THE CORPORATION OF THE MUNICIPALITY OF MORRIS-TURNBERRY

By-law No. 5-2012

BEING A BY-LAW TO ADOPT THE MUNICIPALITY OF MORRIS-TURNBERRY FINANCIAL PLAN FOR THE
BELGRAVE WATER SYSTEM

WHEREAS, Ontario Regulation 453/07 made under The Safe Drinking Water Act, 2002 (SDWA),
requires Owners of Drinking Water Systems to prepare financial plans;

AND WHEREAS, the financial plan must be approved by a resolution of council that indicates that the
drinking water system is financially viable and that is passed by the council of the municipality, if the
owner of the drinking water system is a municipality;

AND WHEREAS, the Municipal Drinking Water Licence Number 247-201 for the Belgrave Water
System was issued on the 2nd day of August, 2011 and Licence Number 247-101 for the Belgrave water
System was issued on the 4th day of August, 2011.

NOW THEREFORE, the Council of the Municipality of Morris-Turnberry enacts as follows:

1.0 That the Financial Plan Number 247-301, for the Belgrave Water System is hereby attached as
Schedule “A” to this by-law and is hereby adopted by the Council of the Municipality of Morris-
Turnberry;

2.0 That the Financial Plan indicates that the Belgrave Water System is financially viable;

2.0 This By-law shall come into full force and effect upon its final passage;

3.0 This By-law may be cited as the “By-law to adopt the Belgrave Water System Financial Plan
By-law”.

Read a first, second, and third time and finally passed this 24th day of January, 2012.

Mayor, Paul Gowing

Clerk, Nancy Michie
Table of Contents

Preamble .............................................................................................................. 1
Financial Plan Requirements ............................................................................. 2
Guiding Principles............................................................................................... 4
Historical Background and Rates ...................................................................... 5
Development of a Financial Plan ...................................................................... 6
Five Steps to Develop a Financial Plan ............................................................ 7
Determining Asset Values ................................................................................. 8
Rate Calculation ................................................................................................... 8
Belgrave Water Debenture ............................................................................... 8
Financial Position of Belgrave Water System ............................................... 9
Rate Determination Model ............................................................................... 10
Description of the Belgrave Water System .................................................... 10
Additional Sources of Funding ........................................................................ 12
Lead Service Lines .......................................................................................... 12
Transparency, Review and Renewal ................................................................. 12
Summary Review of Guiding Principles .......................................................... 13

Tables

Table 1 – Historical Monthly Water Rates (2003-2011) ................................... 6
Table 2 – Belgrave Water System Rate Calculation ......................................... 11

Appendices

Ontario Regulation 453/07............................................................................... Appendix A
Towards Financial Sustainable Drinking
  – Water and Wastewater Systems Part 1....................................................... Appendix B
Municipal Drinking Water Licence Number 247-101 ...................................... Appendix C
Municipal Drinking Works Permit Number 247-201 ...................................... Appendix D
PREAMBLE

Pursuant to the provisions of the Safe Drinking Water Act, 2002 Regulation 453/07 has been enacted which requires, as a condition of a municipal drinking water licence, that Financial Plans be prepared for municipal water systems. Financial Plans are also encouraged for wastewater systems.

To assist with the interpretation of Ontario Regulation 453/07, the Ministry of the Environment (MOE) has published a guide entitled "Towards Financially Sustainable Drinking-Water and Wastewater Systems". The guide will be referred to in the development of Financial Plans for the;

- Belgrave Water System

Ontario Regulation 453/07 (hereinafter referred to as O.Reg. 453/07) is attached as Appendix “A” and the MOE publication “Towards Financially Sustainable Drinking-Water and Wastewater Systems” (hereinafter referred to as FSDWW Guide) is attached as Appendix “B".
Requirements and Guiding Principles:
Section 3 of O.Reg. 453/07 provides the Financial Plan requirements for licence renewals as follows:

Financial plan requirements; licence renewal

3. (1) For the purposes of clause (b) of the definition of “financial plans” in subsection 30 (1) of the Act, the following requirements are prescribed for financial plans that are required by subsection 1 (2) or a condition that is included in a municipal drinking-water licence under subsection 1 (3) to satisfy the requirements of this section:

1. The financial plans must be approved by a resolution that is passed by,
   i. the council of the municipality, if the owner of the drinking-water system is a municipality, or
   ii. the governing body of the owner, if the owner of the drinking-water system has a governing body and is not a municipality.

2. The financial plans must apply to a period of at least six years.

3. The first year to which the financial plans must apply must be the year determined in accordance with the following rules:
   i. If the financial plans are required by subsection 1 (2), the first year to which the financial plans must apply must be the year in which the drinking-water system’s existing municipal drinking-water licence would otherwise expire.
   ii. If the financial plans are required by a condition that was included in a municipal drinking-water licence under subsection 1 (3), the first year to which the financial plans must apply must be the later of 2010 and the year in which the first licence for the system was issued.

4. Subject to subsection (2), for each year to which the financial plans apply, the financial plans must include the following:
   i. Details of the proposed or projected financial position of the drinking-water system itemized by,
      A. total financial assets,
      B. total liabilities,
      C. net debt,
      D. non-financial assets that are tangible capital assets, tangible capital assets under construction, inventories of supplies and prepaid expenses, and
      E. changes in tangible capital assets that are additions, donations, write downs and disposals.
   ii. Details of the proposed or projected financial operations of the drinking-water system itemized by,
      A. total revenues, further itemized by water rates, user charges and other revenues,
B. total expenses, further itemized by amortization expenses, interest expenses and other expenses,
C. annual surplus or deficit, and
D. accumulated surplus or deficit.

iii. Details of the drinking-water system's proposed or projected gross cash receipts and gross cash payments itemized by,
   A. operating transactions, that are cash received from revenues, cash paid for operating expenses and finance charges,
   B. capital transactions, that are proceeds on the sale of tangible capital assets and cash used to acquire capital assets,
   C. investing transactions, that are acquisitions and disposal of investments,
   D. financing transactions, that are proceeds from the issuance of debt and debt repayment,
   E. changes in cash and cash equivalents during the year, and
   F. cash and cash equivalents at the beginning and end of the year.

iv. Details of the extent to which the information described in subparagraphs i, ii and iii relates directly to the replacement of lead service pipes as defined in section 15.1-3 of Schedule 15.1 to Ontario Regulation 170/03 (Drinking-Water Systems), made under the Act.

5. The owner of the drinking-water system must,
   i. make the financial plans available, on request, to members of the public who are served by the drinking-water system without charge,
   ii. make the financial plans available to members of the public without charge through publication on the Internet, if the owner maintains a website on the Internet, and
   iii. provide notice advising the public of the availability of the financial plans under subparagraphs i and ii, if applicable, in a manner that, in the opinion of the owner, will bring the notice to the attention of members of the public who are served by the drinking-water system.

6. The owner of the drinking-water system must give a copy of the financial plans to the Ministry of Municipal Affairs and Housing.

(2) Each of the following sub-subparagraphs applies only if the information referred to in the sub-subparagraph is known to the owner at the time the financial plans are prepared:

   1. Sub-subparagraphs 4 i A, B and C of subsection (1).
   2. Sub-subparagraphs 4 iii A, C, E and F of subsection (1).

Sections 4 and 5 of O.Reg. 453/07 provide details of the format of the Financial Plan (Section 4) and public notification (Section 5).
Alternative requirements for two or more drinking-water systems

4. If section 3 applies to the financial plans of two or more drinking-water systems that are solely owned by the same owner, the requirements prescribed by the section may, as an alternative, be satisfied by financial plans that comply with the section but treat those systems as if they were one drinking-water system.

Amendment of financial plans

5. Sections 2 or 3 do not prevent financial plans from being amended.

The FSDWV guide provides nine principles to help develop Financial Plans and to assist with the transition towards financial sustainability. The guidelines listed below will assist with the development and review of rate structures for the Belgrave Water Systems.

Principle #1: Ongoing public engagement and transparency can build support for, and confidence in, financial plans and the system(s) to which they relate.

Principle #2: An integrated approach to planning among water, wastewater, and storm water systems is desirable given the inherent relationship among these services.

Principle #3: Revenues collected for the provision of water and wastewater services should ultimately be used to meet the needs of those services.

Principle #4: Life-cycle planning with mid-course corrections is preferable to planning over the short-term, or not planning at all.

Principle #5: An asset management plan is a key input to the development of a financial plan.

Principle #6: A sustainable level of revenue allows for reliable service that meets or exceeds environmental protection standards, while providing sufficient resources for future rehabilitation and replacement needs.

Principle #7: Ensuring users pay for the services they are provided leads to equitable outcomes and can improve conservation. In general, metering and the use of rates can help ensure users pay for services received.

Principle #8: Financial Plans are “living” documents that require continuous improvement. Comparing the accuracy of financial projections with actual results can lead to improved planning in the future.

Principle #9: Financial plans benefit from the close collaboration of various groups, including engineers, accountants, auditors, utility staff, and municipal council.
Historical Background

The Belgrave Water System is located in the Municipality of Morris-Turnberry and Township of North Huron. The water system provides services to the Hamlet of Belgrave. Belgrave is split along County Road 4 between the Municipality of Morris-Turnberry and the Township of North Huron.

The Municipality of Morris-Turnberry amalgamated in 2001 and consists of the former Township of Morris and Township of Turnberry. The Township of North-Huron amalgamated in 2001 consists of the former Village of Blyth, Township of East Wawanosh and Town of Wingham.

In 2000, the Township of Morris and the Township of East Wawanosh applied for grant funding under the OSTAR program (Ontario Small Town and Rural Development Initiative). The program was designed to help Ontario's small cities, towns and rural communities comply with the province's new drinking water regulations.

In March 2004, a Schedule B Class Environmental Assessment was completed to determine the most cost effective method of delivering water to Belgrave. Its recommendation was to interconnect the three existing small water systems (McCrea Street, Jane Street and Humphrey Water Works System) by constructing a new pumphouse and reservoir. The reservoir was sized such it could serve the entire Hamlet of Belgrave rather than the current serviced areas. The new pumphouse and reservoir were constructed from April 2006 until April 2007 and utilize the existing McCrea and Jane wells. The Humphrey well and three old pumphouses were decommissioned and abandoned.

The cost sharing between the two municipalities would be Township of North Huron 33.33% and Municipality of Morris-Turnberry 66.66%. The “bookkeeping” aspects relating to the operation of the water system are handled by the Municipality of Morris-Turnberry.

The Municipal Drinking Water Licence Number 247-101, was issued to the Municipality of Morris-Turnberry on the 4th day of August, 2011.

Historical Rates

Users of the McCrea and Jane Street Wells were charged separately and in accordance with the actual costs of their associated well’s actual operation costs. Rates for both wells, while separate, were maintained at such a level to ensure the actual operation costs of each well system was funded from year to year. This resulted yearly changes to the user’s fee and differences between users within the same town.

In 2007 a single user fee was implemented for all users connected to the Belgrave Water System. This rate has been maintained at a consistent level providing a consistent source of revenue and a steady and equitable fee for users.
The following chart provides a history of the water and sewer rates that have been utilized since 2003.

<table>
<thead>
<tr>
<th>Year</th>
<th>McCrea Street Well</th>
<th>Jane Street Well</th>
<th>Belgrave Water System</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>$50.36</td>
<td>$59.34</td>
<td>-</td>
</tr>
<tr>
<td>2004</td>
<td>$40.83</td>
<td>$44.54</td>
<td>-</td>
</tr>
<tr>
<td>2005</td>
<td>$47.25</td>
<td>$53.78</td>
<td>-</td>
</tr>
<tr>
<td>2006</td>
<td>$45.83</td>
<td>$50.00</td>
<td>-</td>
</tr>
<tr>
<td>2007</td>
<td>-</td>
<td>-</td>
<td>$55.84</td>
</tr>
<tr>
<td>2008</td>
<td>-</td>
<td>-</td>
<td>$54.66</td>
</tr>
<tr>
<td>2009</td>
<td>-</td>
<td>-</td>
<td>$54.66</td>
</tr>
<tr>
<td>2010</td>
<td>-</td>
<td>-</td>
<td>$54.66</td>
</tr>
<tr>
<td>2011</td>
<td>-</td>
<td>-</td>
<td>$54.66</td>
</tr>
</tbody>
</table>

**Development of a Financial Plan**

O.Reg. Paragraph 4 of subsection 3(1) provides the requirements of Financial Plans. These requirements are shown below and many are marked with an asterisk. Subsection 3.2 of the Regulations allows certain categories of information to be excluded from the Financial Plans if it is not known at the time the plan is prepared.

**Financial Plans for Existing Drinking-Water Systems:**

Paragraph 4 of subsection 3(1) of the Regulation requires that Financial Plans include the following:

i. Details of the proposed or projected financial position of the drinking-water system itemized by,
   A. total financial assets*
   B. total liabilities,*
   C. net debt,*
   D. non-financial assets that are tangible capital assets, tangible capital assets under construction, inventories of supplies and prepaid expenses, and
   E. changes in tangible capital assets that are additions, donations, write downs and disposals.

ii. Details of the proposed or projected financial operations of the drinking-water system itemized by,
   A. total revenues, further itemized by water rates, user charges and other revenues,
   B. total expenses, further itemized by amortization expenses, interest expenses and other expenses.
   C. annual surplus or deficit, and
   D. accumulated surplus or deficit.
iii. Details of the drinking-water system's proposed or projected gross cash receipts and gross cash payments itemized by,
   A. operating transactions, that are cash received from revenues, cash paid for operating expenses and finance charges,*
   B. capital transactions, that are proceeds on the sale of tangible capital assets and cash used to acquire capital assets,
   C. investing transactions, that are acquisitions and disposal of investments,*
   D. financing transactions, that are proceeds from the issuance of debt and debt repayment,
   E. changes in cash and cash equivalents during the year,* and
   F. cash and cash equivalents at the beginning and end of the year.*

iv. Details of the extent to which the information described in subparagraphs i, ii and iii relates directly to the replacement of lead service pipes as defined in section 15.1 – 3 of Schedule 15.1 to Ontario Regulation 170/03 (Drinking-Water Systems), made under the Act.

* Subsection 3(2) of the Regulation permits certain categories of information to be excluded from the Financial Plans if it is not known to the owner at the time the plan was prepared. This provision recognizes that some financial information may be consolidated on a municipal level across numerous departments and it may be difficult for that information to be allocated to the drinking-water system (e.g. total liabilities and net debt). If the information is known for the drinking-water system, however, it would have to be included in Financial Plans.

The FSDWW guide suggests a five step process to preparing a Financial Plan.

1. Determine Service Needs
   - determination of a method to properly measure the cost of services being provided
   - suggests a building block approach to create an understanding and awareness of costs which includes four distinct components.

2. Determination of Current Period Expenses
   - includes operating expenses and the relationship between capital expenditures and amortization expense
   - careful consideration is required to ensure that current capital expenditures are not less than future amortization expenses under accrual accounting

3. Long Term Capital Expenditure Planning
   - must identify the need to move beyond simply accounting for current period expenses
   - a recognition of the need for accounting surpluses to address the impacts of inflation in capital replacement costs, growth and any historic under-investment
4. Preparation of Funding Plans
   - address how the additional funds needed to cover projected operating and capital needs will be raised
   - expected that operating revenues will exceed operating expenses and that capital funding sources would be available through some or all of the following:
     i) cash flow from operations
     ii) a draw on cash reserves
     iii) new debt issuance

5. Revenue Sources and Rate Structures
   - a number of revenue sources available for consideration
   - can be structured and collected in different ways

Determining Asset Values

The Belgrave Water System was commissioned in 2007. Using the actual costs of construction the Municipality of Morris-Turnberry can accurately value the water system at approximately $3.5M.

The water system has been componentized consistent with recommendations in the implementation guide for PSAB 3150. The three major components; underground infrastructure(50%), building(15%) and treatment equipment(35%) have also been assigned an estimated useful life of 80yrs, 60yrs and 30yrs respectively. Amortization is calculated using the straight line method.

The allocation of costs to the components was provided by the consultants RJ Burnside & Associates Limited. The estimated useful lives were based on internal information, insights from consultants and industry trends.

Rate Calculations

Current monthly rates are maintained at a level to fund the operational expenses incurred in addition to growing a reserve fund for future capital expenses. The current rate since 2008 has provided sufficient funding these two objectives. A future review of the rate may be considered as operational expenses constantly fluctuate and capital expenses become payable. Small gradual increases over time will be more favorable for users rather then a large one time increase.

The Belgrave Water System will implement the use of water meters in the near future. A new meter rate based on usage will be established to fairly attribute the costs to heavy and light users of the water system. Funding for the purchase and installation of the meters is currently ongoing.
Belgrave Water Debenture

A large portion of the capital costs related to the construction of the Belgrave Water System were funded by a grant from the Ontario Small Town and Rural Development Initiative (OSTAR). The unfunded capital costs of the Belgrave Water System were equitably allocated to all properties with current or future access to the system. The property owners are responsible for reimbursing the Municipality for their share of the capital costs within a 30 year time period beginning August 1, 2010.

The Municipality has entered into a financing agreement with Ontario Infrastructure Projects Corporation for a 30 year debenture at a fixed interest rate of 4.36%. The terms and interest rate of this debenture were passed onto the property owners. This debenture offsets the large cash expenditure while the Municipality recovers the costs from the property owners over 30 year time period.

When a property is connected to the water system the owners must make a minimum annual repayment calculated by amortization schedule. This payment is included on their property tax billing. If a property is not connected to the system, the owner may defer payments up to 15 years, but they are still liable for any accrued interest. Repayment must begin no later than 2026 or earlier if connected to the system. All owners must pay their share in full by 2040.

The current liabilities associated to the day-to-day operation of the Belgrave Water System are difficult to itemize due to their inclusion with the municipality’s other account payables.

Financial Position of the Belgrave Water System

The rate calculation will use ending 2010 “Asset” balances as the opening position for the Belgrave Water System. Using 2010 will provide a point-in-time view of the “Asset” position of the system. The analysis will remove 2011 capital expenditures from the calculations and replace with an amortization expense based on the current value replacement cost.

### Assets

<table>
<thead>
<tr>
<th>Capital Assets</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Infrastructure</td>
<td>$1,751,198</td>
</tr>
<tr>
<td>- Building</td>
<td>$525,359</td>
</tr>
<tr>
<td>- Equipment</td>
<td>$1,225,839</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$3,502,396</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Accumulated Amortization</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Infrastructure</td>
<td>-$109,450</td>
</tr>
<tr>
<td>- Building</td>
<td>-$52,536</td>
</tr>
<tr>
<td>- Equipment</td>
<td>-$204,306</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>-$386,292</strong></td>
</tr>
</tbody>
</table>

Net Asset Position, as of December 31, 2010  $3,136,104

Page 9
Rate Determination Model

The current monthly user rates fund the operational costs of the Belgrave Water System. As more users connect to the system the operational costs will be shared among more users. If a large number of users all connect within the same year, this sudden increase of users may result in a decrease in monthly expenses per user. The monthly user rates will have to be monitored regularly to ensure the ever-increasing costs of operation are sufficiently funded while not overcharging the current system users. The Municipality proposes to increase the monthly rates by 2% per year. This small increase will offset the growing costs of operation and help to contribute to a capital reserve fund.

This monthly rate does not take into consideration the amortization of the capital assets, but the capital expenditure relating to the construction of those assets has been funded by grant and the unfunded portion allocated to the users of the system. This newly constructed system will have low future capital expenditures that will not require immediate funding.

The unfunded portion of the capital construction costs passed onto users and funded by a 30 year debenture. The annual amount charged to users for capital reimbursement adequately funds the debenture’s semi-annual principal and interest payments.

Description of the Belgrave Water System (Table 2)

The Belgrave Water System consists of two groundwater wells (Jane Well and McCrea Well) a pumphouse containing treatment and control facilities, an in-ground storage reservoir and distribution system. The pumphouse is equipped with a dedicated standby generator to provide standby power in the event of a power outage. The pumphouse treats water from the McCrea Well and Jane Well, both of which are located in separate wellhead enclosures.

The system consists of approximately 410 meters of 75mm dia. watermains for the transport of raw water to the treatment plant and approximately 1,915 meters of 150mm dia. watermains for the distribution of the treated water to users. Construction of the pumphouse and reservoir was completed from April 2006 until April 2007.

The system was constructed with enough capacity to serve the entire Hamlet of Belgrave. The pumphouse and reservoir will be able to accommodate additional users when they connect in the future.
Belgrave Water System - Rate Calculation
Table 2

Asset Position, December 2010 exclusive of 2011 operations $3,136,104

Operating expenses and funds raised for capital reserve have been increase by 2% per year for inflation. Monthly Rate have been increased by 2% per year for inflation.

Number of Users have been increase by 2 each year to estimate the number of new users connecting to the system. Estimated Interest Rate for Capital Funds held in Reserve is 3% of the previous years closing balance.

<table>
<thead>
<tr>
<th>Number of Users</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>113</td>
<td>115</td>
<td>117</td>
<td>119</td>
<td>121</td>
<td>123</td>
</tr>
</tbody>
</table>

**Operations**

- Revenues (water rates)
  - 2011: $73,582
  - 2012: $76,939
  - 2013: $79,843
  - 2014: $82,832
  - 2015: $85,909
  - 2016: $89,075

- OSWAP Funding
  - 2011: $14,832
  - 2012: $14,832
  - 2013: $14,832
  - 2014: $14,832
  - 2015: $14,832
  - 2016: $14,832

- Funds from Reserve
  - 2011: $31,886
  - 2012: $0
  - 2013: $0
  - 2014: $0
  - 2015: $0
  - 2016: $0


**Operating Expenses**

- Operating Expenses
  - 2011: -$100,301
  - 2012: -$92,307
  - 2013: -$94,153
  - 2014: -$96,036
  - 2015: -$97,957
  - 2016: -$99,916

- Capital for Reserve
  - 2011: $0
  - 2012: -$10,000
  - 2013: -$10,200
  - 2014: -$10,404
  - 2015: -$10,612
  - 2016: -$10,824


**Net Operational Position**

- 2011: $0
- 2012: -$10,535
- 2013: -$9,678
- 2014: -$8,776
- 2015: -$7,828
- 2016: -$6,833

**Capital Reserve**

- Opening Balance
  - 2011: $3,136,104
  - 2012: $3,136,104
  - 2013: $3,125,568
  - 2014: $3,115,891
  - 2015: $3,107,115
  - 2016: $3,099,287

- Revenues (water rates)
  - 2011: $0
  - 2012: $10,000
  - 2013: $10,200
  - 2014: $10,404
  - 2015: $10,612
  - 2016: $10,824

- Interest (est. 3%)
  - 2011: $0
  - 2012: $385
  - 2013: $1,384
  - 2014: $1,525
  - 2015: $1,883
  - 2016: $2,258


Projected Monthly Operational Rates

- 2011: 54.66%
- 2012: 55.75%
- 2013: 56.87%
- 2014: 58.01%
- 2015: 59.17%
- 2016: 60.35%

Annual Rate Increase

- 2011: n/a
- 2012: 2.0%
- 2013: 2.0%
- 2014: 2.0%
- 2015: 2.0%
- 2016: 2.0%

With the proposed increase in water rates and funds raised for capital reserve, the Municipality proposes to manage a reserve to fund the replacement of Equipment (30yrs), Building (50yrs), and Distribution Lines (80yrs).

Any excess funds generated from operations will be contributed to the capital reserve.

Page 11
Additional Sources of Funding

The Municipality currently receives an OSWAP (Ontario Small Water Assistance Program) grant to help offset the costs of operation. This grant combined with the user fees provides continuing financial sustainability and operation of the Belgrave Water System.

Lead Service Lines

No lead service lines are in use by the Belgrave Water System. Testing for lead is completed every 12 months by a certified laboratory is in accordance with Ontario Regulation 170/03.

Transparency, Review and Renewal

Morris-Turnberry Council has consistently maintained a transparent process with respect to water and sewage rates and has engaged public dialogue with respect to rates. Such dialogue and feedback was instrumental in setting fair and affordable rates for all users. The dialogue assisted Council and owners to develop a better appreciation of the needs of both parties. A hardcopy of the financial plan will be available for viewing at the Municipal office in addition to a copy posted on the municipal website.
The Financial Sustainable Drinking – Water and Wastewater Systems guide provided some guiding principles to develop Financial Plans. It is useful to consider these principles in the context of the Plan that has been developed.

**Principle #1:** Ongoing public engagement and transparency can build support for, and confidence in, financial plans and the system(s) to which they relate.

Past experience with public engagement and dialogue provided a better understanding of the impact of water rates in Belgrave. The use of questionnaires has allowed the Municipality to determine the preferences of the property owners while also informing them of any changes.

**Principle #2:** An integrated approach to planning among water, wastewater, and storm water systems is desirable given the inherent relationship among these services.

Currently the Belgrave Water System provides clean municipal water to users. Any future inclusion of a storm water system will have to take into consideration the current location of the Belgrave Water System’s infrastructure.

**Principle #3:** Revenues collected for the provision of water and wastewater services should ultimately be used to meet the needs of those services.

The Belgrave Water System is completely a user-pay system. Council recognizes any funds collected for water services will be used to meet the needs of the system.

**Principle #4:** Life-cycle planning with mid-course corrections is preferable to planning over the short-term, or not planning at all.

The information that has been compiled along with documented location of all components of the Belgrave Water System will allow for the continuing long and short term life-cycle planning.

**Principle #5:** An asset management plan is a key input to the development of a financial plan.

Even though the Belgrave Water System will not require any large capital replacement in the immediate future, scheduled repair/replacement of assets as required will maintain the health and useful life of the system and decrease the likelihood of a sudden disruption.

**Principle #6:** A sustainable level of revenue allows for reliable service that meets or exceeds environmental protection standards, while providing sufficient resources for future rehabilitation and replacement needs.

The rate structures that have been developed over the years and projected into the future allow the system to provide a reliable service that meet or exceed environmental protection standards. New users connecting to the system will share the costs of operation and the current rates will be sufficient in funding the day-today expenses.
Principle #7: Ensuring users pay for the services they are provided leads to equitable outcomes and can improve conservation. In general, metering and the use of rates can help ensure users pay for services received.

Council acknowledges that benefits of metering (fairness and conservation) but is also understands the large cost associated with the installation of meters. Funding for the purchase and installation of the meters is currently being pursued.

Principle #8: Financial Plans are “living” documents that require continuous improvement. Comparing the accuracy of financial projections with actual results can lead to improved planning in the future.

Council, at least initially, intends to review the Financial Plan on an annual basis.

Principal #9: Financial plans benefit from the close collaboration of various groups, including engineers, accountants, auditors, utility staff, and municipal council.

The Financial Plan has been developed using PSAB 3150 information, municipal staff knowledge, financial reports, system reports and statement of facts. The Financial Plan has been closely scrutinized and revised by Morris-Turnberry Council prior to approval.
FINANCIAL PLANS

Requirement to prepare financial plans

1. (1) A person who makes an application under clause 32 (1) (b) of the Act for a municipal drinking-water licence shall, before making the application, prepare and approve financial plans for the system that satisfy the requirements prescribed under section 2.

(2) A person who makes an application under subsection 32 (4) of the Act for the renewal of a municipal drinking-water licence shall, before making the application, prepare and approve financial plans for the system that satisfy the requirements prescribed under section 3.

(3) As a condition in a municipal drinking-water licence that is issued in response to an application made under section 33 of the Act for a municipal drinking-water licence, the Director shall include a requirement that the owner of the drinking-water system, by the later of July 1, 2010 and the date that is six months after the date the first licence for the system is issued, prepare and approve financial plans for the system that satisfy the requirements prescribed under section 3.

(4) The Director shall include, as a condition in a municipal drinking-water licence, the requirement set out in subsection (3) in any amendments to a license made after the application, if the condition is not satisfied at the time when the amendment is made.

Financial plan requirements; new systems

2. For the purposes of clause (b) of the definition of “financial plans” in subsection 30 (1) of the Act, the following requirements are prescribed for financial plans that are required by subsection 1 (1) to satisfy the requirements of this section:

1. The financial plans must be approved by a resolution that indicates that the drinking-water system is financially viable and that is passed by,

i. the council of the municipality, if the owner of the drinking-water system is a municipality, or
ii. the governing body of the owner, if the owner of the drinking-water system has a governing body and is not a municipality.

2. The financial plans,
   i. must include a statement that the financial impacts of the drinking-water system have been considered, and
   ii. must apply for a period of at least six years.

3. The first year to which the financial plan must apply is the year in which the drinking-water system is expected to first serve the public.

4. For each year in which the financial plans apply, the financial plans must include details of the proposed or projected financial operations of the drinking-water system itemized by,
   i. total revenues, further itemized by water rates, user charges and other revenues,
   ii. total expenses, further itemized by amortization expenses, interest expenses and other expenses,
   iii. annual surplus or deficit, and
   iv. accumulated surplus or deficit.

5. The owner of the drinking-water system must,
   i. make the financial plans available, on request, to members of the public who are served by the drinking-water system without charge,
   ii. make the financial plans available to members of the public without charge through publication on the Internet, if the owner maintains a website on the Internet, and
   iii. provide notice advising the public of the availability of the financial plans under subparagraphs i and ii, if applicable, in a manner that, in the opinion of the owner, will bring the notice to the attention of members of the public who are served by the drinking-water system.

6. The owner of the drinking-water system must give a copy of the financial plans to the Ministry of Municipal Affairs and Housing.

Financial plan requirements; licence renewal

3. (1) For the purposes of clause (b) of the definition of “financial plans” in subsection 30 (1) of the Act, the following requirements are prescribed for financial plans that are required by subsection 1 (2) or a condition that is included in a municipal drinking-water licence under subsection 1 (3) to satisfy the requirements of this section:

1. The financial plans must be approved by a resolution that is passed by,
i. the council of the municipality, if the owner of the drinking-water system is a municipality, or

ii. the governing body of the owner, if the owner of the drinking-water system has a governing body and is not a municipality.

2. The financial plans must apply to a period of at least six years.

3. The first year to which the financial plans must apply must be the year determined in accordance with the following rules:

i. If the financial plans are required by subsection 1 (2), the first year to which the financial plans must apply must be the year in which the drinking-water system’s existing municipal drinking-water licence would otherwise expire.

ii. If the financial plans are required by a condition that was included in a municipal drinking-water licence under subsection 1 (3), the first year to which the financial plans must apply must be the later of 2010 and the year in which the first licence for the system was issued.

4. Subject to subsection (2), for each year to which the financial plans apply, the financial plans must include the following:

i. Details of the proposed or projected financial position of the drinking-water system itemized by,

   A. total financial assets,
   B. total liabilities,
   C. net debt,
   D. non-financial assets that are tangible capital assets, tangible capital assets under construction, inventories of supplies and prepaid expenses, and
   E. changes in tangible capital assets that are additions, donations, write downs and disposals.

ii. Details of the proposed or projected financial operations of the drinking-water system itemized by,

   A. total revenues, further itemized by water rates, user charges and other revenues,
   B. total expenses, further itemized by amortization expenses, interest expenses and other expenses,
   C. annual surplus or deficit, and
   D. accumulated surplus or deficit.

iii. Details of the drinking-water system’s proposed or projected gross cash receipts and gross cash payments itemized by,
A. operating transactions, that are cash received from revenues, cash paid for operating expenses and finance charges,

B. capital transactions, that are proceeds on the sale of tangible capital assets and cash used to acquire capital assets,

C. investing transactions, that are acquisitions and disposal of investments,

D. financing transactions, that are proceeds from the issuance of debt and debt repayment,

E. changes in cash and cash equivalents during the year, and

F. cash and cash equivalents at the beginning and end of the year.

iv. Details of the extent to which the information described in subparagraphs i, ii and iii relates directly to the replacement of lead service pipes as defined in section 15.1-3 of Schedule 15.1 to Ontario Regulation 170/03 (Drinking-Water Systems), made under the Act.

5. The owner of the drinking-water system must,

i. make the financial plans available, on request, to members of the public who are served by the drinking-water system without charge,

ii. make the financial plans available to members of the public without charge through publication on the Internet, if the owner maintains a website on the Internet, and

iii. provide notice advising the public of the availability of the financial plans under subparagraphs i and ii, if applicable, in a manner that, in the opinion of the owner, will bring the notice to the attention of members of the public who are served by the drinking-water system.

6. The owner of the drinking-water system must give a copy of the financial plans to the Ministry of Municipal Affairs and Housing.

(2) Each of the following sub-subparagraphs applies only if the information referred to in the sub-subparagraph is known to the owner at the time the financial plans are prepared:

1. Sub-subparagraphs 4 i A, B and C of subsection (1).

2. Sub-subparagraphs 4 iii A, C, E and F of subsection (1).

Alternative requirements for two or more drinking-water systems

4. If section 3 applies to the financial plans of two or more drinking-water systems that are solely owned by the same owner, the requirements prescribed by the section may, as an alternative, be satisfied by financial plans that comply with the section but treat those systems as if they were one drinking-water system.

Amendment of financial plans
5. Sections 2 or 3 do not prevent financial plans from being amended.

Additional information

6. The requirements of this Regulation do not prevent a person from providing additional information in financial plans prepared for the purpose of meeting the requirements of the Act.

Commencement

7. This Regulation comes into force on the day it is filed.

Made by:

LAUREL C. BROTen
Minister of the Environment

Date made: August 8, 2007.
Toward Financially Sustainable Drinking-Water and Wastewater Systems

August 2007
Toward Financially Sustainable Drinking-Water and Wastewater Systems

Ministry of the Environment

August 2007
Table of Contents

Key Acronyms ................................................................................................ 2

Introduction ................................................................................................... 3

Part 1 General Approach and Principles......................................................... 4
  1.1 A Flexible, Locally-Driven Approach to Financial Sustainability ....... 5
  1.2 Principles of Financially Sustainable Water and Wastewater Services 5
  1.3 Policy Context....................................................................................... 7
    1.3.1 The Municipal Drinking-Water Licence Program ................... 7
    1.3.2 Full Accrual Accounting ............................................................. 8
    1.3.3 The Financial Information Return (FIR) ................................. 10
    1.3.4 The Clean Water Act and Source Water Protection.............. 11
    1.3.5 Financial Plans and Source Water Protection Costs ............ 12
    1.3.6 Municipal Water and Wastewater Service Corporations ..... 13
    1.3.7 Ontario’s Lead Action Plan......................................................... 14
  1.4 Financial Plan Regulatory Requirements ........................................ 14
    1.4.1 Financial Plans for Existing Drinking-Water Systems ..... 15
    1.4.2 Length of Projections ............................................................... 17
    1.4.3 Approval of Financial Plans ...................................................... 17
    1.4.4 Timing ...................................................................................... 17
    1.4.5 Public Transparency ................................................................. 18
    1.4.6 Financial Plans for New Drinking-Water Systems ............. 20
    1.4.7 Consolidated Financial Plans .................................................... 21
    1.4.8 Existing Documents and Additional Information ............... 21
  1.5 Integrated Planning.............................................................................. 21
  1.6 Building on Existing Practices........................................................... 22

Part 2 Possible Approaches......................................................................... 24

Introduction ................................................................................................ 25

Chapter I: Determining Service Needs......................................................... 26
  I.1 Overview ............................................................................................ 26
  I.2 A Conceptual Building-block Approach to Determining Utility Needs 26
    I.2.1 Measuring Current Period Expenses .................................... 27
    I.2.2 The Appropriate Level of Accounting Surplus.................. 31
  I.3 Contributions to Municipalities............................................................ 32
  I.4 Proposed Step-By-Step Approach ...................................................... 33

Chapter II: Current Period Expenses........................................................... 34
II.1 Operating Expenses ................................................................. 34
II.2 Interest Expense ................................................................. 35
II.3 Amortization of Tangible Capital Assets .............................. 35
II.4 Summary of Current Period Expenses ................................. 36
II.5 Issues in Coming to Current Period Expenses ...................... 38
   II.5.1 A Three Service Approach ............................................... 38
   II.5.2 Fire Protection Costs ..................................................... 40
II.6 Forecasting Operating Expenses .......................................... 41
   II.6.1 Future Customer Demands ............................................... 42
   II.6.2 Repair and Maintenance Costs ......................................... 43
   II.6.3 Input Commodity Costs ................................................. 43
II.7 General Forecasting Approach ............................................. 44

Chapter III: Long-Term Capital Expenditure Planning .................. 46

III.1 The Need to Move Beyond Current Period Expenses ............. 46
III.2 Preparing a Capital Investment Plan ..................................... 47
   III.2.1 Overall Objectives ....................................................... 47
   III.2.2 Projection Horizon ....................................................... 48
   III.2.3 The Different Categories of Expenditures ....................... 49
   III.2.4 Replacement of Existing Assets ..................................... 50
   III.2.5 Municipalities with a declining population base .............. 51
   III.2.6 Estimating Asset Life .................................................. 51
   III.2.7 Estimating Replacement Costs ...................................... 54
   III.2.8 Index Historical Cost Data ........................................... 55
   III.2.9 Accounting for Inflation ............................................... 56
   III.2.10 Expenditures for Service Enhancements ....................... 57
   III.2.11 Expenditures for Growth ............................................ 57
III.3 Asset Management ............................................................. 57
   III.3.1 Single Asset vs. Component Capitalization ..................... 58
   III.3.2 Relationship to Financial Planning ................................. 58
   III.3.3 Condition Assessments ............................................... 60
   III.3.4 Life-cycle Planning ..................................................... 60
   III.3.5 Accounting for Water Losses ....................................... 61
   III.3.6 Replacing Lead Service Lines with Safer Materials ........... 63
   III.3.7 Information Base Resources ......................................... 64

Chapter IV: Funding Plans .......................................................... 66

IV.1 Overall Approach ............................................................... 66
   IV.1.1 Building on Accrual Measures of Cost ............................ 66
   IV.1.2 Possible Capital Funding Sources .................................... 67
<table>
<thead>
<tr>
<th>Chapter IV:</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV.1.3</td>
<td>Key Objectives in Fund Planning</td>
<td>68</td>
</tr>
<tr>
<td>IV.1.4</td>
<td>Planning Horizon</td>
<td>69</td>
</tr>
<tr>
<td>IV.1.5</td>
<td>The Differing Nature of Capital Expenditures</td>
<td>70</td>
</tr>
<tr>
<td>IV.2</td>
<td>Possible Funding Plan Calculations</td>
<td>71</td>
</tr>
<tr>
<td>IV.3</td>
<td>The Funding Plan: A Hypothetical Example</td>
<td>73</td>
</tr>
<tr>
<td>IV.3.1</td>
<td>Updates to the Plan</td>
<td>84</td>
</tr>
<tr>
<td>IV.3.2</td>
<td>Consideration of Construction Phasing</td>
<td>86</td>
</tr>
<tr>
<td>IV.3.3</td>
<td>Treatment of Contributed Assets</td>
<td>88</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter V:</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>V.1</td>
<td>Rate Structure Objectives</td>
<td>89</td>
</tr>
<tr>
<td>V.2</td>
<td>Revenue Sources</td>
<td>90</td>
</tr>
<tr>
<td>V.3</td>
<td>The Role of Property Taxes</td>
<td>90</td>
</tr>
<tr>
<td>V.4</td>
<td>Capital Specific Funds</td>
<td>91</td>
</tr>
<tr>
<td>V.5</td>
<td>Sources of Capital Financing</td>
<td>92</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter VI:</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>VI.1</td>
<td>Review and Renewal of Financial Plans</td>
<td>93</td>
</tr>
<tr>
<td>VI.1.1</td>
<td>Periodic Review of Past Projections</td>
<td>93</td>
</tr>
<tr>
<td>VI.1.2</td>
<td>Business Case as a Good Practice</td>
<td>95</td>
</tr>
<tr>
<td>VI.1.3</td>
<td>Indicators of Funding Plan Reasonableness</td>
<td>96</td>
</tr>
<tr>
<td>VI.2</td>
<td>Organizing and Operating Water and Wastewater Systems</td>
<td>97</td>
</tr>
<tr>
<td>VI.2.1</td>
<td>Organizational and Governance Models</td>
<td>97</td>
</tr>
<tr>
<td>VI.2.2</td>
<td>Operation of Water and Wastewater Facilities</td>
<td>98</td>
</tr>
<tr>
<td>VI.3</td>
<td>Roles and Responsibilities</td>
<td>99</td>
</tr>
<tr>
<td>VI.3.1</td>
<td>Municipal Staff</td>
<td>99</td>
</tr>
<tr>
<td>VI.3.2</td>
<td>Auditors</td>
<td>101</td>
</tr>
<tr>
<td>VI.3.3</td>
<td>Municipal Council</td>
<td>102</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Appendix A:</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix B:</td>
<td>Title</td>
<td></td>
</tr>
</tbody>
</table>
### Key Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CICA</td>
<td>Canadian Institute of Chartered Accountants</td>
</tr>
<tr>
<td>CWA</td>
<td>Clean Water Act, 2006</td>
</tr>
<tr>
<td>DCA</td>
<td>Development Charges Act, 1997</td>
</tr>
<tr>
<td>FIR</td>
<td>Financial Information Return</td>
</tr>
<tr>
<td>MDWLP</td>
<td>Municipal Drinking-Water Licence Program</td>
</tr>
<tr>
<td>MOE</td>
<td>Ministry of the Environment</td>
</tr>
<tr>
<td>OMBI</td>
<td>Ontario Municipal Benchmarking Initiative</td>
</tr>
<tr>
<td>PSA</td>
<td>Public Sector Accounting</td>
</tr>
<tr>
<td>PSAB</td>
<td>Public Sector Accounting Board (under the CICA)</td>
</tr>
<tr>
<td>TCA</td>
<td>Tangible Capital Assets</td>
</tr>
<tr>
<td>SDWA</td>
<td>Safe Drinking Water Act, 2002</td>
</tr>
</tbody>
</table>
Introduction

In Part Two of his Report of the Walkerton Inquiry, Justice Dennis O'Connor highlighted the importance of ensuring that municipalities plan for the long-term financial sustainability of their drinking-water systems to guarantee the safety of their drinking water into the future.

As part of the province's commitment to implement all of Justice O'Connor's Walkerton Inquiry recommendations, the Minister of the Environment (MOE) has made a regulation (O. Reg. 453/07) under the Safe Drinking Water Act, 2002 (SDWA) that prescribes the requirements for Financial Plans to be prepared as part of the Municipal Drinking-Water Licence Program set out in Part V of the SDWA.

This document is a Guideline designed to assist municipalities in preparing the required Financial Plans under the Financial Plans Regulation. It also sets out broad principles and practical advice that will assist municipalities in moving towards long-term financial sustainability of water services. Topics discussed are relevant to wastewater and storm water service as well, particularly in cases where utilities provide integrated service. The Guideline is not required practice, but is designed to provide assistance to municipalities and to help build capacity in financial planning.

This Guideline is divided into two parts:

**Part I** discusses the province's approach to promoting financially sustainable water and wastewater systems, including principles of financial sustainability and the broader policy context.

**Part II** introduces a number of possible approaches to implementing the principles outlined in Part I.

Taken together, the Regulation and Guideline are a key step in the province's long-term strategy to ensure the financial sustainability of municipal drinking-water and wastewater systems.
Part 1

General Approach and Principles
1.1 A Flexible, Locally-Driven Approach to Financial Sustainability

Stakeholders have emphasized the importance of a flexible and gradual approach to achieving financially sustainable water and wastewater services. Ontario municipalities face a range of unique circumstances and take different approaches to financial planning when it comes to their water and wastewater services. The province's approach to moving toward financially sustainable water and wastewater systems responds to this feedback and encourages municipalities to consider local circumstances where appropriate.

The Financial Plans Regulation is a key component of this flexible approach. The Regulation's requirements are intended to accommodate existing financial planning practices and municipal accounting standards. This Guideline is another key component of this approach and aims to build capacity regardless of the starting point, and in a way that can be tailored to meet local needs. The Guideline also strives to share the knowledge and experiences of Ontario municipalities, large and small.

Stakeholders, particularly smaller municipalities, have also indicated that tools as well as support and guidance would be of great assistance. These tools would help avoid the need for each municipality to undertake potentially redundant and costly work. The Guideline, particularly throughout Part II, provides a first response to these requests and provides references to other resources.

The Guideline presents a range of topics relevant to discussions about water and wastewater financial sustainability. Examples include accounting practices, asset management, and approaches to financing. The Guideline approaches these topics with a broad audience in mind. The intent is that municipal utility, finance and accounting departments will find the discussion of these topics to be informative and illustrate the benefits of an integrated approach.

1.2 Principles of Financially Sustainable Water and Wastewater Services

Achieving financial sustainability in Ontario's municipal water and wastewater sector is a long-term goal. Systems are aging, there is a growing amount of deferred maintenance, and many assets are nearing, or even beyond, the end of their useful lives and in need of replacement.

Financial sustainability is needed to ensure that Ontarians continue to enjoy clean and safe drinking water, that water and wastewater services are reliable in the long term, and that environmental protection is maintained.
This section introduces nine principles to help develop Financial Plans and to inform the transition toward financial sustainability. The remainder of this Guideline builds on these principles and introduces approaches to implement them.

**Principle #1:** Ongoing public engagement and transparency can build support for, and confidence in, financial plans and the system(s) to which they relate.

**Principle #2:** An integrated approach to planning among water, wastewater, and storm water systems is desirable given the inherent relationship among these services.

**Principle #3:** Revenues collected for the provision of water and wastewater services should ultimately be used to meet the needs of those services.

**Principle #4:** Life-cycle planning with mid-course corrections is preferable to planning over the short-term, or not planning at all.

**Principle #5:** An asset management plan is a key input to the development of a financial plan.

**Principle #6:** A sustainable level of revenue allows for reliable service that meets or exceeds environmental protection standards, while providing sufficient resources for future rehabilitation and replacement needs.

**Principle #7:** Ensuring users pay for the services they are provided leads to equitable outcomes and can improve conservation. In general, metering and the use of rates can help ensure users pay for services received.

**Principle #8:** Financial Plans are "living" documents that require continuous improvement. Comparing the accuracy of financial projections with actual results can lead to improved planning in the future.

**Principle #9:** Financial plans benefit from the close collaboration of various groups, including engineers, accountants, auditors, utility staff, and municipal council.

Implementation of these principles of water and wastewater financial planning will have benefits and implications that go beyond the financial health and physical status of the water facilities and infrastructure. Long term financial planning and asset management can have environmental benefits, such as the
enhancement of conservation through reduced leakage rates from aging water mains, and reduced effluent discharges into surface water.

This Guideline suggests that long term financial planning can go hand-in-hand with longer term environmental planning. As will be discussed later in this Guideline, the "costs" of a water system can take into account source water protection and other environmental compliance costs.

1.3 Policy Context

Before discussing the Financial Plans Regulation in-depth or considering principles of financial planning in greater detail, this section briefly discusses the policy context for the development of water and wastewater Financial Plans.

1.3.1 The Municipal Drinking-Water Licence Program

As part of the province's commitment to fulfill all of Justice O'Connor's Walkerton Inquiry recommendations, the MOE is implementing a new approvals framework under the SDWA for municipal residential drinking-water systems called the Municipal Drinking-Water Licence Program.

Justice O'Connor recommended that owners of municipal water systems obtain a licence for the operation of their drinking-water systems. The licence will be issued to owners by the Ministry under the SDWA if the owner demonstrates that it has the following five elements in place:

1. A drinking-water works permit (DWWP)
   - A permit to establish or alter a drinking-water system.

2. An accepted operational plan
   - The Drinking-Water Quality Management Standard (DWQMS) will be the standard upon which operational plans will be based.
   - The plan will document an operating authority's quality management system (QMS).

3. An accredited operating authority
   - A third-party audit of an operating authority's QMS will be the basis for accreditation.

4. A Financial Plan
   - This must be prepared in accordance with the prescribed requirements in the Financial Plans Regulation, discussed below.

5. A permit to take water (PTTW)
Requirements as outlined in the *Ontario Water Resources Act*.

In addition, a licence will only be issued if the Director is satisfied that the system will be operated in accordance with the requirements under the *SDWA* and the conditions in the licence.

Financial Plans are one of the elements which must be put in place for a licence to be issued. However, in the case of the first licence for an existing drinking-water system, the Financial Plan will be required through a condition of the licence. Under section 30 of the *SDWA*, the Financial Plans element of the Licence Program must either be prepared in accordance with the *Sustainable Water and Sewage Systems Act, 2002* or in accordance with requirements set out by the Minister of the Environment. At this time, the government’s approach is to require Financial Plans through the development of a Financial Plans Regulation under the *SDWA* that outlines requirements set out by the MOE. This Regulation’s requirements are outlined below, while possible approaches to developing Financial Plans in accordance with the Regulation are in Part II of this Guideline.

In May 2007, the government proclaimed the sections of the *SDWA* related to the Licensing Program and filed the Licensing of Municipal Drinking-Water Systems Regulation (O. Reg. 188/07). Under the Licensing Regulation, owners of municipal residential drinking water systems are required to submit an operational plan and applications for a DWWP and licence. Dates for these submissions are being phased over an 18-month period starting January 1, 2009, and ending on June 1, 2010. Large municipalities will submit first, followed by medium-sized and then small municipalities.

On July 31, 2007, the ministry posted the remaining Municipal Drinking Water Licensing Program policy decision notices (i.e., Director’s direction, accreditation protocol and implementation guide) to the Environmental Registry.

Additional information on the Licensing Program can be found on the *Drinking Water Ontario* portal (www.ontario.ca/drinkingwater).

### 1.3.2 Full Accrual Accounting

In June 2006, the Public Sector Accounting Board (PSAB) of the Canadian Institute of Chartered Accountants (CICA) approved new municipal financial accounting and reporting standards requiring that tangible capital assets (TCA), including water and wastewater systems, be included in municipal financial statements. Full accrual accounting provides a new view of cost for financial reporting purposes. The implications for municipalities are significant, particularly for public works departments.
The new accounting standard PS 3150, comes into effect on January 1, 2009, and the first financial statements reflecting this change are anticipated no later than May 31, 2010. The comparison year is 2008, which means that the necessary data will need to be available for 2008, although it does not have to be reported until the 2009 financial statements are published.

This transition has important implications for water and wastewater financial sustainability. PS 3150 will make municipalities and the public more aware of the investment in physical infrastructure, and the cost of using an asset to provide services over its useful life. It will also encourage long-term planning for capital renewal and replacement, and begin to provide a more informed basis for setting water rates.

The municipal transition to full accrual accounting is expected to provide a useful foundation for financial planning. By itself, however, it is not the complete answer. As discussed in Part II, other tools are needed to help inform rate setting and to plan for the future. Nevertheless, full accrual accounting could provide a jumping-off point for implementing long-term asset management if that objective is established at the outset. This Guideline recommends that municipalities view accounting standard PS 3150 as an opportunity to move toward comprehensive asset management.

It is recognized that municipalities will have to do a significant amount of work to implement full accrual accounting for tangible capital assets. It is recommended that municipalities use this work as a starting point when preparing Financial Plans.

The CICA Public Sector Accounting (PSA) Handbook is the primary authoritative source for generally accepted accounting principles. Readers are encouraged to become familiar with the accounting standards. Subscription to the PSA Handbook is available through the CICA.

In addition to the PSA Handbook, a number of other organizations and resources are available to assist with the transition to full accrual accounting:

1. The Ontario Municipal Benchmarking Initiative (OMBI) has released three documents on the subject, including:
   - Municipal Guide to Accounting for Tangible Capital Assets – Version 2;
   - Implementation of Accounting for Tangible Capital Assets – Pilot Studies; and,

These documents provide information about developing TCA inventories, applying initial dollar values to inventories, and amortizing TCA.
capitalization, disposals, write-downs, reporting considerations, and various other technical topics are also addressed.

2. The Public Sector Accounting staff of the CICA has released a Guide to Accounting for and Reporting Tangible Capital Assets – Guidance for Local Government Entities That Apply the Public Sector Handbook. This Guideline is a useful reference for local governments implementing Section PS 3150, Tangible Capital Assets, and the new reporting requirements. It contains valuable information on the need for and benefits of accounting for tangible capital assets, implementation considerations and subsequent accounting requirements. It also suggests how that information could be linked with ongoing asset management practices.

3. In addition, full day workshops, hosted by the Association of Municipal Clerks and Treasurers of Ontario (AMCTO) and the Municipal Finance Officers’ Association (MFOA), are available. In addition, these organizations have jointly published a series of newsletters on the subject of full accrual accounting. This Guideline is intended to build on the work that has already been done. Although this Guideline includes a discussion of why it makes sense to build on this work, the primary focus of this Guideline is on the preparation of long-term Capital Investment and Funding Plans.

1.3.3 The Financial Information Return (FIR)

The FIR is a data collection tool used by the Ministry of Municipal Affairs and Housing to collect municipal financial and statistical information. All municipalities submit financial information electronically to the province through a series of standardized templates. Information is for the previous fiscal year, and is submitted annually by May 31. Information in the FIR should be consistent with audited municipal financial statements.

The FIR includes financial information derived from the financial records underlying the annual financial statements of the municipality prepared pursuant to subsection 294.1 of the Municipal Act, 2001 and in accordance with generally accepted accounting principles for local governments as recommended, from time to time, by the Public Sector Accounting Board of the Canadian Institute of Chartered Accountants.

1 For more information, see http://www.amcto.com/db/assetmgmt.asp.

2 Generally accepted accounting principles (GAAP) encompass broad principles and conventions of general application, as well as rules and procedures that determine accepted accounting practices at a particular time. The primary sources of GAAP for public sector bodies are the standards in Sections PS 1200 to PS 3800; Public Sector Guidelines; and appendices and illustrative material contained in the CICA Public Sector Accounting Handbook.
Depending on the organizational model chosen by a municipality, different accounting standards may apply, and the way financial information is reflected on municipal financial statements may differ. Separate financial statements are required for municipal corporations established under the Municipal Services Corporations Regulation (Ontario Regulation 599/06) under the Municipal Act, 2001 and the City Services Corporations Regulation (Ontario Regulation 609/06) under the City of Toronto Act, 2006. For example, government business enterprises and government business type organizations would likely follow the CICA Accounting Handbook. Although the form and content may differ, their individual financial statements will still provide a useful basis for long-term financial planning.

A new schedule is being developed by the province as part of other revisions to existing FIR schedules necessary to reflect the transition to full accrual accounting. This new schedule will be available for fiscal year 2009. It will bring together all the information about water and wastewater systems currently scattered throughout the FIR schedules. This new schedule will organize information, to the fullest extent possible, in the form of a statement of operations and a statement of financial position. The intention is for these statements to be reconcilable with each municipality’s GAAP statement. The schedule will provide a more comprehensive picture of water and wastewater system finances in a format useful for broader financial planning work.

Similar to the revisions being made to the FIR schedules, the specific requirements of the Financial Plans Regulation, which are outlined below, have been developed to be consistent with the transition to full accrual accounting.

1.3.4 The Clean Water Act and Source Water Protection

With the passage of the Clean Water Act, 2006 (CWA) on October 19, 2006 and its proclamation on July 3, 2007 communities will be better able to protect their drinking-water supplies through the development of collaborative, locally driven, science and watershed-based source protection plans. The CWA advances a multiple barrier approach to drinking water protection, starting with the sources.

Components of the CWA include:

1. Identification of Source Protection Areas, Regions and Authorities (Conservation Authorities where they exist) for the purposes of source protection planning;

2. Requirements for a local multi-stakeholder Source Protection Committee to consult with municipalities and develop a Terms of Reference, Assessment Report and Source Protection Plan to address significant drinking water threats;
3. Requiring conformity (e.g. official plans) for those measures addressing significant threats and designated Great Lakes policies in the source protection plans. Policies addressing non-significant threats do not require conformity and decisions in relation to the issuance or amendment of a prescribed instrument (e.g. Certificate of Approval) but are required to "have regard" for non-significant threat policies;

4. The Minister's authority to require action on Great Lakes issues; and,

5. New municipal authority to regulate significant drinking water threats located in Wellhead Protection Areas and Surface Water Intake Protection Zones through the development of negotiated risk management plans.

A number of regulations are under development in both the short and longer term to support the CWA. The first five regulations under the Clean Water Act took effect on July 3, 2007. These regulations establish the source protection planning process. Readers are encouraged to monitor Ontario's Environmental Registry for information on these regulatory initiatives.

### 1.3.5 Financial Plans and Source Water Protection Costs

Municipalities will have a strong role in developing and implementing source protection plans in all areas under municipal jurisdiction. Municipalities are already responsible for the delivery of municipal drinking-water and land use planning so the source protection process builds on this work. Municipalities will work with Source Protection Committees to develop and implement policies to reduce risks posed by activities located in areas under their jurisdiction.

The actual costs of source protection implementation will be quantifiable once technical studies and risk assessments for source protection plans are complete and local watershed characteristics and implementation needs can be determined. In undertaking financial planning for water and wastewater services, municipalities may wish to take into consideration the potential benefits of source protection activities. For example, protecting water at the source could result in reduced water treatment needs.

The protection of drinking water sources is a shared responsibility; therefore, the costs of source water protection implementation (i.e. protection measures/responses) will be borne across many sectors (e.g. industry, agriculture, property owners and municipalities). Under the Source Protection Program, the province has committed $7 million in 2007-08 to support early action to protect drinking water sources. In addition, under the Ontario Drinking Water Stewardship Program, the 2007-08 budget includes another $21 million over the subsequent three years to allow for outreach, education, and early

---

action to protect drinking water sources across the province, for a total of $28 million.

**Note:**

Financial Plans should include source protection costs related to the provision of water services. Utilities are encouraged to have, at minimum, estimates of any current source protection costs as a separate cost item by the time their Financial Plans are required in order to effectively align with the anticipated approval timelines for Source Protection Plans (2010 to 2012). Information on source protection implementation costs may be included in Financial Plans when these costs are identified and Source Protection Plans are approved.

### 1.3.6 Municipal Water and Wastewater Service Corporations

In December 2006, the government promulgated the Municipal Services Corporations Regulation (Ontario Regulation 599/06) under the *Municipal Act* and the City Services Corporations Regulation (Ontario Regulation 609/06) under the *City of Toronto Act*, extending broad authority for most service areas that municipalities provide, including water and wastewater. These new regulatory provisions mean that municipalities can create corporations to operate their water and wastewater services as long as they are 100 per cent publicly-owned and controlled.

Municipally-owned corporate utilities provide an opportunity to put in place a new approach to the provision of water and wastewater services. For example, municipal water and wastewater service corporations could allow for more independent borrowing and management while being accountable to municipal owners. These changes could give more operational flexibility to water service arrangements that span municipal borders, like area water systems.

Municipally-owned corporate utilities may also allow a municipality to more effectively “ring fence” its financial structure in order to keep its revenues and expenses separate from those of the municipality.

It is important to note that choice of organizational structure will affect the Generally Accepted Accounting Principle (GAAP) applied; the presentation of financial information; and how the financial affairs of the utility are reflected in the municipality’s financial statements.

Page 13
1.3.7 Ontario's Lead Action Plan

In June 2007, the government of Ontario proposed a Lead Action Plan in response to elevated lead in drinking water in a number of Ontario municipalities. The finalized Action Plan was released in July 2007 and includes the following elements:

1. All schools, as well as day care facilities with any plumbing installed prior to 1990, must test for lead annually.

2. Schools and day nurseries with any plumbing installed prior to 1990 must flush plumbing daily.

3. A regulatory program to make it mandatory for municipal residential and non-municipal year-round residential system owners to regularly sample for lead at a specified number of taps, notify homeowners of the results from their taps, and take corrective action in systems with elevated lead levels.

4. Assist low-income parents with young children and pregnant women with the cost of filters where they are recommended.

5. Encourage municipalities to conduct public education campaigns.

In addition to these new requirements for reducing lead in drinking water, the Financial Plans Regulation also contains requirements for municipalities to include in their Financial Plans the costs associated with replacing lead service pipes that are part of the drinking-water system. A detailed description of the Financial Plans Regulation requirements follows. For further information on the replacement of lead service pipes see Chapter III.3.6.

1.4 Financial Plan Regulatory Requirements

This section of the Guideline provides a plain language explanation of the Financial Plans Regulation, O. Reg. 453/07, and its general requirements. The Regulation and the SDWA should be consulted for a more detailed understanding of the regulation's application.

The Regulation applies to all owners of large and small municipal residential drinking-water systems who are required to obtain a licence under Part V of the Safe Drinking Water Act, 2002, including municipal service boards and corporations established under the Municipal Act, 2001 and the City of Toronto Act, 2006.
Though the Regulation only requires Financial Plans for drinking-water systems, this Guideline encourages financial planning for wastewater systems as well.

Sections 1.4.1 through 1.4.5 below describe requirements for existing drinking-water systems. Requirements for new drinking-water systems are different and are described in section 1.4.6.

1.4.1 Financial Plans for Existing Drinking-Water Systems

The Regulation requires Financial Plans to contain projections of prescribed categories of financial information. The required categories of information in the Regulation, listed in the text box below, are consistent with the presentation of financial statements in accordance with Section PS 1200 of the CICA Public Sector Accounting Handbook. While a number of definitions of financial terms are provided in the glossary of this Guideline, the reader may wish to refer to the CICA Guide to Accounting for and Reporting Tangible Capital Assets (April 2007) for a more comprehensive list of definitions.

Financial Plans for Existing Drinking-Water Systems:

Paragraph 4 of subsection 3(1) of the Regulation requires that Financial Plans include the following:

i. Details of the proposed or projected financial position of the drinking-water system itemized by,
   A. total financial assets*
   B. total liabilities,*
   C. net debt,*
   D. non-financial assets that are tangible capital assets, tangible capital assets under construction, inventories of supplies and prepaid expenses, and
   E. changes in tangible capital assets that are additions, donations, write downs and disposals.

ii. Details of the proposed or projected financial operations of the drinking-water system itemized by,
   A. total revenues, further itemized by water rates, user charges and other revenues;
   B. total expenses, further itemized by amortization expenses, interest expenses and other expenses;
   C. annual surplus or deficit, and
   D. accumulated surplus or deficit.
iii. Details of the drinking-water system's proposed or projected gross cash receipts and gross cash payments itemized by,

A. operating transactions, that are cash received from revenues, cash paid for operating expenses and finance charges,*
B. capital transactions, that are proceeds on the sale of tangible capital assets and cash used to acquire capital assets,
C. investing transactions, that are acquisitions and disposal of investments,*
D. financing transactions, that are proceeds from the issuance of debt and debt repayment,
E. changes in cash and cash equivalents during the year,* and
F. cash and cash equivalents at the beginning and end of the year.*

iv. Details of the extent to which the information described in subparagraphs i, ii and iii relates directly to the replacement of lead service pipes as defined in section 15.1 - 3 of Schedule 15.1 to Ontario Regulation 170/03 (Drinking-Water Systems), made under the Act.

* Subsection 3(2) of the Regulation permits certain categories of information to be excluded from the Financial Plans if it is not known to the owner at the time the plan was prepared. This provision recognizes that some financial information may be consolidated on a municipal level across numerous departments and it may be difficult for that information to be allocated to the drinking-water system (e.g. total liabilities and net debt). If the information is known for the drinking-water system, however, it would have to be included in Financial Plans.

In essence, the Regulation requires owners to project certain elements of their statement of financial position, statement of operations, and statement of cash flow. Each is of these statements is discussed briefly below:

- The statement of financial position highlights the key figures that describe the financial position of the government at the reporting date. For example, the net debt position of the government is calculated as the difference between its liabilities and financial assets. The non-financial assets of the government are assets that are, by nature, normally for use in service provision and include purchased, constructed, contributed, developed or leased tangible capital assets, inventories of supplies, and prepaid expenses.

- The statement of operations reports the surplus or deficit from operations in the accounting period. The statement displays the cost of government services provided in the period, the revenues recognized in the period and
the difference between them. It measures, in monetary terms, the extent to which a government has maintained its net assets in the period.

- The statement of cash flow reports the change in cash and cash equivalents in the accounting period, and how a municipality finances its activities and meets its cash requirements.

Projections of these three statements will help provide a snapshot of a drinking-water system's projected financial situation, as well as the resources required to run and sustain the system.

1.4.2 Length of Projections

Paragraph 2 of subsection 3(1) of the Regulation requires that Financial Plans project the required information over a minimum period of six years. Paragraph 3 specifies the first year of the period. For example, under subparagraph (i) the projection period begins with the year that the system's existing licence would expire. Under paragraph (ii), applicable to Financial Plans prepared to meet a condition of licence, the projection period begins with the later of 2010 or the year in which the first licence for the system was issued.

Making long term projections is important. Many municipalities already project their future costs for extended time horizons, but it is recognized that for some municipalities six years may be an initial step in financial planning. This Guideline encourages municipalities to adopt a life-cycle approach to managing assets as a long-term goal.

1.4.3 Approval of Financial Plans

Paragraph 1 of subsection 3(1) of the Regulation requires that Financial Plans be approved by a resolution of council, if the owner of the drinking-water system is a municipality, or by a resolution of the governing body, if the owner is not a municipality. An example of a governing body may be a board of directors. Provincial approval of Financial Plans is not required, however, in order to ensure compliance with paragraph 6 of Subsection 3(1) of the Regulation and demonstrate that the required resolution has been passed by the system's owner, a copy of the Financial Plans for the system and the approving resolution should be submitted to the Ministry of Municipal Affairs and Housing.

1.4.4 Timing

Under new municipal accounting standards, municipalities will have to adopt full accrual accounting practices beginning January 1, 2009. As municipal compliance with the new full accrual accounting requirements is an important
step in effective financial planning, submission of the first Financial Plans for a system will not be required before this date. Also, the requirement for Financial Plans has been aligned with the implementation dates for the Municipal Drinking-Water Licence Program, which are prescribed by the Licencing of Municipal Drinking-Water Systems Regulation.

The first Financial Plans for existing systems will be required by a condition of the system’s drinking-water licence, as required by subsection 1(3) of the Financial Plans Regulation. Therefore, Financial Plans will not be required with an application for the first drinking-water licence for a system, but will be required no later than 6 months after the issuance of that system’s first licence. The licence condition will require that Financial Plans for the system be submitted either by July 1, 2010, or six months after the licence is issued, whichever is later.

Once a system is licensed, Financial Plans are required to be updated in conjunction with every application for licence renewal. Subsection 1(2) of the Regulation requires the owner of a municipal drinking-water system to update and submit the updated Financial Plans to the Province before making an application to renew the drinking-water licence (i.e. every five years). The Regulation does not, however, preclude municipalities from updating Financial Plans more regularly. To meet their financial planning needs for revisions, section 5 of Regulation confirms that nothing in the Regulation prevents plans from being amended on a more frequent basis. This Guideline encourages regular updates of Financial Plans.

1.4.5 Public Transparency

Public transparency, including engaging the public in decision-making processes and public reporting of plans and results, is good practice. As Justice O'Connor noted in Part II of his report, "public confidence will be fostered by ensuring that members of the public have access to current information about the different components of the system, about the quality of the water, and about decisions that affect water safety." Ensuring effective access to information can also help water service operators educate and dialogue with consumers about proposed projects and investment decisions that will affect short-term rates, the long-term fiscal situation of the municipality, and the sustainability of the water service.

Paragraph 5 of subsection 3(1) of the Regulation requires owners of municipal drinking-water systems to make copies of Financial Plans available to members of the public who are served by the system and request the plans, at no charge, and to make plans available on a website on the Internet (if the municipality has a website). That section of the Regulation also requires the owner to provide notice to the public of the availability of the plans. It is left to the owner to
determine appropriate methods needed to bring the notice to the attention of members of the public served by the system.

These regulatory requirements are consistent with Principle #1, outlined earlier.

**Principle #1:**

*Ongoing public engagement and transparency can build support for, and confidence in, financial plans and the system(s) to which they relate.*

Although municipalities are required to make most information considered by council available to the public, it does not necessarily mean that such information is easily accessible. Some of the best plans can not be found easily on public websites.

**Case Study:**

On Feb. 24, 2005, the Town of Perth held a public information night to discuss the status of water and wastewater service within the community. Town staff gave a detailed presentation on a recently completed water and sewer rate study, including the costing model used, financing options considered, and rationale for choosing one option over the others. Staff provided additional context by comparing new rates with those in nearby municipalities.

"We have found that being transparent about the financial resources required to maintain high quality, sustainable services increases support for our funding plan. We intend to maintain high levels of transparency and engagement with our customers going forward."

- Jorgen Hoeven
  Director of Corporate and Environmental Services, Town of Perth

**Further Reading:**

http://www.town.perth.on.ca/files/6789-4760-490C-9DAA-41BE66F153E0/Feb242005PresentationFinal.pdf
1.4.6 Financial Plans for New Drinking-Water Systems

The establishment of a new drinking-water system is a significant undertaking, and thus it is important to ensure that the new system is financially viable. While neither the Regulation or Guideline provide a definition of financial viability, an owner should plan to have available an adequate level of resources to run and sustain a new drinking-water system, including both capital and operating costs. Section 2 of the Regulation outlines specific Financial Plan requirements that apply when an owner is applying for a drinking-water licence for a new drinking-water system (i.e., where no licence has been previously issued) under the Safe Drinking-Water Act, 2002. This provision does not apply to expansions or alterations to existing and licensed drinking-water systems.

As with Financial Plan requirements for existing systems, owners are required to prepare Financial Plans with six-year projections of financial information before making an application for a drinking-water licence for a new system. Unlike existing system requirements, however, only the details of the financial operations of the drinking-water system must be projected (see box below).

As with Financial Plans for existing systems, provincial approval is not required. However, unlike the resolution approving Financial Plans for existing systems, the resolution must contain a statement confirming that the proposed system is financially viable. In order to ensure compliance with paragraph 6 of Subsection 2 (1) of the Regulation and demonstrate that the required resolution has been passed by the system's owner, a copy of the financial plans and resolution should be submitted to the Ministry of Municipal Affairs and Housing.

The approval and public transparency requirements for Financial Plans for new systems are the same as for existing systems (see sections 1.4.3 and 1.4.5). As for timing, Financial Plans for new systems will not be required before January 1, 2009. This is consistent with the implementation dates for the Municipal Drinking-Water Licence Program, which prescribed by the Licencing of Municipal Drinking-Water Systems Regulation.

**Financial Plans for New Drinking-Water Systems:**

Details of the proposed or projected financial operations of the drinking-water system are itemized by,

- A. total revenues, further itemized by water rates, user charges and other revenues,
- B. total expenses, further itemized by amortization expenses, interest expenses and other expenses,
- C. annual surplus or deficit, and
- D. accumulated surplus or deficit.
1.4.7 Consolidated Financial Plans

There may be cases where a single owner may own more than one drinking-water system. Under the Municipal Drinking-Water Licence Program, each of these systems requires a separate licence. When it comes to the organizing and managing numerous drinking-water systems, owners may aggregate some or all of their financial information. Therefore, section 4 of the Regulation provides that, for purposes of preparing Financial Plans for several systems that are wholly-owned by the same owner, for the purposes of preparing Financial Plans, the owner can treat the systems as one system and prepare a single Financial Plan for the systems.

The use of a single Financial Plan for more than one system is only permitted for existing drinking-water systems, and not for new systems. For example, if an owner wholly owns two or more existing systems and then constructs a new system, a single Financial Plan can be prepared for the existing systems but the new system must have its own Financial Plan with system-specific information. Since the required categories of financial projections are different for new systems and that the focus of this provision is to ensure the financial sustainability of the new system, that information should be readily identifiable. Subsequent Financial Plans for that system may be consolidated with other systems because that system would then be considered an existing system and be subject to the requirements in section 3 of the Regulation.

1.4.8 Existing Documents and Additional Information

To provide municipal flexibility in complying with the regulatory requirements, existing document or documents may be used to satisfy the requirements of the Regulation if the document(s) includes, at a minimum, six-year projections of the categories listed above and comply with the Regulation in all other respects.

Also, information beyond that required by the Regulation may be included in the Financial Plans, as prescribed by section 6, provided the information required by the Regulations is easily identifiable.

1.5 Integrated Planning

The Regulation requires municipalities to undertake financial planning for drinking-water systems only. This Guideline has been structured so that it can be used in the preparation of Financial Plans for drinking-water services, as well as for Financial Plans for wastewater services and combined storm sewers.

Approximately half of Ontario municipalities with water and wastewater systems have integrated these systems so that one entity is responsible for both water
and wastewater services. An integrated system allows owners and operators to make more rational decisions about operations, capital investment and environmental protection – choices that recognize the inherent inter-relationship between water and wastewater services. This Guideline encourages municipalities to jointly plan for their water and wastewater services. Note however, that information for drinking-water systems must be kept separate from other services for reporting purposes under the Financial Plans Regulation.

Storm water management, and how this relates to financial planning, warrants special consideration. Some municipalities may have wastewater and storm water sewers that are combined in certain areas. Municipalities may also refer to these systems as “sanitary” and “storm water” sewers. In other cases, storm water sewers are stand-alone. This Guideline encourages municipalities to structure their accounts to reflect the three separate activity areas: water, wastewater, and storm water. This will allow costs and assets to be identified on a segmented basis for each of the activity areas. This approach has long term practical benefits, particularly for asset management.

**Principle #2:**

An integrated approach to planning among water, wastewater, and storm water systems is desirable given the inherent relationship among these services.

### 1.6 Building on Existing Practices

The Financial Plans Regulation is intended to build on existing municipal practices. Municipalities generally prepare forward-looking plans as part of their annual budgeting process. Budgets are important, but they do not necessarily present water and wastewater information in an accessible format, nor do they necessarily reflect a life-cycle view of assets.

A number of other tools are used by municipalities to plan for future investment. These include annual reports, water rate studies, by-laws, and council minutes. Practices vary considerably across Ontario when looking at how far forward projections are made, how segregated plans are based on functional areas and how information is presented.

The Regulation is intended to permit municipalities to use existing financial documents, as long as the regulatory requirements are met. While the Regulation applies only to drinking-water systems, consolidated water and wastewater related financial documents may also be used to comply with the Regulation if information pertaining to drinking-water systems is clearly separated.
In many cases, municipal Financial Plans are already guided by the principles and are informed by the policy initiatives outlined in this Guideline. Part II of this Guideline is intended to serve as a resource for those municipalities seeking additional advice in ensuring the provision of financially sustainable water and wastewater systems.
Ontario

MUNICIPAL DRINKING WATER LICENCE

Licence Number: 247-101
Issue Number: 01

Pursuant to the Safe Drinking Water Act, 2002, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, this municipal drinking water licence is issued under Part V of the Safe Drinking Water Act, 2002, S.O. 2002, c. 32 to:

The Corporation of the Municipality of Morris-Turnberry

41342 Morris Road, R.R. #4
Morris-Turnberry, ON N0G 1H0

For the following municipal residential drinking water system:

Belgrave Drinking Water System

This municipal drinking water licence includes the following:

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schedule A</td>
<td>Drinking Water System Information</td>
</tr>
<tr>
<td>Schedule B</td>
<td>General Conditions</td>
</tr>
<tr>
<td>Schedule C</td>
<td>System-Specific Conditions</td>
</tr>
<tr>
<td>Schedule D</td>
<td>Conditions for Relief from Regulatory Requirements</td>
</tr>
</tbody>
</table>

DATED at TORONTO this 4th day of August, 2011

Signature

Indra R. Prashad, P.Eng.
Director
Part V, Safe Drinking Water Act, 2002
The following information is applicable to the above drinking water system and forms part of this licence:

### Licence

<table>
<thead>
<tr>
<th>Licence Issue Date</th>
<th>August 4, 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Licence Expiry Date</td>
<td>August 2, 2016</td>
</tr>
<tr>
<td>Application for Licence Renewal Date</td>
<td>February 1, 2016</td>
</tr>
</tbody>
</table>

### Drinking Water Works Permit

<table>
<thead>
<tr>
<th>Drinking Water System Name</th>
<th>Permit Number</th>
<th>Issue Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgrave Drinking Water System</td>
<td>247-201</td>
<td>August 2, 2011</td>
</tr>
</tbody>
</table>

### Permits to Take Water

<table>
<thead>
<tr>
<th>Water Taking Location</th>
<th>Permit Number</th>
<th>Issue Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well No. 1 (Jane St. Well) and Well No. 2 (McCrea St. Well)</td>
<td>02-P-1209</td>
<td>September 25, 2002</td>
</tr>
</tbody>
</table>

### Financial Plans

The Financial Plan Number for the Financial Plan required to be developed for this drinking water system in accordance with O. Reg. 453/07 shall be: 247-301

Alternately, if one Financial Plan is developed for all drinking water systems owned by the owner, the Financial Plan Number shall be: 247-301A

### Accredited Operating Authority

<table>
<thead>
<tr>
<th>Drinking Water System or Operational Subsystems</th>
<th>Accredited Operating Authority</th>
<th>Operational Plan Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgrave Drinking Water System</td>
<td>Veolia Water</td>
<td>247-401</td>
</tr>
</tbody>
</table>
1.0 Definitions

1.1 Words and phrases not defined in this licence and the associated drinking water works permit shall be given the same meaning as those set out in the SDWA and any regulations made in accordance with that act, unless the context requires otherwise.

1.2 In this licence and the associated drinking water works permit:

"adverse effect", "contaminant" and "natural environment" shall have the same meanings as in the EPA;

"alteration" may include the following in respect of this drinking water system:

(a) An addition to the system,
(b) A modification of the system,
(c) A replacement of part of the system, and
(d) An extension of the system;

"compound of concern" means a contaminant that, based on generally available information, may be emitted from a component of the drinking water system to the atmosphere in a quantity that is significant either in comparison to the relevant point of impingement limit or if a point of impingement limit is not available for the compound, then based on generally available toxicological information, the compound has the potential to cause an adverse effect as defined by the EPA at a point of impingement;

"Director" means a Director appointed pursuant to section 6 of the SDWA for the purposes of Part V of the SDWA;

"drinking water works permit" means the drinking water works permit for the drinking water system as identified in Schedule A of this licence;

"emission summary table" means the table that was prepared by a Professional Engineer in accordance with O. Reg. 419/05 and the procedure document listing the appropriate point of impingement concentrations of each compound of concern emitted from a component of the drinking water system and providing comparison to the corresponding point of impingement limit;

"EPA" means the Environmental Protection Act, R.S.O. 1990, c. E.19;

"financial plan" means the financial plan required by O. Reg. 453/07 and the conditions of this licence;
"licence" means this municipal drinking water licence for the municipal drinking water system identified in Schedule A of this licence;

"operational plan" means an operational plan developed in accordance with the Director’s Directions — Minimum Requirements for Operational Plans made under the authority of subsection 15(1) of the SDWA;

"owner" means the owner of the drinking water system as identified in Schedule A of this licence;

"point of impingement" means any point in the natural environment that is not on the same property as the source of the contaminant and as defined by section 2 of O. Reg. 419/05;

"point of impingement limit" means the appropriate standard from Schedule 1, 2 or 3 of O. Reg. 419/05 and if a standard is not provided for a compound of concern, the appropriate criteria listed in the Ministry of the Environment publication titled "Summary of Standards and Guidelines to support Ontario Regulation 419: Air Pollution - Local Air Quality (including Schedule 6 of O. Reg. 419 on Upper Risk Thresholds)", dated February 2008, as amended;


"Professional Engineer" means a Professional Engineer who has been licenced to practice in the Province of Ontario;

"provincial officer" means a provincial officer appointed pursuant to section 8 of the SDWA;

"publication NPC-205" means the Ministry of the Environment publication titled “Sound Level Limits for Stationary Sources in Class 1 & 2 Areas (Urban)” dated October 1995, as amended;


"publication NPC-232" means the Ministry of the Environment publication titled “Sound Level Limits for Stationary Sources in Class 3 Areas (Rural)” dated October 1995, as amended;

"SDWA" means the Safe Drinking Water Act, 2002, S.O. 2002, c. 32;
"sensitive populations" means any one or a combination of the following locations where the health effects of nitrogen oxides emissions from emergency generator(s) shall be considered using the point of impingement limit instead of the Ministry of the Environment screening level for emergency generator(s):

(a) health care units (e.g., hospitals and nursing homes),
(b) primary/junior public schools,
(c) day-care facilities, and
(d) playgrounds;

2.0 Applicability

2.1 In addition to any other requirements, the drinking water system identified above shall be established, altered and operated in accordance with the conditions of the drinking water works permit and this licence.

3.0 Licence Expiry

3.1 This licence expires on the date identified as the licence expiry date in Schedule A of this licence.

4.0 Licence Renewal

4.1 Any application to renew this licence shall be made on or before the date identified as the application for licence renewal date set out in Schedule A of this licence.

5.0 Compliance

5.1 The owner and operating authority shall ensure that any person authorized to carry out work on or to operate any aspect of the drinking water system has been informed of the SDWA, all applicable regulations made in accordance with that act, the drinking water works permit and this licence and shall take all reasonable measures to ensure any such person complies with the same.

6.0 Licence and Drinking Water Works Permit Availability

6.1 At least one copy of this licence and the drinking water works permit shall be stored in such a manner that they are readily viewable by all persons involved in the operation of the drinking water system.

7.0 Permits to Take Water

7.1 A permit to take water identified in Schedule A of this licence is associated with the taking of water for purposes of the operation of the drinking water system and is the applicable permit on the date identified as the Schedule A Issue Date.
8.0 Financial Plan

8.1 The owner of the drinking water system, by the later of July 1, 2010 and the date that is six months after the date the first licence for the system is issued, shall prepare and approve financial plans for the system that satisfy the requirements prescribed under section 3 of O. Reg. 453/07.

8.2 The owner of the drinking water system shall ensure that every financial plan prepared in accordance with subsections 2 (1) and 3 (1) of O. Reg. 453/07 contains on the front page of the financial plan, the appropriate financial plan number as set out in Schedule A of this licence.

9.0 Interpretation

9.1 Where there is a conflict between the provisions of this licence and any other document, the following hierarchy shall be used to determine the provision that takes precedence:

9.1.1 The SDWA;

9.1.2 A condition imposed in this licence that explicitly overrides a prescribed regulatory requirement;

9.1.3 A condition imposed in the drinking water works permit that explicitly overrides a prescribed regulatory requirement;

9.1.4 Any regulation made under the SDWA;

9.1.5 Any provision of this licence that does not explicitly override a prescribed regulatory requirement;

9.1.6 Any provision of the drinking water works permit that does not explicitly override a prescribed regulatory requirement;

9.1.7 Any application documents listed in this licence, or the drinking water works permit from the most recent to the earliest; and

9.1.8 All other documents listed in this licence, or the drinking water works permit from the most recent to the earliest.

9.2 If any requirement of this licence or the drinking water works permit is found to be invalid by a court of competent jurisdiction, the remaining requirements of this licence and the drinking water works permit shall continue to apply.

9.3 The issuance of and compliance with the conditions of this licence and the drinking water works permit does not:

9.3.1 Relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including the Environmental Assessment Act, R.S.O. 1990, c. E.18; and
9.3.2 Limit in any way the authority of the appointed Directors and provincial officers of the Ministry of the Environment to require certain steps be taken or to require the owner to furnish any further information related to compliance with the conditions of this licence or the drinking water works permit.

9.4 For greater certainty, nothing in this licence or the drinking water works permit shall be read to provide relief from regulatory requirements in accordance with section 46 of the SDWA, except as expressly provided in the licence or the drinking water works permit.

10.0 Adverse Effects

10.1 Nothing in this licence or the drinking water works permit shall be read as to permit:

10.1.1 The discharge of a contaminant into the natural environment that causes or is likely to cause an adverse effect; or

10.1.2 The discharge of any material of any kind into or in any waters or on any shore or bank thereof or into or in any place that may impair the quality of the water of any waters.

10.2 All reasonable steps shall be taken to minimize and ameliorate any adverse effect on the natural environment or impairment of the quality of water of any waters resulting from the operation of the drinking water system including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.

10.3 Fulfillment of one or more conditions imposed by this licence or the drinking water works permit does not eliminate the requirement to fulfill any other condition of this licence or the drinking water works permit.

11.0 Change of Owner or Operating Authority

11.1 This licence is not transferable without the prior written consent of the Director.

11.2 The owner shall notify the Director in writing of a change of any operating authority identified in Schedule A of this licence.

12.0 Information to be Provided

12.1 Any information requested by a Director or a provincial officer concerning the drinking water system and its operation, including but not limited to any records required to be kept by this licence or the drinking water works permit, shall be provided upon request.

13.0 Records Retention

13.1 Except as otherwise required in this licence or the drinking water works permit, any records required by or created in accordance with this licence or the drinking water works permit, other than the records specifically referenced in section 12 of O. Reg. 170/03, shall be retained for at least 5 years and made available for inspection by a provincial officer, upon request.
14.0 Chemicals and Materials

14.1 All chemicals and materials used in the alteration or operation of the drinking water system that come into contact with water within the system shall meet all applicable standards set by both the American Water Works Association ("AWWA") and the American National Standards Institute ("ANSI") safety criteria standards NSF/60 and NSF/61.

14.2 The most current chemical and material product registration documentation from a testing institution accredited by either the Standards Council of Canada or by the American National Standards Institute ("ANSI") shall be available at all times for each chemical and material used in the operation of the drinking water system that comes into contact with water within the system.

14.3 Conditions 14.1 and 14.2 do not apply in the case of the following:

14.3.1 Water pipe and pipe fittings meeting AWWA specifications made from ductile iron, cast iron, PVC, fibre and/or steel wire reinforced cement pipe or high density polyethylene (HDPE);

14.3.2 Articles made from stainless steel, glass, HDPE or Teflon®;

14.3.3 Cement mortar for watermain lining and for water contacting surfaces of concrete structures made from washed aggregates and Portland cement;

14.3.4 Food grade oils and lubricants; or

14.3.5 Any particular chemical or material where the owner has written documentation signed by the Director that indicates that the Ministry of the Environment is satisfied that the chemical or material is acceptable for use within the drinking water system and the chemical or material is only used as permitted by the documentation.

15.0 Drawings

15.1 All drawings and diagrams in the possession of the owner that show any treatment subsystem as constructed shall be retained by the owner unless the drawings and diagrams are replaced by a revised or updated version showing the subsystem as constructed subsequent to the alteration.

15.2 Any alteration to any treatment subsystem shall be incorporated into process flow diagrams, process and instrumentation diagrams, and record drawings and diagrams within one year of the substantial completion of the alteration.

15.3 Process flow diagrams and process and instrumentation diagrams for any treatment subsystem shall be kept in a place, or made available in such a manner, that they may be readily viewed by all persons responsible for all or part of the operation of the drinking water system.
16.0 Operations and Maintenance Manual

16.1 An up-to-date operations and maintenance manual or manuals shall be maintained and applicable parts of the manual or manuals shall be made available for reference by all persons responsible for all or part of the operation or maintenance of the drinking water system.

16.2 The operations and maintenance manual or manuals, shall include at a minimum:

16.2.1 The requirements of this licence and associated procedures;

16.2.2 The requirements of the drinking water works permit for the drinking water system;

16.2.3 Procedures for monitoring and recording the in-process parameters necessary for the control of any treatment subsystem and for assessing the performance of the drinking water system;

16.2.4 Procedures for the operation and maintenance of monitoring equipment;

16.2.5 Contingency plans and procedures for the provision of adequate equipment and material to deal with emergencies, upset conditions and equipment breakdown;

16.2.6 Procedures for dealing with complaints related to the drinking water system, including the recording of the nature of the complaint and any investigation and corrective action taken in respect of the complaint;

16.2.7 An inspection schedule for all wells associated with the drinking water system, including all production wells, standby wells, test wells and monitoring wells;

16.2.8 Well inspection and maintenance procedures for the entire well structure of each well including all above and below grade well components; and

16.2.9 Remedial action plans for situations where an inspection indicates non-compliance with respect to regulatory requirements and/or risk to raw well water quality.

16.3 Procedures necessary for the operation and maintenance of any alterations to the drinking water system shall be incorporated into the operations and maintenance manual or manuals prior to those alterations coming into operation.
Schedule C: System-Specific Conditions

System Owner: The Corporation of the Municipality of Morris-Turnberry
Licence Number: 247-101
Drinking Water System Name: Belgrave Drinking Water System
Schedule C Issue Date: August 4th, 2011

1.0 Performance Limits

Rated Capacity

1.1 For each treatment subsystem listed in column 1 of Table 1, the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed the value identified as the rated capacity in column 2 of the same row.

<table>
<thead>
<tr>
<th>Table 1: Rated Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Column 1</td>
</tr>
<tr>
<td>Treatment Subsystem Name</td>
</tr>
<tr>
<td>Belgrave Well Pumphouse</td>
</tr>
</tbody>
</table>

1.2 Despite condition 1.1, a treatment subsystem may be operated temporarily at a daily volume above the value set out in column 2 of Table 1 for the purposes of fighting a large fire or for the maintenance of the drinking water system.

1.3 Condition 1.2 does not authorize the discharge into the distribution system of any water that does not otherwise meet all of the requirements of this licence and all other regulatory requirements, including compliance with the Ontario Drinking Water Quality Standards.

Maximum Flow Rates

1.4 For each treatment subsystem listed in column 1 of Table 2, the maximum flow rate of water that flows into a treatment subsystem component listed in column 2 shall not exceed the value listed in column 3 of the same row.

<table>
<thead>
<tr>
<th>Table 2: Maximum Flow Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Column 1</td>
</tr>
<tr>
<td>Treatment Subsystem Name</td>
</tr>
<tr>
<td>Not Applicable</td>
</tr>
</tbody>
</table>
Residue Management

1.5 In respect of an effluent discharged into the natural environment from a treatment subsystem or treatment subsystem component listed in column 1 of Table 3:

1.5.1 The annual average concentration of a test parameter identified in column 2 shall not exceed the value in column 3 of the same row; and

1.5.2 The maximum concentration of a test parameter identified in column 2 shall not exceed the value in column 4 of the same row.

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
<th>Column 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment Subsystem or Treatment Subsystem Component Name</td>
<td>Test Parameter</td>
<td>Annual Average Concentration (mg/L)</td>
<td>Maximum Concentration (mg/L)</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

UV Disinfection Equipment Performance

1.6 For each treatment subsystem or treatment subsystem component listed in column 1 of Table 4, the UV disinfection equipment shall be operated such that a continuous pass-through UV dose is maintained throughout the life time of the UV lamp(s) that is at least the minimum continuous pass-through UV dose set out in column 2 of the same row.

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment Subsystem or Treatment Subsystem Component Name</td>
<td>Minimum Continuous Pass-Through UV Dose (mJ/cm²)</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

2.0 Flow Measurement and Recording Requirements

2.1 For each treatment subsystem identified in column 1 of Table 1 and in addition to any other flow measurement and recording that may be required, continuous flow measurement and recording shall be undertaken for:

2.1.1 The flow rate and daily volume of treated water that flows from the treatment subsystem to the distribution system.

2.1.2 The flow rate and daily volume of water that flows into the treatment subsystem.

2.2 For each treatment subsystem component identified in column 2 of Table 2 and in addition to any other flow measurement and recording that may be required, continuous flow measurement and recording shall be undertaken for the flow rate and daily volume of water that flows into the treatment subsystem component.
2.3 Where a rated capacity from Table 1 or a maximum flow rate from Table 2 is exceeded, the following shall be recorded:

2.3.1 The difference between the measured amount and the applicable rated capacity or maximum flow rate specified in Table 1 or Table 2;

2.3.2 The time and date of the measurement;

2.3.3 The reason for the exceedance; and

2.3.4 The duration of time that lapses between the applicable rated capacity or maximum flow rate first being exceeded and the next measurement where the applicable rated capacity or maximum flow rate is no longer exceeded.

3.0 Calibration of Flow Measuring Devices

3.1 All flow measuring devices must be checked and calibrated in accordance with the manufacturer’s instructions.

3.2 If the manufacturer’s instructions do not indicate how often to check and calibrate a flow measuring device, the equipment must be checked and calibrated at least once every year during which the drinking water system is in operation.

4.0 Additional Sampling, Testing and Monitoring

Drinking Water Health and Non-Health Related Parameters

4.1 For each treatment subsystem or treatment subsystem component identified in column 1 of Tables 5 and 6 and in addition to any other sampling, testing and monitoring that may be required, sampling, testing and monitoring shall be undertaken for a test parameter listed in column 2 at the sampling frequency listed in column 3 and at the monitoring location listed in column 4 of the same row.

<table>
<thead>
<tr>
<th>Column 1: Treatment Subsystem or Treatment Subsystem Component Name</th>
<th>Column 2: Test Parameter</th>
<th>Column 3: Sampling Frequency</th>
<th>Column 4: Monitoring Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>
Table 6: Drinking Water Non-Health Related Parameters

<table>
<thead>
<tr>
<th>Column 1 Treatment Subsystem or Component Name</th>
<th>Column 2 Test Parameter</th>
<th>Column 3 Sampling Frequency</th>
<th>Column 4 Monitoring Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

Environmental Discharge Parameters

4.2 For each treatment subsystem or treatment subsystem component identified in column 1 of Table 7 and in addition to any other sampling, testing and monitoring that may be required, sampling, testing and monitoring shall be undertaken for a test parameter listed in column 2 using the sample type identified in column 3 at the sampling frequency listed in column 4 and at the monitoring location listed in column 5 of the same row.

4.3 For the purposes of Table 7:

4.3.1 Manual Composite means the mean of at least three grab samples taken during a discharge event, with one sample being taken immediately following the commencement of the discharge event, one sample being taken approximately at the mid-point of the discharge event and one sample being taken immediately before the end of the discharge event; and

4.3.2 Automated Composite means samples must be taken during a discharge event by an automated sampler at a minimum sampling frequency of once per hour.

4.4 Any sampling, testing and monitoring for the test parameter Total Suspended Solids shall be performed in accordance with the requirements set out in the publication "Standard Methods for the Examination of Water and Wastewater", 21st Edition, 2005, or as amended from time to time by more recently published editions.

Table 7: Environmental Discharge Parameters

<table>
<thead>
<tr>
<th>Column 1 Treatment Subsystem or Component Name</th>
<th>Column 2 Test Parameter</th>
<th>Column 3 Sample Type</th>
<th>Column 4 Sampling Frequency</th>
<th>Column 5 Monitoring Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>
UV Disinfection Equipment

4.5 For each treatment subsystem or treatment subsystem component listed in column 1 of Table 8 and in addition to any other sampling, analysis and recording that may be required, continuous monitoring and recording with a minimum testing/reading and recording frequency of every four (4) hours shall be carried out for the test parameters set out in column 3 of the same row.

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment Subsystem or Treatment Subsystem Component Name</td>
<td>Control Strategy</td>
<td>Test Parameter</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

5.0 Studies Required

5.1 Not Applicable
Schedule D: Conditions for Relief from Regulatory Requirements

System Owner: The Corporation of the Municipality of Morris-Turnberry
Licence Number: 247-101
Drinking Water System Name: Belgrave Drinking Water System
Schedule D Issue Date: August 4th, 2011

1.0 Lead Regulatory Relief

1.1 Any relief from regulatory requirements previously authorized by the Director in respect of the drinking water system under section 38 of the SDWA in relation to the sampling, testing or monitoring requirements contained in Schedule 15.1 of O. Reg. 170/03 shall remain in force until such time as Schedule 15.1 of O. Reg. 170/03 is amended after June 1, 2009.

2.0 Other Regulatory Relief

2.1 Not Applicable
APPENDIX D

Ontario

DRINKING WATER WORKS PERMIT

Permit Number: 247-201
Issue Number: 01

Pursuant to the Safe Drinking Water Act, 2002, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, this drinking water works permit is issued under Part V of the Safe Drinking Water Act, 2002, S.O. 2002, c. 32 to:

The Corporation of the Municipality of Morris-Turnberry

41342 Morris Road, R.R. #4
Morris-Turnberry ON N0G 1H0

For the following municipal residential drinking water system:

Belgrave Drinking Water System

This drinking water works permit includes the following:

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schedule A</td>
<td>Drinking Water System Description</td>
</tr>
<tr>
<td>Schedule B</td>
<td>General</td>
</tr>
<tr>
<td>Schedule C</td>
<td>All documents issued as Schedule C to this drinking water works permit which authorize alterations to the drinking water system</td>
</tr>
</tbody>
</table>

DATED at TORONTO this 2nd day of August, 2011

Signature

Aziz Ahmed, P.Eng.
Director
Part V, Safe Drinking Water Act, 2002
1.0 System Description

1.1 The following is a summary description of the works comprising the above drinking water system:

Overview

The Belgrave Drinking Water System consists of one well pumphouse and approximately 5.0 kilometers of distribution watermains.

Belgrave Water Supply Plant

- Groundwater Wells Supply Plant

Belgrave Distribution
Belgrave Well Pumphouse

Location and System Type

<table>
<thead>
<tr>
<th>Street Address</th>
<th>28 McCrea Street, Morris-Turnberry</th>
</tr>
</thead>
<tbody>
<tr>
<td>UTM Coordinates</td>
<td>NAD 83, Zone 17, Easting 470555 m and Northing 4850900 m</td>
</tr>
<tr>
<td>System Type</td>
<td>Ground water supply and treatment</td>
</tr>
<tr>
<td>Notes</td>
<td></td>
</tr>
</tbody>
</table>

Ground Water Supply

Well Descriptions

<table>
<thead>
<tr>
<th>Description</th>
<th>Well No. 1 (Jane St. Well)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UTM Coordinates</td>
<td>NAD 83, Zone 17, Easting 470551 m and Northing 4851050 m</td>
</tr>
<tr>
<td>Diameter</td>
<td>150 mm</td>
</tr>
<tr>
<td>Depth</td>
<td>42.4 m</td>
</tr>
<tr>
<td>Pump Type</td>
<td>Submersible</td>
</tr>
<tr>
<td>Well Pump Capacity</td>
<td>96 L/min. at 58 m TDH</td>
</tr>
<tr>
<td>Notes</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Well No. 2 (McCrea St. Well)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UTM Coordinates</td>
<td>NAD 83, Zone 17, Easting 470473 m and Northing 4850870 m</td>
</tr>
<tr>
<td>Diameter</td>
<td>150 mm</td>
</tr>
<tr>
<td>Depth</td>
<td>38.1 m</td>
</tr>
<tr>
<td>Pump Type</td>
<td>Submersible</td>
</tr>
<tr>
<td>Well Pump Capacity</td>
<td>252 L/min. at 59.1 m TDH</td>
</tr>
<tr>
<td>Notes</td>
<td></td>
</tr>
</tbody>
</table>
## Filtration

### Greensand Filters

<table>
<thead>
<tr>
<th>Description</th>
<th>Greensand filters for iron removal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>Each filter 200 m³/day</td>
</tr>
<tr>
<td>Equipment</td>
<td>Three (3) greensand filters (in parallel) complete with air-scour and backwash systems</td>
</tr>
</tbody>
</table>

### Chemical Addition

#### Potassium Permanganate

<table>
<thead>
<tr>
<th>Description</th>
<th>Potassium Permanganate addition for iron oxidation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feed Point</td>
<td>Raw water header upstream of the greensand filters</td>
</tr>
<tr>
<td>Equipment</td>
<td>Two (2) metering pumps (duty and shelf spare) each capable of 0.47 L/hr. for Well No. 1 (Jane St. Well)</td>
</tr>
<tr>
<td></td>
<td>Two (2) metering pumps (duty and shelf spare) each capable of 1.11 L/hr. for Well No. 2 (McCrea St. Well)</td>
</tr>
<tr>
<td></td>
<td>Two (2) storage tanks with spill containment</td>
</tr>
</tbody>
</table>

#### Chlorine

<table>
<thead>
<tr>
<th>Description</th>
<th>Sodium hypochlorite addition for disinfection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feed Points</td>
<td>Greensand filter effluent line upstream of the reservoir</td>
</tr>
<tr>
<td>Equipment</td>
<td>Two (2) metering pumps (duty and standby) each capable of 0.79 L/hr. complete with auto switchover control</td>
</tr>
<tr>
<td></td>
<td>Two (2) chemical solution tanks with spill containment</td>
</tr>
</tbody>
</table>
Waste Residual Management System

Decant Holding Tank

<table>
<thead>
<tr>
<th>Description</th>
<th>One (1) in-ground filter backwash holding/settling tank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>37 m³</td>
</tr>
<tr>
<td>Equipment</td>
<td>Two (2) submersible pumps at 0.17 L/s at 36.6 m TDH and 0.42 L/s at 43.3 m TDH respectively for recycling supernatant to the combined raw water header upstream of the greensand filters</td>
</tr>
<tr>
<td></td>
<td>Two (2) solid transfer pumps each at 6.4 L/s at 8.8 m TDH for discharging settled sludge into the solids holding tank</td>
</tr>
</tbody>
</table>

Solids Holding Tank

<table>
<thead>
<tr>
<th>Description</th>
<th>One (1) in-ground solids holding tank for off site disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>25 m³</td>
</tr>
</tbody>
</table>

On-Site Storage

Reservoir/High Lift Pumping System

<table>
<thead>
<tr>
<th>Description</th>
<th>One (1) two-cell in-ground treated water storage reservoir complete with pump chamber</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>Approx. 156 m³ (excluding chlorine contact)</td>
</tr>
<tr>
<td>Equipment</td>
<td>Three (3) submersible high lift pumps (lead/lag/standby) each at 298 m³/day at 58.8 m TDH</td>
</tr>
<tr>
<td></td>
<td>Six (6) hydropneumatic pressure tanks with total volume of approx. 630 L</td>
</tr>
<tr>
<td>Discharge to</td>
<td>Distribution system</td>
</tr>
</tbody>
</table>

Instrumentation and Control

SCADA System

<table>
<thead>
<tr>
<th>Description</th>
<th>Process control and monitoring equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notes</td>
<td>System control with data acquisition including various on-line analyzers and monitors</td>
</tr>
</tbody>
</table>
Emergency Power

Backup Power Supply

<table>
<thead>
<tr>
<th>Description</th>
<th>One (1) standby diesel generator rated 60 kW with fuel storage tank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notes</td>
<td></td>
</tr>
</tbody>
</table>

Watermains

1.2 Watermains within the distribution system comprise:

1.2.1 Watermains that have been set out in each document or file identified in column 1 of Table 1.

<table>
<thead>
<tr>
<th>Column 1: Watermains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Column 1 Document or File Name</td>
</tr>
<tr>
<td>Belgrave Distribution.pdf</td>
</tr>
</tbody>
</table>

1.2.2 Watermains that have been added, modified, replaced or extended further to the provisions of Schedule C of this drinking water works permit on or after the date identified in column 2 of Table 1 for each document or file identified in column 1.

1.2.3 Watermains that have been added, modified, replaced or extended further to an authorization by the Director on or after the date identified in column 2 of Table 1 for each document or file identified in column 1.
1.0 Applicability

1.1 In addition to any other requirements, the drinking water system identified above shall be altered and operated in accordance with the conditions of this drinking water works permit and the licence.

1.2 The definitions and conditions of the licence shall also apply to this drinking water works permit.

2.0 Alterations to the Drinking Water System

2.1 Any document issued by the Director as a Schedule C to this drinking water works permit shall provide authority to alter the drinking water system in accordance, where applicable, with the conditions of this drinking water works permit and the licence.

2.2 All Schedule C documents issued by the Director for the drinking water system shall form part of this drinking water works permit.

2.3 All parts of the drinking water system in contact with drinking water which are:

2.3.1 Added, modified, replaced, extended; or

2.3.2 Taken out of service for inspection, repair or other activities that may lead to contamination,

shall be disinfected before being put into service in accordance with the provisions of the AWWA C651 – Standard for Disinfecting Water Mains; AWWA C652 – Standard for Disinfection of Water-Storage Facilities; AWWA C653 – Standard for Disinfection of Water Treatment Plants; or AWWA C654 – Standard for Disinfection of Wells; or an equivalent procedure.

2.4 The owner shall notify the Director within thirty (30) days of the placing into service or the completion of any addition, modification, replacement or extension of the drinking water system which had been authorized through:

2.4.1 Schedule B to this drinking water works permit which would require an alteration of the description of a drinking water system component described in Schedule A of this drinking water works permit;

2.4.2 Any Schedule C to this drinking water works permit respecting works other than watermains; or
2.4.3 Any approval issued prior to the issue date of the first drinking water works permit respecting works other than watermains which were not in service at the time of the issuance of the first drinking water works permit.

2.5 For greater certainty, the notification requirements set out in condition 2.4 do not apply to any addition, modification, replacement or extension in respect of the drinking water system which:

2.5.1 Is exempt from subsection 31(1) of the SDWA by subsection 9(2) of O. Reg. 170/03;

2.5.2 Constitutes maintenance or repair of the drinking water system; or

2.5.3 Is a watermain authorized by condition 3.1 of Schedule B of this drinking water works permit.

2.6 The owner shall notify the legal owner of any part of the drinking water system that is prescribed as a municipal drinking water system by section 2 of O. Reg. 172/03 of the requirements of the licence and this drinking water works permit as applicable to the prescribed system.

2.7 For greater certainty, any alteration to the drinking water system made in accordance with this drinking water works permit may only be carried out after other legal obligations have been complied with including those arising from the Environmental Assessment Act, Niagara Escarpment Planning and Development Act, Oak Ridges Moraine Conservation Act, 2001 and Greenbelt Act, 2005.

3.0 Watermain Additions, Modifications, Replacements and Extensions

3.1 The drinking water system may be altered by adding, modifying, replacing or extending a watermain within the distribution system subject to the following conditions:

3.1.1 The design of the watermain addition, modification, replacement or extension:

a) Has been prepared by a Professional Engineer;

b) Has been designed only to transmit water and has not been designed to treat water;

c) Satisfies the design criteria set out in the Ministry of the Environment publication "Watermain Design Criteria for Future Alterations Authorized under a Drinking Water Works Permit – March 2009", as amended from time to time; and

d) Is consistent with or otherwise addresses, the design objectives contained within the Ministry of the Environment publication "Design Guidelines for Drinking Water Systems, 2008", as amended from time to time.

3.1.2 The maximum demand for water exerted by consumers who are serviced by the addition, modification, replacement or extension of the watermain will not result in an exceedance of the rated capacity of a treatment subsystem or the maximum flow rate for a treatment subsystem component as specified in the licence, or the creation of adverse conditions within the drinking water system.
3.1.3 The watermain addition, modification, replacement or extension will not adversely affect the distribution system's ability to maintain a minimum pressure of 140 kPa at ground level at all points in the distribution system under maximum day demand plus fire flow conditions.

3.1.4 Secondary disinfection will be provided to water within the added, modified, replaced or extended watermain to meet the requirements of O. Reg. 170/03.

3.1.5 The watermain addition, modification, replacement or extension is wholly located within the municipal boundary over which the owner has jurisdiction.

3.1.6 The owner of the drinking water system consents to the watermain addition, modification, replacement or extension.

3.1.7 A Professional Engineer has verified in writing that the watermain addition, modification, replacement or extension meets the requirements of condition 3.1.1.

3.1.8 The owner of the drinking water system has verified in writing that the watermain addition, modification, replacement or extension meets the requirements of conditions 3.1.2 to 3.1.6.

3.2 The authorization for the addition, modification, replacement or extension of a watermain provided for in condition 3.1 does not include the addition, modification, replacement or extension of a watermain that:

3.2.1 Passes under or through a body of surface water, unless trenchless construction methods are used;

3.2.2 Has a nominal diameter greater than 900 mm;

3.2.3 Connects to another drinking water system; or

3.2.4 Results in the fragmentation of the drinking water system.

3.3 The verifications required in conditions 3.1.7 and 3.1.8 shall be:

3.3.1 Recorded on "Form 1 - Record of Watermains Authorized as a Future Alteration" as published by the Ministry of the Environment; and

3.3.2 Retained for a period of ten (10) years by the owner.

3.4 For greater certainty, the verification requirements set out in condition 3.3 do not apply to any addition, modification, replacement or extension in respect of the drinking water system which:

3.4.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or

3.4.2 Constitutes maintenance or repair of the drinking water system.
3.5 The document or file referenced in Column 1 of Table 1 of Schedule A of this drinking water works permit that sets out watermains shall be retained by the owner and shall be updated to include watermain additions, modifications, replacements and extensions within 12 months of the addition, modification, replacement or extension.

3.6 The updates required by condition 3.5 shall include watermain location relative to named streets or easements and watermain diameter.

4.0 Minor Modifications to the Drinking Water System

4.1 The drinking water system may be altered by modifying or replacing the following components:

4.1.1 Raw water, treatment process or treated water pumps;
4.1.2 Chemical metering or chemical handling pumps;
4.1.3 Valves;
4.1.4 Instrumentation and controls;
4.1.5 Cathodic corrosion protection; or
4.1.6 Spill containment works.

4.2 The drinking water system may be altered by replacing the following:

4.2.1 Raw water, treatment process or treated water piping within the treatment subsystem.

4.3 The modification or replacement of a drinking water system component set out in condition 4.1 or the replacement of a drinking water system component set out in condition 4.2 must not result in:

4.3.1 An exceedance of a treatment subsystem rated capacity or a treatment subsystem component maximum flow rate as specified in the licence;
4.3.2 The bypassing of any unit process within a treatment subsystem;
4.3.3 A deterioration in the quality of drinking water provided to consumers;
4.3.4 A reduction in the reliability or redundancy of any component of the drinking water system;
4.3.5 A negative impact on the ability to undertake compliance and other monitoring; or
4.3.6 An adverse effect on the environment.

4.4 The owner shall verify in writing that the modification or replacement of drinking water system components in accordance with conditions 4.1 and 4.2 has met the requirements of the conditions listed in condition 4.3.
4.5 The verifications required in condition 4.4 shall be:

4.5.1 Recorded on “Form 2 – Record of Minor Modifications or Replacements to the Drinking Water System” as published by the Ministry of the Environment; and

4.5.2 Retained for a period of ten (10) years by the owner.

4.6 For greater certainty, the verification requirements set out in conditions 4.4 and 4.5 do not apply to any modification or replacement in respect of the drinking water system which:

4.6.1 Is exempt from subsection 31(1) of the SDWA by subsection 9(2) of O. Reg. 170/03; or

4.6.2 Constitutes maintenance or repair of the drinking water system.

4.7 The owner shall update any drawings maintained for the drinking water system to reflect the modification or replacement of the works, where applicable.

5.0 Equipment with Emissions to the Air

5.1 The drinking water system may be altered by adding, modifying or replacing any of the following drinking water system components that may discharge or alter the rate or manner of a discharge of a compound of concern to the atmosphere:

5.1.1 Any equipment, apparatus, mechanism or thing that is used for the transfer of outdoor air into a building or structure that is not a cooling tower;

5.1.2 Any equipment, apparatus, mechanism or thing that is used for the transfer of indoor air out of a space used for the production, processing, repair, maintenance or storage of goods or materials, including chemical storage;

5.1.3 Laboratory fume hoods used for drinking water testing, quality control and quality assurance purposes;

5.1.4 Low temperature handling of compounds with a vapor pressure of less than 1 kilopascal;

5.1.5 Maintenance welding stations;

5.1.6 Minor painting operations used for maintenance purposes;

5.1.7 Parts washers for maintenance shops;

5.1.8 Emergency chlorine and ammonia gas scrubbers;

5.1.9 Venting for activated carbon units for drinking water taste and odour control;

5.1.10 Venting for a stripping unit for methane removal from a groundwater supply;
5.1.11 Natural gas or propane fired boilers, water heaters, space heaters and make-up air units with a total facility-wide heat input rating of less than 20 million kilojoules per hour, and with an individual fuel energy input of less than or equal to 10.5 gigajoules per hour; and

5.1.12 Emergency generators that fire No. 2 fuel oil (diesel fuel) with a sulphur content of 0.5 per cent or less measured by weight, natural gas, propane, gasoline or biofuel, and that are used for emergency duty only with periodic testing.

5.2 The owner shall not add, modify or replace a drinking water system component set out in condition 5.1 for an activity that is not directly related to the treatment and distribution of drinking water.

5.3 The emergency generators identified in condition 5.1.12 shall not be used for non-emergency purposes including the generation of electricity for sale or for peak shaving purposes.

5.4 The owner shall prepare an emission summary table for nitrogen oxide emissions only, for each addition, modification or replacement of emergency generators identified in condition 5.1.12.

Performance Limits

5.5 The owner shall ensure that a drinking water system component identified in conditions 5.1.1 to 5.1.12 is operated at all times to comply with the following limits:

5.5.1 For equipment other than emergency generators, the maximum concentration of any compound of concern at a point of impingement shall not exceed the corresponding point of impingement limit;

5.5.2 For emergency generators, the maximum concentration of nitrogen oxides at sensitive populations shall not exceed the applicable point of impingement limit, and at non-sensitive populations shall not exceed the Ministry of the Environment half-hourly screening level of 1880 ug/m$^3$ as amended;

5.5.3 The noise emissions comply at all times with the limits set out in publication NPC-205 and/or publication NPC-232, as applicable, and

5.5.4 The vibration emissions comply at all times with the limits set out in publication NPC-207.

5.6 The owner shall verify in writing that any addition, modification or replacement of works in accordance with condition 5.1 has met the requirements of the conditions listed in condition 5.5.

5.7 The owner shall document how compliance with the performance limits outlined in 5.5.3 and 5.5.4 is being achieved, through noise abatement equipment and/or operational procedures.
5.8 The verifications required in condition 5.6 shall be:

5.8.1 Recorded on "Form 3 – Record of Addition, Modification or Replacement of Equipment Discharging a Contaminant of Concern to the Atmosphere" as published by the Ministry of the Environment.

5.8.2 Retained for a period of ten (10) years by the owner.

5.9 For greater certainty, the verification requirements set out in conditions 5.6 and 5.8 do not apply to any addition, modification or replacement in respect of the drinking water system which:

5.9.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or

5.9.2 Constitutes maintenance or repair of the drinking water system.

5.10 The owner shall update any drawings maintained for the works to reflect the addition, modification or replacement of the works, where applicable.

6.0 Previously Approved Works

6.1 The owner may add, modify, replace or extend, and operate part of a municipal drinking water system if:

6.1.1 An approval was issued after January 1, 2004 under section 36 of the SDWA in respect of the addition, modification replacement or extension and operation of that part of the municipal drinking water system;

6.1.2 The approval expired by virtue of subsection 36(4) of the SDWA; and

6.1.3 The addition, modification, replacement or extension commenced within five years of the date that activity was approved by the expired approval.

7.0 System-Specific Conditions

7.1 Not applicable