township, there is no final document regarding the standard that the septage has currently been treated to but preliminary evaluations indicate that odour and pathogen reduction is sufficient to be classified as Non-Agricultural Source Material (NASM) as per MOE guidelines. The mandate is to provide service for free therefore, tipping fees have not been determined yet. At the time of our discussions, the final costs of the project could not be provided as they have yet to be determined.

Township of Horton

The Township of Horton is also undertaking a pilot project in partnership with the County and the MOE. The Township is testing and evaluating the use of year-round Lime Stabilization treatment methods which, are considered to be the most cost effective. The technology utilizes two 10,000 gallon underwater tanks that are already in place to store septage. A lime/alkaline slurry is then added to the septage in order to increase the pH levels resulting in a reduction of harmful pathogens. Once treated, the contents of the tanks are tested and if they are found to be in compliance with MOE regulations, will be spread on fields as fertilizer.

The pilot project was to have been completed by fall 2009 however, cracks were discovered in the tanks and this resulted in additional approval requirements that have delayed the process. The Township has rectified the issue and the tanks are currently undergoing final inspections. It is anticipated that the site will begin receiving waste following scheduled “spreadings” in spring and fall of 2010 and then again in the spring of 2011. The initial cost estimate was expected to equal the grant received (i.e. $84,000) however, the tank problems have added approximately $50,000 to the estimate to-date. Once the pilot project is complete, septage services will only be provided to handle sources from within Township boundaries given current capacity.

Town of Renfrew

The Town advised that they were in the process of constructing a new sewage treatment plant while the County master plan was underway however, the final report did not reflect this. As part of determining the design needs of the new plant, the Town canvassed other municipalities as to whether they were interested in having additional capacity built into the design that they could use but collaboration was not feasible at the time. As such, the facility was constructed with capacity to receive and treat septage from 100 homes primarily within Town boundaries. The cost of the treatment plant is estimated at $28 million with grant funding for two thirds received. The Town is currently in the process of establishing tipping fees for the facility.

McNab Township

The Township does not currently have facilities for receiving and treating septage. Township staff advises that utilizing the unused treatment capacity within neighbouring municipalities has been investigated as an option but any such arrangements have not been established as of yet. Furthermore, it has been determined that other alternatives are not feasible at this time. Currently, septage is handled by private haulers operating within Township.

Madawaska Township

The current plant configuration cannot receive septage therefore haulers are continuing the practice of land application within the Township. In response, the Township is in the process of upgrading the treatment plant with septage receiving capabilities. The upgrades are expected to be completed by 2011 at an estimated cost of $9 million dollars two-thirds of which will be grant funded. The planned capacity is 1,260m3/day and the Township will not be accepting septage from sources outside of municipal boundaries because the cost of the additional upgrades that would be required is too high. Tipping fees are to be established in 2010 but the Township currently charges residents for “holding” at a rate of $50/1,000 gallons.

City of Pembroke

Through our discussions with City staff, we were advised that the City did not participate in County’s master plan study. Nevertheless, they don’t have a septage treatment issue as 99.9% of residents are on municipal systems. Moreover, the City recently constructed a new sewage treatment plant that has the capacity to treat septage from the entire County. The only obstacle to offering this as an alternative is that a septage receiving station with appropriate odour control and grit removal would need to be constructed at a cost that makes doing so unfeasible at this time. The septage that is currently being treated at the facility is considered minimal and

originates mostly from haulers shipping it in from sources in Quebec. These haulers are permitted to deposit the septage in a dedicated manhole at a rate of $7-$8/m3. The bigger issue for the City is biosolids management. The strategy in place is land filling but the City is actively looking for a more sustainable solution. One alternative that is being considered is composting however, composters are hesitant not having worked with the biosolids in the past.

1.3.2 County of Lanark – Area Municipalities

Township of Lanark Highlands

The Township does not have septage receiving/treatment facilities but is in the process of evaluating a large project that will establish full communal water and sewer treatment facilities. One consideration is mandatory connection to the system which would eliminate septic tanks altogether. Until that plan is place, local haulers will continue to ship septage to the Town of Perth.

Town of Perth

Septage treatment within the Town utilizes a lagoon system with 90-day retention. Septage is deposited into a manhole at a rate of 1.4 million gallons/day with haulers prepaying at a rate of $50/1,000 gallons. The Town currently receives septage from a small number of haulers originating both within and outside Town boundaries. The lagoon is reaching capacity and should the legislative changes come to fruition, the Town will want to reserve this for local needs. As such, there are no plans to expand the network of haulers beyond Town boundaries.

Separated Town of Smith's Falls

The Town has a sewage treatment plant capable of treating septage however, there is no receiving station. Instead, haulers are permitted to deposit septage into a manhole located at the treatment plant. Septage is received primarily from two haulers (one is local) who are required to advise on the number of gallons that will be deposited and the originating source. Fees for this service are similar to those charged by the City of Ottawa (please refer to Appendix B).

1.3.3 County of Lennox and Addington – Area Municipalities

Within the County, the Townships of Addington Highlands and North Frontenac undertook a septage feasibility study in 2005. The study was initiated in response to the expected changes in legislation discussed earlier and aimed at examining the various options for septage management within the Townships. Based on discussions with both Townships, the costs of the recommended alternatives could not be justified within the current environment and as such, have not been implemented. Private haulers continue to deal with septage issues and neither Township has any immediate plans to take on septage going forward.

1.3.4 City of Kingston

The City of Kingston has sufficient capacity to treat septage from sources both within City boundaries and from outside municipalities. The rated capacity of the plant is 38,800m3/day with actual utilization estimated at 27,000m3/day. Access to the treatment plant is controlled electronically with haulers required to have a preloaded swipe-card to gain access. The City will perform random checks on the contents of the trucks to ensure that standards are being met. Tipping fees are approximately $8.00/m3 but are under review and expected to increase to at least $10.00/m3 early in 2010.

1.3.5 City of Ottawa

Similar to Kingston, the City of Ottawa also has sufficient capacity to treat septage from sources both within City boundaries and from outside municipalities. Haulers must obtain an annual permit from the City which specifies the types of waste that are acceptable for discharge, times and location of the discharge. In addition, Haulers must provide a manifest for each load of waste they discharge to ensure that Sewer Use By-law requirements are being met. Since access to the wastewater treatment plant is controlled electronically, haulers must have electronic access card for 24/7 service. The fees charged by the City are tiered based on volumes, quality and origin. The fee schedule is summarized in Appendix B.

2. SEPTAGE SERVICES CAPITAL PLAN

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2.1 Capital Needs Forecast

The Town's 2009 Development Charges Background Study and 2009 Water and Wastewater Rate Study Update address the capital costs septage treatment services. The capital cost estimates utilized in these reports were based on the December 2006 Environmental Study Report, Town of Mississippi Mills Almonte Ward Communal Sewage System Class Environmental Assessment, updated to reflect the Building Canada Communities Component Intake 1 grant funding program (BCF). Under the BCF grant funding program, a funding limit of $28,066,555 was identified. The septage treatment component of the total costs was identified at approximately $2,620,100, or 9% of the total project cost.

The Thompson Rosemount Group Inc. recently completed a 30% Design Report for the Town of Mississippi Mills WWTP (October 2009) which has subsequently updated the project capital costs. The anticipated capital costs of the sewage treatment plant are $27,311,921. Moreover, the septage treatment capital costs have also been updated and are estimated at $1,932,000 (or 7% of the total project cost). These revised figures reflect the most up to date capital cost estimates and form the basis for the financial plan calculations herein.

Table 2-1 summarizes the capital costs for the septage treatment components of the sewage treatment plant. The septage treatment costs are based on the increase in plant capacity required to address the additional organic loading of septage. As identified within the 30% Design Report, the septage treatment components include:

- "Septage receiving with includes the screening unit, holding tank, and transfer pump;
- Aeration which includes the reactor (concrete, excavation, etc.), aeration piping and diffusers, and blowers; and
- Sludge stabilization which includes thickening, autothermal thermophilic aerobic digesters, transfer pumps and storage.

Table 2-1

Septage Treatment Capital Cost Estimate

Septage Treatment Component	Total Sewage Treatment Plant Capital Cost ($)	Septage Treatment Capital Cost Component ($)
Septage Receiving Station	520,000	520,000
Aeration System – Tanks	2,200,000	381,000
Aeration System – Equipment	300,000	83,000
Sludge Stabilization – ATAD	600,000	98,000
Sludge Stabilization – Biosolids Storage	930,000	282,000
Sludge Stabilization – Thickening/Dewatering Equipment	1,200,000	220,000
Engineering (12%) and Contingency (10%)	1,700,000	348,000
Total		**1,932,000**

Source: The Thompson Rosemont Group Inc., 30% Design Report for Town of Mississippi Mills WWTP

For the purposes of the financial plan calculations (see Appendix A), it is assumed that the project will be constructed over a two year period (i.e. 2010 and 2011). An annual capital cost inflation rate of 3.78% has been applied to the 2011 expenditures, based on 20-year Statistics Canada, Non-Residential Price Statistics Index. As such the inflated capital cost estimate utilized in the calculations is $1,968,515.

2.2 Capital Funding Alternatives

There is a number of capital funding alternatives available to the Town of Mississippi Mills to recover capital costs of septage treatment services. The principle underlying their use is to recover the costs of septage treatment services from the benefiting service users in a fair and equitable manner that provides the Town with a sustainable financial plan.

Under the Town's sewage treatment plant funding strategy, 2/3 grant funding has been secured through the Building Canada Communities Intake 1 grant program to a funding limit of $28,066,555. The Town's recently completed water and sewer rate study identified the application of grant funding on a pro rata basis between the sanitary sewage treatment and

septage treatment service components. As such the Town's net capital cost share for septage treatment services is $644,000 (i.e. $1,932,000 - $1,288,000). The Town anticipates financing municipal cost share of the sewage treatment plant through a debenture over 25 year at an estimated interest rate of 5.38%.

The potential capital funding alternatives to recover the municipal cost share include:

- Development Charges
- Municipal Act Fees and Charges
- Municipal Act Special Service Levies

2.2.1 Development Charges Act, 1997

In November, 1996, the Ontario Government introduced Bill 98, a new *Development Charges Act*. The Province's stated intentions were to "create new construction jobs and make home ownership more affordable" by reducing the charges and to "make municipal Council decisions more accountable and more cost effective." The basis for this Act is to allow municipalities to recover the growth-related capital cost of infrastructure necessary to accommodate new growth within the municipality.

Under the Act, the municipality must prepare a Development Charges Background Study that clearly identifies the anticipated amount, type and location of growth, the associated growth-related capital needs on a service by service basis, the calculated charges, and the rules that will govern the imposition of charges. The DC Background Study and Bylaw must be made available to the public at least two weeks prior to the public meeting and identified within a public notice prior to the meeting. A public meeting must be held at which time the general public may make representations to Council on the matter. Once a DC Bylaw is passed by Council there is a 40-day appeal period to the Ontario Municipal Board.

The Town of Mississippi Mills passed a new Development Charges Bylaw in June 2009. Septage treatment services are included within the DC Bylaw. The bylaw imposes a charge of $194 per single detached and semi detached residential dwelling, and $0.15/sq.ft. of gross floor area for non-residential development within the rural service area. The basis for the charge was the capital costs for septage treatment component of the sewage treatment plant as identified in the 2006 ESR with cost updates to reflect the BCF funding limit (i.e. $2,620,100). The growth-related cost share was determined based on the anticipated development over the build-out

period, with the construction of approximately 1,025 additional rural single detached dwellings during the period. As such, the growth related cost share was estimated at $235,100 (approximately 27% of the net cost share of $874,000).

The 30% Design Study identifies a lower net capital cost than previously assumed under the BCF funding limit. The anticipated cost of $1,932,000 would produce a comparable single detached residential development charge of $142, as compared to the current charge of $194. However as noted previously the Town will be debenturing for the municipal cost share; factoring in financing costs would result in a charge of approximately $210/single detached unit. The development charges are adjusted annually for inflation under the terms of the DC Bylaw and the bylaw must be renewed every 5 years, with the preparation of a new DC Background Study and Bylaw, to ensure that the estimates are still reasonable. As part of the process the actual costs of the sewage treatment plant will be revised and ultimately the growth share will be recovered. In light of these factors it is recommended that the current DC charge remain unchanged and funding assumptions be maintained within the septage treatment financial plan.

2.2.2 Municipal Act, 2001 – Fees and Charges

Fees and Charges, Part XII of the *Municipal Act* provides municipalities with broad powers to impose fees and charges via passage of a by-law. These powers, as presented in s.391(1), include imposing fees or charges:

- "for services or activities provided or done by or on behalf of it;
- for costs payable by it for services or activities provided or done by or on behalf of any other municipality or any local board; and
- for the use of its property including property under its control."

A fees and charges bylaw under this authority can be imposed on persons for the recovery of capital costs related to services or activities where an immediate benefit is received from the service, or where a benefit will be received at some later point in time. Moreover, these costs can include costs incurred by the municipality related to administration, enforcement and the establishment, acquisition and replacement of capital assets.

As noted above, the *Municipal Act* indicates that it is permissible for municipalities to impose charges for the recovery of capital costs associated with services that are provided either directly or on its behalf. These capital costs can include costs associated with the initial

establishment or acquisition of capital or for the replacement of existing capital assets. Moreover, the Act permits the imposition of capital charges on persons who receive an immediate benefit or a benefit at some later point (i.e. deferred benefit).

Section 391 of the Act does not define a methodology for calculating the fee or charge quantum, nor for determining its distribution among the benefiting landowners. As such, fees and charges may be determined at the reasonable discretion of Council following some general restrictions. There are no public process requirements under Part XII for adopting a capital charge by-law (although it is a prudent process recommendation). Part XII charges cannot be appealed to the OMB on the grounds that the fees or charges are unfair or unjust. However they may be challenged in court on the basis that the municipality is not operating within its statutory authority.

Ontario Regulation 584/06 governs the fees and charges provision of the *Municipal Act*. The fees and charges regulation was revised in 2006 by the *Municipal Statute Law Amendment Act*. The regulation in its present form is less prescriptive than its predecessor. The previous regulation (i.e. O.Reg. 244/02) limited bylaws for water and waste services to a 1-year period, required public process notification and meetings to substantiate any charges and expressly limited any charges to the costs of service. Furthermore, the previous restrictions whereby a municipality did not have the power to impose fees or charges under Part XII of the Act relating to the allocation of sewage and water capacity have been removed. These changes to the fees and charges regulation provide municipalities with greater flexibility in determining its use.

It should be noted that in applying Section 391 of the Municipal Act for the recovery of capital costs a municipality must have regard for the associated regulation. Section 2(1) of the regulation indicates that a fee under the Act cannot be imposed to recover capital costs that are also included in a development charge or front-ending agreement which is in effect before the composition of the fee. This clause is provided to avoid a duplication of fees and charges for the same works. As these costs included in the Town's DC Bylaw are for recovery the growth-related costs and under the Development Charges Act, the existing benefit costs cannot be recovered under a DC Bylaw, no duplication in cost recovery exists.

If the Town elected to use this mechanism to recover the net capital costs of septage treatment services from existing rural system users the charge per benefiting property owner would be approximately $156/unit. This is based on the following calculation:

Gross Capital Cost for Septage Treatment -	$1,932,000
Less: 2/3 BCF Grant Funding -	$(1,288,000)
Municipal Net Capital Cost Share -	$644,000
Less: Development Charges Cost Share (i.e. 27%) -	$(172,000)
Capital Charge Recovery Cost Share -	$472,000
Existing Rural Properties -	3,035
Capital Charge per Property -	$156

Under this funding alternative, the benefiting property owners could elect to pay the full charge (i.e. $156) within a permitted time of bylaw passage, e.g. within 90-days. This would reduce the amount of capital the Town's would need borrow and reduce the overall borrowing costs of the project. Moreover, the bylaw could allow for payment of the charge over a specified period of time with interest. Given the amount of the capital charge a 3-year payment term is recommended at an annual cost of $55/year (assuming annual interest of 5.38%). Council may elect to expand or reduce this term as deemed appropriate (e.g. if paid over 25-year term the charge would be $12.23/property).

As an alternative approach to recovering the net capital costs directly from property owners on a per lot basis, the Town could recover the annual debenture costs through a tipping fee at the sewage treatment plant. Under this approach the capital charge recovery amount would be debentured at 5.38% interest over a 25 year term, producing annual debt costs of approximately $37,000. Based on the projected septage volumes in Section 3.1 of this study, a tipping fee of approximately $9.58-14.84/m3 would be required under 3-year and 5-year pump out scenarios respectively. Based on a typical septage tank capacity of 3.63m3, the tipping fee would equate to $35-54 (or annualized cost of approximately $11).

2.2.3 Municipal Act, 2001 – Special Service Levies

Municipal Taxation, Part VIII of the *Municipal Act* provides municipalities with powers to impose levies to recover the costs of special service via passage of a by-law. Subsection 326(1), provides the following in this regard:

"A municipality may by by-law,

(a) identify a special service;

(b) determine which of the costs, including capital costs, debenture charges, charges for depreciation or a reserve fund, of the municipality are related to that special service;

(c) designate the area of the municipality in which the residents and property owners receive or will receive an additional benefit from the special service that is not received or will not be received in other areas of the municipality;

(d) determine the portion and set out the method of determining the portion of the costs determined in clause (b) which represent the additional costs to the municipality of providing the additional benefit in the area designated in clause (c);

(e) determine whether all or a specified portion of the additional costs determined in clause (d) shall be raised under subsection (4)." Subsection 4 requires that a special local levy under s.312 must be levied each year on the rateable property.

This section allows municipalities to pass bylaw to recover capital costs from benefiting owners if they derive and direct or indirect benefit whether it is currently available or will be available in the future. To qualify as a special service the service must not be generally provided or provided in a different manner throughout the Town.

Utilizing this approach, the annual debenture costs of the net municipal cost share for septage treatment (net of anticipated development charges) would be recovered from the rural area on a taxable assessment basis. Based on annual debt costs of approximately $37,000 and taxable assessment in the rural designated area of $683-$792 million, the annual tax rate would range between 0.00544%-0.00469%. This would produce an annual levy per residential dwelling (based on $214,000 assessed value) that would decline from $11.64 in 2012 to $10.03 in 2031.

2.3 Capital Cost Recovery Options

Table 2-2 summarizes the various capital funding alternatives identified in the previous subsections of this study.

Table 2-2
Summary of Capital Funding Alternatives

	Municipal Act Capital Charge ($/rural property)	Municipal Act Capital Charge Tipping Fee ($/m3)	Municipal Act Special Service Levy (tax rate/taxable assessment)
Septage Treatment Capital Cost	$1,932,000	$1,932,000	$1,932,000
Less: BCF Grant Funding	$(1,288,000)	$(1,288,000)	$(1,288,000)
Net Municipal Cost Share	$644,000	$644,000	$644,000
DC Funding Cost Share	$172,000	$172,000	$172,000
Recovery for Benefiting Rural Service Users	$472,000	$472,000	$472,000
Commuted Payment (one-time payment)	$156	$-	$-
Three Year Instalment Payment	$55	$-	$-
Charge per Septic Tank (3yr-5yr)	$-	$34.78-$53.87	$-
2012 Annual Payment	$12.23	$11.59	$11.64
2031 Annual Payment	$12.23	$10.77	$10.03

As noted previous, the sewage treatment plant funding plan allocates the BCF funding on a pro rata basis between sewage treatment and septage treatment services, and the Town has recently adopted a Development Charges By-Law to recover the growth-related capital costs of providing septage treatment services to new development in the rural service area. These components of the septage treatment funding plan are consistent between all three capital funding alternatives. It is also noted that these capital funding options are not mutually exclusive and may be used in conjunction. However, while the annualized payments under each option are comparable, there are benefits and limitations of each option that will effect Town's financial position. These are summarized as follows:

Municipal Act Capital Charge ($/rural property)

- Benefits
    - Easy to administer
    - Ensures full recovery of septage treatment capital costs of service (i.e. reduces instability of septage volumes)
    - Provides for equitable uniform rate recovery from all system users
    - Provides individual property owners with payment options to address affordability
- Limitations
    - Reflects availability of service, but not accurately use of service by individual

Municipal Act Capital Charge Tipping Fee ($/m3)

- Benefits
    - Closely aligns cost recovery with service benefits received by individual
    - Allows for imposition of deferential rates for septic tank/holding tank and Town/external users
- Limitations
    - Requires the development and administration of a new billing system and procedures
    - May not achieve full cost recovery if tipping volumes are variable due to changes in behaviour or lack of regulatory requirements for treatment
    - Full cost pricing of tipping fees may result in haulers seeking substitutes (i.e. tipping outside of Town to mitigate costs, which will lower volume treated and cost recovery)
    - New rural developments would in essence be charged twice for the same capital needs (i.e. development charge imposed and tipping fee for annual debt costs)

Municipal Act Special Service Levy (tax rate/taxable assessment)

- Benefits
    - Ensures full recovery of septage treatment capital costs of service (i.e. reduces instability of septage volumes)
    - Property assessment based recognition of ability to pay (i.e. higher valued properties pay more)
- Limitations
    - Requires administration of separate special service levy

- Property assessment charging parameters may not align cost recovery with service benefits received by individual
- New rural developments would in essence be charged twice for the same capital needs (i.e. development charge imposed and special levy for annual debt costs)

Based on the foregoing it is recommended that the Town recover the capital costs of septage treatment services by imposing a capital charge under the authority of Part XII of the *Municipal Act* on existing rural developments. This is recommended as it allows for the full recovery of capital costs being emplaced from those rural developments which will derive service benefits. This approach is consistent with the Town's position to recover the growth-related cost share of the septage treatment services from new developments within the rural area, and ensures that these costs are not imposed on new development twice (i.e. once through payment of DCs and then again through payment of tipping fees or special levy). Moreover the capital charge bylaw could be structured to allow for the payment of the capital charge in full at the time of bylaw passage (typically within a period of time, e.g. 90 days) or to pay the charges over a period of time with interest to address matters of affordability.

3. SEPTAGE SERVICES OPERATING PLAN

3. SEPTAGE SERVICES OPERATING PLAN

3.1 Septage Volume Forecast

The financial plan relies upon assumptions of septage volume for the purposes of estimating annual operating costs and in designing a tipping fee structure. The septage volume forecast contained herein was prepared in consultation with the following background documents:

- Business Plan for Addition of Septage Treatment System, prepared by Trow Consulting Engineers Ltd.);
- 30% Design Report for the Town of Mississippi Mills WWTP, prepared by The Thompson Rosemont Group Inc.;
- 2009 Development Charges Background Study, prepared by Watson & Associates Economists Ltd.;
- Interviews with two private septage haulers operating within the Town of Mississippi Mills; and
- Rural area solid waste collection records provided by the Town of Mississippi Mills.

The approach utilized in developing a septage forecast was to project the amount of septage produced by rural Town residents annually based on profile of use, tank capacity and pump out rates. These annual production estimates were verified through discussions with local area haulers, which also provided a basis for estimate potential septage volumes from areas outside of the Town. Table 3-1 provides a forecast of septage volumes for the 2010-2031 forecast period in 3-year intervals.

The forecast rural area growth for the period 2010-2031 is based on the Town's recently completed DC Background Study. The DC growth forecast identified the construction of an additional 565 residential units over the forecast period, at approximately 27 units per year. Non-residential growth (i.e. industrial, commercial, institutional) was identified at approximately 56 additional businesses, derived from projected employment growth and current levels of employees per business within the Town. The existing profile of rural area developments was taken from the Town's solid waste collection records, which indicate that there are presently 2,760 residential units and 275 non-residential businesses within the rural service area. In total the rural area is anticipated to increase from 3,064 to 3,685 properties over the period.

Table 3-1

Septage Volume Forecast (2010-2031)

	2010	2013	2016	2019	2022	2025	2028	2031
Population	6,967	7,166	7,366	7,565	7,768	7,972	8,175	8,378
Dwelling Units (2.5ppu)	2,787	2,866	2,946	3,026	3,107	3,189	3,270	3,351
Commercial/Industrial Properties	278	286	294	302	310	318	326	334
Total Septic Properties (res and non-res)	3,064	3,152	3,240	3,328	3,417	3,506	3,596	3,685
3-Year Pump Out Rate								
Septage Volume - Total (at 3.63 m^3/septage tank)	10,115	10,405	10,695	10,984	11,279	11,575	11,870	12,165
Annual Septage Volume (m3 - 3yr Pump Out)	3,372	3,468	3,565	3,661	3,760	3,858	3,957	4,055
Annual Holding Tank Volumes (m3)	1,413	1,454	1,494	1,535	1,576	1,617	1,659	1,700
Total Annual Septic Tank and Holding Tank Volumes	4,785	4,922	5,059	5,196	5,336	5,476	5,615	5,755
Septage Volume - Summer Months (90%)	4,307	4,430	4,553	4,677	4,802	4,928	5,054	5,179
Days - Apr. to Nov.	173	173	173	173	173	173	173	173
Septage Volume - m3 per day	25	26	26	27	28	28	29	30
5-Year Pump Out Rate								
Septage Volume - Total (at 3.63 m^3/septage tank)	10,115	10,405	10,695	10,984	11,279	11,575	11,870	12,165
Annual Septage Volume (m3 - 5yr Pump Out)	2,023	2,081	2,139	2,197	2,256	2,315	2,374	2,433
Annual Holding Tank Volumes (m3)	1,413	1,454	1,494	1,535	1,576	1,617	1,659	1,700
Total Annual Septic Tank and Holding Tank Volumes	3,437	3,535	3,633	3,732	3,832	3,932	4,033	4,133
Septage Volume - Summer Months (90%)	3,093	3,181	3,270	3,359	3,449	3,539	3,629	3,720
Days - Apr. to Nov.	173	173	173	173	173	173	173	173
Septage Volume - m3 per day	18	18	19	19	20	20	21	22
Internal/External Septage Volumes								
Internal Annual Volume (m3 - 3yr Pump Out)	4,785	4,922	5,059	5,196	5,336	5,476	5,615	5,755
External Annual Volume	7,215	7,215	7,215	7,215	7,215	7,215	7,215	7,215
Total Annual Septic Tank and Holding Tank Volumes	12,000	12,137	12,274	12,411	12,551	12,690	12,830	12,969
Septage Volume - Summer Months (90%)	10,800	10,923	11,047	11,170	11,296	11,421	11,547	11,673
Days - Apr. to Nov.	173	173	173	173	173	173	173	173
Septage Volume - m3 per day	62	63	64	65	65	66	67	67
Internal Annual Volume (m3 - 5yr Pump Out)	3,437	3,535	3,633	3,732	3,832	3,932	4,033	4,133
External Annual Volume	7,215	7,215	7,215	7,215	7,215	7,215	7,215	7,215
Total Annual Septic Tank and Holding Tank Volumes	10,651	10,750	10,848	10,946	11,047	11,147	11,247	11,348
Septage Volume - Summer Months (90%)	9,586	9,675	9,763	9,852	9,942	10,032	10,123	10,213
Days - Apr. to Nov.	173	173	173	173	173	173	173	173
Septage Volume - m3 per day	55	56	56	57	57	58	59	59

The residential septage volume forecast was generated based on an average septic tank size of 3.63m^3. This average tank size was utilized in the previous Business Plan and 30% Design Study. In discussion with private septage haulers this size assumption was confirmed, although it was noted that tanks are becoming increasingly larger on new developments. The non-residential septage volume was forecast based on the previous Business Plan holding tank annual volume assumptions (i.e. 1,400 m^3 annually) and increased for the projected ICI growth over the period.

The Town's request for proposal identified that a septage forecast be prepared based on a 5-year pump out rate. The Town's previous Business Plan identified a range between a 3-year and 5-year pump out rate, while the 30% Design Study identified a 3-year pump out rate only. A 3-year and 5-year pump out rate has been identified within Table 3-1. Under the 3-year pump out rate scenario, total septic tank and holding tank volumes would increase from 4,875 m^3

annually in 2010 to 5,755m^3 annually in 2031. Correspondingly, under the 5-year pump out rate scenario, total septic tank and holding tank volumes would increase from 3,437 m^3 annually in 2010 to 4,133m^3 annually in 2031. When compared with results achieved through discussion with two local private septage haulers, it would appear that the 3-year pump out rate is more appropriate, i.e. the private hauler estimated current volumes within the Town to be approximately 1.1 million gallons annually (or 5,000 m^3). Moreover, the private haulers confirmed pump out rates are typically between 3-4 years.

Incorporating assumptions from previous background studies, 90% of septage volumes would be hauled during the period of April to November. Assuming an average of 173 days, annual septage volumes to be received at the sewage treatment plant would increase from 25m^3/day in 2010 to 30m^3/day by 2031. This is comparable to the 35m3/day assumed within the 30% Design Study, which was based on a higher growth forecast assumption.

Based on discussions with two local private septage haulers, we were able to confirm that they are responsible for disposing of the majority of septage waste within the Town of Mississippi Mills. In addition to septage volumes generated within the Town, these two haulers combined dispose of an additional 7,215 m3 (or approximately 1.5 million gallons) annually in septage from areas outside of the Town. If these volumes were treated at the sewage treatment plant, the total annual volumes would increase from 12,000 m^3 in 2010 to 12,969 m^3 in 2031, assuming a 3-year pump out rate and no external service area growth. This translates into a daily receiving volume of 62-67 m^3, which is more than double that assumed in the 30% Design Study. It is suggested that the design capacity of the sewage treatment plant and receiving facility be reviewed to ensure that these external volumes could be accommodated. For the purposes of our analysis however, it is assumed that external volumes can be accommodated.

3.2 Operating Cost Forecast

Annual forecast of operating costs has been prepared for the 2010-2031 period. The 30% Design Study was consulted, and subsequent discussions with The Thompson Rosemount Group Inc. were undertaken, in this regard. The 30% Design Study identifies annual operating costs of approximately $68,100 annually, based on daily septage volumes of 30 m^3/d. The operating cost assumptions include Fournier Press dewatering technology and identify cost components for hydro, polymer and operations. Discussions with The Thompson Rosemount Group Inc. confirmed that the hydro and polymer operating cost components are variable and

should be based on daily septage volumes, while operations costs would be fixed for the forecast period.

Consistent with the 30% design assumptions, Table 3-2 provides a summary of operating costs over the 2010-2031 period (in three year increments) for anticipated Town of Mississippi Mills septage volumes and for the inclusion of external septage volumes. It is assumed that the plan would be operational in 2012 and operating costs have been inflated assuming an annual inflation rate of 2.9%, based on 20-year CPI figures. Annual debt repayment costs for the anticipated septage treatment capital costs have also been included, assuming an interest rate of 5.38% and 25-year term.

Table 3-1

Operating Cost Forecast (2010-2031)

Description	Forecast							
	2010	2013	2016	2019	2022	2025	2028	2031
Internal Septage Volumes Only								
Operating Expenditures								
Hydro		29,722	33,243	37,153	41,514	46,356	51,728	57,687
Polymer		25,078	28,049	31,348	35,028	39,113	43,645	48,674
Operations (1 hour per day)		9,902	10,775	11,725	12,758	13,883	15,107	16,439
Subtotal - Operating Expenditures	-	64,703	72,066	80,226	89,300	99,351	110,480	122,800
Captial Related Expenditures								
Long-term Debt Charges	-	37,125	37,125	37,125	37,125	37,125	37,125	37,125
Subtotal - Capital Related Expenditures	-	37,125	37,125	37,125	37,125	37,125	37,125	37,125
TOTAL GROSS EXPENDITURES	**-**	**101,828**	**109,192**	**117,351**	**126,425**	**136,477**	**147,606**	**159,925**
Internal & External Septage Volumes Only								
Operating Expenditures								
Hydro		72,051	79,303	87,273	96,053	105,702	116,305	127,957
Polymer		60,793	66,912	73,637	81,044	89,186	98,133	107,964
Operations (1 hour per day)		9,902	10,775	11,725	12,758	13,883	15,107	16,439
Subtotal - Operating Expenditures	-	142,747	156,990	172,635	189,856	208,771	229,545	252,360
Captial Related Expenditures								
Long-term Debt Charges	-	37,125	37,125	37,125	37,125	37,125	37,125	37,125
Transfer to Septage Treatment Reserve Fund	-	-	-	-	-	-	-	-
Subtotal - Capital Related Expenditures	-	37,125	37,125	37,125	37,125	37,125	37,125	37,125
TOTAL GROSS EXPENDITURES	**-**	**179,872**	**194,115**	**209,760**	**226,981**	**245,896**	**266,670**	**289,485**

Under the internal septage volume only scenario, annual operating costs would increase from $64,700 in 2013 to $122,800 by 2031. With assumed annual borrowing costs of $37,125, total gross costs would increase from $101,828 in 2013 to $159,925 by 2031. Under the assumption that the plant is designed to accommodate the additional external septage volumes, operating cost would be approximately $78,000 higher in 2013 and $129,600 higher by 2031, than under

the internal volume only scenario. This reflects the increased costs of hydro and polymer associated with higher daily flow volumes.

3.3 Operating Cost Recovery Options

The cost recovery options for operating costs are similar to those presented earlier for capital costs, with the exclusion of development charges. The Town could elect to impose a flat rate charge on all rural area system users, impose a special service area levy on the rural service area, and/or develop a tipping fee for recovery from septage haulers based on septage volumes received at the sewage treatment plant.

Table 3-3 summarizes the various charging mechanisms forecast over the 2010-2031 period, in three year intervals. With respect to the flat rate options, the operating costs would be recovered from the existing rural developments as well as those constructed throughout the period. Under the special service area levy, the tax rate would be calculated based on the existing property tax assessed value, with increase assessment assumed with development. Lastly, for the tipping fee calculation volumes have been adjusted to reflect industry practice of imposing lower rates for holding tank volumes as compared to septic tank volumes. This reflects the increased frequency of holding tank disposal and the less concentrated content of holding tanks. For this purpose, holding tank volumes have been weighted at 0.31x septic volumes. Moreover, external septage volumes are typically charged higher rates than those imposed on rural development within a municipality. Reflecting this, a premium of 2.48x local septic volumes has been assumed.

Table 3-3

Charging Mechanism Forecast (2010-2031)

	2010	2013	2016	2019	2022	2025	2028	2031
Flat Rate Charging Mechanism								
Rural Area Developments	3,064	3,152	3,240	3,328	3,417	3,506	3,596	3,685
Special Levy Charging Mechanism								
Annual Weighted Assessment (in millions$)	671.3	688.4	705.4	722.5	739.9	757.3	774.7	792.1
Tipping Fee Charging Mechanism								
3-Year Pump Out Rate								
Septage Volume - Total (at 3.63 m^3/septage tank)	10,115	10,405	10,695	10,984	11,279	11,575	11,870	12,165
Annual Septage Volume (m3 - 3yr Pump Out)	3,372	3,468	3,565	3,661	3,760	3,858	3,957	4,055
Annual Holding Tank Volumes (m3)	1,413	1,454	1,494	1,535	1,576	1,617	1,659	1,700
Total Annual Septic Tank and Holding Tank Volumes	4,785	4,922	5,059	5,196	5,336	5,476	5,615	5,755
Weighted Septage Volumes								
Septic Tank Volumes (m3 x 1)	3,372	3,468	3,565	3,661	3,760	3,858	3,957	4,055
Holding Tank Volumes (m3 x 0.31)	431	444	456	468	481	493	506	519
External Septage Volumes (m3 x 2.48)	17,363	17,363	17,363	17,363	17,363	17,363	17,363	17,363
Total Weighted Septage Volumes	21,166	21,275	21,384	21,493	21,604	21,715	21,826	21,937

Table 3-4 summarizes the potential rates for recovery operating costs over the forecast period, in three year intervals. For each of the recovery options, rates are provided for operating costs only (i.e. excluding annual debt repayment costs) and for operating and capital combined.

Table 3-4

Septage Rate Forecast (2010-2031)

	Forecast							
Description	**2010**	**2013**	**2016**	**2019**	**2022**	**2025**	**2028**	**2031**
EXISTING RURAL UNITS (residential & non-residential)	**3,064**	**3,152**	**3,240**	**3,328**	**3,417**	**3,506**	**3,596**	**3,685**
Calculated Annual Flat Rate Per Unit (Operating Only)	**-**	**20.53**	**22.24**	**24.11**	**26.13**	**28.34**	**30.73**	**33.32**
Calculated Annual Flat Rate Per Unit (Capital and Operating)	**-**	**32.31**	**33.70**	**35.27**	**37.00**	**38.92**	**41.05**	**43.40**
WEIGHTED ASSESSMENT (existing + $214,000/unit)	**671.3**	**688.4**	**705.4**	**722.5**	**739.9**	**757.3**	**774.7**	**792.1**
Calculated Tax Rate (RT) (Operating Only)		**0.00940%**	**0.01022%**	**0.01110%**	**0.01207%**	**0.01312%**	**0.01426%**	**0.01550%**
Annual Tax Bill (based on $214,000 average assessment/unit)		**20.12**	**21.86**	**23.76**	**25.83**	**28.07**	**30.52**	**33.18**
Calculated Tax Rate (RT) (Capital and Operating)		**0.01479%**	**0.01548%**	**0.01624%**	**0.01709%**	**0.01802%**	**0.01905%**	**0.02019%**
Annual Tax Bill (based on $214,000 average assessment/unit)		**31.66**	**33.12**	**34.76**	**36.57**	**38.57**	**40.77**	**43.21**
ESTIMATED SEPTAGE GENERATION - (internal m3)	**3,803**	**3,912**	**4,021**	**4,130**	**4,241**	**4,352**	**4,463**	**4,573**
Calculated Septic Tank Rate per Cubic Metre (Operating Only)	**-**	**16.54**	**17.92**	**19.43**	**21.06**	**22.83**	**24.76**	**26.85**
Calculated Holding Tank Rate per Cubic Metre (Operating Only)	**-**	**5.05**	**5.47**	**5.93**	**6.42**	**6.96**	**7.55**	**8.19**
Calculated Septic Tank Rate per Cubic Metre (Capital and Operating)	**-**	**26.03**	**27.16**	**28.42**	**29.81**	**31.36**	**33.08**	**34.97**
Calculated Holding Tank Rate per Cubic Metre (Capital and Operating)	**-**	**7.94**	**8.28**	**8.67**	**9.09**	**9.57**	**10.09**	**10.67**
ESTIMATED SEPTAGE GENERATION (internal & external m3)	**21,166**	**21,275**	**21,384**	**21,493**	**21,604**	**21,715**	**21,826**	**21,937**
Calculated Septic Tank Rate per Cubic Metre (Operating Only)		**2.94**	**3.26**	**3.61**	**4.00**	**4.42**	**4.89**	**5.41**
Calculated Holding Tank Rate per Cubic Metre (Operating Only)		**0.90**	**0.99**	**1.10**	**1.22**	**1.35**	**1.49**	**1.65**
Calculated External Rate per Cubic Metre (Operating Only)		**7.28**	**8.07**	**8.94**	**9.90**	**10.96**	**12.12**	**13.41**
Calculated Septic Tank Rate per Cubic Metre (Capital and Operating)		**4.69**	**5.00**	**5.34**	**5.72**	**6.14**	**6.60**	**7.11**
Calculated Holding Tank Rate per Cubic Metre (Capital and Operating)		**1.43**	**1.52**	**1.63**	**1.74**	**1.87**	**2.01**	**2.17**
Calculated External Rate per Cubic Metre (Capital and Operating)		**11.61**	**12.37**	**13.22**	**14.16**	**15.20**	**16.34**	**17.61**

Similar to the capital cost recovery analysis, these funding options are not mutually exclusive although highly desirable from an administrative perspective. The following summarizes the benefits and limitations of recovering operating costs only under the various options:

Flat Rate Option ($/rural property)

- Benefits
    - Easy to administer
    - Ensures full recovery of septage treatment operating costs of service (i.e. reduces instability of septage volumes)
- Limitations
    - Does not provide equity in recovery of costs, as volumes received from outside the Town would not be charged
    - Reflects availability of service, but not accurately use of service by individual

Tipping Fee Option ($/m3)

- Benefits
    - Closely aligns cost recovery with service benefits received by individual
    - Provides for equity in recovery between Town system user and users external to the system
    - Reflects service distinctions (i.e. holding tank composition)
- Limitations
    - Requires the development and administration of a new billing system and procedures
    - May not achieve full cost recovery if tipping volumes are variable due to changes in behaviour or lack of regulatory requirements for treatment
    - Full cost pricing of tipping fees may result in haulers seeking substitutes (i.e. tipping outside of Town to mitigate costs, which will lower volume treated and cost recovery)

Special Service Levy (tax rate/taxable assessment)

- Benefits
    - Ensures full recovery of septage treatment capital costs of service (i.e. reduces instability of septage volumes)
    - Property assessment based recognition of ability to pay (i.e. higher valued properties pay more)

- Limitations
    - Requires administration of separate special service levy
    - Does not provide equity in recovery of costs, as volumes received from outside the Town would not be charged
    - Property assessment charging parameters may not align cost recovery with service benefits received by individual

With respect to the annual operating costs, it is recommended that the Town impose tipping fees to recovery costs. When compared with the City of Ottawa tipping fees (i.e. $9.31/$m^3$ for septic waste, $2.84/$m^3$ for holding tank waste, and $23.06/$m^3$ for external septage), the calculated rates for the Town on better positioned. However this is premised on the ability of the plant to accommodate the anticipated external volumes. If the plant is incapable of treating the higher volume levels than the proposed tipping fees would be higher (i.e. $16.54 v. $9.31 per m^3 for septic tank waste). The later may not reduce the seeking of substitutes by haulers to mitigate their costs and provide for the recovery of operating costs benefiting such system users. It is further recommended that annual revenues from this funding mechanism be monitored and alterative rate recovery options be considered if deemed insufficient.

4. CONCLUSIONS

4. CONCLUSIONS

4.1 Conclusions

The business plan herein reviews the current legislative context and the results of a survey of municipalities in response. While the current legislation seeks to remove the land application of untreated septage, it has not been fully enforced at this time. This presents municipalities with a difficult situation where they are seeking to provide constituents with services to accommodate these potential regulatory changes without the proper Provincial enforcement. There are a number of engineering solutions that are being considered in this regard, with the current preferred solution within the Town being the construction of a sewage treatment plant with septage receiving and treatment capabilities.

The capital costs for the septage treatment options currently being proposed is approximately $1.93 million. The Town has secured BCF grant funding toward 2/3 of the capital costs of the project, as such the municipal capital cost component is estimated at $644,000. The financial plan presented herein recommends the utilization of development charges to recover the growth-related costs of the project from future developments. Moreover, the non-growth capital costs are recommended to be recovered through a Municipal Act capital charge from existing rural area developments. It is anticipated that the capital charge would be approximately $153 per property and could be paid over a 3-year term at $55/year.

The operating costs for septage treatment have been forecast over the forecast period 2010-2031. These costs reflect anticipated septage volumes forecast based on existing service users and growth within the municipality, as well as potential volumes from outside the Town of Mississippi Mills. It is recommended that the Town impose tipping fees for the recovery of operating costs of septage treatment, with ongoing monitoring of activity to ensure cost recovery. Tipping fees are recommended because they closely align cost recovery with service benefits received by individuals within and outside of the municipality and reflect service distinctions amongst users. The primary risk in utilizing this mechanism again relates to the certainty of septage volumes in light of legislative requirements and market pricing.

APPENDIX A
DETAILED FINANCIAL PLAN CALCULATIONS

TABLE 1
Town of Mississippi Mills
Septage Treatment Services
Capital Budget Forecast
Inflated $

Description	Total	Forecast																					
		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Capital Expenditures																							
Septage Receiving Station	529,828	260,000	269,828																				
Aeration System - Tanks	388,201	190,500	197,701																				
Aeration System - Equipment	84,569	41,500	43,069																				
Sludge Stabilization - ATAD	99,852	49,000	50,852																				
Sludge Stabilization - Biosolids Storage	287,330	141,000	146,330																				
Thickening/Dewatering Equipment	224,158	110,000	114,158																				
Engineering (12%) and Contingency (10%)	354,577	174,000	180,577																				
Total Capital Expenditures	1,968,515	966,000	1,002,515	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Capital Financing																							
Grant Funding (2/3 of $1,932,000)	1,288,000	644,000	644,000	-																			
Debt Requirements (Rate-related)	503,881	235,321	268,560	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debt Requirements (DC-related)	176,634	86,679	89,955	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Capital Financing	1,968,515	966,000	1,002,515	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 2
Town of Mississippi Mills
Septage Treatment Services
Schedule of Debenture Repayments
Inflated $

Rate Recovered Debt	Principal	Year																					
Year	(Inflated)	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
2010	235,321		17,338	17,338	17,338	17,338	17,338	17,338	17,338	17,338	17,338	17,338	17,338	17,338	17,338	17,338	17,338	17,338	17,338	17,338	17,338	17,338	17,338
2011	268,560			19,787	19,787	19,787	19,787	19,787	19,787	19,787	19,787	19,787	19,787	19,787	19,787	19,787	19,787	19,787	19,787	19,787	19,787	19,787	19,787
2012	-				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2013	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2014	-						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2015	-							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2016	-								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2017	-									-	-	-	-	-	-	-	-	-	-	-	-	-	-
2018	-										-	-	-	-	-	-	-	-	-	-	-	-	-
2019	-											-	-	-	-	-	-	-	-	-	-	-	-
2020	-												-	-	-	-	-	-	-	-	-	-	-
Total Annual Debt Charges (Rate-Recovered)	**503,881**	**-**	**17,338**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**

DC Related Debt	Principal	Year																					
Year	(Inflated)	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
2010	86,679		6,386	6,386	6,386	6,386	6,386	6,386	6,386	6,386	6,386	6,386	6,386	6,386	6,386	6,386	6,386	6,386	6,386	6,386	6,386	6,386	6,386
2011	89,955			6,628	6,628	6,628	6,628	6,628	6,628	6,628	6,628	6,628	6,628	6,628	6,628	6,628	6,628	6,628	6,628	6,628	6,628	6,628	6,628
2012	-				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2013	-					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2014	-						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2015	-							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2016	-								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2017	-									-	-	-	-	-	-	-	-	-	-	-	-	-	-
2018	-										-	-	-	-	-	-	-	-	-	-	-	-	-
2019	-											-	-	-	-	-	-	-	-	-	-	-	-
2020	-												-	-	-	-	-	-	-	-	-	-	-
Total Annual Debt Charges (DC-Recovered)	**176,634**	**-**	**6,386**	**13,014**	**13,014**	**13,014**	**13,014**	**13,014**	**13,014**	**13,014**	**13,014**	**13,014**	**13,014**	**13,014**	**13,014**	**13,014**	**13,014**	**13,014**	**13,014**	**13,014**	**13,014**	**13,014**	**13,014**
Interest Rate	5.38%	Term (yrs)	25																				

TABLE 3
Town of Mississippi Mills
Septage Treatment Services
Reserve Continuity Schedules
Inflated $

Septage Treatment Reserve Fund	Actual 2008	Forecast																					
		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Opening Balance		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Income		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Transfer to Operating																							
Transfer to Capital																							
Adjustment to reflect actual balances																							
Balance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest Rate	4%																						

Septage Treatment DC Reserve Fund	Actual 2008	Forecast																					
		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Opening Balance	-	-	5,414	4,608	(2,911)	(10,511)	(18,185)	(25,929)	(33,737)	(41,601)	(49,515)	(57,469)	(65,456)	(73,466)	(81,489)	(89,513)	(97,526)	(105,516)	(113,468)	(121,368)	(129,200)	(136,945)	(144,586)
Income	-	5,206	5,403	5,607	5,819	6,039	6,267	6,504	6,750	7,005	7,270	7,545	7,830	8,126	8,433	8,752	9,083	9,426	9,782	10,152	10,536	10,934	11,347
Transfer to Operating																							
Debt Repayment		-	6,386	13,014	13,014	13,014	13,014	13,014	13,014	13,014	13,014	13,014	13,014	13,014	13,014	13,014	13,014	13,014	13,014	13,014	13,014	13,014	13,014
Transfer to Capital	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Balance	-	5,206	4,431	(2,799)	(10,106)	(17,486)	(24,932)	(32,440)	(40,001)	(47,610)	(55,259)	(62,939)	(70,641)	(78,355)	(86,070)	(93,775)	(101,458)	(109,104)	(116,700)	(124,230)	(131,678)	(139,025)	(146,253)
Interest	-	208	177	(112)	(404)	(699)	(997)	(1,298)	(1,600)	(1,904)	(2,210)	(2,518)	(2,826)	(3,134)	(3,443)	(3,751)	(4,058)	(4,364)	(4,668)	(4,969)	(5,267)	(5,561)	(5,850)
Interest Rate	4%																						

TABLE 4
Town of Mississippi Mills
Septage Treatment Services
Operating Budget Forecast
Inflated $

Description	Forecast																					
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Expenditures																						
Hydro			28,629	29,722	30,855	32,028	33,243	34,501	35,804	37,153	38,556	40,009	41,514	43,072	44,685	46,356	48,085	49,875	51,728	53,646	55,632	57,687
Polymer			24,156	25,078	26,034	27,024	28,049	29,110	30,209	31,348	32,532	33,758	35,028	36,342	37,703	39,113	40,572	42,082	43,645	45,264	46,939	48,674
Operations (1 hour per day)			9,627	9,902	10,185	10,476	10,775	11,083	11,399	11,725	12,060	12,404	12,758	13,123	13,498	13,883	14,280	14,687	15,107	15,538	15,982	16,439
Subtotal - Operating Expenditures	**-**	**-**	**62,412**	**64,703**	**67,074**	**69,527**	**72,066**	**74,694**	**77,413**	**80,226**	**83,148**	**86,172**	**89,300**	**92,537**	**95,886**	**99,351**	**102,936**	**106,644**	**110,480**	**114,449**	**118,554**	**122,800**
Captial Related Expenditures																						
Long-term Debt Charges	-	17,338	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125
Transfer to Septage Treatment Reserve Fund	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal - Capital Related Expenditures	**-**	**17,338**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**
TOTAL GROSS EXPENDITURES	**-**	**17,338**	**99,537**	**101,828**	**104,199**	**106,653**	**109,192**	**111,819**	**114,538**	**117,351**	**120,273**	**123,297**	**126,425**	**129,663**	**133,012**	**136,477**	**140,061**	**143,769**	**147,606**	**151,574**	**155,679**	**159,925**
Operating Revenues																						
Operating Revenues																						
Transfer from Reserves	-																					
TOTAL OPERATING REVENUES	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
SEPTAGE TREATMENT BILLING RECOVERY	**-**	**17,338**	**99,537**	**101,828**	**104,199**	**106,653**	**109,192**	**111,819**	**114,538**	**117,351**	**120,273**	**123,297**	**126,425**	**129,663**	**133,012**	**136,477**	**140,061**	**143,769**	**147,606**	**151,574**	**155,679**	**159,925**
EXISTING RURAL UNITS (residential & non-residential)	**3,064**	**3,094**	**3,123**	**3,152**	**3,181**	**3,211**	**3,240**	**3,269**	**3,298**	**3,328**	**3,357**	**3,387**	**3,417**	**3,447**	**3,477**	**3,506**	**3,536**	**3,566**	**3,596**	**3,626**	**3,655**	**3,685**
Calculated Commuted Flat Rate Per Unit (Capital Only)	**153**																					
Calculated Annual Flat Rate Per Unit (Capital Only)	**-**	**5.60**	**11.89**	**11.78**	**11.67**	**11.56**	**11.46**	**11.36**	**11.26**	**11.16**	**11.06**	**10.96**	**10.87**	**10.77**	**10.68**	**10.59**	**10.50**	**10.41**	**10.32**	**10.24**	**10.16**	**10.07**
Calculated Annual Flat Rate Per Unit (Operating Only)	**-**	**-**	**19.99**	**20.53**	**21.08**	**21.66**	**22.24**	**22.85**	**23.47**	**24.11**	**24.77**	**25.44**	**26.13**	**26.85**	**27.58**	**28.34**	**29.11**	**29.91**	**30.73**	**31.57**	**32.43**	**33.32**
Calculated Annual Flat Rate Per Unit (Capital and Operating)	**-**	**5.60**	**31.87**	**32.31**	**32.75**	**33.22**	**33.70**	**34.21**	**34.73**	**35.27**	**35.82**	**36.40**	**37.00**	**37.62**	**38.26**	**38.92**	**39.61**	**40.32**	**41.05**	**41.81**	**42.59**	**43.40**
WEIGHTED ASSESSMENT (existing + $214,000/unit)	**671,282,820**	**676,975,220**	**682,667,620**	**688,360,020**	**694,052,420**	**699,744,820**	**705,437,220**	**711,129,620**	**716,822,020**	**722,514,420**	**728,313,820**	**734,113,220**	**739,912,620**	**745,712,020**	**751,511,420**	**757,310,820**	**763,110,220**	**768,909,620**	**774,709,020**	**780,508,420**	**786,307,820**	**792,107,220**
Calculated Tax Rate (RT) (Capital Only)		**0.00256%**	**0.00544%**	**0.00539%**	**0.00535%**	**0.00531%**	**0.00526%**	**0.00522%**	**0.00518%**	**0.00514%**	**0.00510%**	**0.00506%**	**0.00502%**	**0.00498%**	**0.00494%**	**0.00490%**	**0.00486%**	**0.00483%**	**0.00479%**	**0.00476%**	**0.00472%**	**0.00469%**
Annual Tax Bill (based on $214,000 average assessment/unit)		**5.48**	**11.64**	**11.54**	**11.45**	**11.35**	**11.26**	**11.17**	**11.08**	**11.00**	**10.91**	**10.82**	**10.74**	**10.65**	**10.57**	**10.49**	**10.41**	**10.33**	**10.26**	**10.18**	**10.10**	**10.03**
Calculated Tax Rate (RT) (Operating Only)		**0.00000%**	**0.00914%**	**0.00940%**	**0.00966%**	**0.00994%**	**0.01022%**	**0.01050%**	**0.01080%**	**0.01110%**	**0.01142%**	**0.01174%**	**0.01207%**	**0.01241%**	**0.01276%**	**0.01312%**	**0.01349%**	**0.01387%**	**0.01426%**	**0.01466%**	**0.01508%**	**0.01550%**
Annual Tax Bill (based on $214,000 average assessment/unit)		**-**	**19.56**	**20.12**	**20.68**	**21.26**	**21.86**	**22.48**	**23.11**	**23.76**	**24.43**	**25.12**	**25.83**	**26.56**	**27.30**	**28.07**	**28.87**	**29.68**	**30.52**	**31.38**	**32.27**	**33.18**
Calculated Tax Rate (RT) (Capital and Operating)		**0.00256%**	**0.01458%**	**0.01479%**	**0.01501%**	**0.01524%**	**0.01548%**	**0.01572%**	**0.01598%**	**0.01624%**	**0.01651%**	**0.01680%**	**0.01709%**	**0.01739%**	**0.01770%**	**0.01802%**	**0.01835%**	**0.01870%**	**0.01905%**	**0.01942%**	**0.01980%**	**0.02019%**
Annual Tax Bill (based on $214,000 average assessment/unit)		**5.48**	**31.20**	**31.66**	**32.13**	**32.62**	**33.12**	**33.65**	**34.19**	**34.76**	**35.34**	**35.94**	**36.57**	**37.21**	**37.88**	**38.57**	**39.28**	**40.01**	**40.77**	**41.56**	**42.37**	**43.21**
ESTIMATED SEPTAGE GENERATION - (internal m^3)	**3,803**	**3,839**	**3,876**	**3,912**	**3,948**	**3,984**	**4,021**	**4,057**	**4,093**	**4,130**	**4,167**	**4,204**	**4,241**	**4,278**	**4,315**	**4,352**	**4,389**	**4,426**	**4,463**	**4,500**	**4,537**	**4,573**
Calculated Septic Tank Rate per Cubic Metre (Capital and Operating)	**-**	**4.52**	**25.68**	**26.03**	**26.39**	**26.77**	**27.16**	**27.56**	**27.98**	**28.42**	**28.87**	**29.33**	**29.81**	**30.31**	**30.83**	**31.36**	**31.91**	**32.49**	**33.08**	**33.69**	**34.32**	**34.97**
Calculated Holding Tank Rate per Cubic Metre (Capital and Operating)	**-**	**1.38**	**7.83**	**7.94**	**8.05**	**8.17**	**8.28**	**8.41**	**8.54**	**8.67**	**8.81**	**8.95**	**9.09**	**9.25**	**9.40**	**9.57**	**9.74**	**9.91**	**10.09**	**10.28**	**10.47**	**10.67**
Calculated Septic Tank Rate per Cubic Metre (Operating Only)	**-**	**-**	**16.10**	**16.54**	**16.99**	**17.45**	**17.92**	**18.41**	**18.91**	**19.43**	**19.96**	**20.50**	**21.06**	**21.63**	**22.22**	**22.83**	**23.46**	**24.10**	**24.76**	**25.44**	**26.13**	**26.85**
Calculated Holding Tank Rate per Cubic Metre (Operating Only)	**-**	**-**	**4.91**	**5.05**	**5.18**	**5.32**	**5.47**	**5.62**	**5.77**	**5.93**	**6.09**	**6.25**	**6.42**	**6.60**	**6.78**	**6.96**	**7.16**	**7.35**	**7.55**	**7.76**	**7.97**	**8.19**

TABLE 4a
Town of Mississippi Mills
Septage Treatment Services
Operating Budget Forecast
Inflated $

Description	Forecast																					
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Expenditures																						
Hydro			69,782	72,051	74,393	76,809	79,303	81,877	84,532	87,273	90,108	93,034	96,053	99,168	102,384	105,702	109,126	112,659	116,305	120,068	123,951	127,957
Polymer			58,879	60,793	62,769	64,808	66,912	69,083	71,324	73,637	76,029	78,497	81,044	83,673	86,386	89,186	92,075	95,056	98,133	101,307	104,583	107,964
Operations (1 hour per day)			9,627	9,902	10,185	10,476	10,775	11,083	11,399	11,725	12,060	12,404	12,758	13,123	13,498	13,883	14,280	14,687	15,107	15,538	15,982	16,439
Subtotal - Operating Expenditures	**-**	**-**	**138,289**	**142,747**	**147,347**	**152,093**	**156,990**	**162,043**	**167,256**	**172,635**	**178,196**	**183,935**	**189,856**	**195,964**	**202,267**	**208,771**	**215,480**	**222,403**	**229,545**	**236,914**	**244,516**	**252,360**
Captial Related Expenditures																						
Long-term Debt Charges	-	17,338	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125	37,125
Transfer to Septage Treatment Reserve Fund	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal - Capital Related Expenditures	**-**	**17,338**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**	**37,125**
TOTAL GROSS EXPENDITURES	**-**	**17,338**	**175,414**	**179,872**	**184,472**	**189,218**	**194,115**	**199,168**	**204,381**	**209,760**	**215,322**	**221,060**	**226,981**	**233,090**	**239,393**	**245,896**	**252,605**	**259,528**	**266,670**	**274,039**	**281,642**	**289,485**
Operating Revenues																						
Operating Revenues																						
Transfer from Reserves	-																					
TOTAL OPERATING REVENUES	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
SEPTAGE TREATMENT BILLING RECOVERY	**-**	**17,338**	**175,414**	**179,872**	**184,472**	**189,218**	**194,115**	**199,168**	**204,381**	**209,760**	**215,322**	**221,060**	**226,981**	**233,090**	**239,393**	**245,896**	**252,605**	**259,528**	**266,670**	**274,039**	**281,642**	**289,485**
EXISTING RURAL UNITS (residential & non-residential)	**3,064**	**3,094**	**3,123**	**3,152**	**3,181**	**3,211**	**3,240**	**3,269**	**3,298**	**3,328**	**3,357**	**3,387**	**3,417**	**3,447**	**3,477**	**3,506**	**3,536**	**3,566**	**3,596**	**3,626**	**3,655**	**3,685**
Calculated Commuted Flat Rate Per Unit (Capital Only)	**153**																					
Calculated Annual Flat Rate Per Unit (Capital Only)	**-**	**5.60**	**11.89**	**11.78**	**11.67**	**11.56**	**11.46**	**11.36**	**11.26**	**11.16**	**11.06**	**10.96**	**10.87**	**10.77**	**10.68**	**10.59**	**10.50**	**10.41**	**10.32**	**10.24**	**10.16**	**10.07**
Calculated Annual Flat Rate Per Unit (Operating Only)	**-**	**-**	**44.28**	**45.29**	**46.32**	**47.37**	**48.46**	**49.57**	**50.71**	**51.88**	**53.08**	**54.30**	**55.56**	**56.86**	**58.18**	**59.54**	**60.94**	**62.37**	**63.84**	**65.35**	**66.89**	**68.48**
Calculated Annual Flat Rate Per Unit (Capital and Operating)	**-**	**5.60**	**56.17**	**57.07**	**57.99**	**58.94**	**59.92**	**60.93**	**61.97**	**63.04**	**64.14**	**65.27**	**66.43**	**67.63**	**68.86**	**70.13**	**71.44**	**72.78**	**74.16**	**75.59**	**77.05**	**78.56**
WEIGHTED ASSESSMENT (existing + $214,000/unit)	**671,282,820**	**676,975,220**	**682,667,620**	**688,360,020**	**694,052,420**	**699,744,820**	**705,437,220**	**711,129,620**	**716,822,020**	**722,514,420**	**728,313,820**	**734,113,220**	**739,912,620**	**745,712,020**	**751,511,420**	**757,310,820**	**763,110,220**	**768,909,620**	**774,709,020**	**780,508,420**	**786,307,820**	**792,107,220**
Calculated Tax Rate (RT) (Capital Only)		**0.00256%**	**0.00544%**	**0.00539%**	**0.00535%**	**0.00531%**	**0.00526%**	**0.00522%**	**0.00518%**	**0.00514%**	**0.00510%**	**0.00506%**	**0.00502%**	**0.00498%**	**0.00494%**	**0.00490%**	**0.00486%**	**0.00483%**	**0.00479%**	**0.00476%**	**0.00472%**	**0.00469%**
Annual Tax Bill (based on $214,000 average assessment/unit)		**5.48**	**11.64**	**11.54**	**11.45**	**11.35**	**11.26**	**11.17**	**11.08**	**11.00**	**10.91**	**10.82**	**10.74**	**10.65**	**10.57**	**10.49**	**10.41**	**10.33**	**10.26**	**10.18**	**10.10**	**10.03**
Calculated Tax Rate (RT) (Operating Only)		**0.00000%**	**0.02026%**	**0.02074%**	**0.02123%**	**0.02174%**	**0.02225%**	**0.02279%**	**0.02333%**	**0.02389%**	**0.02447%**	**0.02506%**	**0.02566%**	**0.02628%**	**0.02691%**	**0.02757%**	**0.02824%**	**0.02892%**	**0.02963%**	**0.03035%**	**0.03110%**	**0.03186%**
Annual Tax Bill (based on $214,000 average assessment/unit)		**-**	**43.35**	**44.38**	**45.43**	**46.51**	**47.62**	**48.76**	**49.93**	**51.13**	**52.36**	**53.62**	**54.91**	**56.24**	**57.60**	**58.99**	**60.43**	**61.90**	**63.41**	**64.96**	**66.55**	**68.18**
Calculated Tax Rate (RT) (Capital and Operating)		**0.00256%**	**0.02570%**	**0.02613%**	**0.02658%**	**0.02704%**	**0.02752%**	**0.02801%**	**0.02851%**	**0.02903%**	**0.02956%**	**0.03011%**	**0.03068%**	**0.03126%**	**0.03185%**	**0.03247%**	**0.03310%**	**0.03375%**	**0.03442%**	**0.03511%**	**0.03582%**	**0.03655%**
Annual Tax Bill (based on $214,000 average assessment/unit)		**5.48**	**54.99**	**55.92**	**56.88**	**57.87**	**58.89**	**59.94**	**61.02**	**62.13**	**63.27**	**64.44**	**65.65**	**66.89**	**68.17**	**69.48**	**70.84**	**72.23**	**73.66**	**75.14**	**76.65**	**78.21**
ESTIMATED SEPTAGE GENERATION (internal & external m^3)	**21,166**	**21,203**	**21,239**	**21,275**	**21,311**	**21,348**	**21,384**	**21,420**	**21,457**	**21,493**	**21,530**	**21,567**	**21,604**	**21,641**	**21,678**	**21,715**	**21,752**	**21,789**	**21,826**	**21,863**	**21,900**	**21,937**
Calculated Septic Tank Rate per Cubic Metre (Capital and Operating)	**-**	**0.82**	**8.26**	**8.45**	**8.66**	**8.86**	**9.08**	**9.30**	**9.53**	**9.76**	**10.00**	**10.25**	**10.51**	**10.77**	**11.04**	**11.32**	**11.61**	**11.91**	**12.22**	**12.53**	**12.86**	**13.20**
Calculated Holding Tank Rate per Cubic Metre (Capital and Operating)	**-**	**0.25**	**2.52**	**2.58**	**2.64**	**2.70**	**2.77**	**2.84**	**2.91**	**2.98**	**3.05**	**3.13**	**3.20**	**3.29**	**3.37**	**3.45**	**3.54**	**3.63**	**3.73**	**3.82**	**3.92**	**4.03**
Calculated External Rate per Cubic Metre (Capital and Operating)	**-**	**2.03**	**20.46**	**20.94**	**21.44**	**21.95**	**22.48**	**23.03**	**23.59**	**24.17**	**24.77**	**25.39**	**26.02**	**26.68**	**27.35**	**28.05**	**28.76**	**29.50**	**30.26**	**31.05**	**31.85**	**32.69**
Calculated Septic Tank Rate per Cubic Metre (Operating Only)	**-**	**-**	**6.51**	**6.71**	**6.91**	**7.12**	**7.34**	**7.56**	**7.80**	**8.03**	**8.28**	**8.53**	**8.79**	**9.06**	**9.33**	**9.61**	**9.91**	**10.21**	**10.52**	**10.84**	**11.17**	**11.50**
Calculated Holding Tank Rate per Cubic Metre (Operating Only)	**-**	**-**	**1.99**	**2.05**	**2.11**	**2.17**	**2.24**	**2.31**	**2.38**	**2.45**	**2.52**	**2.60**	**2.68**	**2.76**	**2.85**	**2.93**	**3.02**	**3.11**	**3.21**	**3.31**	**3.41**	**3.51**
Calculated External Rate per Cubic Metre (Operating Only)	**-**	**-**	**16.13**	**16.62**	**17.13**	**17.65**	**18.18**	**18.74**	**19.31**	**19.89**	**20.50**	**21.12**	**21.77**	**22.43**	**23.11**	**23.81**	**24.54**	**25.28**	**26.05**	**26.84**	**27.66**	**28.49**

APPENDIX B
SURVEY OF MUNICIPAL SEPTAGE TIPPING FEES

Table 7
Town of Mississippi Mills
Municipal Comparison of Septage Treatment Tipping Fees

	Hauled Waste Disposal	Comparison		2009	2009	2010	2009	2006	2009/10	2010
		Flat Rate	$ per m^3	$ per 1,000 L	$ per m^3	Fee / Charge	$ per 1000 ga.	$ per 1000 ga.	$ per m^3	$ per 500 ga.
London	Inside Municipal Boundaries (except Leachate)		6.49	6.49						
	Outside Municipal Boundaries and All Leachate		16.22	16.22						
Barrie	Septic Tank Contents Disposal		22.50		22.50					
	Holding Tank Contents or Leachate		5.60		5.60					
Hamilton	Annual Permit ro Discharge Hauled Sewage	271.78				271.78				
	Inside the City - Compliant									
	up to 1000 imperial gallons (4.54 m3) or any part thereoff	40.90	9.01			40.90				
	greater than 1000 but less than or equal to 3500 imperial gallons (15.9 m3)	40.90	2.57			40.90				
	greater than 3500 but less than or equal to 5000 imperial gallons (22.7 m3)	81.80	3.60			81.80				
	greater than 5000 but less than or equal to 8000 imperial gallons (36.3 m3)	122.71	3.38			122.71				
	greater than 8000 but less than or equal to 10000 imperial gallons (45.43 m3)	163.61	3.60			163.61				
	Inside the City - Non-Compliant									
	up to 1000 imperial gallons (4.54 m3) or any part thereoff	40.90	9.01			40.90				
	greater than 1000 but less than or equal to 3500 imperial gallons (15.9 m3)	81.80	5.14			81.80				
	greater than 3500 but less than or equal to 5000 imperial gallons (22.7 m3)	122.71	5.41			122.71				
	greater than 5000 but less than or equal to 8000 imperial gallons (36.3 m3)	204.49	5.63			204.49				
	greater than 8000 but less than or equal to 10000 imperial gallons (45.43 m3)	240.58	5.30			240.58				
	Outside the City									
	up to 1000 imperial gallons (4.54 m3) or any part thereoff	81.80	18.02			81.80				
	greater than 1000 but less than or equal to 3500 imperial gallons (15.9 m3)	163.61	10.29			163.61				
	greater than 3500 but less than or equal to 5000 imperial gallons (22.7 m3)	245.39	10.81			245.39				
	greater than 5000 but less than or equal to 8000 imperial gallons (36.3 m3)	409.00	11.27			409.00				
	greater than 8000 but less than or equal to 10000 imperial gallons (45.43 m3)	490.90	10.81			490.90				
	Holding Tanks for Recreation Vehicles	5.38				5.38				
Kawartha Lakes	Standard Septage Waste Disposal (at any municipal wastewater facility)		3.30					15.00		
	Registered Holding Tanks		3.30					15.00		
	Unregistered Holding Tanks		9.90					45.00		
	(cannot dipose of septage waste that originates outside the City of Kawartha Lakes)									
	One-Time Holding Tank Registration Fee	50.00						50.00		
	(owners of conventional septic systems with a leaching bed do not have to register)									
Collingwood	Dumping of Raw Sewage - Haulers		13.20				60.00			
	Dumping of Raw Sewage - Recreation Vehicles		13.20				60.00			
	Dumping of Raw Sewage - Portable Toilets		13.20				60.00			
	Special Events		13.20				60.00			
Kingston	Dumping of Raw Sewage - Haulers		8.00		8.00					
Ottawa	Annual Permit Fee	220.00							220.00	
	Annual Permit Revision Fee	123.00							123.00	
	Liquid Material - Septic Waste		9.31						9.31	
	Liquid Material - Holding Tank Waste		2.84						2.84	
	Liquid Material generated outside the City of Ottawa		23.06						23.06	
Halton	Septic Tank Disposal		4.73							10.75