

**FINANCIAL MANAGEMENT OF  
MUNICIPAL WATER SYSTEMS IN  
ONTARIO**

**PREPARED ON BEHALF OF  
CANADIAN ENVIRONMENTAL  
LAW ASSOCIATION**

June, 2001

**P L A N N I N G   F O R   G R O W T H**



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## 1. INTRODUCTION

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# 1. INTRODUCTION

## 1.1 Purpose

This report is being prepared on behalf of the Canadian Environmental Law Association as part of a number of background papers being prepared and reviewed during the Walkerton Inquiry. This report specifically will review the municipal financial environment in which municipalities work within to present a detailed picture of how municipalities operate their systems, finance capital expenditures (replacement and growth-related), undertake pricing policies, etc. This information will provide a foundation on which to discuss privatization of municipal systems as a new initiative in municipal service provision. This review will provide observation regarding municipalities' ability to address potential capital financing problems and the potential impacts on rates of undertaking this approach to water service delivery.

## 1.2 Overview of Water Systems in Ontario

In 1998, there were 639 Water Treatment facilities in Ontario. Approximately 80% of these facilities were operated by municipalities and 20% operated by the Ontario Clean Water Agency. A limited number of small facilities were operated by private operations. Based upon Municipal Financial Information Returns for 1997, approximately \$893 million was spent on operating costs to run these systems. As well, approximately \$413 million was spent in capital water expenditures (on infrastructure) for the same year.

With the recent events arising in the community of Walkerton, considerable focus has been given to the state or condition of water systems in Ontario. Questions have been raised as to the condition of water systems in Ontario; however, there appears to be no definitive data available to answer these questions. As well, there needs to be a clear identification of what is defined as system deficiencies in order to address this question. Deficiency in a system can be defined in many ways:

- water quality from the source
- ability to treat the water to remove contaminants
- security of the water supply throughout the year

- water pressure
- fire protection needs
- adequate storage
- etc.

Hence, deficiencies within a system have to be clearly defined to establish clear conclusions on the state of Ontario systems, and to address these issues through regulation, operational changes or capital/operating spending. For example, water quality issues may be addressed in some situations by enhancing treatment through operational changes whereas in other cases, it may need to be addressed via capital expenditures for chlorination systems. Fire flow problems may be as a result of treatment capacity or storage problems which may be mitigated by lawn watering problems in the summer, versus undersized water mains or dead-end pipes which require main replacement or system looping.

Hence, identification of the problems must be categorized in order to clearly define how these problems are to be addressed. It is noted, however, that much of this information is probably kept by Ontario water operators (municipalities, PUC's, OCWA), however it has not been consolidated into a larger data base to be overseen by a regulatory body. During the late 1980's-early 1990's, municipalities commenced documenting their inventories of main location, age, material, etc., in order to commence asset management practices. Therefore, information is available, however on a fragmented basis.

Extensive research on the state of water infrastructure is limited; however, two studies have been conducted which attempt to address this issue. These are presented in the following sections.

### **1.3 Federation of Canadian Municipalities Study (1996)**

A study was prepared by the Canadian Federation of Municipalities, in January 1996, titled "Report on the State of Municipal Infrastructure in Canada." The intent of this report focused on essential infrastructure such as roads, bridges, sidewalks, sewers and water qualities. This report surveyed municipalities throughout Canada categorized by size ranges. These ranges are as follows:

- Group 1 - Population below 10,000
- Group 2 - Population between 10,000-100,000
- Group 3 - Population between 100,000-400,000
- Group 4 - Population above 400,000.

Thirty-five (35) of the total 167 municipalities surveyed were in Ontario. The population of these municipalities in Ontario totalled 7.2 million or 65% of the Ontario population.

The survey sought to obtain perspectives on the changing condition of infrastructure for these municipalities and to assess the major impediments to maintaining the municipalities' infrastructure. This information was presented on a consolidated basis and information specific to Ontario was not provided within the report. A summary of the information provided on a Canada-wide basis is presented below.

The first part of the study sought the municipal staff opinion regarding the condition of their infrastructure over the past ten year period. The results are presented as follows:

#### **Change in Condition of Infrastructure – Water Distribution**

|         | About the Same | Worse | Improving |
|---------|----------------|-------|-----------|
| Group 1 | 31%            | 28%   | 41%       |
| Group 2 | 30%            | 25%   | 44%       |
| Group 3 | 26%            | 23%   | 50%       |
| Group 4 | 52%            | 32%   | 8%        |

#### **Change in Condition of Infrastructure – Water Supply**

|         | About the Same | Worse | Improving |
|---------|----------------|-------|-----------|
| Group 1 | 33%            | 23%   | 44%       |
| Group 2 | 38%            | 6%    | 56%       |
| Group 3 | 54%            | 19%   | 27%       |
| Group 4 | 60%            | 32%   | 8%        |

Based on the above, 60%-76% of the water distribution systems in Canada and 68%-91% of the water supply systems are being maintained or improved. The residual percentage of the systems are worsening.



The survey also identified impediments to maintaining municipal infrastructure. The top two major impediments are provided below by category.

**Major Impediments to Maintaining Infrastructure**

|         |                                      |
|---------|--------------------------------------|
| Group 1 | Funding Shortage, Political Inaction |
| Group 2 | Funding Shortage, Lack of Staff      |
| Group 3 | Funding Shortage, Lack of Staff      |
| Group 4 | Funding Shortage, Red Tape           |

#### **1.4 Canadian Water and Wastewater Association Study (1998)**

A study was undertaken by the Canadian Water and Wastewater Association in April, 1998, entitled "Municipal Water and Wastewater Infrastructure: Estimated Investment Needs, 1997 to 2012." This report was partially sponsored by the Canadian Mortgage and Housing Corporation. A summary of this document is provided herein.

The study noted that "there is very little information available on which to base any estimates, and what information there is, is very fragmentary." (page iii) The focus of the paper was to address future investment needs for municipal water (and wastewater) infrastructures. It should be made clear that the report was not solely addressing matters of deficiencies, but estimating investment in water infrastructure. This distinction needs to be clearly made, as the financial avenues available to municipalities to address these investment needs, varies depending upon the nature of this need.

The study defined four categories of investment needs:

- a) maintenance of the current infrastructure in a good operating condition (since a large portion of Canada's infrastructure is adequately served by the current infrastructure);
- b) expansion of the current infrastructure to urban Canadians who currently do not receive complete services (e.g. some are connected to water services and not to wastewater services;

- c) improvements in current infrastructure (some portion of the infrastructure are a rudimentary level of service);
- d) growth of the current infrastructure to meet extraordinary population pressures (serving future populations).

The above information was collected for all provinces and territories; however, the information summarized herein is for Ontario only. The study surveyed municipalities with populations in excess of 1,000 persons. Although it was noted that there are municipalities below this size who provide water servicing to its residents, the survey limited the number of municipalities surveyed. On a population basis, 9.3 million out of a total Ontario population of 10.9 million were surveyed (84.8%). Of the 9.3 million surveyed, 92% or 8.5 million were serviced by municipal water.

For Ontario, the study identified \$12.6 billion in water infrastructure needs. The cost breakdown of this total is provided below.

**Summary of Water Investment Need in Ontario (\$ millions)**

| Water Infrastructure Type | Existing Needs | Expanded System | Growth-Related | Total    |
|---------------------------|----------------|-----------------|----------------|----------|
| Watermains                | 1,163.7        | 1,495.5         | 2,884.8        | 5,544.0  |
| Storage                   | 315.9          | 36.6            | 137.4          | 489.9    |
| Supply                    | 384.0          | 1,024.1         | 5,120.6        | 6,528.7  |
| Total                     | 1,863.6        | 2,556.2         | 8,142.8        | 12,562.6 |

“Existing Needs” represents improvements needed in the existing systems to overcome identified problems. In total, \$1.9 billion or 14.8% of the total needs are for this category. The study does not provide an indication of the nature of the problem (water quality, pressure, main breaks, fire protection, etc.).

The “Expanded System” costs represent 20% of the total needs identified. These costs are estimated to bring the entire population onto municipal water systems.

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The “Growth-Related” costs represent the largest share of the needs identified totalling \$8.1 billion or 65% of the total. These costs are future costs needed to service new development over the 15 year forecast period. The amount of growth for Ontario, on which this was based, was a 30% increase in population.

As will be discussed later in this report, the way in which municipalities address these cost issues will be different depending upon the category of expenditure. For example, the costs related to growth are normally addressed by municipalities under the *Development Charges Act*. Under this legislation, municipalities impose charges directly against residential and non-residential growth to finance these expenditures. As well, it would appear from the methodology employed in the study calculations, that local watermains are also included within these cost figures. Under the *Planning Act*, local watermains and connections to the water systems are direct costs borne by the land developer. Hence, these costs are paid 100% by the subdivider of land. The use of these statutory authorities ensure a cost recovery with little or no costs being funded by rates.

In regard to the Expanded Growth costs, municipalities also have the ability to recover the costs of extending services into areas with existing homes and businesses without affecting water rates. Under section 221 of the *Municipal Act*, all costs of extending the mains and costs for expansion to supply and storage facilities can be recovered through this authority. As well, other authorities such as the *Local Improvement Act* would also allow municipalities to recover the cost of local mains extended into unserved areas.

The “Existing Needs” category would be costs which would have to be financed directly or over time (via debt) through the rates. Those costs reflect needs to maintain or improve an existing system and hence, are required to be paid for by existing users. The affordability of these costs would have to be considered on a municipality by municipality basis; however, most municipalities in Ontario have the ability to raise capital through debenturing. Based on 1997 financial data, the debt capacity of Ontario municipalities is between \$16 and \$24 billion, depending upon the term of the debt. For those municipalities which provide water services (not all Ontario municipalities have municipal water systems), the ability to raise capital is between \$13 and \$20 billion. Hence, the magnitude of these costs to address these problems represents between 9%-14% of the municipality's debt capacity.

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## **2. OVERVIEW OF THE MUNICIPAL FINANCIAL SYSTEM**

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Municipalities in Ontario utilize Fund Accounting as the basis for recording and reporting of all financial transactions. It can be defined as an “accounting system in which a self-balancing group of accounts is provided for each accounting entity established by legal, contractual, or voluntary action, especially in government units”. In more simple terms, Ontario municipalities practice a form of accounting which uses three funds; those being a revenue (or operating) fund, a capital fund and a reserve fund. Each of these funds has a specific defined use and within that use, the expenditures are funded by various sources. The three funds are described as follows:

### ***Revenue Fund***

The revenue fund or the “operating” or “general fund” as it is often called, is the principle fund found in all municipalities. This is the fund into which the main sources of financing available to the municipality flow. Taxation revenue, grants, interest earned on investments, service charges, licenses and permits are all to be found in this fund. It is also this fund in which for the everyday operating expenditures of the municipality are recorded. The revenue fund initially records most of the sources of financing that are eventually transferred to the capital fund and the reserve funds.

### ***Capital Fund***

The capital fund is used to record the financing sources and expenditures for the acquisition of or for the rehabilitation or replacement of the capital assets of the municipality. In general, capital assets refer to the building, equipment and infrastructure of the municipality. Included here are municipal buildings, arenas, trucks, graders, roads, water/sewerage systems and the like.

### ***Reserve Funds***

Reserve funds are those funds that have been set aside either by a by-law of the council or by a requirement of provincial legislation to meet a future event. As a result, reserve funds could be called either “permissive” being those set up by Council or “regulatory” (or obligatory) being

those set up by virtue of a requirement of a provincial statute. As a general principle, municipal Councils may set up reserve funds for any purpose for which they have the authority to spend money.

An overview of these three funds, how they inter-relate and the more common expenditures and revenues associated with each fund is provided in Figure 2-1.

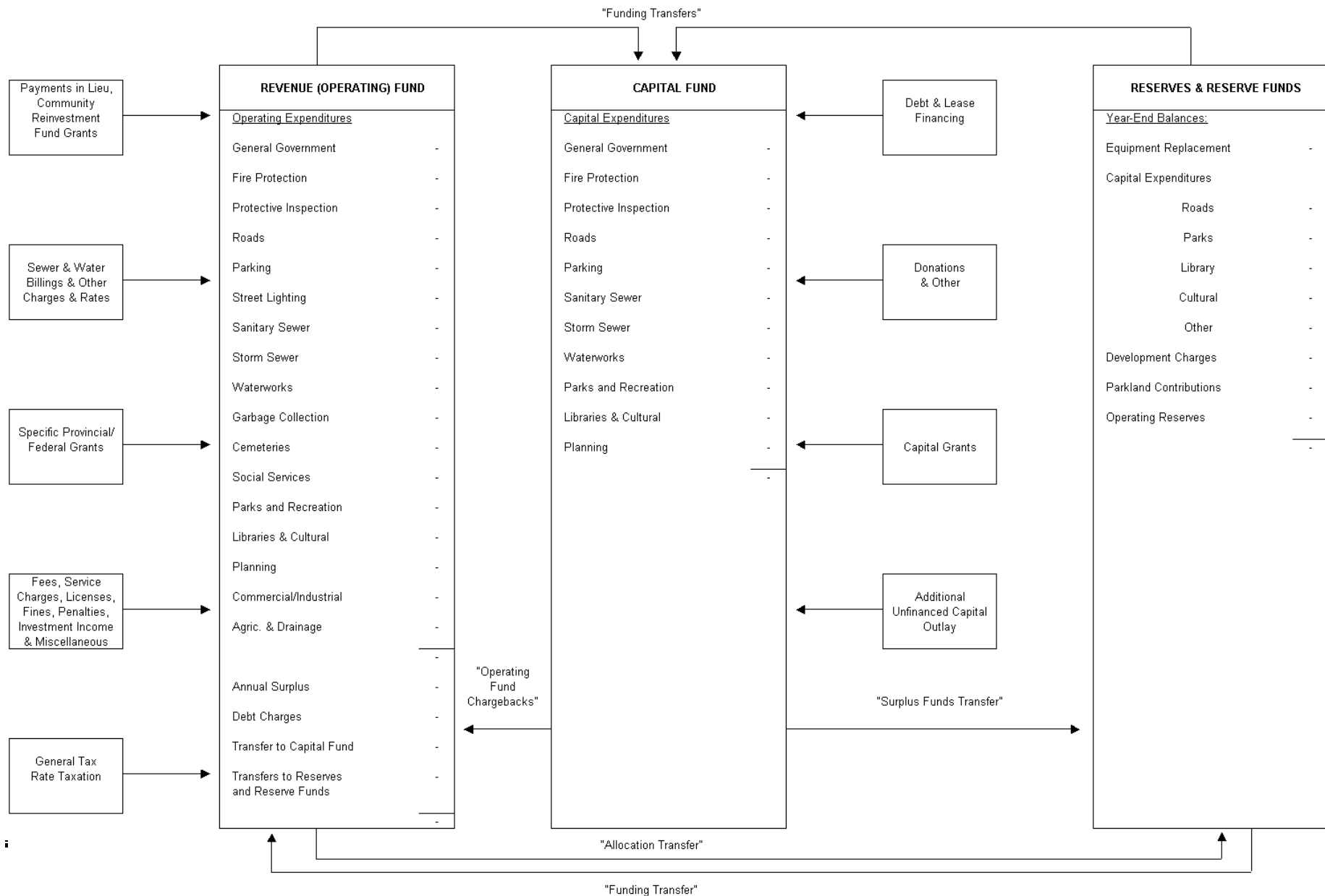
Fund Accounting is different from that which is used by private companies. The most notable distinction is that municipalities do not generate profits from their activities. As a result, the need to carry asset inventory valuations on the balance sheets is not required. Hence, asset depreciation is not part of the annual expenditures.

When a municipality undertakes a capital project (replacement or new), the project cost is expended in the capital fund. Project funding may come from transfers from the operating fund (i.e. amounts budgeted from in year taxes or user rates), transfers from reserve funds (accumulated amounts set aside for specific purposes), external sources (such as grants, donations, developer contributions) or from debt financing. If debt is used in financing the capital project, the repayment of that debt (both principal and interest) is budgeted for in subsequent years in the operating fund. Once the debt is paid off for that project, the asset is no longer recorded on the financial statements. That is not to say that the municipality does not have inventory records for its various assets, but it is not reported in the financial statements.

As municipalities operate on a “not for profit basis,” all expenditures are reported at cost and revenues such as property taxes and user fees (e.g. water rates) reflect this. As no profits are generated, no income taxes are paid. It is noted that not all revenues generated in a specific year may be expensed in that year. Many municipalities have financial management policies which transfer monies into the reserve fund. These funds are to smooth out potential tax/rate fluctuations which may arise due to the need to pay for large expenditure items in future years or to cover off potential liabilities or risks which may occur in the future. These concepts will be explored further in this report.

Figure 2-1

## SCHEMATIC OVERVIEW OF THE MUNICIPAL FINANCIAL SYSTEM



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### **3. CAPITAL INFRASTRUCTURE**



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### 3. CAPITAL INFRASTRUCTURE

#### 3.1 Water Infrastructure Expenditures

Municipalities in Ontario are empowered by statutory authority to provide services to their residents. Often, in the delivery of the service, capital assets need to be acquired or constructed. For water services, capital infrastructure costs are required for supply, treatment, storage and distribution. Examples of the infrastructure involved in the water service, are as follows:

|              |   |
|--------------|---|
| Supply       | <ul style="list-style-type: none"><li>- wells</li><li>- intake pipes</li><li>- recharge systems</li><li>- etc.</li></ul>                                    |
| Treatment    | <ul style="list-style-type: none"><li>- filtration system</li><li>-sediment tanks</li><li>- chlorination/chemical systems</li><li>- etc.</li></ul>          |
| Storage      | <ul style="list-style-type: none"><li>- elevated standpipes</li><li>- inground reservoirs</li><li>- storage tanks</li><li>- etc.</li></ul>                  |
| Distribution | <ul style="list-style-type: none"><li>- pumping stations</li><li>- trunk mains</li><li>- local mains</li><li>- water haul stations</li><li>- etc.</li></ul> |

Generally, municipalities categorize their infrastructure needs as either new infrastructure, generally to service new residential, commercial, industrial and institutional growth or service

area expansion, or replacement due to age. However, other types of expenditures will also be made resulting from legislated service standard changes, cost saving measures or system enhancements. The basis for the expenditure is important to the municipality as the potential recovery of those expenditures (i.e. financing) will vary as a result. These financing mechanisms are provided in the following section.

### **3.2 Summary of Capital Cost Financing Alternatives**

Historically, the powers which municipalities have had to raise alternative revenues to taxation/rates to fund capital services have been restrictive. Over the past few years, legislative reforms have been introduced. Some of these have expanded municipal powers (e.g. Bill 26 introduced in 1996 to provide for expanded powers for imposing fees and charges), while others appear to restrict them (Bill 98 in 1997 providing amendments to the *Development Charges Act*).

The methods of capital cost recovery available to municipalities are provided as follows:

| RECOVERY METHODS                       | SECTION<br>REFERENCE |
|--|----------------------|
| • <i>Development Charges Act, 1997</i> | 3.3                  |
| • <i>Municipal Act</i>                 | 3.4                  |
| • Fees and Charges s.220.1             |                      |
| • Sewer and Water Area Charges s.221   |                      |
| • Connection Fees s.222                |                      |
| • <u>Other Acts</u>                    |                      |
| • <i>Local Improvement Act</i>         | 3.5                  |

### **3.3 Development Charges Act, 1997**

In November, 1996, the Ontario Government introduced Bill 98, a new *Development Charges Act*. The Province's stated intentions were to "create new construction jobs and make home ownership more affordable" by reducing the charges and to "make municipal Council decisions

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more accountable and more cost effective". The basis for this Act is to allow municipalities to recover the growth-related capital cost of infrastructure necessary to accommodate new growth within the municipality. Generally the new Act provided the following changes to the former Act.

- Replace those sections of the 1989 DCA which govern municipal development charges.
- Limit services which can be financed from development charges, specifically excluding parkland acquisition, administration buildings, and cultural, entertainment, tourism, solid waste management and hospital facilities. (Water service continues to be an eligible service for DC purposes.)
- Ensure that the level of service used in the calculation of capital costs will not exceed the average level of service over the previous decade. Level of service is to be measured from both a quality and quantity perspective.
- Provide that uncommitted excess capacity available in existing municipal facilities and benefits to existing residents are removed from the calculation of the charge.
- Ensure that the development charge revenues collected by municipalities are spent only on those capital costs identified in the calculation of the development charge.
- Require municipalities to contribute funds (e.g. taxes, user charges or other non-development charge revenues) to the financing of certain projects primarily funded from development charges. The municipal contribution is 10 percent for services such as recreation, parkland development, libraries, etc. (This requirement does not apply to water service.)
- Permit municipalities to grant developers credits for the direct provision of services identified in the development charge calculation and, when credits are granted, require the municipality to reimburse the developer for the costs the municipality would have incurred if the project had been financed from the development charge reserve fund. This provision allows the municipality to negotiate with developers, to construct infrastructure (such as water) and to receive a future recovery as a repayment of costs incurred.

- Set out provisions for front-end financing capital projects (limited to essential services such as water and sewer) required to service new development. This is a similar negotiated agreement with the developer to construct the new infrastructure and to recover these costs in the future.

### **3.4 Municipal Act**

- 3.4.1 Section 220.1 provides municipalities with broad powers to impose fees and charges via passage of a by-law. The fee or charge must be based on service or activities provided to the end user or entity which benefits, for costs payable by it for services or activities done by or on behalf of the end user or entity which benefits or for use of municipal property under its control. Restrictions are provided to ensure that the form of the charge is not akin to a Provincial sales tax on goods and services or a poll tax. Any charges not paid under this authority may be added to the tax roll and collect them in a like manner. The by-law imposed under this section is not appealable to the OMB.
- 3.4.2 s.221 (Sewer and Water Charges) permits a local municipality to impose a charge by by-law, on owners or occupants of land who will or may derive a benefit from the construction of sewage (storm and sanitary) or water works being authorized (in a Specific Benefit Area). OMB approval is no longer required for such by-law. Charges on individual parcels can be deferred, exemptions can be established (e.g. existing residential), repayment is secured, a variety of different means can be used to establish the rate and non-abutting owners can be charged. Rates may be imposed in respect to costs of major capital works, even though an immediate benefit is not enjoyed. Finally, recovery is authorized against existing works, where a new water or sewer main is added to such works, "notwithstanding that the capital costs of existing works has in whole or in part been paid." The Act sets out that recovery of the costs may be imposed by a number of methods at the discretion of Council (i.e. lot size, frontage, number of benefiting properties, etc.). This section of the Act is very useful in recovering capital costs to extend water and sewer services into areas with existing homes and businesses and to recover these capital costs directly from those who benefit from the service.

- 3.4.3 s.222 (Connection Fees) permit a local municipality by by-law, to require buildings to be connected to the municipality's sewer and water systems, charging an owner for the cost of constructing service drains from sewers to the property line.

Note: The reference in section 221 and 222 is to "work or service done or furnished". This would therefore appear to refer to the cost of works or services that are already completed, hence based on final actual costs.

### **3.5 Local Improvement Act**

- A variety of different types of works may be undertaken, such as watermain, storm and sanitary sewer projects, supply of electrical light or power, bridge construction, sidewalks, road widening and paving.
- Council may pass a by-law for undertaking such work on petition of a majority of benefiting taxpayers, on a 2/3 vote of Council and on sanitary grounds, based on the recommendation of the Minister of Health. The by-law must go to the OMB, which may hold hearings and alter the by-law, particularly if there are objections.
- The entire cost of a work is assessed only upon the lots abutting directly on the work, according to the extent of their respective frontages, using an equal special rate per metre of frontage.

### **3.6 Grant Funding Availability**

Since the early 1980's, the level of Provincial and Federal assistance toward municipal infrastructure has declined significantly. By the mid 1990's, there were very limited funds available from senior levels of government. Recently, initiatives from the Provincial and Federal level have been announced; however, detailed eligibility criteria is not available at the time of writing. The basic programs are summarized below:

- An agreement for the implementation of the Infrastructure Canada program in Ontario was signed between the governments of Canada and Ontario on October 20, 2000. The Infrastructure Canada allocation to Ontario is \$680.723 million. With contributions from

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provincial and municipal partners, the total infrastructure investment in Ontario will be more than \$2.04 billion.

- Infrastructure Canada funds were allocated according to a formula that gives equal weight to population and unemployment, a formula the Government of Canada believes takes into account the economic status and investment needs of all regions.
- On average, the federal government will contribute one-third of the cost of municipal infrastructure projects. The provincial and municipal governments will contribute the remaining funds, and in some instances, there may be private sector investment as well.
- Infrastructure Canada's first priority is green municipal infrastructure. The Infrastructure Canada-Ontario agreement specifies a minimum 40 per cent of the total value of all approved projects must be invested in green municipal infrastructure.
- Secondary priorities for the Infrastructure Canada-Ontario program include cultural and recreational facilities, infrastructure supporting tourism, rural and remote telecommunications, high-speed Internet access for local public institutions, local transportation and affordable housing.
- Municipal governments will continue to play an important role: Municipalities will propose most of the projects funded by Infrastructure Canada-Ontario. In addition, one or more Federal-Provincial-Local Government committees on Infrastructure will be established for the purpose of consulting local government on program design and implementation. The committee(s) will include representation from the Association of Municipalities of Ontario, and other local government representation as appropriate.

### **3.7 Reserves**

As noted earlier, reserves can be used as a source of financing future anticipated capital expenditures. There are various types of reserves in use by municipalities today for water services. A summary of those types of reserves is as follows:

- capital replacement/life cycle reserves – money set aside to replace infrastructure as it approaches the end of its useful life (see chapter on life cycle costing);
- unallocated capital – reserves set aside for either unforeseen capital expenditures or the fund project expenditure overages;
- rate stabilization reserves – amounts set aside to fund operating budget shortfalls due to seasonal water use fluctuations. In years where there are surpluses, the amounts are transferred into the reserve. Conversely, amounts are transferred out when budget shortfalls occur;
- working funds – funds set aside for operating cash flow purposes – to offset the need for short term borrowing for timing differences between operating expenditures and billings;
- contingency reserves – funds set aside for potential events or expenditures which may arise – to offset the risk of an occurrence.

### **3.8 Debenture Financing**

Although it is not a direct method of minimizing the overall cost to the ratepayer, debentures are used by municipalities to assist in cash flowing large capital expenditures.

The Ministry of Municipal Affairs regulates the level of debt incurred by Ontario municipalities, through its powers established under the *Municipal Act*. Ontario Regulations 799/94, as amended by 75/97, provides the current rules respecting municipal debt and financial obligations. Through the rules established under these regulations, a municipality's debt capacity is capped at a level where no more than 25% of the municipality's own purpose revenue, may be allotted for servicing the debt (i.e. debt charges).

Appendix A to this report provides a detailed listing of municipal debt capacity for Ontario municipalities for the year 1997. As the provincial regulation is based upon the debt charge paid annually through the operating funding, the interest rate and term of the debt would establish a range of potential debt which could be secured by municipalities. Hence, the debt

capacity calculations are based on 10 year and 20 year terms. A summary of the borrowing capacity of Ontario municipalities as of 1997, is summarized below:

**Debt Borrowing Capacity of Ontario Municipalities (1997)**  
**(\$ Billions)**

|              | All Municipalities | Municipalities Providing<br>Water Service |
|--------------|--------------------|---|
| 10 Year Debt | \$15.8             | \$13.1                                    |
| 20 Year Debt | \$23.8             | \$19.7                                    |

The use of debt financing and the amount borrowed is often a function of the financial policies of the municipality. Although many municipalities have large borrowing capacity, financial management practices in recent years have seen a movement more towards pay-as-you-go. However, these policies have preserved the municipal sector's ability to react to unforeseen or unplanned expenditures, should the need arise.



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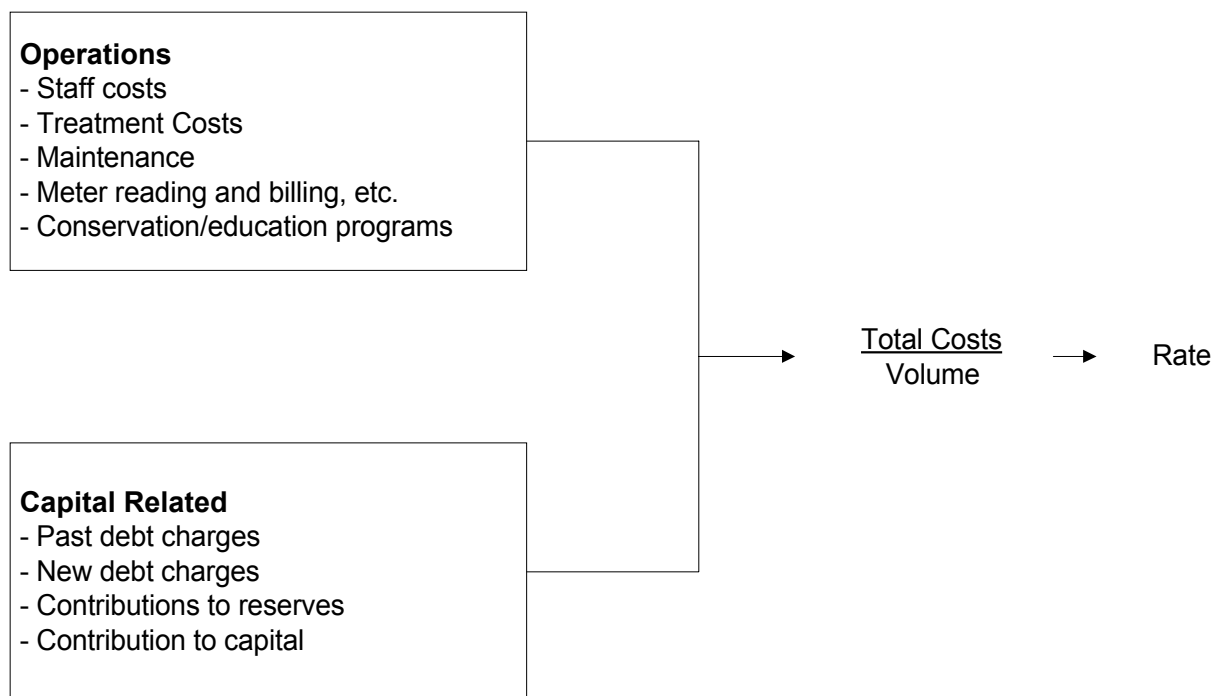
## **4. PRICING STRUCTURES**

## 4. PRICING STRUCTURES

### 4.1 Introduction

Rates in their simplest form can be defined as total costs to maintain the utility function divided by the total expected volume to be generated for the period. Total costs are usually a combination of operating costs (e.g. staff costs, treatment costs for purchased water, maintenance, administration, etc.) and capital-related costs (e.g. past or future debt to finance capital projects, transfers to capital to fund in year expenditures, transfers to reserves to finance future expenditures, etc.). The schematic below provided a simplified illustration of the rate calculation.

#### “ANNUAL COSTS”



These operating and capital expenditures will vary over time. An example of factors which will affect the expenditures over time are provided below:

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### Operations

- Inflation
- Increased maintenance as system ages
- Additional treatment costs, i.e. purchased water meter reading, administration as more users hook to the system
- Changes to Provincial legislation

### Capital Related

- New capital will be built as areas expand
- Replacement capital needed as system ages
- Financing of capital costs are a function of policy regarding reserves and direct financing from rates (pay as you go), debt and user pay methods (development charges, s.221 *Municipal Act*)

## **4.2 Alternative Pricing Structures**

As reflected later in this Chapter in the "Survey of Municipalities", the use of pricing mechanisms varies between municipalities throughout Ontario, and as well, Canada. The use of a particular form of pricing depends upon numerous factors, including Council preference, administrative structure, surplus/deficit system capacities, economic/demographic conditions, to name a few.

Municipalities within Ontario have two basic forms of collecting revenues for water purposes, those being through incorporation of the costs within the tax rate charged on property assessment and/or through the establishment of a specific water rate billed to the customer. Within the rate methods, there are four basic rate structures employed:

- Flat Rate
- Constant Rate
- Declining Block Rate
- Increasing (or Inverted) Block Rate.

The definitions and general application of the various methods are as follows:

Property Assessment: This method incorporates the total costs of providing water into the general requisition or the assessment base of the municipality. This form of collection is a "wealth tax", as payment increases directly with the value of property owned and bears no necessary relationship to actual consumption. This form is easy to administer as the costs to be recovered are incorporated in the calculation for all general services, normally collected through property taxes. Generally, most municipalities have moved away from this method as amounts can be collected from properties exempted from taxation (e.g. provincial and federal lands, school boards, etc.).

Flat Rate: This rate is a constant charge applicable to all customers served. The charge is calculated by dividing the total number of user households and other entities (e.g. businesses) into the costs to be recovered. This method does not recognize differences in actual consumption but provides for a uniform spreading of costs across all users. Some municipalities define users into different classes of similar consumption patterns, that is a commercial user, residential user and industrial user, and charge a flat rate by class. Each user is then billed on a periodic basis. No meters are required to facilitate this method, but an accurate estimate of the number of users is required. This method ensures a set revenue for the collection period but is not sensitive to consumption, hence may cause a shortfall or surplus of revenues collected.

Constant Rate: This rate is a volume-based rate, in which the consumer pays the same price per unit consumed, regardless of the volume. The price per unit is calculated by dividing the total cost of the service by the total volume used by total consumers. The bill to the consumer climbs uniformly as the consumption increases. This form of rate requires the use of meters to record the volume consumed by each user. This method closely aligns the revenue recovery with consumption. Revenue collected varies directly with the consumption volume.

Declining Block Rates: This rate structure charges a successively lower price for set volumes, as consumption increases through a series of "blocks". That is to say that within set volume ranges, or blocks, the charge per unit is set at one rate. Within the next volume range the charge per unit decreases to lower rate, and so on. Typically, the first, or first and second blocks cover residential and light commercial uses. Subsequent

blocks normally are used for heavier commercial and industrial uses. This rate structure requires the use of meters to record the volume consumed by each type of user. This method requires the collection and analysis of consumption patterns by user classification to establish rates at a level which does not over or under collect revenue from rate payers.

Increasing (Inverted) Block Rates: The increasing block rate works essentially the same way as the declining block rate, except that the price of water in successive blocks increases rather than declines. Under this method the consumer's bill rises faster with higher volumes used. This rate structure also requires the use of meters to record the volume consumed by each user. This method requires, as with the declining block structure, the collection and analysis of consumption patterns by user classification to establish rates at a level which does not over or under collect from rate payers.

### **4.3 Assessment of Alternative Pricing Structures**

The adoption by a municipality or utility of any one particular pricing structure is normally a function of a variety of administrative, social, demographic and financial factors. The number of factors and the weighting each particular factor receives can vary between municipalities. The following is a review of some of the more prevalent factors:

#### Cost Recovery

Cost recovery is a prime factor in establishing a particular pricing structure. Costs can be loosely defined into different categories: operations; maintenance; capital; financing; administration. These costs often vary between municipalities and even within a municipality, based on consumption patterns, infrastructure age, economic growth, etc.

The pricing alternatives defined earlier can all achieve the cost recovery goal, but some do so more precisely than others. Fixed pricing structures, such as Property Assessment and Flat Rate, are established on the value of property or on the number of units present in the municipality, but do not adjust in accordance with consumption. Thus, if actual consumption for the year is greater than projected, the municipality incurs a higher cost of production, but the revenue base remains static (since it was determined at the beginning of the year), thus

potentially providing a funding shortfall. Conversely, if the consumption level declines below projections, fixed pricing structures will produce more revenue than actual costs incurred.

The other pricing methods (declining block, constant rate, increasing block) are consumption based and generally will generate revenues in proportion to actual expenditures.

### Administration

Administration is defined herein as the staffing, equipment and supplies required to support the undertaking of a particular pricing strategy. This factor not only addresses the physical tangible requirements to support the collection of the revenues, but also the intangible requirements, such as policy development.

The easiest pricing structure to support is the Property Assessment structure. As municipalities undertake the process of calculating property tax bills and the collection process for their general services, the incorporation of the water costs into this calculation would have virtually no impact on the administrative process and structure.

The Flat Rate pricing structure is relatively easy to administer as well. It is normally calculated to collect a set amount, either on a monthly, quarterly, semi annual or annual basis and is billed directly to the customer. The impact on administration centres mostly on the accounts receivable or billing area of the municipality, but normally requires minor additional staff or operating costs to undertake.

The three remaining methods, those being Increasing Block Rate, Constant Rate and Declining Block Rate, have a more dramatic effect on administration. These methods are dependent upon actual consumption and hence involve a major structure in place to administer. First, meters must be installed in all existing units in the municipality and units to be subsequently built must be required to include these meters. Second, meter readings must be undertaken periodically. Hence staff must be available for this purpose or a service contract must be negotiated. Third, the billings process must be expanded to accommodate this process. Billing must be done per a defined period, requiring staff to produce the bills. Also, as consumers become more aware of consumption, the number of customer inquiries, investigations, etc. increases and must be responded to. Lastly, either through increased staffing or by service

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contract, an annual maintenance program must be set up to ensure meters are working effectively in recording consumed volumes.

The benefit derived from the installation of meters is that information on consumption patterns becomes available. This information provides benefit to administration in calculating rates which will ensure revenue recovery. Additionally, when planning what services are to be constructed in future years, the municipality or utility has documented consumption patterns distinctive to its own situation, which can be used to project sizing of growth-related works.

### Equity

Equity is always a consideration in the establishment of pricing structures but its definition can vary depending on a municipality's circumstances and based on the subjective interpretation of those involved. For example: is the price charged to a particular class of rate payer consistent with those of a similar class in surrounding municipalities; through the pricing structure does one class of rate payer pay more than another class; should one pay based on ability to pay, or on the basis that a unit of water costs the same to supply no matter who consumes it; etc. There are many interpretations. Equity therefore must be viewed broadly in light of many factors as part of achieving what is best for the municipality as a whole.

### Conservation

In today's society, conservation of natural resources is increasingly being more highly valued. Controversy continuously focuses on the preservation of non-renewable resources and on the proper management of renewable resources. Conservation is also a concept which applies to a municipality facing physical limitations in the amount of water which can be supplied to an area. As well, financial constraints can encourage conservation in a municipality where the cost of providing each additional unit is increasing.

Pricing structures such as property assessment and flat rate do not, in themselves, encourage conservation. In fact, depending on the price which is charged, they may even encourage resource "squandering", either because consumers, without the price discipline, consume water at will, or the customer wants to get his money's worth and hence adopts more liberal consumption patterns. The fundamental reason for this, is that the price paid for the service

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bears no direct relationship to the volume consumed and hence is viewed as a "tax", instead of being viewed as the price of a purchased commodity.

The Declining Block Rate provides a decreasing incentive towards conservation. This method creates an awareness as to volumes consumed and a consumer can reduce his costs by restricting consumption. This incentive lessens as more is consumed, because the cost per unit declines as the consumer enters the next block pricing range. Similarly, those whose consumption level is at the top end of a block have reduced incentive to reduce consumption.

The Constant Rate structure presents the customer with a linear relationship between consumption and the cost thereof. As the consumer pays a fixed cost per unit, his bill will vary directly with the amount consumed. This method presents tangible incentive for consumers to conserve water. As metering provides direct feedback as to usage patterns and the consumer has direct control over the total amount paid for the commodity, the consumer is encouraged to use only those volumes that are reasonably required.

The Inverted Block method presents the most effective pricing method for encouraging conservation. Through this method, the price per unit consumed increases as total volumes consumed grow. The consumer becomes aware of consumption through metering with the charges increasing dramatically with usage. Hence, there normally is an awareness that exercising control over usage can produce significant savings. This method not only encourages conservation methods, but penalizes legitimate high volume users.

### Economic Development

An economic development policy encourages community-related economic development by setting the rate for water service at a level that retains existing customers, attracts new customers who are critical to the community's development and economic welfare, and encourages new and expanded uses of water from existing customers. The rate is normally made available to targeted customers who provide an overall economic benefit to the community in terms of employment, local tax revenues , and community services.

For example, municipalities who may wish to encourage certain types of high water industries to their community may establish a declining block rate structure which reduces the cost per unit of



water as the monthly volume increases. Should water costs provide a significant cost factor in the company's production costs, it may serve to attract certain types of industries.

Figure 4-1 provides a schematic representation of the various rate structures (note property tax as a basis for revenue recovery has not been presented for comparison, as the proportion of taxes paid varies in direct proportion to the market value of the property). The graphs on the left-hand side of the figure present the cost per unit for each additional amount of water consumed. The right-hand side of the figure presents the impact on the customer's bill as the volume of water increases. The schematic is summarized below for each rate structure.

| RATE<br>STRUCTURE              | COST PER UNIT<br>AS VOLUME CONSUMPTION<br>INCREASES       | IMPACT ON CUSTOMER<br>BILL AS VOLUME<br>CONSUMPTION<br>INCREASES |
|--------------------------------|---|--|
| Flat Rate                      | Cost per unit decreases as more volume consumed           | Bill remains the same no matter how much volume is consumed      |
| Constant Rate                  | Cost per unit remains the same                            | Bill increases in direct proportion to consumption               |
| Declining Block                | Cost per unit decreases as threshold targets are achieved | Bill increases at a slower rate as volumes increase              |
| Increasing<br>(Inverted) Block | Cost per unit increases as threshold targets are achieved | Bill increases at a faster rate as volumes increase              |

#### **4.4 Experience in Ontario Municipalities**

A survey of rates and structures was undertaken to provide a cross-section across Ontario. The rates are 2000/2001 rates as, at the time of surveying municipalities, a number had yet to establish their new rates for 2001. The survey samples all Regional municipalities and a number of Cities and Towns across Ontario. It is noted that in the case of Regional municipalities, some had full control of supply, treatment, storage and distribution (Halton,

Durham, Haldimand-Norfolk), whereas others (York, Waterloo, Niagara) had split responsibilities where supply, treatment and storage generally was an upper tier responsibility and distribution and billing was a lower tier. In the case of the latter instance, two municipalities were presented in the survey. The survey also provided for a wide range of municipality size. Populations for each municipality is provided in Table 4-1.

Table 4-2 provides the sample of rates based on residential consumers and non-residential consumers. This distinction was made as many municipalities adopt somewhat different structures for the two types of users. Rates are presented on a monthly basis:

Elements of the table are described below:

- Flat Rate        -        Column denotes those municipalities which impose a flat rate charge to customers. This normally occurs where meters are not present, either municipality-wide or within certain areas of the municipality where meters are yet to be installed.
  
- Base Charge    -        Many municipalities impose a base charge which will require the user to pay whether or not any water was consumed for the month. Often the base charge is established at a level which recovers billing, meter reading and administration costs where as others establish it by policy to ensure that a portion of the revenue collection is fixed and does not vary with usage.
  
- Step Rates     -        As two of the rate structures involve stepped rates, the table has been formatted to present this information. The “upper limit” denotes the high end of that stepped rate after which, the next step is imposed. The constant rate is presented as Step One and “all” is noted on the upper limit line.

Based on the survey, all forms of rate structures are present. A listing of the structures is presented on Table 4-3 and is summarized below:

| Rate Structure             | Residential Rates | Non-Residential Rates |
|----------------------------|-------------------|-----------------------|
| Flat Rate                  | 3                 | 0                     |
| Constant Rate              | 22                | 21                    |
| Declining Block            | 4                 | 9                     |
| Increasing Block           | 2                 | 1                     |
| Number Using a Base Charge | 22                | 24                    |

Of the 31 municipalities surveyed, 70% used the Constant Rate as their rate structure. For residential users, Declining Block, Flat Rate and Increasing Block were also used. For non-residential users Declining Block was the second most used structure with only one municipality using the Increasing Block rate and no municipality uses the Flat Rate.

Tables 4-4 to 4-6 provide average annual billing to users based upon set amounts of volumes consumed. Table 4-4 is based on an annual consumption of 227 m<sup>3</sup> (50,000 gallons) and represents the usage of an average household. Table 4-5 provides the annual water bill based upon 447 m<sup>3</sup> (100,000 gallons) and represents many small business users. Table 4-6 provides for an annual volume of 60,000 m<sup>3</sup> (13.2 million gallons) and represents the bill for a large industrial users. These tables are summarized below:

| Usage                             | Average Annual Water Bill |          |           |
|-----------------------------------|---------------------------|----------|-----------|
|                                   | Lowest                    | Highest  | Mid-point |
| 227 m <sup>3</sup> (Table 4-4)    | \$89                      | \$312    | \$178     |
| 445 m <sup>3</sup> (Table 4-5)    | \$127                     | \$539    | \$277     |
| 60,000 m <sup>3</sup> (Table 4-6) | \$15,883                  | \$67,800 | \$31,155  |

**Table 4-1**  
**Population of Surveyed Municipalities**

| <b>Municipality</b>                                    | <b>Population</b> |
|--|-------------------|
| City of Toronto  | 2,385,421         |
| Region of Peel   | 933,000           |
| City of Ottawa (Former Region of Ottawa-Carlton)       | 718,499           |
| City of Hamilton (Former Region of Hamilton-Wentworth) | 461,541           |
| Region of Durham                                       | 458,616           |
| City of London   | 330,258           |
| Region of Halton                                       | 329,613           |
| City of Windsor  | 200,062           |
| Town of Markham  | 191,527           |
| City of Kitchener                                      | 181,703           |
| City of Sudbury (Former Region of Sudbury)             | 164,049           |
| City of St. Catharines                                 | 130,926           |
| City of Kingston                                       | 110,327           |
| City of Chatham-Kent                                   | 109,945           |
| City of Cambridge                                      | 105,484           |
| Region of Haldimand/Norfolk (Former)                   | 96,336            |
| City of Guelph   | 92,130            |
| City of Brantford                                      | 86,100            |
| City of Sarnia   | 70,503            |
| City of Welland  | 47,617            |
| City of Cornwall                                       | 46,802            |
| Town of Aurora   | 40,000            |
| City of Woodstock                                      | 32,347            |
| City of St. Thomas                                     | 31,319            |
| City of Stratford                                      | 30,000            |
| Town of Leamington                                     | 25,042            |
| Town of Tecumseh                                       | 23,151            |
| Town of Whitchurch-Stouffville                         | 22,000            |
| Town of Grimsby  | 19,585            |
| Town of Ingersoll                                      | 10,009            |
| Town of Goderich                                       | 7,428             |

Source: Populations figures shown above are based on 1997 Enumerations

Table 4-2  
Survey of Monthly Residential and Commercial/Industrial Water Rates Per m<sup>3</sup>  
(2000/2001)

| Municipality  | WATER RATES |         |                 |                      |                      |                 |                      |                       |   |                 |                      |                      |                 |                      |
|---|-------------|---------|-----------------|----------------------|----------------------|-----------------|----------------------|-----------------------|---|-----------------|----------------------|----------------------|-----------------|----------------------|
|   | RESIDENTIAL |         |                 |                      |                      |                 |                      | COMMERCIAL/INDUSTRIAL |   |                 |                      |                      |                 |                      |
|   | Flat Rate   | Base    | Metered Rate    |                      |                      |                 |                      | Flat Rate             | Base (reference to inches denotes meter size) | Metered Rate    |                      |                      |                 |                      |
|   |             |         | Step 1          | Step 2               | Step 3               | Step 4          | Step 5               |                       |   | Step 1          | Step 2               | Step 3               | Step 4          | Step 5               |
| City of Toronto (Toronto Community)<br>Upper Limit Rate |             |         | all<br>\$1.1300 |                      |                      |                 |                      |                       |   | all<br>\$1.1300 |                      |                      |                 |                      |
| Region of Peel<br>Upper Limit Rate                      | \$6.00      |         | all<br>\$0.3959 |                      |                      |                 |                      | \$6.00                |   | \$0.3959        |                      |                      |                 |                      |
| Region of Durham<br>Upper Limit Rate                    |             | \$6.60  | 45<br>\$0.3930  | 4500<br>\$0.3340     | residual<br>\$0.3070 |                 |                      |                       | \$6.60 (1") - \$1,112 (12")                   | 45<br>\$0.3930  | 4500<br>\$0.3340     | residual<br>\$0.3070 |                 |                      |
| Town of Aurora<br>Upper Limit Rate                      |             |         | all<br>\$0.6440 |                      |                      |                 |                      |                       |   | all<br>\$0.6440 |                      |                      |                 |                      |
| Town of Markham<br>Upper Limit Rate                     |             |         | all<br>\$0.6358 |                      |                      |                 |                      |                       |   | all<br>\$0.6358 |                      |                      |                 |                      |
| Town of Whitchurch-Stouffville<br>Upper Limit Rate      |             | \$8.50  | 7<br>base       | residual<br>\$0.6050 |                      |                 |                      |                       | \$8.50  | 7<br>base       | residual<br>\$0.6050 |                      |                 |                      |
| City of Hamilton<br>Upper Limit Rate                    |             | \$3.95  | 5<br>base       | residual<br>\$0.5500 |                      |                 |                      |                       | \$11.85(5/8") - \$863.82(12")                 | 15<br>base      | residual<br>\$0.5500 |                      |                 |                      |
| Region of Halton<br>Upper Limit Rate                    |             | \$4.86  | 25<br>\$0.3979  | 45<br>\$0.4569       | 60<br>\$0.5254       | 460<br>\$0.4860 | residual<br>\$0.3973 |                       | \$4.86(3/4") - \$805.42(10")                  | 25<br>\$0.3973  | 45<br>\$0.4569       | 60<br>\$0.5254       | 460<br>\$0.4860 | residual<br>\$0.3973 |
| Region Haldimand/Norfolk (former)<br>Upper Limit Rate   | \$27.11     | \$7.21  | 50<br>\$0.9950  | residual<br>\$0.4140 |                      |                 |                      | \$27.11               | \$7.21(3/4") - \$963.55( 12")                 | 50<br>\$0.9950  | residual<br>\$0.4140 |                      |                 |                      |
| City of St. Catharines<br>Upper Limit Rate              | \$15.68     | \$6.85  | 9<br>base       | residual<br>\$0.5600 |                      |                 |                      | \$15.68               | \$6.85  | 9<br>base       | residual<br>\$0.5600 |                      |                 |                      |
| City of Welland<br>Upper Limit Rate                     |             | \$9.56  | all<br>\$0.5103 |                      |                      |                 |                      |                       | \$9.50  | all<br>\$0.5103 |                      |                      |                 |                      |
| Town of Grimsby<br>Upper Limit Rate                     |             | \$10.95 | 8<br>base       | residual<br>\$0.4488 |                      |                 |                      |                       | \$10.95                                       | 8<br>base       | residual<br>\$0.4500 |                      |                 |                      |
| City of Sudbury<br>Upper Limit Rate                     | \$50.41     | \$8.77  | all<br>\$0.7700 |                      |                      |                 |                      | \$50.41               | \$8.77(5/8") - 486.39 (10")                   | all<br>\$0.7700 |                      |                      |                 |                      |
| City of Ottawa (Ottawa Community)<br>Upper Limit Rate   |             | \$1.00  | all<br>\$0.4950 |                      |                      |                 |                      |                       | \$ (1/2") \$1 - \$256 (18")                   | \$0.4950        |                      |                      |                 |                      |

Table 4-2  
Survey of Monthly Residential and Commercial/Industrial Water Rates Per m<sup>3</sup>  
(2000/2001)

| Municipality  | WATER RATES |                |                 |                      |                      |        |        |                       |  |                   |                      |                    |                      |                      |
|---|-------------|----------------|-----------------|----------------------|----------------------|--------|--------|-----------------------|--|-------------------|----------------------|--------------------|----------------------|----------------------|
|   | RESIDENTIAL |                |                 |                      |                      |        |        | COMMERCIAL/INDUSTRIAL |  |                   |                      |                    |                      |                      |
|   | Flat Rate   | Base           | Metered Rate    |                      |                      |        |        | Flat Rate             | Base (reference to inches denotes meter size)  | Metered Rate      |                      |                    |                      |                      |
|   |             |                | Step 1          | Step 2               | Step 3               | Step 4 | Step 5 |                       |  | Step 1            | Step 2               | Step 3             | Step 4               | Step 5               |
| City of Cornwall<br>Upper Limit<br>Rate                         | \$17.83     |                |                 |                      |                      |        |        |                       |  | 758<br>\$0.2838   | 7,575<br>\$0.2613    | 18,933<br>\$0.2497 | 37,833<br>\$0.2393   | Residual<br>\$0.2210 |
| City of Kingston<br>Upper Limit<br>Rate                         |             | \$3.25-\$10.01 | all<br>\$0.4029 |                      |                      |        |        |                       | \$16.38-\$23.59 (11/2") - \$72.02-\$79.23 (6") | 50<br>\$0.4029    | residual<br>\$0.2839 |                    |                      |                      |
| City of London<br>Upper Limit<br>Rate                           |             |                | 17<br>\$1.0445  | 40<br>\$1.1014       | residual<br>\$1.1569 |        |        |                       | \$5.00   | 3<br>\$3.5876     | 708<br>\$0.6124      | residual<br>0.5007 |                      |                      |
| Town of Ingersoll<br>Upper Limit<br>Rate                        |             | \$6.25         | all<br>\$0.3300 |                      |                      |        |        |                       | \$6.25 (3/4") - \$124.25 (6")                  | all<br>\$0.3300   |                      |                    |                      |                      |
| City of Woodstock<br>Upper Limit<br>Rate                        | \$10.59     |                |                 |                      |                      |        |        |                       | \$12.19 (5/8") - \$ 893.35 (6")                | 8,000<br>\$0.4087 | residual<br>\$0.3285 |                    |                      |                      |
| City of Windsor<br>Upper Limit<br>Rate                          |             | \$10.07        | all<br>\$0.2530 |                      |                      |        |        |                       | \$ 8.34 (5/8")-\$1,463.20 (10")                | all<br>\$0.2530   |                      |                    |                      |                      |
| City of Chatham-Kent (Chatham Community)<br>Upper Limit<br>Rate |             | \$3.35         | all<br>\$0.5110 |                      |                      |        |        |                       | \$3.35   | 235<br>\$0.5110   | residual<br>\$0.3800 |                    |                      |                      |
| Town of Leamington<br>Upper Limit<br>Rate                       |             | \$13.50        | all<br>\$0.4000 |                      |                      |        |        |                       | \$13.50  | all<br>\$0.4900   |                      |                    |                      |                      |
| Town of Tecumseh<br>Upper Limit<br>Rate                         |             | \$8.60         | 114<br>\$0.2464 | residual<br>\$0.2354 |                      |        |        |                       | \$8.6 (5/8") - \$210 (6")                      | 114<br>\$0.2464   | residual<br>\$0.2354 |                    |                      |                      |
| City of Sarnia<br>Upper Limit<br>Rate                           |             | \$5.65         | all<br>\$0.5290 |                      |                      |        |        |                       | \$ 5.65 (5/8") -1,030.81 (10")                 | all<br>\$0.5290   |                      |                    |                      |                      |
| City of Kitchener<br>Upper Limit<br>Rate                        |             |                | all<br>\$0.9052 |                      |                      |        |        |                       |  | all<br>\$0.9052   |                      |                    |                      |                      |
| Town of Goderich<br>Upper Limit<br>Rate                         | \$15.95     |                |                 |                      |                      |        |        |                       | \$1.46 (1/2") - \$73.02 (8")                   | 250<br>\$0.5400   | 750<br>\$0.4300      | 1750<br>\$0.3900   | residual<br>\$0.3500 |                      |
| City of Stratford<br>Upper Limit<br>Rate                        |             | \$3.50         | 3<br>\$1.0000   | residual<br>\$0.3600 |                      |        |        |                       | \$3.50 (1") - \$62.00 (8")                     | 3<br>\$1.0000     | residual<br>\$0.3600 |                    |                      |                      |
| City of Cambridge<br>Upper Limit<br>Rate                        |             | \$3.90         | all<br>\$0.5885 |                      |                      |        |        |                       | \$3.90(5/8") - \$228.51(10")                   | all<br>\$0.5885   |                      |                    |                      |                      |

Table 4-2  
Survey of Monthly Residential and Commercial/Industrial Water Rates Per m<sup>3</sup>  
(2000/2001)

| Municipality                              | WATER RATES |         |                 |        |        |        |        |                       |   |                 |        |        |        |        |
|---|-------------|---------|-----------------|--------|--------|--------|--------|-----------------------|---|-----------------|--------|--------|--------|--------|
|   | RESIDENTIAL |         |                 |        |        |        |        | COMMERCIAL/INDUSTRIAL |   |                 |        |        |        |        |
|   | Flat Rate   | Base    | Metered Rate    |        |        |        |        | Flat Rate             | Base (reference to inches denotes meter size) | Metered Rate    |        |        |        |        |
|   |             |         | Step 1          | Step 2 | Step 3 | Step 4 | Step 5 |                       |   | Step 1          | Step 2 | Step 3 | Step 4 | Step 5 |
| City of St. Thomas<br>Upper Limit<br>Rate |             | \$14.50 | all<br>\$0.5100 |        |        |        |        |                       | \$14.50(5/8") - \$436.00(6")                  | all<br>\$0.5100 |        |        |        |        |
| City of Brantford<br>Upper Limit<br>Rate  |             | \$7.25  | all<br>\$0.4700 |        |        |        |        |                       | \$7.25 (5/8") - \$821 (8")                    | all<br>\$0.4700 |        |        |        |        |
| City of Guelph<br>Upper Limit<br>Rate     |             | \$2.10  | all<br>\$0.2800 |        |        |        |        |                       | \$2.10 (5/8") - \$333 (10")                   | all<br>\$0.2800 |        |        |        |        |

Notes: Monthly Residential Water

A flat rate has been applied to all residential units which do not have meters

Base charges for residential are based on a meter size of 1" or less for all municipalities surveyed

A range of base charges based on meter size has been provided for commercial rates

Rates do not vary based on meter size for the following municipalities; Toronto, Peel, Aurora, Markham, Whitchurch-Stouffville, St. Catharines, Welland, Grimsby, Cornwall, London, Chatham-Kent, Leamington, and Kitchener

Basic service charges in Kingston are based on an average for Central, West, and East Kingston

For the City of Windsor from May to October excess water consumption (water not delivered back into the sewer system) is charged at reduced rate of .237

**TABLE 4-3**  
**Survey of Water Pricing Structures**

| Municipality                             | Water Rate Structure   |                        |
|--|------------------------|------------------------|
|  | Residential            | Commercial/Industrial  |
| City of Toronto (Toronto Community)      | Constant Rate          | Constant Rate          |
| Region of Peel                           | Constant Rate          | Constant Rate          |
| Region of Durham                         | Base + Declining Block | Base + Declining Block |
| Town of Aurora                           | Constant Rate          | Constant Rate          |
| Town of Markham                          | Constant Rate          | Constant Rate          |
| Town of Whitchurch-Stouffville           | Base + Constant Rate   | Base + Constant Rate   |
| City of Hamilton                         | Base + Constant Rate   | Base + Constant Rate   |
| Region of Halton                         | Base + Inverted Block  | Base + Inverted Block  |
| Region Haldimand/Norfolk (former)        | Base + Declining Block | Base + Declining Block |
| City of St. Catharines                   | Base + Constant Rate   | Base + Constant Rate   |
| City of Welland                          | Base + Constant Rate   | Base + Constant Rate   |
| Town of Grimsby                          | Base + Constant Rate   | Base + Constant Rate   |
| City of Sudbury                          | Base + Constant Rate   | Base + Constant Rate   |
| City of Ottawa (Ottawa Community)        | Base + Constant Rate   | Base + Constant Rate   |
| City of Cornwall                         | Flat Rate              | Declining Block        |
| City of Kingston                         | Base + Constant Rate   | Base + Constant Rate   |
| City of London                           | Inverted Block         | Base + Declining Block |
| Town of Ingersoll                        | Base + Constant Rate   | Base + Constant Rate   |
| City of Woodstock                        | Flat Rate              | Declining Block        |
| City of Windsor                          | Base + Constant Rate   | Base + Constant Rate   |
| City of Chatham-Kent (Chatham Community) | Base + Constant Rate   | Base + Declining Block |
| Town of Leamington                       | Base + Constant Rate   | Base + Constant Rate   |
| Town of Tecumseh                         | Base + Declining Block | Base + Declining Block |
| City of Sarnia                           | Base + Constant Rate   | Base + Constant Rate   |
| City of Kitchener                        | Constant Rate          | Constant Rate          |
| Town of Goderich                         | Flat Rate              | Base + Declining Block |
| City of Stratford                        | Base + Declining Block | Base + Declining Block |
| City of Cambridge                        | Base + Constant Rate   | Base + Constant Rate   |
| City of St. Thomas                       | Base + Constant Rate   | Base + Constant Rate   |
| City of Brantford                        | Base + Constant Rate   | Base + Constant Rate   |
| City of Guelph                           | Base + Constant Rate   | Base + Constant Rate   |

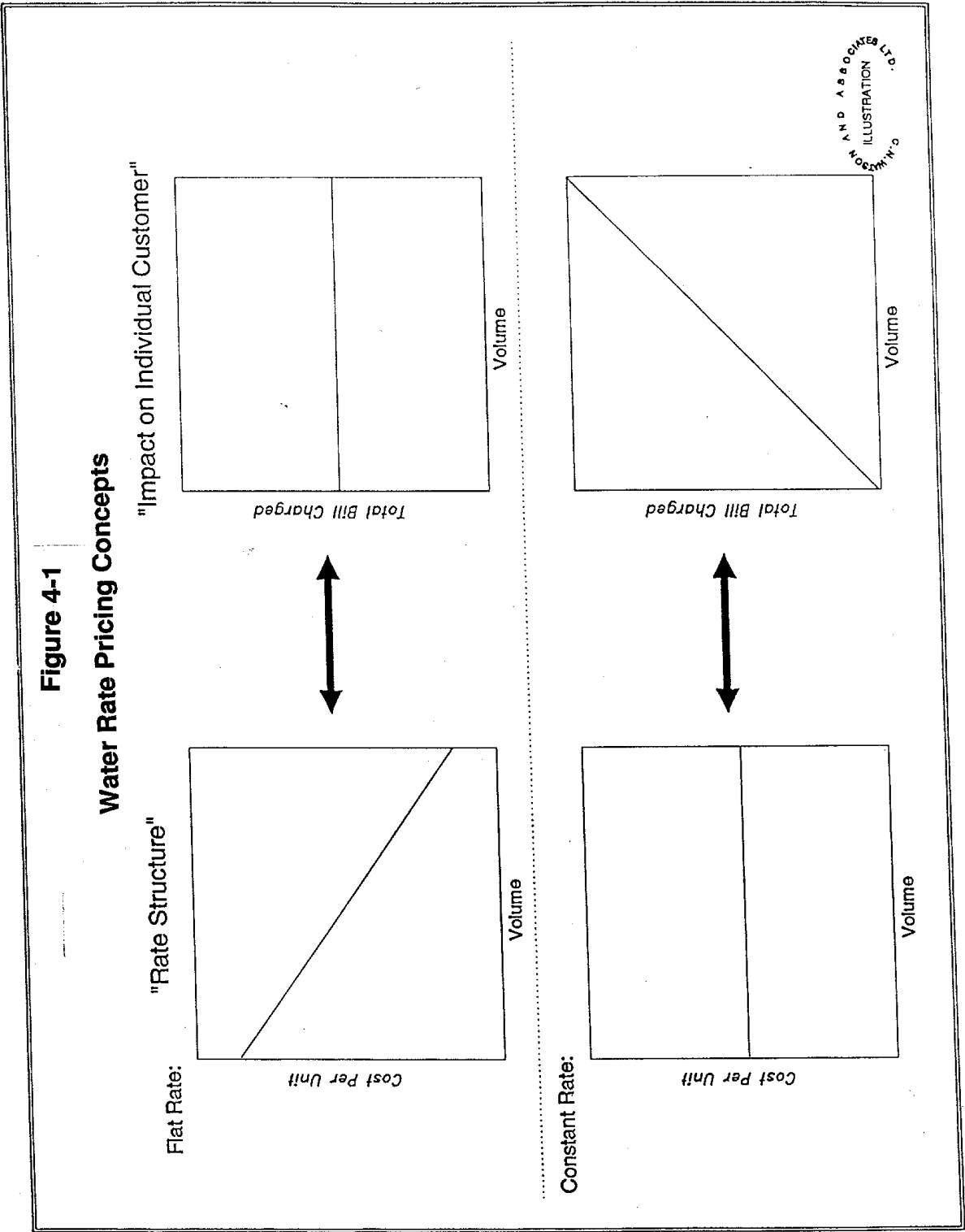


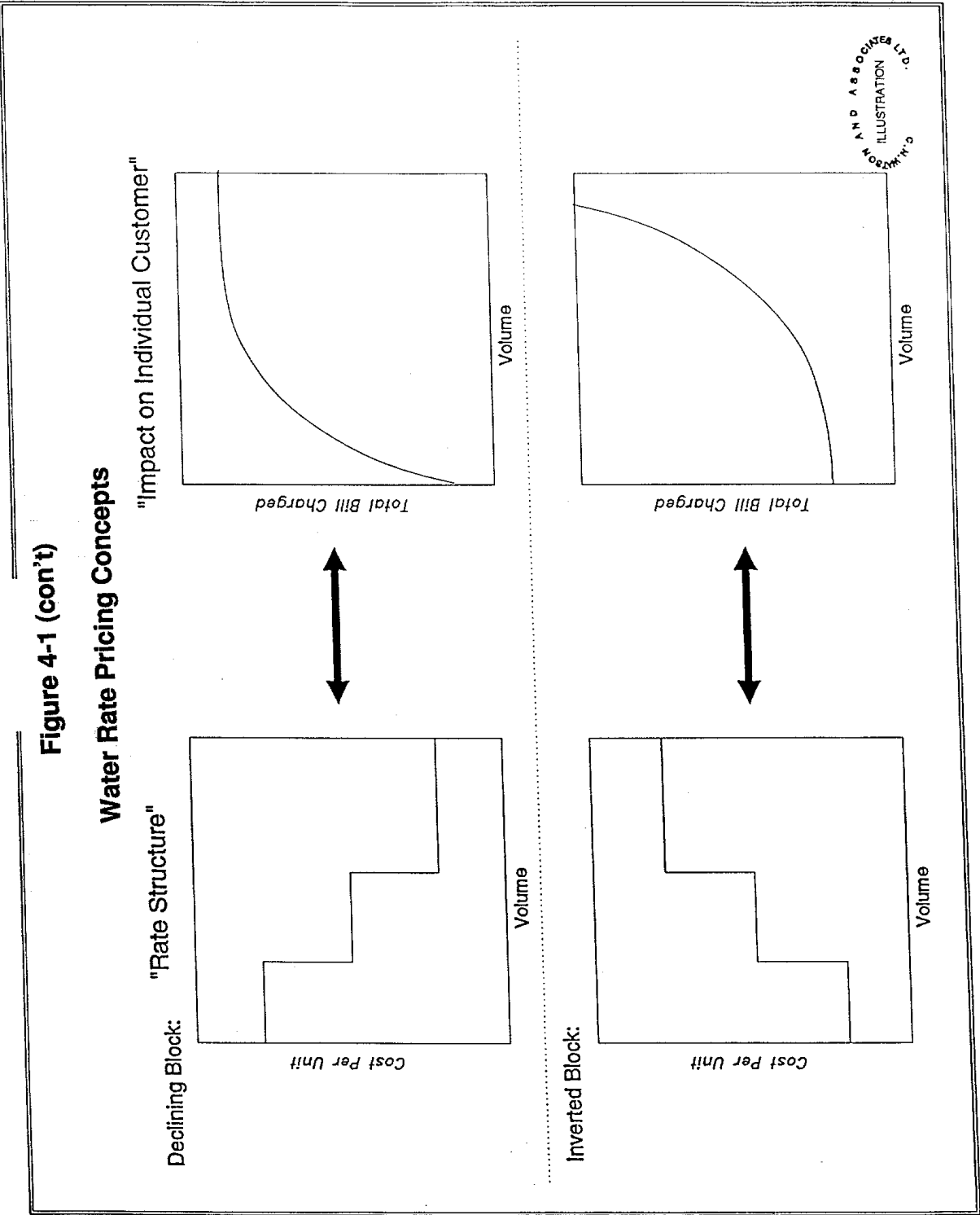
**TABLE 4-4**  
**Annual Residential Water Bill**  
**Based on 227 Cubic Metres Consumption (50,000 Gallons)**  
**(2000 / 2001 Rates)**

| <b>Municipal<br/>Ranking</b> | <b>Municipality</b>                      | <b>Water<br/>Charges</b> |
|------------------------------|--|--------------------------|
| 1                            | Region Haldimand/Norfolk (former)        | 312                      |
| 2                            | City of St. Thomas                       | 290                      |
| 3                            | City of Sudbury                          | 280                      |
| 4                            | City of Toronto (Toronto Community)      | 257                      |
| 5                            | Town of Leamington                       | 253                      |
| 6                            | City of London                           | 238                      |
| 7                            | City of Welland                          | 231                      |
| 8                            | City of Cornwall                         | 214                      |
| 9                            | City of Kitchener                        | 205                      |
| 10                           | City of Brantford                        | 194                      |
| 11                           | Town of Grimsby                          | 192                      |
| 12                           | Town of Goderich                         | 191                      |
| 13                           | Town of Whitchurch-Stouffville           | 191                      |
| 14                           | City of Sarnia                           | 188                      |
| 15                           | City of Cambridge                        | 180                      |
| 16                           | City of Windsor                          | 178                      |
| 17                           | City of Kingston                         | 172                      |
| 18                           | Region of Durham                         | 168                      |
| 19                           | Town of Tecumseh                         | 159                      |
| 20                           | City of Chatham-Kent (Chatham Community) | 156                      |
| 21                           | Town of Ingersoll                        | 150                      |
| 22                           | City of St. Catharines                   | 149                      |
| 23                           | Region of Halton                         | 149                      |
| 24                           | City of Stratford                        | 147                      |
| 25                           | Town of Aurora                           | 146                      |
| 26                           | Town of Markham                          | 144                      |
| 27                           | City of Hamilton                         | 139                      |
| 28                           | City of Woodstock                        | 127                      |
| 29                           | City of Ottawa (Ottawa Community)        | 124                      |
| 30                           | Region of Peel                           | 90                       |
| 31                           | City of Guelph                           | 89                       |

**TABLE 4-5**  
**Annual Residential Water Bill**  
**Based on 455 Cubic Metres Consumption (100,000 Gallons)**  
**(2000 / 2001 Rates)**

| <b>Municipal<br/>Ranking</b> | <b>Municipality</b>                      | <b>Water<br/>Charges</b> |
|------------------------------|--|--------------------------|
| 1                            | Region Haldimand/Norfolk (former)        | 539                      |
| 2                            | City of Toronto (Toronto Community)      | 514                      |
| 3                            | City of London                           | 490                      |
| 4                            | City of Sudbury                          | 456                      |
| 5                            | City of Kitchener                        | 412                      |
| 6                            | City of St. Thomas                       | 406                      |
| 7                            | City of Welland                          | 347                      |
| 8                            | Town of Leamington                       | 344                      |
| 9                            | Town of Whitchurch-Stouffville           | 329                      |
| 10                           | City of Cambridge                        | 315                      |
| 11                           | City of Sarnia                           | 308                      |
| 12                           | City of Brantford                        | 301                      |
| 13                           | Town of Grimsby                          | 295                      |
| 14                           | Town of Aurora                           | 293                      |
| 15                           | Town of Markham                          | 289                      |
| 16                           | City of St. Catharines                   | 277                      |
| 17                           | City of Chatham-Kent (Chatham Community) | 273                      |
| 18                           | City of Hamilton                         | 265                      |
| 19                           | City of Kingston                         | 263                      |
| 20                           | Region of Durham                         | 258                      |
| 21                           | Region of Halton                         | 249                      |
| 22                           | City of Ottawa (Ottawa Community)        | 237                      |
| 23                           | City of Windsor                          | 236                      |
| 24                           | City of Stratford                        | 229                      |
| 25                           | Town of Ingersoll                        | 225                      |
| 26                           | Town of Tecumseh                         | 215                      |
| 27                           | City of Cornwall                         | 214                      |
| 28                           | Town of Goderich                         | 191                      |
| 29                           | Region of Peel                           | 180                      |
| 30                           | City of Guelph                           | 153                      |
| 31                           | City of Woodstock                        | 127                      |





**TABLE 4-6**  
**Annual Residential Water Bill**  
**Based on 60,000 Cubic Metres Consumption (13,200,000 Gallons)**  
**(2000 / 2001 Rates)**

| <b>Municipal Ranking</b> | <b>Municipality</b>                      | <b>Water Charges</b> |
|--------------------------|--|----------------------|
| 1                        | City of Toronto (Toronto Community)      | 67,800               |
| 2                        | City of Kitchener                        | 54,312               |
| 3                        | City of Sudbury                          | 48,316               |
| 4                        | Town of Aurora                           | 38,640               |
| 5                        | Town of Markham                          | 38,148               |
| 6                        | City of Cambridge                        | 37,749               |
| 7                        | City of Hamilton                         | 36,801               |
| 8                        | Town of Whitchurch-Stouffville           | 36,354               |
| 9                        | City of St. Thomas                       | 35,832               |
| 10                       | City of Sarnia                           | 35,621               |
| 11                       | City of Woodstock                        | 35,242               |
| 12                       | City of Ottawa (Ottawa Community)        | 34,884               |
| 13                       | City of Brantford                        | 33,936               |
| 14                       | City of St. Catharines                   | 33,622               |
| 15                       | Region Haldimand/Norfolk (former)        | 32,099               |
| 16                       | City of London                           | 31,155               |
| 17                       | City of Welland                          | 30,732               |
| 18                       | Town of Leamington                       | 29,562               |
| 19                       | Region of Halton                         | 29,267               |
| 20                       | Town of Grimsby                          | 27,090               |
| 21                       | Region of Durham                         | 24,734               |
| 22                       | Region of Peel                           | 23,756               |
| 23                       | Town of Goderich                         | 23,743               |
| 24                       | City of Chatham-Kent (Chatham Community) | 23,210               |
| 25                       | City of Stratford                        | 22,151               |
| 26                       | Town of Ingersoll                        | 21,291               |
| 27                       | City of Windsor                          | 20,895               |
| 28                       | City of Guelph                           | 18,193               |
| 29                       | City of Kingston                         | 17,970               |
| 30                       | Town of Tecumseh                         | 16,657               |
| 31                       | City of Cornwall                         | 15,883               |

Note: Base water charges are based on a 6" metre size

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## **5. LIFE CYCLE COSTING**

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## **5. LIFE CYCLE COSTING**

### **5.1 Overview of Life Cycle Costing**

#### **5.1.1 Definition**

For many years, life cycle costing has been used in the field of maintenance engineering and to evaluate the advantages of using alternative materials in construction or production design. The method has gained wider acceptance and use in the areas of industrial decision-making and the management of physical assets.

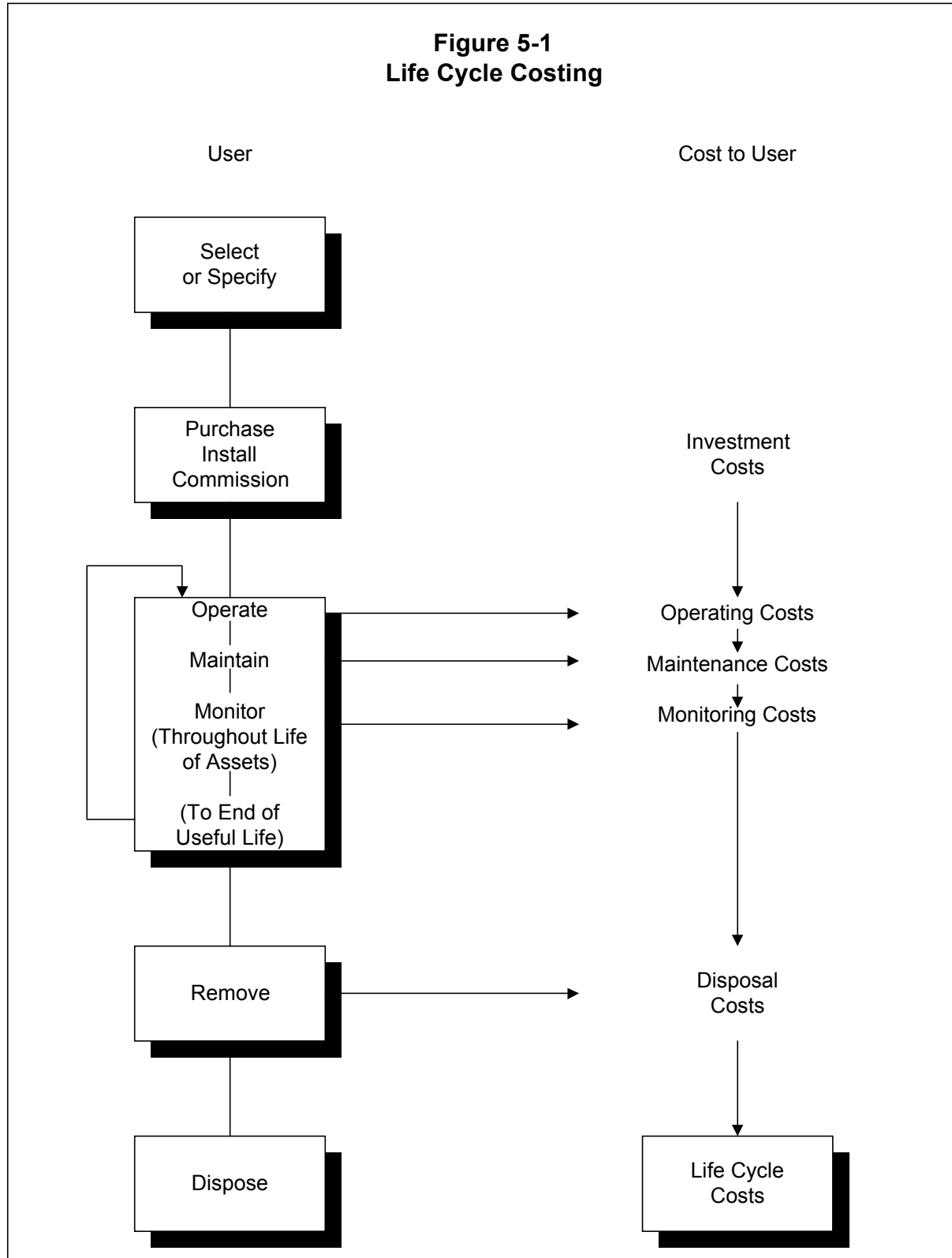
By definition, life cycle costs are all the costs which are incurred during the life cycle of a physical asset, from the time its acquisition is first considered, to the time it is taken out of service for disposal or redeployment. The stages which the asset goes through in its life cycle are specification, design, manufacture (or build), install, commission, operate, maintain and dispose of. Figure 3-1 depicts these stages in a schematic form.

#### **5.1.2 Financing Costs**

This section will focus on financing mechanisms in place to fund the costs incurred throughout the asset's life.

In a municipal context, services are provided to benefit taxpayers. Acquisition of assets is normally timed in relation to direct needs within the community. At times, economies of scale or technical efficiencies will lead to oversizing an asset to accommodate future growth within the municipality. Over the past few decades, new financing techniques such as development charges, have been employed, based on the underlying principle of having tax/rate payers who benefit directly from the service paying for that service. Operating costs which reflect the cost of the service for that year, are charged directly to all existing tax/rate payers who have received the benefit. Operating costs are normally charged through the tax base or user rates.

**Figure 5-1  
Life Cycle Costing**



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As noted in Chapter 3, capital expenditures are recouped through several methods; operating budget contributions, development charges, reserves, developer contributions and debentures, being the most common.

New construction related to growth could produce development charges and developer contributions (e.g. works internal to a subdivision which are the responsibility of the developer to construct) to fund a significant portion of projects, where new assets are being acquired to allow growth within the municipality to continue. As well, debentures could be used to fund such works, with the debt charge carrying costs recouped from taxpayers in the future.

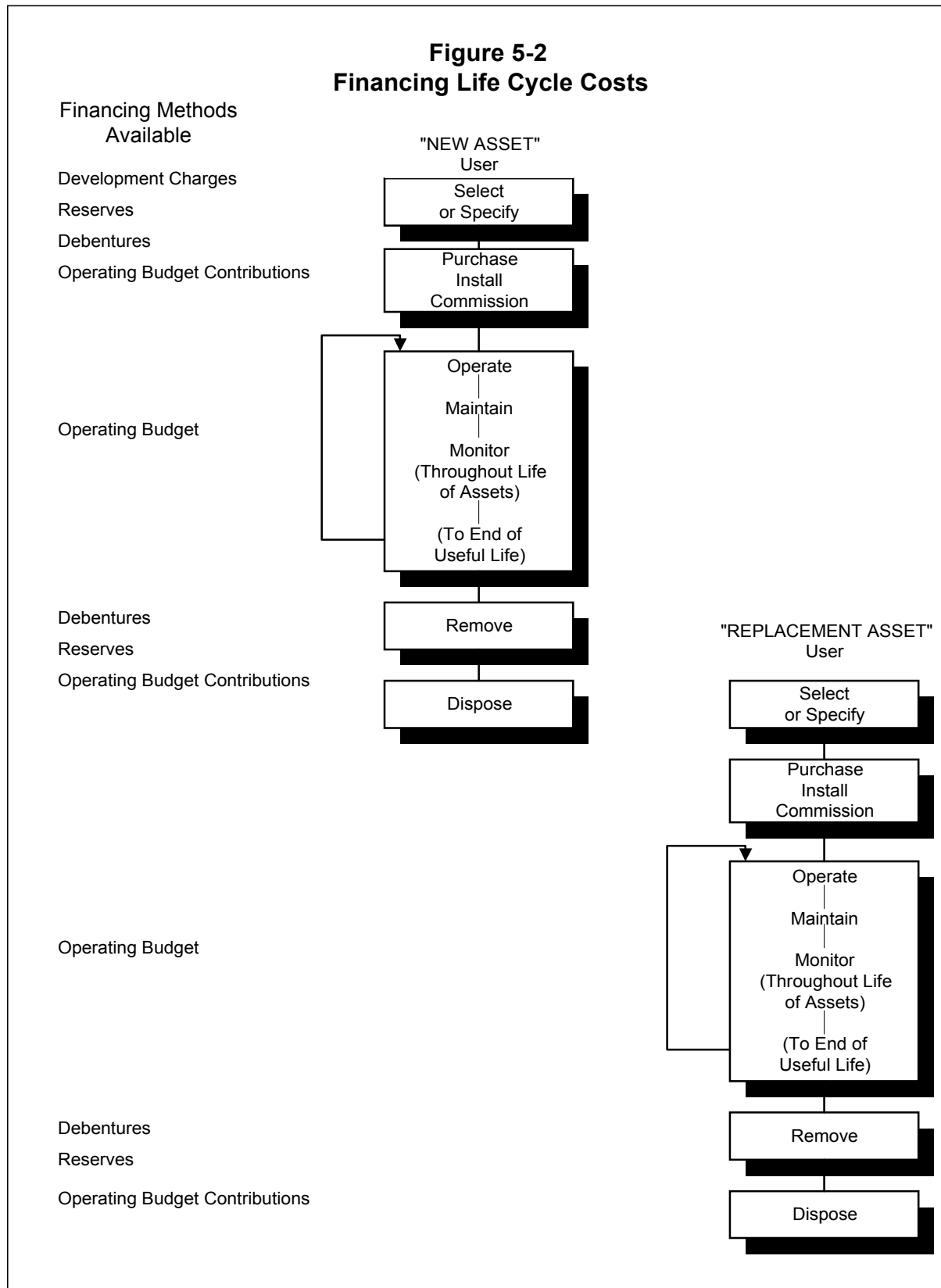
However, capital construction to replace existing infrastructure is largely not growth-related and will therefore not yield development charges or developer contributions to assist in financing these works. Hence, a municipality will be dependent upon debentures, reserves and contribution from the operating budget to fund these works.

Figure 5-2 depicts the costs of an asset from its initial conception through to replacement and then continues to follow the associated costs through to the next replacement.

As referred to earlier, growth-related financing methods such as development charges and developer contributions could be utilized to finance the growth-related component of the new asset. These revenues are collected (indirectly) from the new homeowner who benefits directly from the installation of this asset. Other financing methods may be used as well to finance this project; reserves which have been collected from past tax/rate payers, operating budget contributions which are collected from existing tax/rate payers and debenturing which will be carried by future tax/rate payers. Ongoing costs for monitoring, operating and maintaining the asset will be charged annually to the existing tax/rate payer.

When the asset requires replacement, the sources of financing will be limited to reserves, debentures and contributions from the operating budget. At this point, the question is raised as to "If the cost of replacement is to be assessed against the tax/rate payer who benefits from the replacement of the asset, should the past tax/rate payer pay for this cost or should future rate payers assume this cost?" If the position is taken that the past user has used up the asset, hence he should pay for the cost of replacement, then a charge should be assessed annually, through the life of the asset to have funds available to replace it when the time comes. If the

**Figure 5-2**  
**Financing Life Cycle Costs**



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position is taken that the future tax payer should assume this cost, then debenturing and, possibly, a contribution from the operating budget should be used to fund this work.

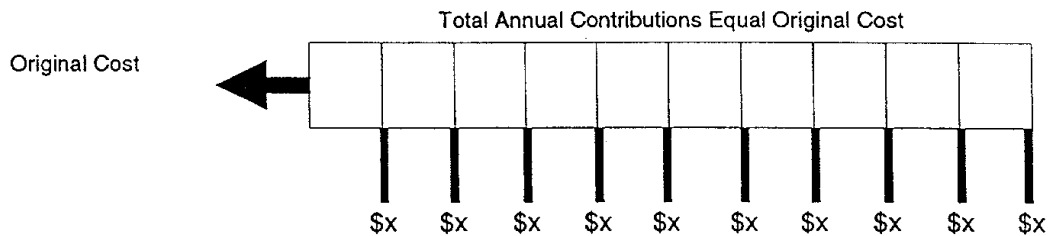
Charging for the cost of using up of an asset is the fundamental concept behind depreciation methods utilized by the private sector. This concept allows for expending the asset as it is used up in the production process. The tracking of these costs forms part of the product's selling price and hence end users are charged for the asset's depreciation. A similar concept can be applied in a municipal setting to charge existing users for the asset's use and set those funds aside in a reserve to finance the cost of replacing the asset in the future. **It should be noted that this one component is the one difference between the private sector and municipalities with respect to “full cost pricing.”** However, as will be discussed later in this chapter, some municipalities address replacement of capital through life cycle reserves and others through a combination of reserves/debt/operating contributions. However, this may not be consistently applied across Ontario municipalities.

### **5.1.3 Costing Methods**

There are two fundamental methods of calculating the cost of the usage of an asset and for the provision of the revenue required when the time comes to retire and replace it. The first method is the Depreciation Method. This method recognizes the reduction in the value of the asset through wear and tear, and aging. There are two commonly used forms of depreciation: the straight line method and the reducing balance method.

The straight line method is calculated by taking the original cost of the asset, subtracting its estimated salvage value (estimated value of the asset at the time it is disposed of) and dividing this by the estimated number of years of useful life. The reducing balance method is calculated by utilizing a fixed percentage rate and this rate is applied annually to the undepreciated balance of the asset value.

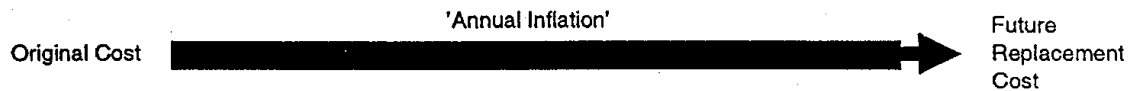
The second method of life cycle costing is the sinking fund method. This method first estimates the future value of the asset at the time of replacement. This is done by inflating the original cost of the asset at an assumed annual inflation rate. A calculation is then performed to determine annual contributions (equal or otherwise) which, when invested, will grow with interest to equal the future replacement cost.

**Figure 5-3****STRAIGHT LINE DEPRECIATION**

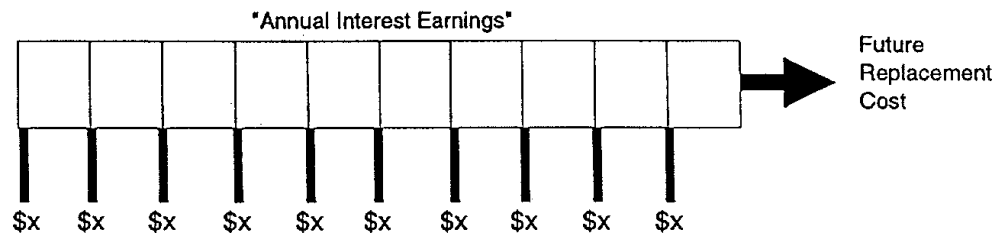
Formula: 
$$\frac{\text{Original Cost} - \text{Salvage Cost}}{\text{Number of Years of Useful Life}}$$

**SINKING FUND METHOD**

1. 'Estimate Future Replacement Cost'



2. 'Estimate Annual Contribution which will Grow with Interest to Equal Future Replacement Cost'



Formula: 
$$\frac{\text{Interest Rate}}{(1 + \text{Interest Rate})^{\text{Term}_1}} \times \text{Original Cost}$$

Note: Interest Rate Used Would be the Investment Rate - Inflation Rate, e.g. 11% - 5% = 6% and is Presented as 0.06.

C.N. WATSON AND ASSOCIATES  
ILLUSTRATION

Both the straight line depreciation method and the sinking fund method are presented in a schematic form on Figure 5-3. The formula for calculating the annual contributions is also presented. This figure demonstrates the fundamental principles behind both methods. The straight line method focuses on the original acquisition of the asset. Each year as the asset is being used, the users contribute toward the original purchase of the asset. The sinking fund method focuses on the replacement of the asset. The original purchase of the asset is accepted as a given level of service. Each year, as the asset is used, a contribution is made toward its replacement at a time when the asset is no longer functional.

Of the two methods presented, the sinking fund method is recommended as it provides for potential investment income to be earned over the period and hence, has a lower impact on rates.

## **5.2 Water Infrastructure Life Cycle**

As discussed in the first Chapter, there is no detailed information available today on the existing condition of water systems in Ontario. The condition of a system in one municipality may be considerably different from another municipality. Reasons for these differences are discussed below.

### **5.2.1 *Average Life of Infrastructure***

Given normal maintenance and care of water systems, materials used for water infrastructure have average useful lives after which their potential for continuing to provide a reasonable service performance diminishes. Listed below are examples of the average life of various components of a water system.

|                               |  |          |
|-------------------------------|--|----------|
| Ground Water Supply           | - Well house                                     | 75 years |
|                               | - Pumps  | 25 years |
|                               | - Well rehabilitation                            | 10 years |
| Surface Water Treatment Plant | - Super Structure (50% of cost)                  | 75 years |
|                               | - Mechanical Pumps and Valves (20% of cost)      | 25 years |
|                               | - Electrical meters, wires, lights (10% of cost) | 10 years |
|                               | - Instrumentation/HUSAC (10% of cost)            | 10 years |

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|       |                                    |          |
|-------|------------------------------------|----------|
|       | - Intake pipes, etc. (10% of cost) | 50 years |
| Mains | - Concrete                         | 80 years |
|       | - PVC                              | 80 years |
|       | - Cast iron                        | 50 years |
|       | - Duct Tile Iron                   | 50 years |
|       | - Steel                            | 50 years |

It is noted that the average life figures listed above can be variable based upon materials used, construction quality, maintenance, etc., and have been provided based upon discussions with various engineers.

### **5.2.2 Age of System**

Municipalities in Ontario have grown and urbanized at different times throughout the past century. Older municipalities such as Toronto, Kingston, London, Windsor have watermains dating back to the early 1900s. Their systems were constructed at different intervals over time and, depending upon when growth periods were experienced, will have varying age systems. Many Ontario municipalities urbanized during or since the 1960's and 1970's. During this period, the Province of Ontario made municipal water systems a priority and provided long term loans and grants and constructed numerous plants operated by the MOE (subsequently by OCWA). Hence, the age of the municipal systems will vary dramatically across the province.

As well, in conjunction with the timing of when municipal servicing was put in place, different materials were used in construction of watermains. During the 1960's and 1970's, materials such as cast iron and duct tile iron were used. As noted in the prior section, these materials may have a shorter useful life. Many of these materials will be requiring replacement over the next two decades.

### **5.2.3 Changing Legislation**

Over time, Provincial standards for water quality, operational procedures, etc., will change. As these changes are implemented and depending upon the rules regarding immediate or longer terms to conform to these standards, the systems may or may not conform to present day standards. These matters are particularly applicable in the areas of water treatment.

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#### **5.2.4 Other Factors**

Other matters will also affect the state of the municipal water system. For example, the extent of ongoing maintenance of the storage, treatment or distribution systems will affect the performance and useful life of the infrastructure. As well, other factors such as soil conditions can also affect the useful life of these systems.

### **5.3 Approach to Addressing Infrastructure Replacement and Upgrade**

The approach used by various municipalities in addressing life cycle costs varies across the Province. Twenty years ago, when most systems were relatively young, not many municipalities provided for much of their rate budgets for the purpose of infrastructure replacement. As the systems have aged, this cost component has emerged as a higher priority budget item. Listed below are a number of examples of how municipalities are addressing lifecycle costs for their systems.

Aurora – In 1989, with the inventory work being undertaken with WIMS, the municipality addressed the issue of long term system renewal and replacement. At that time the municipality was fully responsible for all supply, treatment, storage and distribution. The municipality undertook to implement life cycle reserves (based on the sinking fund method) and provides annual an amount which is set aside in reserves for long term infrastructure replacement. The Town updates this valuation approximately every 5 years. Today, their full life cycle replacement of water and sewer services are funded through this system. Life cycle costs represents 10% of their rates.

Chatham-Kent – The new municipality amalgamated as of January 1, 1998. The former 22 municipalities were consolidated into one municipality with responsibility for water being provided to the PUC. The PUC has undergone an extensive masterplanning process to identify existing improvements, extension of servicing to existing residents experiencing problems with private systems and planning for growth. Major improvements to the plants and trunk mains will be financed over the next ten years using a combination of user rates and debt. For more local mains, the PUC, as part of its rate study process, is considering phasing in life cycle reserve contributions (sinking fund method) over the next five years. All of this is being undertaken in

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conjunction with the standardization of the rate pricing structure. Life cycle costs will represent about 12% of their rates once fully implemented.

St. Thomas – St. Thomas is presently finalizing a new rate study and, as part of this process, a detailed review of the condition and replacement needs of their entire water system. The City has developed a 20 year capital replacement plan and will be financing these costs by a combination of operating contributions, reserves and debt. This financing plan will equate to 30% of their rates. As part of this overall plan, a longer term, full asset replacement needs assessment was also undertaken. Within the policies established for financing the next 10 years, sufficient financing mechanisms should be in place to provide future full replacement of assets, when required.

Lincoln – The Town is presently undertaking a water rate study. As part of that study, they are reviewing life cycle replacement of their water system. Their system is relatively young dating back to only 1969. Upon implementation of a life cycle reserve (sinking fund), this cost will equate approximately 9% of their rates and should be implemented with a phase-in policy over the next 5 years.

Halton Region – The Region has valued their water and waste water infrastructure at about \$2.7 billion. The Region uses a 10 year capital and operating budget forecast period; however, recently they have extended this to 16 years (to conform to their OP forecast period). The Region's plan identified an annual asset replacement budget of \$40-50 million. For 2001, they are financing approximately \$30 million through the use of debt, transfers from the operating budget and reserves. It is anticipated that this amount will be increased over the period as annual budgets are approved.

Based upon the above, there are a number of examples where municipalities have adopted very long term infrastructure replacement programs in concert with their rate structures.



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## **6. OVERVIEW OF VARIOUS TYPES OF WATER SUPPLY SYSTEMS IN ONTARIO**

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## 6. OVERVIEW OF VARIOUS TYPES OF WATER SUPPLY SYSTEMS IN ONTARIO

A study was undertaken in 1997 by C.N. Watson and Associates Ltd. on behalf of the Ontario Ground Water Association. The purpose of the study was to review the cost of water supplied by different methods. The different systems considered are summarized as follows:

Ground Water System #1 – smaller municipality with over 10 wells

Ground Water System #2 – serves many communities and has larger number of wells

Surface Water System #1 and #2 – Lake-based water treatment plants

Surface water System #3 – River-based system

Big Pipe System #1 – Lake-based water treatment servicing over 10 communities with a transmission distance in excess of 30 km.

The focus of this study was to consider the cost of water production only and did not address the municipalities' distribution and storage systems. However, for the purpose of reviewing the "Big Pipe" option, the cost of the infrastructure required to move water to the border of the community was considered. Observations and analysis from that study are provided herein.

For municipal water systems, comparing consumer water bills is not an accurate basis for determining whether one system of water production is less expensive than another. For example, Whitchurch-Stouffville charges its residential customers approximately \$100 per year for water whereas East Gwillimbury charged up to \$300 a year for similar water consumption levels, yet both municipalities were on well-based systems and are part of the same Regional municipality. Many factors impact on the cost of water paid by consumers including geographical considerations, density of land use, type of water supply, age of distribution system, maintenance management practices, loss due to leakage and rate-setting practices.

In undertaking this assessment, it was determined that samplings of different-sized systems be considered to establish potential ranges within the individual forms of supply. These systems were summarized above.

Operating costs were summarized into 5 components; personnel (including benefits), chemicals, utilities, maintenance and other materials and services. The range of operating costs for each of the systems is presented below:

| SUPPLY SOURCE | SYSTEM #  | COST PER m <sup>3</sup> |
|---------------|-----------|-------------------------|
| Groundwater   | System #1 | 8.9¢ - 10.7¢            |
|               | System #2 | 6.2¢ - 7.0¢             |
| Surface water | System #1 | 7.0¢ - 7.8¢             |
|               | System #2 | 7.4¢ - 8.1¢             |
|               | System #3 | 22.1¢ - 24.9¢           |
| Big Pipe      | System #1 | 8.9¢ - 10.5¢            |

It was observed that each of the systems were performing at less than their optimum capacity, hence, the comparison provided in the above table requires adjustment to present each system cost at its optimum efficiency. For example, the surface water #3 system was running at 30% of its rated capacity; hence, fixed operating costs represent a high proportion of the cost per m<sup>3</sup>. To adjust for this, the costs were adjusted to reflect the operating costs associated with its maximum annual or firm capacity. For the purposes of the analysis, the firm capacity was defined as 85% of rated capacity. It was also assumed that chemicals and utility costs were completely variable, and that personnel, maintenance and other materials and services were fixed costs. The results are summarized as follows:

| SUPPLY SOURCE | SYSTEM #  | COST PER m <sup>3</sup><br>AT FIRM CAPACITY |
|---------------|-----------|---|
| Groundwater   | System #1 | 6.9¢ - 7.8¢                                 |
|               | System #2 | 5.7¢ - 6.3¢                                 |
| Surface water | System #1 | 5.3¢ - 5.5¢                                 |
|               | System #2 | 6.0¢ - 6.5¢                                 |
|               | System #3 | 11.3¢ - 15.4¢                               |
| Big Pipe      | System #1 | 7.7¢ - 8.8¢                                 |

From an operating cost perspective, it was observed that operating costs were generally similar between groundwater and (lake based) surface water systems. At lower volumes the groundwater appeared to produce a slightly overall lower cost where surface water appears slightly lower at firm capacity levels. Both the river based system and the Big Pipe system had higher costs, the former caused primarily by higher chemical costs and the latter by higher utility costs.

The estimated capital costs for each of the systems were as follows:

| SYSTEM TYPE             | CAPITAL COST<br>\$ | MIGD | COST/MIGD |
|-------------------------|--------------------|------|-----------|
| Groundwater System #1   | 12,600,000         | 11.6 | 1,170,000 |
| Groundwater System #2   | 62,500,000         | 41   | 1,524,400 |
| Surface water System #1 | 63,000,000         | 36   | 1,750,000 |
| Surface water System #2 | 42,000,000         | 24   | 1,750,000 |
| Surface water System #3 | 100,000,000        | 16   | 6,250,000 |
| Big Pipe System #1      | 105,000,000        | 72   | 1,458,300 |

The allocation of the capital cost against the volume of water produced is less precise than the estimate and allocation of operating costs against water volumes. This results from a number of factors:

- lump sum capital payment versus future volumes produced
- under-utilized volume capacity
- interest cost on borrowing
- lifecycle costs of component parts of the system, requiring replacement
- etc.

To equalize the capital costs on the rates, standardized calculations were made. Two approaches to allocating the capital costs were utilized, those being the capital financing perspective and the lifecycle cost perspective. Under both methods, the groundwater system was less expensive. From the capital financing perspective, the groundwater system was 24%

less expensive (50% less expensive if considered on a present value basis). From a lifecycle cost perspective, groundwater is 50% less expensive than surface water.

From a combined capital and operating perspective, it was concluded that groundwater was a less expensive source for water supply than surface water. The conclusions from the preceding chapters were based upon a small sample size relative to the number of systems operating in Ontario; however, the opinion of the municipal engineers and engineering consultants were sought relative to their applicability compared to elsewhere in the Province. The numbers presented were deemed in line with other systems elsewhere.

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## **7. PRIVATIZATION OF WATER SERVICE**

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## 7. PRIVATIZATION OF WATER SERVICE

### 7.1 Review of Legislation

In 1993, the Province of Ontario passed Bill 40 which provided expanded powers for municipalities to enter into financial arrangements with private companies. This Bill provided changes to the *Municipal Act* (Section 210.1). Section 210.1 provides Councils of metropolitan, regional and district municipalities the power to enter into agreements for the provision of municipal capital facilities to such municipalities by the private sector, to provide financial or other assistance to persons providing municipal capital facilities and to exempt from taxes land owned by persons providing municipal capital facilities in certain circumstances. The key aspects of the new section 210.1 are summarized below:

- Section 210.1(2) provides that the Council of a municipality may enter into agreements for the provision of municipal capital facilities by any person.
- Section 210.1(3) provides that such agreements may allow for the lease, operation or maintenance of such facilities by any person and will permit that sale or other disposition of municipal land or buildings that are still required for the use by the municipality.
- Section 210.1(4) allows municipalities to extend Section 210.1(4) allows municipalities to extend financial or other assistance at less than fair market value or at no cost to persons with whom the municipality has contracted for the provision of capital facilities. This assistance may include: (1) the lending of money; (2) lending, leasing or selling of property; (3) guaranteeing borrowing; or (4) providing the services of municipal employees. Section 210.1(5) provides that any assistance provided by the municipality must be solely in respect of the provision, lease, operation or maintenance of the facilities that are subject of the agreement.
- Section 210.1(7) allows municipalities, in certain circumstances, to grant property tax exemptions to private sector entities in respect of municipal capital facilities provided to the municipality by such entities.
- Section 210.1(8) provides that by-laws passed under section 210.1(7) may also provide a full or partial exemption from the facilities from payments required under the *Development Charges Act*.

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In most instances, no approval by the Ontario Municipal Board or Ministry of Municipal Affairs is required relative to the above. The Province will, however, retain a degree of supervisory contact through its power under 210.1(19) to make regulations defining "municipal capital facilities" and prescribing the municipal capital facilities or clauses which may or may not be eligible for inclusion of an agreement under 210.1(2).

Ontario Regulation 46/94 was filed February 11, 1994, which provided the first regulations for the new Act. With respect to agreements established under s.210.1(2) of the *Municipal Act*, a municipality may provide for the following classes of municipal capital facilities:

- Facilities used by the council.
- Facilities used for the general administration of the municipality.
- Municipal roads, highways and bridges.
- Municipal local improvements and public utilities, except facilities for the generation of electricity.
- Municipal facilities related to the provision of telecommunications, transit and transportation systems.
- Municipal facilities for water, sewers, sewage, drainage and flood control.
- Municipal facilities for the collection and management of waste and garbage.
- Municipal facilities relating to policing, firefighting and by-law enforcement.
- Municipal facilities for the protection, regulation and control of animals.
- Municipal facilities related to the provision of social and health services, including homes under the *Homes for the Aged and Rest Homes Act*.
- Municipal facilities for public libraries.
- Municipal facilities that combine the facilities described in the above.
- Municipal community centres.
- Parking facilities ancillary to facilities described in any of the above.
- Municipal facilities used for cultural, recreational or tourist purposes including municipal general parking facilities and ancillary parking facilities.



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## 7.2 Forms of Public Private Partnerships

Section 210.1 of the *Municipal Act* provides a broad range of arrangements for municipalities to enter into. They range from a fully public service to fully private service. There are numerous forms of arrangements which could be contemplated.

Table 7-1 provides nine of the more common forms of arrangements. Some of the arrangements are of an operating nature, while others provide for construction and/or financing of capital facilities or for a full operation of the service. Considerations of what form of arrangements provides the best arrangement for a particular municipality, will be subject to review of various policy and financial/economic factors. These are discussed in the next section.

**TABLE 7-1**  
**SUMMARY OF PUBLIC/PRIVATE FINANCING TECHNIQUES**

| FORM OF ARRANGEMENT                   | DESCRIPTION  | ASSET OWNERSHIP   | COMMENTARY  |
|---------------------------------------|--|---|---|
| 1. Operation and Maintenance Contract | <ul style="list-style-type: none"> <li>private contractor operates publicly-owned facility</li> </ul>  | <ul style="list-style-type: none"> <li>municipality</li> </ul>  | <ul style="list-style-type: none"> <li>many municipalities use this basis for garbage collection or snow clearing</li> </ul>  |
| 2. Super-Turnkey Development          | <ul style="list-style-type: none"> <li>public contractor designs and constructs facility</li> <li>municipality pays for facility upon completion</li> <li>private contractor operates</li> </ul>   | <ul style="list-style-type: none"> <li>municipality</li> </ul>  | <ul style="list-style-type: none"> <li>this form of contract being used by municipalities (e.g. recycling)</li> </ul>   |
| 3. Wrap Around Agreement              | <ul style="list-style-type: none"> <li>private developer finances and constructs addition to existing municipal facility</li> <li>private sector operates entire facility</li> <li>capital recovery through user fee revenue</li> </ul>  | <ul style="list-style-type: none"> <li>municipality</li> </ul>  | <ul style="list-style-type: none"> <li>this form of contract may be used by municipalities (e.g. recycling)</li> </ul>  |
| 4. Lease - Develop - Operate          | <ul style="list-style-type: none"> <li>private developer given long term lease to operate and expand facility</li> <li>at end of period, facility reverts to municipal ownership</li> </ul>  | <ul style="list-style-type: none"> <li>municipality (but right of use given up by municipality during life of agreement)</li> </ul> | <ul style="list-style-type: none"> <li>some municipalities have undertaken this type of arrangement with community groups</li> </ul>  |
| 5. Temporary Privatization            | <ul style="list-style-type: none"> <li>existing public facility transferred to private company who expands (or upgrades) facility and operates the facility</li> <li>at some point in the future (after recovery of capital and return on investment) title transferred back to municipality (possibly at some specified value)</li> </ul> | <ul style="list-style-type: none"> <li>private developer (until facility is acquired at end of the period)</li> </ul>               | <ul style="list-style-type: none"> <li>facility may be sold at fair market value</li> <li>at present, debt capacity guidelines may restrict some municipalities' abilities</li> </ul> |
| 6. Buy - Build - Operate              | <ul style="list-style-type: none"> <li>existing public facility purchased by private developer who renovates or expands the facility</li> <li>ownership and operation remains with developer in perpetuity</li> </ul>  | <ul style="list-style-type: none"> <li>private developer</li> </ul>   | <ul style="list-style-type: none"> <li>facility may be sold at fair market value</li> <li>at present, debt capacity guidelines may restrict some municipalities' abilities</li> </ul> |
| 7. Build - Transfer - Operate         | <ul style="list-style-type: none"> <li>private developer finances and builds facility</li> <li>upon completion, transfer the facility back to municipality, then leases back the facility on a long-term lease</li> <li>developer operates and recovers investment user fees and commercial enterprises</li> </ul>                         | <ul style="list-style-type: none"> <li>municipality</li> </ul>  | <ul style="list-style-type: none"> <li>at present, debt capacity guidelines may restrict some municipalities' abilities</li> </ul>  |
| 8. Build - Operate - Transfer         | <ul style="list-style-type: none"> <li>private developer receives a franchise to build and collect user fees on a facility for a specified time period</li> <li>at the end of the period the facility transfers back to the municipality</li> </ul>  | <ul style="list-style-type: none"> <li>private developer (until facility is acquired at end of the period)</li> </ul>               | <ul style="list-style-type: none"> <li>at present, debt capacity guidelines may restrict some municipalities' abilities</li> </ul>  |
| 9. Build - Own - Operate              | <ul style="list-style-type: none"> <li>private developer finances, owns, and operates facility in perpetuity</li> </ul>  | <ul style="list-style-type: none"> <li>private developer</li> </ul>   | <ul style="list-style-type: none"> <li>at present, debt capacity guidelines may restrict some municipalities' abilities</li> </ul>  |

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### **7.3 Review of Goals and Objectives of Private/Public Partnerships**

The goals and objectives of a municipality in evaluating an arrangement with private providers will vary depending upon the political or bureaucratic perspectives within the municipality. For example, the Chief Financial Officer (e.g. Treasurer) of a municipality will be most concerned about maximizing service levels while minimizing the net financial impact onto taxes or rates. Alternatively, the Municipal Engineer will be most concerned about the quality of the service and minimizing risk and liability in carrying out the service.

In considering a private sector arrangement, a number of goals or objectives will be measured during the review of an agreement. These goals may vary between the political and bureaucratic sides of the corporation, as follows:

#### **Political Goals and Objectives**

- Minimize environment impact
- Maximize economic benefit
- Job creation
- Community impact and benefits
- Maximize service level provided
- Public control of the arrangement

#### **Bureaucratic Goals and Objectives**

- Cost/benefit of the agreement
- Public cost of construction
- Control of scheduling
- Ability to adjust service with changing Federal/Provincial regulations and standards
- Probability and impact of default
- Liability arising from the agreement
- Terms of the agreement

Based upon the goals and objectives identified above, there may be distinct advantages and disadvantages to an agreement which the municipality will consider, as follows:

#### **Possible Advantages to Municipality**

- Lower labour costs
- Lower material/service costs

- 
- Access to technology and knowledge
  - Cost efficiencies arising from different management skills or resulting from being consolidated as part of the larger operation
  - Flexibility in making operational changes
  - Sharing of risk
  - Access to larger financial market and ability to spread costs over life of asset
  - Less municipal administration
  - Access to grants and subsidies targeted towards private sector.

#### Possible Disadvantages

- Assumption of capital assets and corresponding depreciation of those assets may increase the annual operating cost significantly
- Profit margin for private operator must be added to cost
- Council loss of input into service levels during life of contract
- Less control in managing risk
- Longer term for financing capital may result in higher interest rates and higher total cost of capital
- Type of agreement entered into may impact on debt capacity more than traditional methods
- Potential environmental risks.

The weighting assignment to any of the above factors will vary based upon the service provided, the form of agreement being considered and the municipality considering the agreement.

## **7.4 Financial Consideration**

### **7.4.1 Overview**

As noted in the previous section, there are various factors to be considered in the development of a privatization agreement. The following analysis will address only the financial competitiveness aspects of the arrangements, as only one factor of several to be considered.

This review will consider the operating aspects of the water service along with the capital aspects. It should be clear that water service involves not only the supply and treatment of water, but storage, distribution and administration (including metering and billing). Hence, this review will consider the details of the system, and address areas where the private or public sector may have abilities to provide components of the service at a less expensive cost.

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#### **7.4.2 Analysis of Capital Costs of a Water System**

From a capital financing perspective, municipalities have traditionally funded their net capital financing requirements through the debenture markets. Prior to the 1980's, municipalities often funded major capital facilities over a 15-20 year term. With the high interest rate costs experienced during the 1980's, most municipalities restricted the term of their debt to 10 years or less. This change in terms was due to a concerted effort to minimize the overall cost of capital and was due in part to the reduction in the number of investors wishing to invest for a term longer than 10 years.

Most municipalities issue serial bonds (annual retirement of debt equal to the principal retired in a long term blended payment loan). Municipalities also have the power to issue "bullet" bonds in which all principal is retired in a lump sum at the end of the period. Annual costs to the end of the period would only be for the annual interest payments to bond holders. Municipalities may also issue sinking fund debentures which, to the investor, is similar to a "bullet" issue. The municipality annually contributes an amount into a sinking fund reserve which will be invested and will compound to equal the amount of principal to be retired at the end of the period.

With respect to the credit worthiness of municipalities in Ontario, almost all Regional municipalities have AAA ratings from the Bond Rating Agencies. Currently, this provides a better credit rating than the Province of Ontario. This superior credit rating allows Regional municipalities to borrow at interest rates equal to the Province or, at times, lower rates of interest. Most other municipalities in Ontario have lower credit ratings than Regional municipalities which has meant, in the past, that these municipalities borrow at rates higher than the Province.

With respect to Private Sector financing various forms of financial arrangements may be available. These forms can range from total debt financing to total equity financing or some combination thereof. The final form of the arrangement, to a great extent, is dependent upon the provider of capital. Often in facility financing, a combined debt/equity arrangement would be made. Low risk investments would often require a lower debt component whereas higher risk investments often require a higher debt component. This relationship is a function of investors willingness to purchase shares in the capital venture. As there are less investors willing to invest in high risk ventures, the shortfall in share equity is offset by debt financing.

With respect to the rate of interest, often debt financed forms of arrangements provide a higher rate of interest than what municipalities may borrow at (possibly 1-2% above municipal borrowing rates). With respect to return on investment for equity financing a (pre-tax) rate of approximately 6-8% above the municipal borrowing rate would often be required.

The advantage of private sector arrangements to a municipality would be the ability to spread the capital repayment over a longer period of time (i.e. the life of the asset). As well, if short term cash flow restriction are faced by municipalities, private sector financing arrangements may provide for the interest and principal payments to be delayed in the early years and recovered at a later period.

As noted in Chapter 3, municipalities have legislation which allows them to recover the cost of new capital through section 221 of the *Municipal Act* or the *Development Charges Act*. These Acts provide municipalities with the ability to impose user fees directly on those benefiting landowners to directly recover the cost of the capital infrastructure. Hence, these costs do not affect the water rates as they are funded from another source. The private sector may use similar forms of charges to pay for capital; however, tax legislation may restrict their ability to capitalize the asset. Hence, there may be reluctance to recover the costs directly from landowners and thus, these costs would be reflected in the water rates.

#### **7.4.3 Analysis of Operating Costs of a Water System**

A review of two municipalities was undertaken to establish a range of the amount of expenditures made on water service provision. A large and medium-size municipality were selected as follows:

|                           | Municipality  |  |
|---------------------------|---|--|
|                           | Halton Region   | St. Thomas   |
| Service Population (est.) | 366,000   | 34,000   |
| Service Area              | <ul style="list-style-type: none"> <li>• Burlington</li> <li>• Oakville</li> <li>• Milton</li> <li>• Halton Hills</li> </ul>  | <ul style="list-style-type: none"> <li>• St. Thomas</li> <li>• portion of Central Elgin</li> </ul>   |
| Services Provided         | <ul style="list-style-type: none"> <li>• Supply</li> <li>• Treatment</li> <li>• Storage</li> <li>• Distribution</li> <li>• Administration*</li> <li>• Billing/Collection</li> </ul> | <ul style="list-style-type: none"> <li>• Supply and treatment of water purchased from Elgin Primary Water System</li> <li>• Storage</li> <li>• Distribution</li> <li>• Administration</li> <li>• Billing/Collection</li> </ul> |
| Water Supply Type         | <ul style="list-style-type: none"> <li>• Predominately surface water from Lake Ontario</li> <li>• Halton Hills and portions of Milton on wells</li> </ul>                           | <ul style="list-style-type: none"> <li>• Surface water from Lake Erie ("Big Pipe" Supply System)</li> </ul>  |

\*Administration includes subdivision servicing review, design, capital project management, etc.

Details of the operating expenditures are provided in Tables 7-2 and 7-3. Operating expenditures have been summarized into five sub-categories: Treatment, Distribution, Administration, Billings/Collection and Capital Related. These expenditures have been further broken down into six components: Personnel, Chemicals, Utilities, Services/Overhead, Maintenance and Capital/Debt/Reserves. The following table summarizes the percentage breakdown of these expenditure components.

**% Breakdown of Operating Expenditures**

| Expenditure Component | Halton Region | St. Thomas |
|-----------------------|---------------|------------|
| Personnel             | 19.6%         | 20.2%      |
| Chemicals             | 1.0%          | 2.5%       |
| Utilities             | 6.8%          | 6.4%       |
| Services and Overhead | 8.9%          | 10.9%      |
| Maintenance           | 8.1%          | 10.8%      |
| Capital/Debt/Reserves | 55.7%         | 49.2%      |
| Total                 | 100.0%        | 100.0%     |

A commentary on the ability for the private sector to compete, is provided below:

- Personnel – In discussion with municipal staff from the sample municipalities, it was identified that the wage rate for staffing is lower on average than comparable jobs in the private sector. During more buoyant economic times, problems have been experienced in the municipalities' ability to maintain or hire staff because of the lower wage scale. It was also acknowledged though, that benefit packages (e.g. pension, medical, disability, etc.) were higher for municipal staff than the private sector.

There may be opportunities to reduce the number of staff through capital upgrades or changes in operating processes. Potential savings, however, would vary depending upon the municipal system. Municipalities may address these issues by establishing periodic operational reviews, thus providing them with similar processes (if required) as the private sector. The dominant issue within this category is definition of acceptable service quality levels and the corresponding staffing levels to implement those measures.

- Chemicals – Municipalities often competitive bid their tenders for materials on a quantity basis. As well, in recent times, tendering arrangements with other municipalities have been undertaken to take advantage of "bulk quantity" discounts on similar goods. Hence, the private sector may not be able to gain a significant reduction in this area.



- Utilities – Municipalities, as in all hydro users, purchase energy at prevailing rates. Whereas municipalities formerly were GST exempt, recent changes have removed this area of cost advantage. Unless significant charges are made to the treatment process, costs would remain the same for both private and public service providers.
- Services and Overhead – Overhead and service includes items such as taxes, purchased services, supplies, etc., As most items are purchased via a tendering process, limited cost savings would materialize through privatization.
- Maintenance – This category includes purchase of services and maintenance replacement items. Most of these services are purchased via tendering and, hence, limited opportunities for cost savings are available.
- Capital/Debt/Reserves – Municipalities normally address capital needs over a 5-10 year planning horizon through their capital budget process. Costs are either funded immediately through direct contributions from the operating budget to the capital budget or from reserves. If sufficient funds are not available, costs would be debentured over a 10-20 year period and repaid through the operating budget. This process minimizes interest costs and, once the capital asset is paid for, is normally not a significant cost until the need arises for major repair or replacement. Alternatively, the private sector builds the infrastructure which is recorded as an asset on the financial statements. The capital is then depreciated over the life of the asset in somewhat similar annual amounts. Interest financing is normally higher than the municipal rate and may extend for a longer period of time. For Halton Region, whose capital costs are approximately \$21.7 million, depreciation of the asset would be in the range of \$16 million per year based on current costs. In addition to this amount, the financing of the \$1.3 billion in capital assets must also be included. It is anticipated that these costs collectively would cause rates to increase significantly.
- Other Costs – As municipalities are required to operate on a “not for profit basis,” profit margins are not incorporated into the above costs. As well, income taxes are also not paid on their operations. For the private sector, these costs would have to be factored into the analysis. A rate of 10-15% would be considered appropriate for these types of operations.

**Table 7-2**  
**Region of Halton 2001 Operating Budget**

| Expenditure Category                   | Total Expenditure | Total Expenditure | Personnel | Chemicals | Utilities | Services and Overhead | Maintenance | Capital/Debt/Reserves |
|--|-------------------|-------------------|-----------|-----------|-----------|-----------------------|-------------|-----------------------|
| <b><u>Operating</u></b>                |                   |                   |           |           |           |                       |             |                       |
| Treatment<br>(Purchased water)         | 6,338,900         | 16.3%             | 1,386,300 | 373,000   | 2,636,500 | 645,400               | 1,297,700   |                       |
| Distribution System                    | 6,371,200         | 16.4%             | 4,516,766 |           |           |                       | 1,854,435   |                       |
| Administration                         | 2,732,300         | 7.0%              | 1,719,975 |           |           | 1,012,325             |             |                       |
| Billing, Collection &<br>Meter Reading | 1,792,600         | 4.6%              |           |           |           | 1,792,600             |             |                       |
| Sub-total                              | 17,235,000        | 44.3%             | 7,623,041 | 373,000   | 2,636,500 | 3,450,325             | 3,152,135   | 0                     |
| <b><u>Capital Related</u></b>          |                   |                   |           |           |           |                       |             |                       |
| Debt - External                        | 4,910,800         | 12.6%             |           |           |           |                       |             | 4,910,800             |
| Transfer to Capital                    | 12,728,200        | 32.7%             |           |           |           |                       |             | 12,728,200            |
| Transfer to Reserves - Capital         | 62,000            | 0.2%              |           |           |           |                       |             | 62,000                |
| - internal Debt                        | 3,982,000         | 10.2%             |           |           |           |                       |             | 3,982,000             |
| Subtotal                               | 21,683,000        | 55.7%             | 0         | 0         | 0         | 0                     | 0           | 21,683,000            |
|  |                   |                   |           |           |           |                       |             |                       |
| Total                                  | 38,918,000        | 100.0%            | 7,623,041 | 373,000   | 2,636,500 | 3,450,325             | 3,152,135   | 21,683,000            |
| % of Total                             |                   |                   | 19.6%     | 1.0%      | 6.8%      | 8.9%                  | 8.1%        | 55.7%                 |

**Table 7-3**  
**City of St. Thomas 2001 Operating Budget**

| Expenditure Category                   | Total Expenditure | % of Total Expenditure | Personnel | Chemicals | Utilities | Services and Overhead | Maintenance | Capital/Debt/Reserves |
|--|-------------------|------------------------|-----------|-----------|-----------|-----------------------|-------------|-----------------------|
| <b><u>Operating</u></b>                |                   |                        |           |           |           |                       |             |                       |
| Treatment<br>(Purchased water)         | 1,750,000         | 35.2%                  | 252,200   | 123,700   | 319,000   | 194,300               | 83,100      | 777,700               |
| Secondary System                       | 120,600           | 2.4%                   |           |           |           | 77,300                |             | 43,300                |
| Distribution System                    | 929,100           | 18.7%                  | 473,800   |           |           |                       | 455,300     |                       |
| Administration                         | 162,300           | 3.3%                   | 82,800    |           |           | 79,500                |             |                       |
| Billing, Collection &<br>Meter Reading | 385,000           | 7.7%                   | 196,400   |           |           | 188,600               |             |                       |
| Sub-total                              | 3,347,000         | 67.4%                  | 1,005,200 | 123,700   | 319,000   | 539,700               | 538,400     | 821,000               |
| <b><u>Capital Related</u></b>          |                   |                        |           |           |           |                       |             |                       |
| Debt                                   | 240,000           | 4.8%                   |           |           |           |                       |             | 240,000               |
| Transfer to Capital                    | 1,291,100         | 26.0%                  |           |           |           |                       |             | 1,291,100             |
| Tansfer to Reserves                    | 90,400            | 1.8%                   |           |           |           |                       |             | 90,400                |
| Subtotal                               | 1,621,500         | 32.6%                  | 0         | 0         | 0         | 0                     | 0           | 1,621,500             |
|  |                   |                        |           |           |           |                       |             |                       |
| Total                                  | 4,968,500         | 100.0%                 | 1,005,200 | 123,700   | 319,000   | 539,700               | 538,400     | 2,442,500             |
| % of Total                             |                   |                        | 20.2%     | 2.5%      | 6.4%      | 10.9%                 | 10.8%       | 49.2%                 |

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## **8. REGIONALIZATION OF WATER SYSTEM**

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## 8. REGIONALIZATION OF WATER SYSTEM

### 8.1 Chatham-Kent PUC

In 1997, the 22 former municipalities and 13 public utilities within Kent County were ordered to amalgamate by a Commission appointed by the Minister of Municipal Affairs and Housing. As a result, Chatham-Kent is a single municipality and all independent public utilities have been integrated into a single utility for water and sewer.

The amalgamation placed all water systems under the jurisdiction of the Chatham-Kent PUC. The various systems included well based, stream based, small lake based, large lake based systems and included the purchase of water from municipalities outside of the County. A summary of the systems and (former) municipalities served by the systems are provided on Table 8-1. Several of the systems were owned and operated by the municipalities, others were owned and operated under joint agreement, while others were owned and operated by OCWA (Ontario Clean Water Agency). The OCWA systems are presented below:

- Three (3) water treatment facilities owned and operated under contract by the Ontario Clean Water Agency (OCWA)
  - Chatham-Kent Raw Water Facility at Erie Beach
  - Eriean/Erie Beach Water Treatment Plant
  - Deulton Water Treatment Plant
- Four (4) water distribution systems within Chatham-Kent owned and operated by the Ontario Clean Water Agency (OCWA)
  - Blenheim Area Water Transmission Mains
  - Eriean/Erie Beach Water Distribution System
  - North-Kent Area Supply System
  - Shrewsbury Transmission Mains

**Table 8-1**  
**Former Water Systems in Chatham-Kent**

| <b>Water System</b>   | <b>Communities Served</b>                                     | <b>Water Source</b>                          |
|-----------------------|---|--|
| 1. Wallaceburg        | Wallaceburg<br>Chatham Twp. (portion)                         | St. Clair River (via Chenal Escarte Channel) |
| 2. Dresden/North Kent | Dresden<br>Camden Twp. (portion)                              | Chatham Water System                         |
| 3. Bothwell           | Bothwell  | West Lorne System (Elgin)                    |
| 4. Tilbury            | Tilbury<br>Tilbury East Twp.<br>Tilbury North Twp. (Essex)    | Lake St. Clair                               |
| 5. Chatham            | Chatham<br>Dresden/North Kent system<br>Mitchell's Bay system | Lake Erie                                    |
| 6. Mitchell's Bay     | Dover Twp.  | Chatham Water System                         |
| 7. Thamesville        | Thamesville   | Well-based                                   |
| 8. Wheatly            | Wheatly<br>Romney Twp. (portion)<br>Mersea (Essex)            | Lake Erie                                    |
| 9. Blenheim/Dealtown  | Blenheim<br>Harwich Twp. (portion)                            | Lake Erie                                    |
| 10. Eric Beach        | Erie Beach<br>Erieau  | Lake Erie                                    |
| 11. Ridgetown         | Ridgetown   | Well-based                                   |

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As noted, the amalgamation or regionalization of these various systems presented a wide variety of systems and operators. Upon assumption of these systems, in order to look at a standardization of service levels and efficiencies, the PUC undertook several initiatives to establish a conditions audit of the capital infrastructure and the operations system and practices. These initiatives also included a Water and Wastewater Masterplan Report, Facilities Inspection and Evaluation Report, Water Distribution System Analysis and a Water and Wastewater Rate Study.

Discussions were held with the Manager of Water and Wastewater for the PUC. Observations were provide regarding the “regionalization” of the systems, as follows:

- Undertook a standardization of salaries/wages with the assistance of the Ontario Labour Relations Branch – many staff wages increased with this standardization, however, several positions were frozen. Process was undertaken with no strikes.
- Same number of staff as before, however, have increase workload with this staff to address increase maintenance of facilities and distribution systems, increases in sampling and engineers reports due to changing regulations, increased contracts to build additional infrastructure and to upgrade existing infrastructure, and service population has increased by approximately 20%.
- Several facilities were not maintained at standards now imposed by the new PUC. Major equipment overhauls and replacements were needed to bring these facilities up to standard.
- No direct correlation between the quality of the system and former municipal size. Quality of operation was more a function of municipal policy regarding management of the system.
- Ability to implement policies, practices and approve capital works greatly enhanced. Now one decision maker vs. some systems, which needed several councils’ approval to undertake.
- Better able to address problems with private well facilities and water quality problems. Extension of servicing to rural areas requires financial ability to extend loans to landowners for constructing new works (section 221 of *Municipal Act*).

- PUC retains very good cross-section of knowledge across its workers, which allows for cross-training and knowledgeable back-up staff. As well, better able to hire outside expertise when needed.
- Economies of scale allows the operation costs per m<sup>3</sup> to decrease due to operational efficiencies.
- Since the amalgamation, have paid off all of their debt. Are implementing life cycle reserves and have a twenty year plan for replacement of aging infrastructure and upgrading of all facilities.
- It is estimated that approximately \$2.5 million (out of \$17 million budget) has been saved through staff realignment, operating efficiencies and economies of scale. All of these savings have been re-invested in increasing service delivery and infrastructure replacement/maintenance.
- The new utility is prepared for any regulatory changes which may be implemented over the next few years. It was identified that the water service is operating above provincially mandated standards.



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## **9. OBSERVATIONS AND SUMMARY COMMENTS**

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## **9. OBSERVATIONS AND SUMMARY COMMENTS**

### **9.1 Overview**

The primary focus of this report is two-fold. First, in recent times there have been comments and observations on the provision of public water service by municipalities. As this service is somewhat unique and the basis for accounting and financing this service is different for municipalities than for private corporations, this report has sought to provide a detailed review of the financial environment within which these systems operate. It is only with the knowledge of how the municipal financial environment operates that one can measure and judge the validity or success of moving to a different system of service provision.

The second purpose is to address the issue of privatization and to provide insights into whether a privatized system is more cost effective than existing municipal systems. To conclude that one system is better than the other without a solid foundation on which to base this conclusion, would not be beneficial to the users of the system, both from a cost perspective and from a quality of service perspective. Although observations may be made as to municipal situations where errors have been made and inefficiencies experienced, similar examples are also available in regard to privatized services in Ontario and elsewhere. Hence, regard should be made to factual information and not isolated examples.

### **9.2 Need for Capital Infrastructure Repair and Replacement**

The level of detailed analysis available on the state of municipal water infrastructure appears to be limited. The most detailed review appears to have been the 1998 study undertaken by the Canadian Water and Wastewater Association. The often-quoted “deficiencies” total \$12.6 billion, however, this study did not identify this as existing deficiencies. Of this total amount, 64.5% (\$8.1 billion) related to the need to build new infrastructure to service growth in Ontario. As noted in Chapter 3, most municipalities have implemented development charges which provide a per unit fee charged to developing landowners. Many municipalities who do not have the upfront cash to build infrastructure, enter into cost sharing arrangements with developers to finance the construction of these works and provide for a method of flowing back the costs over time. Hence, this portion of the costs identified within the report are not considered a significant problem as most municipalities have a funding mechanism to address this.

The second largest cost was for expanding the system to service all users within the municipality. The \$2.6 billion cost (20% of total needs) represents, to some extent, a hypothetical calculation. There are many areas where the quality and quantity of water supply for private systems, functions adequately. Hence, there is not a need, or at least an immediate need, to expand municipal systems to connect those users to municipal systems. However, there are situations in various areas of the province, where there is a real need for extending municipal services into unserved areas. Most municipalities extending these services impose a charge on landowners under section 221 of the *Municipal Act*. This charge provides for a direct recovery of the cost to the municipality. Once again, it is not perceived that this component of the identified “deficiencies” is a significant concern as it can be addressed and financed without impacting on water rates.

The third area of investment was for existing needs. These costs (\$1.9 billion) represent 15% of the total needs identified. These costs do relate to systems improvements required now and would impact on water rates. From a funding perspective, municipalities who provide water services have the debt borrowing capacity of between \$13 and \$19 billion. Hence, although many municipalities have policies to limit the amount of debt they incur, they do have the financial ability (in most municipalities) to address these needs.

### **9.3 Cost of Water to Residents**

The cost for water charged to Ontario residents is relatively inexpensive. Of the 31 municipalities surveyed, the average annual cost to households (based on 227 m<sup>3</sup> or 50,000 gallons) ranges from a low of \$89 (Guelph) to \$312 (Haldimand/Norfolk), with the mid-point being \$178 (Windsor). When compared to other discretionary household purchases such as the Internet at \$240 annually (basic service) or cable TV at approximately \$350 per year, the purchase of water is a reasonable commodity. Put another way, for the cost of a bottle of spring water (\$1.25) purchased at the store, consumers can get approximately 3,200 glasses of water (based on the mid-point annual cost noted above).

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## **9.4 Infrastructure Management**

As observed in Chapter 5, many municipalities in Ontario are addressing infrastructure replacement in their financial plans. The extent of this approach to managing the system is not known; however, most municipalities implementing this process do so through a blend of reserve funds, operating contributions and debt.

As has been discussed, the age of municipal infrastructure across municipalities in Ontario varies widely. Larger and older urban areas may have systems dating back to the early 1900's whereas smaller municipalities may have younger systems built in the late 1960's/early 1970's when the province promoted municipal water systems. Factors which affect the condition of these systems include the material type (material types have varying useful lives), maintenance practices, etc. Should the province wish to regulate infrastructure management practices, it could require an infrastructure conditions report to be undertaken on a, say, five year basis. To ensure that these needs are addressed by the municipality, it could also require a financial implementation report be provided to addressing financing of these works and to demonstrate the impact on municipal rates over the forecast period.

## **9.5 Privatization**

As presented in Chapter 7, privatization can take many forms, ranging from operational or individual service contracts, to complete ownership and operational responsibility of the private company. The latter form has not had a significant presence within Ontario, perhaps either because of a price factor or because of concerns regarding the municipalities divesting control while maintaining (by Statutes) the ultimate responsibility for any problems which may arise. In regard to service contracts, these forms of private sector involvement have had a significant presence. In areas where the private sector may be cost competitive or where specialized expertise may be provided, various forms of private contracts are in place throughout Ontario.

In regard to the potential move to complete privatization of municipal systems, there are three main themes which are put forth in support of this directional move: (1) ability to raise the necessary capital (2) responsiveness and (3) cost effectiveness. These are discussed below.

- (1) Ability to Raise Capital – It is recognized that municipalities have upper limits imposed upon them via provincial Regulations whereas a private company has the ability to raise capital via debt and equity financing. As noted earlier in this section, the perceived level of infrastructure deficiency ranges in the \$1.9 billion range across Ontario, compared to the \$13-20 billion in available capital financing across Ontario. Hence, this does not appear to be a major issue facing most Ontario municipalities. In addition, municipalities have the ability to impose special capital charges (development charges and section 221-*Municipal Act* charges) against new users to the system as a direct financing tool for new infrastructure. Comparatively, there may be reluctance by the private owners as this may affect their ability to capitalize the asset. Hence, for most Ontario municipalities, this does not appear to be a significant issue.
  
- (2) Responsiveness – A major advantage identified for a privatized service is the ability of the company to react to issues quicker as a result of “less bureaucracy.” Generally the decision process is shorter, resulting from an internal decision process. As well, potential increase profits can stimulate the need to streamline process, implement new technologies and address potential problems quicker. Many of these advantages are apparent, however, the slower process adopted by municipalities results from the need to conduct an open public process and to ensure that the expenditures made are in the best interest of the municipality. These advantages result from different “environments” vs. ineffectiveness of municipal staff and politicians. Whereas the private sector is profit driven, there is more incentive to take risks. Should any ineffective cost spending occur, it remains internal and, hence, is not often disclosed. On the contrary, municipalities operate in a very open environment with public watchdogs overseeing the spending of public dollars. Hence, more caution may be exercised in the public realm. Based on the above, there are opportunities for the private company to respond quicker.

One exception, however, may be in the area of capital replacement. Although the incentive to implement new technologies may be scrutinized closer by the private operator, considerations driven by bottom line profits may influence the decisions. Rules regarding depreciation may delay the implementation of new technologies. For example, in Canada, infrastructure within the steel industry can be written off quicker than in the U.S. This provides Canadian companies with a faster write-off of assets and an incentive to modernize facilities faster than their American counterparts. Similarly, if the asset depreciation is over a long period of time, disposal of an asset without the

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offsetting write-off may slow decisions regarding technology upgrading. This decision, however, needs to be considered relative to operating cost savings resulting from the capital expenditures.

- (3) Cost Effectiveness – This may be the most difficult to quantify. If measured at a micro level, certain areas of an operation may be more effectively performed by a private corporation. As discussed in Chapter 8, there may be areas where private entities may perform more effectively. At the macro level, it is questionable whether the net cost to consumers would be less expensive under a privatized service. Capitalization of the assets, higher overall interest costs and return on investment may cause the overall costs to be considerably higher than the present costs paid by consumers. If potential increased costs were used by municipalities to overcome any potential infrastructure deficiencies, it may more than overcome these costs at a less expensive cost to consumers. Recent observations by the Province of Ontario have indicated that privatization of the Hydro Industry may result in higher costs to the consumer. Similar experiences may arise through privatization of water.

Based on the above, the merits of moving towards privatization must be measured before proceeding in this direction. Significant increases in water prices can have a negative impact on high-usage industrial users, hence, a negative economic impact. In addition, private initiatives may be attainable for large municipal systems, however, there are many small operations, especially in the north, where private initiatives may not be of interest because of the small size of the operation.

## **9.6 Regionalization**

Chapter 8 provided an example of a recent regionalization of water systems within the Ontario context. Regionalization occurred within Regional municipalities in the 1970's. Consolidation of these systems allowed for more specialized staff, a broader rate based to address issues and costs, a better planned allocation of resources to municipalities, standardization of quality of service levels, etc. Similar benefits have been observed in the case of Chatham-Kent.

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Recent trends in the area of Solid Waste, Land Ambulance, and in some cases, Ontario Works/Childcare/Assisted Housing have been broadened, providing services elevated to the upper tier level. A similar direction for water service may provide cost effectiveness and a higher standard of service provision. Consideration of this approach may provide higher cost savings and a more standardized level of service without the need to move towards privatization.

## **9.7 Conclusion**

The state of water service in Ontario is currently under great scrutiny. Ontario has generally been considered a leader in water delivery throughout the world, however, because of recent events, has come under close scrutiny. Analysing any service provided by private or public corporations will give rise to commentary on quality or cost effectiveness. Where municipalities have been criticized for various matters, over time, private companies have not been without similar criticism. Devalued share prices and bankruptcies are a sign that private companies are not removed from poor decision making or errors.

The current examination of the water service should give rise to discussion and debate on the most effective way of providing a much needed resource to Ontario consumers. As the condition of municipal water systems, management and quality will vary across jurisdictions, the overall direction of this process should be to strengthen the system in the most cost effective way possible. Provincial regulation and monitoring will continue to be needed under either a municipally-operated system or privately-operated system. Consideration of how the systems are operated (privately/publicly) should be closely considered. Opportunities may be there for some combination thereof. As well, a movement towards moving this responsibility to the upper tier in some cases, may also assist in this objective. Any and all opportunities should be considered, with the outcome always with direct consideration of the best interest of the water consumer.

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## **APPENDIX A**

### **DEBT CAPACITY OF MUNICIPALITIES WITH WATER SERVICES**



### ADDITIONAL DEBT CAPACITY CALCULATION BY MUNICIPALITY (1997\$)

| Municipality           | Population<br># | Households<br># | Own Fund Revenues          |                                  |                          | Debt Charges                   |                                     | Additional Debt<br>Which Can Be Issued |                  | Does the Municipality<br>Have Municipal |                   |
|------------------------|-----------------|-----------------|----------------------------|----------------------------------|--------------------------|--------------------------------|-------------------------------------|--|------------------|---|-------------------|
|                        |                 |                 | Total<br>Revenues<br>\$000 | Less: Ontario<br>Grants<br>\$000 | Net<br>Revenues<br>\$000 | Total Debt<br>Charges<br>\$000 | Debt as a %<br>of Net Revenues<br>% | 10 Year<br>\$000                       | 20 Year<br>\$000 | Water<br>(Yes/No)                       | Sewer<br>(Yes/No) |
|                        |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Metropolitan Toronto R | 2,183,655       | 928,039         | 3,661,919                  | 1,176,727                        | 2,485,192                | 167,875                        | 6.8%                                | 3,184,653                              | 4,803,570        | YES                                     | YES               |
| Toronto C              | 590,838         | 296,435         | 675,870                    | 23,380                           | 652,490                  | 44,359                         | 6.8%                                | 834,148                                | 1,258,186        | YES                                     | YES               |
| Etobicoke C            | 302,451         | 122,664         | 191,540                    | 6,738                            | 184,802                  | 14,852                         | 8.0%                                | 220,182                                | 332,112          | YES                                     | YES               |
| Scarborough C          | 507,680         | 188,693         | 235,675                    | 14,121                           | 221,554                  | 1,612                          | 0.7%                                | 377,703                                | 569,708          | YES                                     | YES               |
| North York C           | 549,115         | 214,907         | 329,304                    | 16,046                           | 313,259                  | 6,383                          | 2.0%                                | 505,215                                | 762,041          | YES                                     | YES               |
| York C                 | 134,977         | 59,151          | 69,086                     | 5,608                            | 63,478                   | 5,572                          | 8.8%                                | 72,325                                 | 109,092          | YES                                     | YES               |
| East York B            | 98,594          | 46,189          | 52,921                     | 5,288                            | 47,633                   | 3,221                          | 6.8%                                | 61,017                                 | 92,035           | YES                                     | YES               |
| Durham R               | 421,824         | 160,374         | 325,288                    | 97,507                           | 227,781                  | 6,696                          | 2.9%                                | 352,929                                | 532,340          | YES                                     | YES               |
| Oshawa C               | 127,813         | 51,431          | 75,721                     | 4,439                            | 71,281                   | 2,959                          | 4.2%                                | 104,382                                | 157,445          | NO                                      | YES               |
| Ajax T                 | 58,854          | 21,033          | 28,170                     | 1,200                            | 26,970                   | 755                            | 2.8%                                | 42,052                                 | 63,429           | NO                                      | YES               |
| Clarington T           | 53,842          | 20,764          | 24,455                     | 1,434                            | 23,021                   | 860                            | 3.7%                                | 34,385                                 | 51,865           | NO                                      | YES               |
| Pickering T            | 70,733          | 24,631          | 36,200                     | 2,203                            | 33,997                   | 0                              | 0.0%                                | 59,692                                 | 90,037           | NO                                      | YES               |
| Whitby T               | 67,039          | 24,787          | 35,541                     | 1,784                            | 33,757                   | 1,044                          | 3.1%                                | 51,942                                 | 78,346           | NO                                      | YES               |
| Brock Tp               | 10,991          | 4,787           | 5,488                      | 836                              | 4,652                    | 229                            | 4.9%                                | 6,557                                  | 9,890            | NO                                      | NO                |
| Scugog Tp              | 17,880          | 7,198           | 6,257                      | 512                              | 5,745                    | 33                             | 0.6%                                | 9,857                                  | 14,869           | NO                                      | NO                |
| Uxbridge Tp            | 14,672          | 5,743           | 6,730                      | 516                              | 6,214                    | 3                              | 0.1%                                | 10,889                                 | 16,424           | NO                                      | NO                |
| Haldimand - Norfolk R  | 96,586          | 41,966          | 77,020                     | 28,528                           | 48,493                   | 3,044                          | 6.3%                                | 63,769                                 | 96,186           | YES                                     | YES               |
| Nanticoke C            | 22,401          | 9,514           | 7,851                      | 969                              | 6,882                    | 176                            | 2.6%                                | 10,846                                 | 16,360           | NO                                      | YES               |
| Dunnville T            | 11,908          | 5,296           | 4,616                      | 554                              | 4,062                    | 103                            | 2.5%                                | 6,406                                  | 9,662            | NO                                      | NO                |
| Haldimand T            | 21,151          | 8,688           | 8,185                      | 1,185                            | 7,000                    | 28                             | 0.4%                                | 12,096                                 | 18,245           | NO                                      | NO                |
| Simcoe T               | 14,896          | 6,427           | 8,866                      | 453                              | 8,413                    | 338                            | 4.0%                                | 12,396                                 | 18,697           | NO                                      | YES               |
| Delhi Tp               | 15,134          | 6,967           | 5,253                      | 507                              | 4,746                    | 81                             | 1.7%                                | 7,762                                  | 11,708           | NO                                      | NO                |
| Norfolk Tp             | 11,096          | 5,074           | 4,519                      | 893                              | 3,626                    | 37                             | 1.0%                                | 6,109                                  | 9,215            | NO                                      | NO                |
| Halton R               | 315,557         | 119,069         | 206,753                    | 40,667                           | 166,086                  | 19,539                         | 11.8%                               | 154,399                                | 232,887          | YES                                     | YES               |
| Burlington C           | 128,453         | 50,858          | 72,852                     | 4,512                            | 68,340                   | 3,521                          | 5.2%                                | 95,270                                 | 143,700          | NO                                      | YES               |
| Halton Hills T         | 38,763          | 14,332          | 16,833                     | 1,229                            | 15,604                   | 732                            | 4.7%                                | 22,260                                 | 33,576           | NO                                      | YES               |
| Milton T               | 30,278          | 10,552          | 15,494                     | 1,244                            | 14,251                   | 731                            | 5.1%                                | 19,892                                 | 30,004           | NO                                      | YES               |
| Oakville T             | 118,063         | 43,327          | 76,517                     | 3,882                            | 72,635                   | 2,947                          | 4.1%                                | 106,845                                | 161,159          | NO                                      | YES               |
| Hamilton - Wentworth R | 452,745         | 185,620         | 487,846                    | 151,643                          | 336,203                  | 26,766                         | 8.0%                                | 402,341                                | 606,871          | YES                                     | YES               |
| Hamilton C             | 315,109         | 135,142         | 182,658                    | 7,228                            | 175,430                  | 15,610                         | 8.9%                                | 198,398                                | 299,253          | YES                                     | YES               |
| Stoney Creek C         | 51,865          | 18,765          | 23,070                     | 610                              | 22,460                   | 1,510                          | 6.7%                                | 28,830                                 | 43,485           | NO                                      | YES               |
| Ancaster T             | 22,496          | 7,814           | 10,612                     | 923                              | 9,689                    | 873                            | 9.0%                                | 10,879                                 | 16,409           | NO                                      | YES               |
| Dundas T               | 22,154          | 8,697           | 10,205                     | 443                              | 9,762                    | 785                            | 8.0%                                | 11,627                                 | 17,538           | NO                                      | NO                |
| Flamborough T          | 30,972          | 11,574          | 13,733                     | 737                              | 12,996                   | 1,617                          | 12.4%                               | 11,460                                 | 17,285           | NO                                      | YES               |
| Glanbrook Tp           | 10,149          | 3,628           | 4,336                      | 264                              | 4,072                    | 98                             | 2.4%                                | 6,461                                  | 9,745            | NO                                      | NO                |
| Niagara R              | 390,260         | 165,129         | 321,926                    | 102,748                          | 219,178                  | 25,132                         | 11.5%                               | 208,336                                | 314,244          | YES                                     | YES               |

### ADDITIONAL DEBT CAPACITY CALCULATION BY MUNICIPALITY (1997\$)

| Municipality          | Population<br># | Households<br># | Own Fund Revenues          |                                  |                          | Debt Charges                   |                                     | Additional Debt<br>Which Can Be Issued |                  | Does the Municipality<br>Have Municipal |                   |
|-----------------------|-----------------|-----------------|----------------------------|----------------------------------|--------------------------|--------------------------------|-------------------------------------|--|------------------|---|-------------------|
|                       |                 |                 | Total<br>Revenues<br>\$000 | Less: Ontario<br>Grants<br>\$000 | Net<br>Revenues<br>\$000 | Total Debt<br>Charges<br>\$000 | Debt as a %<br>of Net Revenues<br>% | 10 Year<br>\$000                       | 20 Year<br>\$000 | Water<br>(Yes/No)                       | Sewer<br>(Yes/No) |
|                       |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Niagara Falls C       | 74,915          | 31,249          | 52,279                     | 2,255                            | 50,024                   | 1,994                          | 4.0%                                | 73,831                                 | 111,363          | YES                                     | YES               |
| Port Colborne C       | 18,389          | 8,246           | 12,285                     | 929                              | 11,357                   | 881                            | 7.8%                                | 13,755                                 | 20,747           | YES                                     | YES               |
| St Catharines C       | 125,887         | 54,595          | 81,900                     | 5,081                            | 76,818                   | 5,754                          | 7.5%                                | 94,469                                 | 142,493          | YES                                     | YES               |
| Welland C             | 47,423          | 20,094          | 29,510                     | 1,688                            | 27,822                   | 2,179                          | 7.8%                                | 33,551                                 | 50,606           | YES                                     | YES               |
| Thorold C             | 17,586          | 7,102           | 10,865                     | 499                              | 10,366                   | 90                             | 0.9%                                | 17,569                                 | 26,500           | YES                                     | YES               |
| Fort Erie T           | 26,221          | 13,068          | 17,643                     | 1,250                            | 16,393                   | 1,181                          | 7.2%                                | 20,490                                 | 30,907           | YES                                     | YES               |
| Grimsby T             | 18,925          | 7,059           | 9,149                      | 507                              | 8,641                    | 474                            | 5.5%                                | 11,847                                 | 17,870           | YES                                     | YES               |
| Lincoln T             | 17,318          | 6,692           | 9,196                      | 610                              | 8,587                    | 277                            | 3.2%                                | 13,129                                 | 19,803           | YES                                     | YES               |
| Niagara-on-the-Lake T | 12,695          | 5,189           | 8,824                      | 431                              | 8,394                    | 684                            | 8.1%                                | 9,937                                  | 14,989           | YES                                     | YES               |
| Pelham T              | 13,702          | 5,242           | 4,103                      | 415                              | 3,688                    | 102                            | 2.8%                                | 5,757                                  | 8,683            | YES                                     | YES               |
| Wainfleet Tp          | 6,139           | 2,903           | 2,655                      | 452                              | 2,202                    | 88                             | 4.0%                                | 3,251                                  | 4,903            | NO                                      | NO                |
| West Lincoln Tp       | 11,060          | 3,690           | 5,129                      | 946                              | 4,183                    | 239                            | 5.7%                                | 5,663                                  | 8,542            | YES                                     | YES               |
| Ottawa - Carleton R   | 692,898         | 291,452         | 983,545                    | 334,738                          | 648,806                  | 64,659                         | 10.0%                               | 685,098                                | 1,033,367        | YES                                     | YES               |
| Ottawa C              | 313,971         | 151,351         | 261,776                    | 6,562                            | 255,214                  | 38,447                         | 15.1%                               | 178,091                                | 268,623          | NO                                      | YES               |
| Vanier C              | 17,562          | 9,042           | 8,882                      | 1,607                            | 7,275                    | 327                            | 4.5%                                | 10,474                                 | 15,799           | NO                                      | YES               |
| Kanata C              | 43,362          | 15,830          | 21,659                     | 697                              | 20,963                   | 1,416                          | 6.8%                                | 26,861                                 | 40,516           | NO                                      | YES               |
| Nepean C              | 111,264         | 41,897          | 54,342                     | 2,042                            | 52,300                   | 267                            | 0.5%                                | 89,955                                 | 135,684          | NO                                      | YES               |
| Gloucester C          | 99,024          | 35,054          | 49,054                     | 2,462                            | 46,592                   | 1,348                          | 2.9%                                | 72,344                                 | 109,121          | YES                                     | YES               |
| Rockcliffe Park V     | 2,183           | 767             | 2,287                      | 101                              | 2,186                    | 0                              | 0.0%                                | 3,838                                  | 5,789            | NO                                      | YES               |
| Cumberland Tp         | 44,630          | 15,003          | 16,268                     | 1,077                            | 15,190                   | 278                            | 1.8%                                | 24,721                                 | 37,288           | NO                                      | YES               |
| Goulbourn Tp          | 17,964          | 6,623           | 6,195                      | 386                              | 5,808                    | 291                            | 5.0%                                | 8,155                                  | 12,301           | NO                                      | YES               |
| Osgoode Tp            | 15,207          | 5,346           | 6,185                      | 1,001                            | 5,184                    | 123                            | 2.4%                                | 8,241                                  | 12,430           | NO                                      | NO                |
| Rideau Tp             | 12,106          | 4,294           | 4,337                      | 431                              | 3,906                    | 112                            | 2.9%                                | 6,074                                  | 9,162            | NO                                      | NO                |
| West Carleton Tp      | 15,625          | 6,245           | 6,094                      | 1,045                            | 5,049                    | 240                            | 4.8%                                | 7,180                                  | 10,830           | NO                                      | YES               |
| Peel R                | 753,116         | 271,072         | 471,051                    | 109,195                          | 361,856                  | 472                            | 0.1%                                | 632,067                                | 953,377          | YES                                     | YES               |
| Brampton C            | 236,319         | 81,932          | 128,161                    | 4,992                            | 123,168                  | 10,070                         | 8.2%                                | 145,544                                | 219,531          | NO                                      | YES               |
| Mississauga C         | 480,170         | 175,878         | 282,043                    | 15,636                           | 266,407                  | 339                            | 0.1%                                | 465,401                                | 701,987          | NO                                      | YES               |
| Caledon T             | 36,627          | 13,262          | 19,937                     | 1,093                            | 18,844                   | 623                            | 3.3%                                | 28,715                                 | 43,313           | NO                                      | YES               |
| Sudbury R             | 154,576         | 68,177          | 171,116                    | 78,984                           | 92,132                   | 2,599                          | 2.8%                                | 143,521                                | 216,480          | YES                                     | YES               |
| Sudbury C             | 87,087          | 41,406          | 58,732                     | 9,093                            | 49,639                   | 0                              | 0.0%                                | 87,161                                 | 131,470          | NO                                      | YES               |
| Capreol T             | 3,621           | 1,508           | 1,516                      | 488                              | 1,028                    | 0                              | 0.0%                                | 1,805                                  | 2,722            | NO                                      | YES               |
| Nickel Centre T       | 12,129          | 4,860           | 4,539                      | 1,414                            | 3,125                    | 46                             | 1.5%                                | 5,162                                  | 7,786            | NO                                      | NO                |
| Onaping Falls T       | 5,068           | 2,131           | 3,208                      | 683                              | 2,525                    | 159                            | 6.3%                                | 3,321                                  | 5,009            | YES                                     | YES               |
| Rayside - Balfour T   | 14,816          | 5,903           | 5,950                      | 1,762                            | 4,188                    | 59                             | 1.4%                                | 6,938                                  | 10,465           | NO                                      | NO                |
| Valley East T         | 22,102          | 7,932           | 7,626                      | 2,224                            | 5,402                    | 130                            | 2.4%                                | 8,574                                  | 12,932           | NO                                      | YES               |
| Walden T              | 9,753           | 4,437           | 6,302                      | 1,489                            | 4,813                    | 0                              | 0.0%                                | 8,450                                  | 12,746           | NO                                      | NO                |

**ADDITIONAL DEBT CAPACITY CALCULATION BY MUNICIPALITY  
(1997\$)**

| Municipality               | Population<br># | Households<br># | Own Fund Revenues |                         |                 | Debt Charges          |                                | Additional Debt<br>Which Can Be Issued |         | Does the Municipality<br>Have Municipal |          |
|----------------------------|-----------------|-----------------|-------------------|-------------------------|-----------------|-----------------------|--------------------------------|--|---------|---|----------|
|                            |                 |                 | Total<br>Revenues | Less: Ontario<br>Grants | Net<br>Revenues | Total Debt<br>Charges | Debt as a %<br>of Net Revenues | 10 Year                                | 20 Year | Water                                   | Sewer    |
|                            |                 |                 | \$000             | \$000                   | \$000           | \$000                 | %                              | \$000                                  | \$000   | (Yes/No)                                | (Yes/No) |
| Waterloo R                 | 383,319         | 153,591         | 288,254           | 95,219                  | 193,036         | 33,437                | 17.3%                          | 104,104                                | 157,026 | YES                                     | YES      |
| Cambridge C                | 95,260          | 36,599          | 60,802            | 3,031                   | 57,771          | 2,072                 | 3.6%                           | 86,888                                 | 131,058 | YES                                     | YES      |
| Kitchener C                | 167,540         | 69,815          | 122,836           | 5,693                   | 117,144         | 5,267                 | 4.5%                           | 168,701                                | 254,460 | YES                                     | YES      |
| Waterloo C                 | 75,274          | 31,283          | 48,078            | 2,569                   | 45,509          | 4,418                 | 9.7%                           | 48,880                                 | 73,728  | YES                                     | YES      |
| North Dumfries Tp          | 7,090           | 2,643           | 3,492             | 165                     | 3,328           | 0                     | 0.0%                           | 5,843                                  | 8,813   | YES                                     | YES      |
| Wellesley Tp               | 8,309           | 2,536           | 2,635             | 375                     | 2,260           | 146                   | 6.5%                           | 2,942                                  | 4,437   | YES                                     | YES      |
| Wilmot Tp                  | 13,135          | 4,843           | 5,839             | 343                     | 5,496           | 783                   | 14.2%                          | 4,151                                  | 6,261   | YES                                     | YES      |
| Woolwich Tp                | 16,711          | 5,872           | 7,227             | 459                     | 6,769           | 179                   | 2.6%                           | 10,627                                 | 16,029  | YES                                     | YES      |
| York R                     | 518,010         | 184,530         | 280,321           | 77,159                  | 203,162         | 23,649                | 11.6%                          | 190,632                                | 287,539 | YES                                     | YES      |
| Vaughan C                  | 116,360         | 38,588          | 93,939            | 2,670                   | 91,269          | 3,769                 | 4.1%                           | 133,788                                | 201,800 | YES                                     | YES      |
| Aurora T                   | 30,392          | 11,649          | 18,766            | 549                     | 18,216          | 0                     | 0.0%                           | 31,986                                 | 48,246  | YES                                     | YES      |
| Markham T                  | 151,518         | 50,361          | 97,502            | 5,214                   | 92,289          | 608                   | 0.7%                           | 157,780                                | 237,987 | YES                                     | NO       |
| Newmarket T                | 49,645          | 18,389          | 27,933            | 1,143                   | 26,790          | 1,305                 | 4.9%                           | 37,875                                 | 57,129  | YES                                     | YES      |
| Richmond Hill T            | 85,970          | 32,092          | 71,166            | 1,904                   | 69,262          | 829                   | 1.2%                           | 115,793                                | 174,656 | YES                                     | YES      |
| Whitchurch - Stouffville T | 17,796          | 6,793           | 10,118            | 427                     | 9,691           | 174                   | 1.8%                           | 15,796                                 | 23,826  | YES                                     | YES      |
| East Gwillimbury T         | 18,023          | 6,180           | 8,514             | 456                     | 8,058           | 510                   | 6.3%                           | 10,567                                 | 15,939  | YES                                     | YES      |
| Georgina T                 | 30,802          | 14,301          | 17,089            | 1,100                   | 15,989          | 1,264                 | 7.9%                           | 19,195                                 | 28,953  | YES                                     | YES      |
| King Tp                    | 17,504          | 6,177           | 8,281             | 456                     | 7,825           | 14                    | 0.2%                           | 13,644                                 | 20,580  | YES                                     | YES      |
| Muskoka D                  | 45,017          | 41,688          | 50,613            | 16,065                  | 34,548          | 4,927                 | 14.3%                          | 26,056                                 | 39,302  | YES                                     | YES      |
| Bracebridge T              | 11,675          | 7,145           | 6,454             | 453                     | 6,001           | 131                   | 2.2%                           | 9,616                                  | 14,504  | NO                                      | NO       |
| Gravenhurst T              | 8,941           | 7,344           | 5,032             | 427                     | 4,605           | 70                    | 1.5%                           | 7,594                                  | 11,455  | NO                                      | NO       |
| Huntsville T               | 14,342          | 8,725           | 7,597             | 792                     | 6,806           | 230                   | 3.4%                           | 10,332                                 | 15,584  | NO                                      | YES      |
| Georgian Bay Tp            | 2,074           | 4,923           | 2,553             | 142                     | 2,410           | 0                     | 0.0%                           | 4,232                                  | 6,383   | NO                                      | NO       |
| Lake of Bays Tp            | 2,588           | 4,438           | 2,685             | 216                     | 2,469           | 0                     | 0.0%                           | 4,335                                  | 6,539   | NO                                      | NO       |
| Muskoka Lakes Tp           | 5,397           | 9,113           | 5,656             | 482                     | 5,175           | 0                     | 0.0%                           | 9,086                                  | 13,705  | NO                                      | NO       |
| Oxford Co                  | 94,959          | 37,389          | 57,798            | 20,628                  | 37,170          | 1,719                 | 4.6%                           | 53,191                                 | 80,231  | YES                                     | YES      |
| Woodstock C                | 31,252          | 13,269          | 23,936            | 1,564                   | 22,372          | 2,388                 | 10.7%                          | 22,507                                 | 33,948  | NO                                      | YES      |
| Ingersoll T                | 9,545           | 3,929           | 7,072             | 446                     | 6,626           | 576                   | 8.7%                           | 7,591                                  | 11,449  | NO                                      | YES      |
| Tillsonburg T              | 12,729          | 5,700           | 11,268            | 536                     | 10,732          | 1,548                 | 14.4%                          | 7,969                                  | 12,020  | NO                                      | YES      |
| Blandford - Blenheim Tp    | 7,157           | 2,589           | 3,216             | 468                     | 2,748           | 110                   | 4.0%                           | 4,051                                  | 6,110   | NO                                      | NO       |
| East Zorra - Tavistock Tp  | 7,370           | 2,486           | 2,768             | 435                     | 2,334           | 287                   | 12.3%                          | 2,080                                  | 3,137   | NO                                      | NO       |
| Norwich Tp                 | 10,302          | 3,500           | 4,479             | 337                     | 4,142           | 95                    | 2.3%                           | 6,603                                  | 9,959   | NO                                      | YES      |
| South-West Oxford Tp       | 8,422           | 2,905           | 2,660             | 478                     | 2,182           | 89                    | 4.1%                           | 3,210                                  | 4,841   | NO                                      | NO       |
| Zorra Tp                   | 8,182           | 3,011           | 4,604             | 603                     | 4,002           | 323                   | 8.1%                           | 4,755                                  | 7,172   | NO                                      | NO       |
| Brant Co                   | 28,569          | 10,622          | 18,175            | 11,186                  | 6,989           | 77                    | 1.1%                           | 11,732                                 | 17,695  | NO                                      | NO       |
| Brantford C                | 81,074          | 33,956          | 114,509           | 24,572                  | 89,938          | 6,709                 | 7.5%                           | 110,803                                | 167,130 | YES                                     | YES      |

# **ADDITIONAL DEBT CAPACITY CALCULATION BY MUNICIPALITY (1997\$)**

A-4

| Municipality      | Population<br># | Households<br># | Own Fund Revenues          |                                  |                          | Debt Charges                   |                                     | Additional Debt<br>Which Can Be Issued |                  | Does the Municipality<br>Have Municipal |                   |
|-------------------|-----------------|-----------------|----------------------------|----------------------------------|--------------------------|--------------------------------|-------------------------------------|--|------------------|---|-------------------|
|                   |                 |                 | Total<br>Revenues<br>\$000 | Less: Ontario<br>Grants<br>\$000 | Net<br>Revenues<br>\$000 | Total Debt<br>Charges<br>\$000 | Debt as a %<br>of Net Revenues<br>% | 10 Year<br>\$000                       | 20 Year<br>\$000 | Water<br>(Yes/No)                       | Sewer<br>(Yes/No) |
|                   |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Paris T           | 8,552           | 3,326           | 9,333                      | 2,736                            | 6,597                    | 798                            | 12.1%                               | 5,977                                  | 9,015            | YES                                     | YES               |
| Brantford Tp      | 6,241           | 2,197           | 3,521                      | 285                              | 3,236                    | 7                              | 0.2%                                | 5,633                                  | 8,497            | YES                                     | YES               |
| Burford Tp        | 5,712           | 2,053           | 2,624                      | 329                              | 2,295                    | 39                             | 1.7%                                | 3,757                                  | 5,666            | NO                                      | NO                |
| South Dumfries Tp | 5,103           | 2,019           | 2,793                      | 152                              | 2,641                    | 77                             | 2.9%                                | 4,098                                  | 6,181            | YES                                     | YES               |
| Oakland Tp        | 1,336           | 477             | 443                        | 67                               | 375                      | 0                              | 0.0%                                | 659                                    | 994              | NO                                      | NO                |
| Onondaga Tp       | 1,625           | 550             | 690                        | 79                               | 611                      | 7                              | 1.1%                                | 1,024                                  | 1,545            | NO                                      | NO                |
| Bruce Co          | 62,053          | 34,975          | 29,214                     | 17,090                           | 12,124                   | 0                              | 0.0%                                | 21,288                                 | 32,110           | NO                                      | NO                |
| Chesley T         | 1,815           | 850             | 1,256                      | 279                              | 977                      | 0                              | 0.0%                                | 1,716                                  | 2,588            | YES                                     | YES               |
| Kincardine T      | 6,318           | 2,778           | 6,111                      | 638                              | 5,473                    | 319                            | 5.8%                                | 7,368                                  | 11,114           | YES                                     | YES               |
| Port Elgin T      | 6,772           | 3,000           | 7,261                      | 982                              | 6,279                    | 378                            | 6.0%                                | 8,374                                  | 12,630           | YES                                     | YES               |
| Southampton T     | 3,065           | 1,980           | 3,931                      | 620                              | 3,311                    | 13                             | 0.4%                                | 5,722                                  | 8,631            | YES                                     | YES               |
| Walkerton T       | 4,735           | 2,056           | 4,165                      | 515                              | 3,650                    | 44                             | 1.2%                                | 6,102                                  | 9,204            | YES                                     | YES               |
| Wiaarton T        | 2,291           | 1,087           | 2,856                      | 374                              | 2,482                    | 239                            | 9.6%                                | 2,679                                  | 4,041            | YES                                     | YES               |
| Hepworth V        | 462             | 186             | 120                        | 13                               | 108                      | 0                              | 0.0%                                | 189                                    | 285              | NO                                      | NO                |
| Lion's Head V     | 520             | 308             | 502                        | 45                               | 457                      | 13                             | 2.9%                                | 710                                    | 1,070            | YES                                     | NO                |
| Lucknow V         | 1,162           | 560             | 861                        | 145                              | 716                      | 0                              | 0.0%                                | 1,256                                  | 1,895            | YES                                     | YES               |
| Mildmay V         | 1,069           | 461             | 781                        | 127                              | 654                      | 118                            | 18.0%                               | 323                                    | 487              | YES                                     | YES               |
| Paisley V         | 1,024           | 475             | 1,269                      | 198                              | 1,072                    | 92                             | 8.6%                                | 1,234                                  | 1,861            | YES                                     | YES               |
| Tara V            | 863             | 376             | 608                        | 90                               | 518                      | 0                              | 0.0%                                | 909                                    | 1,371            | YES                                     | YES               |
| Teeswater V       | 1,027           | 463             | 930                        | 127                              | 803                      | 0                              | 0.0%                                | 1,411                                  | 2,128            | YES                                     | NO                |
| Tiverton V        | 796             | 335             | 553                        | 86                               | 467                      | 0                              | 0.0%                                | 820                                    | 1,237            | YES                                     | YES               |
| Albemarle Tp      | 1,127           | 1,437           | 832                        | 220                              | 613                      | 0                              | 0.0%                                | 1,076                                  | 1,622            | NO                                      | NO                |
| Amabel Tp         | 3,577           | 3,805           | 2,668                      | 435                              | 2,234                    | 35                             | 1.6%                                | 3,675                                  | 5,543            | YES                                     | NO                |
| Arran Tp          | 1,621           | 581             | 977                        | 437                              | 539                      | 108                            | 19.9%                               | 191                                    | 289              | NO                                      | NO                |
| Brant Tp          | 3,267           | 1,373           | 1,444                      | 481                              | 963                      | 46                             | 4.7%                                | 1,371                                  | 2,068            | YES                                     | NO                |
| Bruce Tp          | 1,515           | 808             | 2,505                      | 960                              | 1,545                    | 29                             | 1.9%                                | 2,507                                  | 3,781            | YES                                     | NO                |
| Carrick Tp        | 2,365           | 790             | 1,390                      | 583                              | 807                      | 34                             | 4.2%                                | 1,179                                  | 1,779            | YES                                     | NO                |
| Culross Tp        | 1,647           | 589             | 990                        | 391                              | 599                      | 20                             | 3.4%                                | 911                                    | 1,374            | NO                                      | NO                |
| Eastnor Tp        | 1,280           | 1,774           | 1,183                      | 258                              | 925                      | 16                             | 1.7%                                | 1,513                                  | 2,282            | NO                                      | YES               |
| Elderslie Tp      | 1,158           | 432             | 791                        | 392                              | 399                      | 49                             | 12.2%                               | 359                                    | 542              | NO                                      | NO                |
| Greenock Tp       | 1,684           | 609             | 960                        | 428                              | 532                      | 60                             | 11.2%                               | 515                                    | 776              | YES                                     | NO                |
| Kincardine Tp     | 2,894           | 1,401           | 1,787                      | 477                              | 1,311                    | 39                             | 3.0%                                | 2,026                                  | 3,056            | YES                                     | YES               |
| Kinloss Tp        | 1,172           | 466             | 787                        | 453                              | 333                      | 63                             | 18.8%                               | 146                                    | 220              | NO                                      | NO                |
| Lindsay Tp        | 484             | 855             | 603                        | 216                              | 387                      | 0                              | 0.0%                                | 679                                    | 1,025            | NO                                      | NO                |
| St Edmunds Tp     | 929             | 1,400           | 1,102                      | 210                              | 892                      | 0                              | 0.0%                                | 1,566                                  | 2,362            | NO                                      | YES               |
| Saugeen Tp        | 1,759           | 1,186           | 1,204                      | 222                              | 982                      | 27                             | 2.8%                                | 1,534                                  | 2,314            | YES                                     | NO                |

# **ADDITIONAL DEBT CAPACITY CALCULATION BY MUNICIPALITY (1997\$)**

| Municipality                | Population<br># | Households<br># | Own Fund Revenues          |                                  |                          | Debt Charges                   |                                     | Additional Debt<br>Which Can Be Issued |                  | Does the Municipality<br>Have Municipal |                   |
|-----------------------------|-----------------|-----------------|----------------------------|----------------------------------|--------------------------|--------------------------------|-------------------------------------|--|------------------|---|-------------------|
|                             |                 |                 | Total<br>Revenues<br>\$000 | Less: Ontario<br>Grants<br>\$000 | Net<br>Revenues<br>\$000 | Total Debt<br>Charges<br>\$000 | Debt as a %<br>of Net Revenues<br>% | 10 Year<br>\$000                       | 20 Year<br>\$000 | Water<br>(Yes/No)                       | Sewer<br>(Yes/No) |
|                             |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Huron Tp                    | 3,655           | 2,554           | 2,741                      | 540                              | 2,201                    | 214                            | 9.7%                                | 2,365                                  | 3,567            | YES                                     | YES               |
| Dufferin Co                 | 40,997          | 16,431          | 16,713                     | 7,517                            | 9,196                    | 263                            | 2.9%                                | 14,299                                 | 21,568           | NO                                      | NO                |
| Orangeville T               | 19,036          | 7,496           | 14,235                     | 836                              | 13,399                   | 118                            | 0.9%                                | 22,701                                 | 34,240           | YES                                     | YES               |
| Shelburne T                 | 3,450           | 1,413           | 2,944                      | 253                              | 2,691                    | 0                              | 0.0%                                | 4,724                                  | 7,126            | YES                                     | YES               |
| Amaranth Tp                 | 3,187           | 1,151           | 1,533                      | 484                              | 1,049                    | 101                            | 9.6%                                | 1,132                                  | 1,708            | YES                                     | NO                |
| East Garafraxa Tp           | 2,012           | 716             | 1,054                      | 172                              | 882                      | 18                             | 2.0%                                | 1,422                                  | 2,145            | YES                                     | NO                |
| Melancthon Tp               | 2,286           | 994             | 1,081                      | 476                              | 605                      | 25                             | 4.2%                                | 885                                    | 1,335            | NO                                      | NO                |
| Mono Tp                     | 5,980           | 2,330           | 2,673                      | 269                              | 2,404                    | 0                              | 0.0%                                | 4,221                                  | 6,367            | YES                                     | NO                |
| Mulmur Tp                   | 2,509           | 1,366           | 1,471                      | 462                              | 1,009                    | 103                            | 10.2%                               | 1,049                                  | 1,583            | YES                                     | NO                |
| East Luther Grand Valley Tp | 2,537           | 965             | 1,826                      | 299                              | 1,526                    | 34                             | 2.3%                                | 2,438                                  | 3,678            | YES                                     | YES               |
| Elgin Co                    | 44,335          | 17,479          | 26,030                     | 13,132                           | 12,898                   | 0                              | 0.0%                                | 22,647                                 | 34,160           | NO                                      | NO                |
| St Thomas C                 | 29,758          | 13,156          | 40,267                     | 10,112                           | 30,155                   | 2,876                          | 9.5%                                | 32,753                                 | 49,402           | YES                                     | YES               |
| Aylmer T                    | 6,275           | 2,663           | 5,096                      | 349                              | 4,747                    | 308                            | 6.5%                                | 6,172                                  | 9,309            | YES                                     | YES               |
| Belmont V                   | 1,474           | 567             | 994                        | 46                               | 949                      | 0                              | 0.0%                                | 1,665                                  | 2,512            | YES                                     | YES               |
| Dutton V                    | 1,198           | 483             | 1,080                      | 75                               | 1,006                    | 149                            | 14.8%                               | 721                                    | 1,087            | YES                                     | YES               |
| Port Burwell V              | 882             | 460             | 751                        | 159                              | 592                      | 86                             | 14.5%                               | 436                                    | 658              | YES                                     | YES               |
| Port Stanley V              | 2,183           | 1,317           | 2,422                      | 276                              | 2,147                    | 282                            | 13.1%                               | 1,789                                  | 2,699            | YES                                     | YES               |
| Springfield V               | 669             | 236             | 155                        | 33                               | 122                      | 0                              | 0.0%                                | 215                                    | 324              | NO                                      | YES               |
| Vienna V                    | 443             | 169             | 236                        | 47                               | 190                      | 0                              | 0.0%                                | 333                                    | 502              | YES                                     | YES               |
| West Lorne V                | 1,367           | 607             | 1,242                      | 89                               | 1,153                    | 31                             | 2.7%                                | 1,809                                  | 2,729            | YES                                     | YES               |
| Bayham Tp                   | 4,152           | 1,564           | 1,768                      | 324                              | 1,444                    | 28                             | 1.9%                                | 2,342                                  | 3,532            | YES                                     | NO                |
| South Dorchester Tp         | 1,806           | 653             | 759                        | 210                              | 550                      | 30                             | 5.4%                                | 757                                    | 1,142            | NO                                      | NO                |
| Dunwich Tp                  | 2,279           | 881             | 1,385                      | 347                              | 1,038                    | 263                            | 25.4%                               | (26)                                   | (39)             | YES                                     | NO                |
| Malahide Tp                 | 5,671           | 1,903           | 2,365                      | 240                              | 2,125                    | 115                            | 5.4%                                | 2,926                                  | 4,414            | YES                                     | NO                |
| Southwold Tp                | 4,431           | 1,477           | 1,682                      | 296                              | 1,387                    | 59                             | 4.2%                                | 2,023                                  | 3,051            | YES                                     | YES               |
| Yarmouth Tp                 | 7,733           | 2,736           | 2,928                      | 455                              | 2,473                    | 152                            | 6.2%                                | 3,274                                  | 4,939            | YES                                     | YES               |
| Aldborough Tp (new)         | 3,772           | 1,763           | 2,825                      | 416                              | 2,409                    | 410                            | 17.0%                               | 1,350                                  | 2,036            | YES                                     | YES               |
| Essex Co                    | 143,809         | 55,487          | 58,008                     | 23,835                           | 34,173                   | 889                            | 2.6%                                | 53,763                                 | 81,093           | NO                                      | NO                |
| Windsor C                   | 193,657         | 82,905          | 343,762                    | 63,767                           | 279,995                  | 22,300                         | 8.0%                                | 335,016                                | 505,321          | YES                                     | YES               |
| Amherstburg T               | 9,707           | 3,771           | 8,068                      | 651                              | 7,417                    | 675                            | 9.1%                                | 8,285                                  | 12,497           | YES                                     | YES               |
| Belle River T               | 4,353           | 1,674           | 4,411                      | 960                              | 3,451                    | 184                            | 5.3%                                | 4,768                                  | 7,192            | YES                                     | YES               |
| Essex T                     | 6,745           | 2,599           | 4,836                      | 434                              | 4,402                    | 375                            | 8.5%                                | 5,096                                  | 7,686            | YES                                     | YES               |
| Harrow T                    | 2,656           | 1,015           | 2,035                      | 122                              | 1,914                    | 18                             | 1.0%                                | 3,233                                  | 4,876            | YES                                     | YES               |
| Kingsville T                | 5,841           | 2,328           | 4,164                      | 382                              | 3,782                    | 269                            | 7.1%                                | 4,750                                  | 7,165            | YES                                     | YES               |
| Leamington T                | 14,629          | 6,172           | 14,945                     | 1,557                            | 13,388                   | 888                            | 6.6%                                | 17,273                                 | 26,054           | YES                                     | YES               |
| Tecumseh T                  | 11,913          | 4,285           | 7,184                      | 307                              | 6,878                    | 387                            | 5.6%                                | 9,362                                  | 14,121           | YES                                     | YES               |

### ADDITIONAL DEBT CAPACITY CALCULATION BY MUNICIPALITY (1997\$)

| Municipality                  | Population<br># | Households<br># | Own Fund Revenues          |                                  |                          | Debt Charges                   |                                     | Additional Debt<br>Which Can Be Issued |                  | Does the Municipality<br>Have Municipal |                   |
|-------------------------------|-----------------|-----------------|----------------------------|----------------------------------|--------------------------|--------------------------------|-------------------------------------|--|------------------|---|-------------------|
|                               |                 |                 | Total<br>Revenues<br>\$000 | Less: Ontario<br>Grants<br>\$000 | Net<br>Revenues<br>\$000 | Total Debt<br>Charges<br>\$000 | Debt as a %<br>of Net Revenues<br>% | 10 Year<br>\$000                       | 20 Year<br>\$000 | Water<br>(Yes/No)                       | Sewer<br>(Yes/No) |
|                               |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| LaSalle T                     | 18,797          | 6,827           | 13,911                     | 1,373                            | 12,538                   | 857                            | 6.8%                                | 15,994                                 | 24,125           | YES                                     | YES               |
| St Clair Beach V              | 3,495           | 1,298           | 2,345                      | 127                              | 2,218                    | 10                             | 0.4%                                | 3,827                                  | 5,772            | NO                                      | YES               |
| Anderdon Tp                   | 5,596           | 1,923           | 3,786                      | 238                              | 3,548                    | 170                            | 4.8%                                | 5,037                                  | 7,598            | YES                                     | YES               |
| Colchester North Tp           | 3,891           | 1,435           | 1,173                      | 207                              | 966                      | 101                            | 10.4%                               | 988                                    | 1,490            | YES                                     | YES               |
| Colchester South Tp           | 5,625           | 2,617           | 3,880                      | 296                              | 3,584                    | 614                            | 17.1%                               | 1,984                                  | 2,993            | YES                                     | YES               |
| Gosfield North Tp             | 4,500           | 1,561           | 2,375                      | 114                              | 2,261                    | 151                            | 6.7%                                | 2,912                                  | 4,392            | YES                                     | YES               |
| Gosfield South Tp             | 7,604           | 2,940           | 3,827                      | 321                              | 3,506                    | 233                            | 6.7%                                | 4,518                                  | 6,814            | YES                                     | NO                |
| Maidstone Tp                  | 10,714          | 4,104           | 5,421                      | 407                              | 5,014                    | 484                            | 9.7%                                | 5,404                                  | 8,151            | NO                                      | YES               |
| Malden Tp                     | 3,220           | 1,324           | 2,390                      | 146                              | 2,244                    | 145                            | 6.5%                                | 2,920                                  | 4,404            | YES                                     | YES               |
| Mersea Tp                     | 8,494           | 3,306           | 5,599                      | 447                              | 5,152                    | 595                            | 11.6%                               | 4,865                                  | 7,339            | YES                                     | YES               |
| Pelee Tp                      | 261             | 357             | 1,148                      | 148                              | 1,000                    | 25                             | 2.5%                                | 1,578                                  | 2,381            | YES                                     | NO                |
| Rochester Tp                  | 4,384           | 1,673           | 1,877                      | 227                              | 1,650                    | 306                            | 18.6%                               | 747                                    | 1,126            | YES                                     | NO                |
| Sandwich South Tp             | 6,260           | 2,146           | 4,135                      | 180                              | 3,955                    | 153                            | 3.9%                                | 5,870                                  | 8,855            | YES                                     | YES               |
| Tilbury North Tp              | 3,469           | 1,494           | 2,263                      | 189                              | 2,073                    | 382                            | 18.4%                               | 961                                    | 1,450            | YES                                     | YES               |
| Tilbury West Tp               | 1,655           | 638             | 1,297                      | 172                              | 1,125                    | 152                            | 13.5%                               | 908                                    | 1,369            | YES                                     | YES               |
| Frontenac Co                  | 71,099          | 35,114          | 19,520                     | 10,559                           | 8,961                    | 0                              | 0.0%                                | 15,735                                 | 23,733           | NO                                      | NO                |
| Kingston C                    | 55,939          | 28,656          | 106,550                    | 32,216                           | 74,334                   | 6,533                          | 8.8%                                | 84,641                                 | 127,668          | YES                                     | YES               |
| Barrie Tp                     | 706             | 1,318           | 613                        | 149                              | 464                      | 4                              | 0.8%                                | 787                                    | 1,186            | NO                                      | NO                |
| Bedford Tp                    | 945             | 2,160           | 1,032                      | 338                              | 693                      | 0                              | 0.0%                                | 1,216                                  | 1,834            | NO                                      | NO                |
| Clarendon and Miller Tp       | 483             | 1,072           | 546                        | 222                              | 324                      | 0                              | 0.0%                                | 569                                    | 858              | NO                                      | NO                |
| Hinchinbrooke Tp              | 1,118           | 925             | 757                        | 403                              | 354                      | 0                              | 0.0%                                | 621                                    | 936              | NO                                      | NO                |
| Howe Island Tp                | 421             | 322             | 378                        | 173                              | 205                      | 2                              | 1.0%                                | 346                                    | 522              | NO                                      | NO                |
| Kennebec Tp                   | 733             | 1,049           | 810                        | 451                              | 360                      | 0                              | 0.0%                                | 631                                    | 952              | NO                                      | NO                |
| Kingston Tp                   | 39,679          | 15,552          | 27,048                     | 5,030                            | 22,018                   | 1,631                          | 7.4%                                | 27,206                                 | 41,036           | YES                                     | YES               |
| Loughborough Tp               | 4,436           | 2,266           | 1,995                      | 472                              | 1,523                    | 63                             | 4.2%                                | 2,230                                  | 3,364            | NO                                      | NO                |
| Olden Tp                      | 830             | 710             | 712                        | 394                              | 318                      | 0                              | 0.0%                                | 559                                    | 843              | NO                                      | NO                |
| Oso Tp                        | 1,189           | 949             | 948                        | 448                              | 499                      | 24                             | 4.7%                                | 711                                    | 1,072            | NO                                      | NO                |
| Palmerston & N & S Canonto Tp | 348             | 649             | 403                        | 117                              | 286                      | 12                             | 4.1%                                | 420                                    | 633              | NO                                      | NO                |
| Pittsburgh Tp                 | 10,675          | 3,293           | 13,953                     | 875                              | 13,078                   | 14                             | 0.1%                                | 22,865                                 | 34,488           | YES                                     | YES               |
| Portland Tp                   | 4,529           | 1,979           | 2,223                      | 786                              | 1,437                    | 0                              | 0.0%                                | 2,522                                  | 3,805            | NO                                      | NO                |
| Storrington Tp                | 3,914           | 2,059           | 2,053                      | 424                              | 1,629                    | 0                              | 0.0%                                | 2,860                                  | 4,313            | NO                                      | YES               |
| Wolfe Island Tp               | 1,093           | 811             | 828                        | 338                              | 490                      | 22                             | 4.4%                                | 709                                    | 1,070            | NO                                      | NO                |
| Grey Co                       | 61,124          | 32,313          | 29,642                     | 17,942                           | 11,699                   | 0                              | 0.0%                                | 20,543                                 | 30,986           | NO                                      | NO                |
| Owen Sound C                  | 20,399          | 9,460           | 29,518                     | 4,098                            | 25,420                   | 1,483                          | 5.8%                                | 34,223                                 | 51,620           | YES                                     | YES               |
| Durham T                      | 2,546           | 1,184           | 2,200                      | 351                              | 1,849                    | 0                              | 0.0%                                | 3,247                                  | 4,898            | YES                                     | YES               |
| Hanover T                     | 6,538           | 2,992           | 6,036                      | 390                              | 5,647                    | 318                            | 5.6%                                | 7,678                                  | 11,582           | YES                                     | YES               |

### ADDITIONAL DEBT CAPACITY CALCULATION BY MUNICIPALITY (1997\$)

| Municipality                  | Population<br># | Households<br># | Own Fund Revenues          |                                  |                          | Debt Charges                   |                                     | Additional Debt<br>Which Can Be Issued |                  | Does the Municipality<br>Have Municipal |                   |
|-------------------------------|-----------------|-----------------|----------------------------|----------------------------------|--------------------------|--------------------------------|-------------------------------------|--|------------------|---|-------------------|
|                               |                 |                 | Total<br>Revenues<br>\$000 | Less: Ontario<br>Grants<br>\$000 | Net<br>Revenues<br>\$000 | Total Debt<br>Charges<br>\$000 | Debt as a %<br>of Net Revenues<br>% | 10 Year<br>\$000                       | 20 Year<br>\$000 | Water<br>(Yes/No)                       | Sewer<br>(Yes/No) |
|                               |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Meaford T                     | 4,330           | 2,142           | 5,020                      | 614                              | 4,405                    | 278                            | 6.3%                                | 5,785                                  | 8,726            | YES                                     | YES               |
| Thornbury T                   | 1,612           | 1,125           | 2,233                      | 305                              | 1,928                    | 2                              | 0.1%                                | 3,370                                  | 5,083            | YES                                     | YES               |
| Chatsworth V                  | 482             | 210             | 319                        | 50                               | 269                      | 0                              | 0.0%                                | 472                                    | 712              | YES                                     | NO                |
| Dundalk V                     | 1,566           | 707             | 1,247                      | 166                              | 1,081                    | 0                              | 0.0%                                | 1,898                                  | 2,863            | YES                                     | YES               |
| Flesherton V                  | 575             | 292             | 552                        | 66                               | 486                      | 6                              | 1.2%                                | 811                                    | 1,223            | NO                                      | YES               |
| Markdale V                    | 1,193           | 643             | 1,469                      | 238                              | 1,231                    | 78                             | 6.3%                                | 1,617                                  | 2,439            | YES                                     | YES               |
| Neustadt V                    | 542             | 250             | 396                        | 42                               | 353                      | 13                             | 3.6%                                | 531                                    | 800              | YES                                     | YES               |
| Shallow Lake V                | 457             | 185             | 291                        | 22                               | 269                      | 0                              | 0.0%                                | 472                                    | 712              | YES                                     | NO                |
| Artemesia Tp                  | 2,506           | 1,887           | 1,275                      | 475                              | 800                      | 0                              | 0.0%                                | 1,405                                  | 2,119            | NO                                      | NO                |
| Bentinck Tp                   | 3,396           | 1,490           | 1,208                      | 389                              | 819                      | 7                              | 0.8%                                | 1,391                                  | 2,099            | NO                                      | NO                |
| Collingwood Tp                | 3,251           | 3,892           | 4,411                      | 331                              | 4,080                    | 284                            | 7.0%                                | 5,169                                  | 7,797            | YES                                     | YES               |
| Derby Tp                      | 2,856           | 1,065           | 1,096                      | 180                              | 916                      | 13                             | 1.5%                                | 1,513                                  | 2,283            | YES                                     | YES               |
| Egremont Tp                   | 2,391           | 1,046           | 1,120                      | 459                              | 661                      | 70                             | 10.5%                               | 671                                    | 1,013            | NO                                      | NO                |
| Euphrasia Tp                  | 1,374           | 979             | 1,249                      | 338                              | 911                      | 28                             | 3.1%                                | 1,403                                  | 2,116            | YES                                     | YES               |
| Glenelg Tp                    | 2,006           | 1,085           | 1,044                      | 454                              | 590                      | 2                              | 0.4%                                | 1,022                                  | 1,541            | NO                                      | NO                |
| Holland Tp                    | 2,748           | 1,327           | 1,395                      | 668                              | 727                      | 17                             | 2.3%                                | 1,160                                  | 1,749            | YES                                     | NO                |
| Keppel Tp                     | 3,751           | 2,082           | 1,622                      | 419                              | 1,203                    | 1                              | 0.1%                                | 2,108                                  | 3,179            | YES                                     | NO                |
| Normanby Tp                   | 2,550           | 1,055           | 1,286                      | 433                              | 853                      | 99                             | 11.6%                               | 806                                    | 1,216            | NO                                      | NO                |
| Osprey Tp                     | 1,996           | 1,028           | 1,009                      | 477                              | 532                      | 0                              | 0.0%                                | 934                                    | 1,409            | YES                                     | NO                |
| Proton Tp                     | 1,783           | 830             | 1,119                      | 609                              | 511                      | 26                             | 5.0%                                | 716                                    | 1,080            | NO                                      | NO                |
| St Vincent Tp                 | 2,296           | 1,288           | 1,256                      | 284                              | 972                      | 26                             | 2.7%                                | 1,524                                  | 2,298            | NO                                      | NO                |
| Sarawak Tp                    | 2,727           | 1,102           | 1,080                      | 179                              | 901                      | 0                              | 0.0%                                | 1,582                                  | 2,386            | YES                                     | NO                |
| Sullivan Tp                   | 2,655           | 1,052           | 1,105                      | 565                              | 540                      | 26                             | 4.8%                                | 766                                    | 1,155            | NO                                      | NO                |
| Sydenham Tp                   | 2,997           | 1,375           | 1,351                      | 506                              | 844                      | 10                             | 1.1%                                | 1,415                                  | 2,134            | YES                                     | NO                |
| Haliburton Co                 | 13,895          | 20,630          | 13,046                     | 8,921                            | 4,125                    | 0                              | 0.0%                                | 7,244                                  | 10,926           | NO                                      | NO                |
| Anson Hindon and Minden Tp    | 3,160           | 3,286           | 2,991                      | 245                              | 2,746                    | 546                            | 19.9%                               | 986                                    | 1,488            | YES                                     | YES               |
| Cardiff Tp                    | 674             | 1,360           | 763                        | 102                              | 661                      | 0                              | 0.0%                                | 1,160                                  | 1,750            | NO                                      | NO                |
| Dysart et al Tp               | 4,702           | 6,426           | 3,640                      | 644                              | 2,996                    | 0                              | 0.0%                                | 5,261                                  | 7,936            | NO                                      | YES               |
| Glamorgan Tp                  | 619             | 1,448           | 608                        | 90                               | 518                      | 18                             | 3.4%                                | 784                                    | 1,183            | NO                                      | NO                |
| Lutterworth Tp                | 900             | 1,657           | 666                        | 93                               | 573                      | 0                              | 0.0%                                | 1,007                                  | 1,518            | NO                                      | NO                |
| Monmouth Tp                   | 767             | 1,045           | 606                        | 131                              | 476                      | 0                              | 0.0%                                | 836                                    | 1,260            | NO                                      | NO                |
| Sherborne McClintock et al Tp | 553             | 1,949           | 779                        | 105                              | 674                      | 21                             | 3.1%                                | 1,034                                  | 1,560            | NO                                      | NO                |
| Snowdon Tp                    | 803             | 884             | 438                        | 74                               | 364                      | 12                             | 3.2%                                | 558                                    | 841              | NO                                      | NO                |
| Stanhope Tp                   | 1,174           | 2,257           | 983                        | 159                              | 824                      | 46                             | 5.5%                                | 1,126                                  | 1,699            | NO                                      | NO                |
| Bicroft Tp                    | 543             | 318             | 447                        | 57                               | 390                      | 0                              | 0.0%                                | 685                                    | 1,032            | YES                                     | YES               |
| Hastings Co                   | 56,708          | 29,743          | 61,170                     | 47,202                           | 13,968                   | 0                              | 0.0%                                | 24,527                                 | 36,995           | NO                                      | NO                |

### ADDITIONAL DEBT CAPACITY CALCULATION BY MUNICIPALITY (1997\$)

| Municipality                  | Population<br># | Households<br># | Own Fund Revenues          |                                  |                          | Debt Charges                   |                                     | Additional Debt<br>Which Can Be Issued |                  | Does the Municipality<br>Have Municipal |                   |
|-------------------------------|-----------------|-----------------|----------------------------|----------------------------------|--------------------------|--------------------------------|-------------------------------------|--|------------------|---|-------------------|
|                               |                 |                 | Total<br>Revenues<br>\$000 | Less: Ontario<br>Grants<br>\$000 | Net<br>Revenues<br>\$000 | Total Debt<br>Charges<br>\$000 | Debt as a %<br>of Net Revenues<br>% | 10 Year<br>\$000                       | 20 Year<br>\$000 | Water<br>(Yes/No)                       | Sewer<br>(Yes/No) |
|                               |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Belleville C                  | 34,954          | 16,499          | 59,712                     | 16,823                           | 42,890                   | 4,712                          | 11.0%                               | 42,214                                 | 63,674           | YES                                     | YES               |
| Trenton C                     | 16,404          | 7,304           | 17,082                     | 1,117                            | 15,965                   | 2,901                          | 18.2%                               | 7,658                                  | 11,551           | YES                                     | YES               |
| Deseronto T                   | 1,728           | 754             | 1,870                      | 222                              | 1,648                    | 155                            | 9.4%                                | 1,804                                  | 2,721            | YES                                     | YES               |
| Bancroft T                    | 2,280           | 1,194           | 2,725                      | 338                              | 2,387                    | 372                            | 15.6%                               | 1,575                                  | 2,376            | YES                                     | YES               |
| Deloro V                      | 156             | 66              | 76                         | 9                                | 67                       | 0                              | 0.0%                                | 118                                    | 178              | YES                                     | YES               |
| Frankford V                   | 1,971           | 863             | 2,287                      | 201                              | 2,086                    | 376                            | 18.0%                               | 1,023                                  | 1,543            | YES                                     | YES               |
| Madoc V                       | 1,296           | 637             | 1,176                      | 142                              | 1,034                    | 107                            | 10.4%                               | 1,061                                  | 1,600            | YES                                     | YES               |
| Marmora V                     | 1,442           | 648             | 1,216                      | 181                              | 1,034                    | 0                              | 0.0%                                | 1,816                                  | 2,739            | YES                                     | YES               |
| Stirling V                    | 1,998           | 841             | 1,609                      | 183                              | 1,426                    | 8                              | 0.6%                                | 2,449                                  | 3,694            | YES                                     | YES               |
| Tweed V                       | 1,477           | 733             | 1,700                      | 179                              | 1,521                    | 35                             | 2.3%                                | 2,422                                  | 3,654            | YES                                     | YES               |
| Bangor Wicklow and McClure Tp | 1,007           | 1,578           | 891                        | 333                              | 559                      | 0                              | 0.0%                                | 981                                    | 1,480            | NO                                      | NO                |
| Carlow Tp                     | 422             | 313             | 301                        | 163                              | 138                      | 0                              | 0.0%                                | 242                                    | 366              | NO                                      | NO                |
| Dungannon Tp                  | 1,285           | 671             | 633                        | 107                              | 526                      | 11                             | 2.0%                                | 850                                    | 1,282            | NO                                      | NO                |
| Elzevir and Grimsthorpe Tp    | 731             | 511             | 404                        | 197                              | 207                      | 0                              | 0.0%                                | 364                                    | 548              | NO                                      | NO                |
| Faraday Tp                    | 1,416           | 1,264           | 631                        | 159                              | 472                      | 40                             | 8.4%                                | 550                                    | 830              | NO                                      | NO                |
| Herschel Tp                   | 1,226           | 1,214           | 686                        | 177                              | 509                      | 27                             | 5.4%                                | 701                                    | 1,057            | NO                                      | NO                |
| Hungerford Tp                 | 3,024           | 1,553           | 1,288                      | 692                              | 596                      | 5                              | 0.9%                                | 1,009                                  | 1,521            | NO                                      | NO                |
| Huntingdon Tp                 | 2,216           | 1,176           | 837                        | 271                              | 565                      | 2                              | 0.3%                                | 979                                    | 1,476            | NO                                      | NO                |
| Limerick Tp                   | 322             | 542             | 333                        | 73                               | 260                      | 0                              | 0.0%                                | 456                                    | 688              | NO                                      | NO                |
| Madoc Tp                      | 1,831           | 786             | 776                        | 380                              | 396                      | 0                              | 0.0%                                | 696                                    | 1,050            | NO                                      | NO                |
| Marmora and Lake Tp           | 2,054           | 1,677           | 968                        | 264                              | 705                      | 0                              | 0.0%                                | 1,237                                  | 1,866            | NO                                      | NO                |
| Mayo Tp                       | 384             | 321             | 265                        | 130                              | 134                      | 0                              | 0.0%                                | 236                                    | 356              | NO                                      | NO                |
| Monteagle Tp                  | 1,186           | 665             | 479                        | 255                              | 223                      | 0                              | 0.0%                                | 392                                    | 592              | NO                                      | NO                |
| Rawdon Tp                     | 2,618           | 1,018           | 1,031                      | 476                              | 555                      | 29                             | 5.3%                                | 769                                    | 1,160            | NO                                      | NO                |
| Sidney Tp                     | 12,890          | 5,190           | 6,103                      | 643                              | 5,460                    | 32                             | 0.6%                                | 9,364                                  | 14,124           | YES                                     | YES               |
| Thurlow Tp                    | 7,327           | 2,793           | 3,461                      | 267                              | 3,194                    | 190                            | 5.9%                                | 4,274                                  | 6,447            | YES                                     | YES               |
| Tudor and Cashel Tp           | 598             | 763             | 389                        | 144                              | 245                      | 0                              | 0.0%                                | 430                                    | 649              | NO                                      | NO                |
| Tyendinaga Tp                 | 3,201           | 1,234           | 1,021                      | 398                              | 623                      | 3                              | 0.5%                                | 1,074                                  | 1,620            | NO                                      | NO                |
| Wollaston Tp                  | 622             | 738             | 430                        | 118                              | 312                      | 0                              | 0.0%                                | 548                                    | 826              | NO                                      | NO                |
| Huron Co                      | 59,068          | 26,515          | 26,917                     | 11,190                           | 15,728                   | 0                              | 0.0%                                | 27,616                                 | 41,655           | NO                                      | NO                |
| Clinton T                     | 3,182           | 1,425           | 2,792                      | 385                              | 2,407                    | 126                            | 5.2%                                | 3,340                                  | 5,039            | YES                                     | YES               |
| Exeter T                      | 4,384           | 1,920           | 3,741                      | 321                              | 3,420                    | 141                            | 4.1%                                | 5,014                                  | 7,563            | YES                                     | YES               |
| Goderich T                    | 7,500           | 3,354           | 7,478                      | 710                              | 6,769                    | 0                              | 0.0%                                | 11,885                                 | 17,927           | YES                                     | YES               |
| Seaforth T                    | 2,223           | 986             | 2,387                      | 294                              | 2,093                    | 151                            | 7.2%                                | 2,614                                  | 3,943            | YES                                     | YES               |
| Wingham T                     | 2,921           | 1,286           | 3,861                      | 580                              | 3,281                    | 110                            | 3.4%                                | 4,988                                  | 7,523            | YES                                     | YES               |
| Bayfield V                    | 847             | 675             | 777                        | 83                               | 694                      | 14                             | 2.0%                                | 1,123                                  | 1,694            | YES                                     | YES               |



### ADDITIONAL DEBT CAPACITY CALCULATION BY MUNICIPALITY (1997\$)

| Municipality     | Population<br># | Households<br># | Own Fund Revenues          |                                  |                          | Debt Charges                   |                                     | Additional Debt<br>Which Can Be Issued |                  | Does the Municipality<br>Have Municipal |                   |
|------------------|-----------------|-----------------|----------------------------|----------------------------------|--------------------------|--------------------------------|-------------------------------------|--|------------------|---|-------------------|
|                  |                 |                 | Total<br>Revenues<br>\$000 | Less: Ontario<br>Grants<br>\$000 | Net<br>Revenues<br>\$000 | Total Debt<br>Charges<br>\$000 | Debt as a %<br>of Net Revenues<br>% | 10 Year<br>\$000                       | 20 Year<br>\$000 | Water<br>(Yes/No)                       | Sewer<br>(Yes/No) |
|                  |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Blyth V          | 964             | 409             | 786                        | 72                               | 714                      | 0                              | 0.0%                                | 1,254                                  | 1,891            | YES                                     | YES               |
| Brussels V       | 1,127           | 483             | 1,137                      | 102                              | 1,035                    | 0                              | 0.0%                                | 1,818                                  | 2,742            | YES                                     | YES               |
| Hensall V        | 1,210           | 479             | 848                        | 48                               | 800                      | 0                              | 0.0%                                | 1,404                                  | 2,118            | YES                                     | YES               |
| Zurich V         | 845             | 365             | 639                        | 152                              | 486                      | 12                             | 2.6%                                | 766                                    | 1,156            | YES                                     | YES               |
| Ashfield Tp      | 1,836           | 1,349           | 1,243                      | 387                              | 856                      | 282                            | 32.9%                               | (474)                                  | (716)            | YES                                     | NO                |
| Colborne Tp      | 2,030           | 1,127           | 814                        | 176                              | 638                      | 52                             | 8.1%                                | 758                                    | 1,143            | YES                                     | NO                |
| Goderich Tp      | 2,503           | 1,412           | 1,008                      | 315                              | 692                      | 63                             | 9.1%                                | 775                                    | 1,170            | YES                                     | NO                |
| Grey Tp          | 2,036           | 663             | 1,299                      | 586                              | 713                      | 151                            | 21.2%                               | 191                                    | 289              | NO                                      | NO                |
| Hay Tp           | 2,184           | 1,518           | 1,303                      | 241                              | 1,062                    | 169                            | 15.9%                               | 675                                    | 1,019            | YES                                     | YES               |
| Howick Tp        | 3,546           | 1,265           | 1,927                      | 604                              | 1,323                    | 61                             | 4.6%                                | 1,895                                  | 2,859            | YES                                     | NO                |
| Hullett Tp       | 1,843           | 628             | 915                        | 311                              | 604                      | 70                             | 11.7%                               | 566                                    | 854              | NO                                      | NO                |
| McKillop Tp      | 1,427           | 445             | 1,045                      | 302                              | 743                      | 242                            | 32.6%                               | (397)                                  | (598)            | NO                                      | NO                |
| Morris Tp        | 1,771           | 636             | 1,113                      | 402                              | 711                      | 85                             | 12.0%                               | 647                                    | 977              | YES                                     | NO                |
| Stanley Tp       | 1,613           | 1,114           | 1,162                      | 160                              | 1,002                    | 247                            | 24.7%                               | 23                                     | 35               | YES                                     | NO                |
| Stephen Tp       | 4,182           | 1,864           | 2,560                      | 278                              | 2,282                    | 134                            | 5.9%                                | 3,067                                  | 4,626            | YES                                     | YES               |
| Tuckersmith Tp   | 3,036           | 1,088           | 1,799                      | 562                              | 1,237                    | 150                            | 12.1%                               | 1,118                                  | 1,686            | YES                                     | NO                |
| Turnberry Tp     | 1,739           | 612             | 920                        | 280                              | 639                      | 42                             | 6.5%                                | 830                                    | 1,251            | NO                                      | NO                |
| Usborne Tp       | 1,529           | 534             | 934                        | 250                              | 684                      | 60                             | 8.8%                                | 777                                    | 1,172            | NO                                      | NO                |
| East Wawanosh Tp | 1,137           | 398             | 752                        | 231                              | 521                      | 35                             | 6.7%                                | 669                                    | 1,009            | YES                                     | NO                |
| West Wawanosh Tp | 1,453           | 480             | 647                        | 293                              | 354                      | 140                            | 39.5%                               | (360)                                  | (543)            | YES                                     | NO                |
| Kent Co          | 62,159          | 26,120          | 36,191                     | 20,728                           | 15,463                   | 0                              | 0.0%                                | 27,152                                 | 40,955           | NO                                      | NO                |
| Chatham C        | 39,815          | 17,867          | 51,392                     | 12,071                           | 39,321                   | 1,681                          | 4.3%                                | 57,240                                 | 86,337           | YES                                     | YES               |
| Blenheim T       | 4,567           | 1,961           | 4,166                      | 313                              | 3,853                    | 311                            | 8.1%                                | 4,584                                  | 6,914            | YES                                     | YES               |
| Bothwell T       | 912             | 411             | 920                        | 91                               | 829                      | 115                            | 13.9%                               | 646                                    | 975              | YES                                     | NO                |
| Dresden T        | 2,492           | 1,047           | 3,133                      | 316                              | 2,817                    | 115                            | 4.1%                                | 4,137                                  | 6,239            | YES                                     | YES               |
| Ridgetown T      | 3,234           | 1,426           | 3,056                      | 455                              | 2,601                    | 140                            | 5.4%                                | 3,586                                  | 5,409            | YES                                     | YES               |
| Tilbury T        | 4,254           | 1,730           | 4,500                      | 658                              | 3,842                    | 450                            | 11.7%                               | 3,584                                  | 5,406            | YES                                     | YES               |
| Wallaceburg T    | 10,992          | 4,713           | 13,331                     | 1,243                            | 12,088                   | 1,328                          | 11.0%                               | 11,898                                 | 17,947           | YES                                     | YES               |
| Erieau V         | 482             | 342             | 323                        | 27                               | 297                      | 2                              | 0.5%                                | 510                                    | 769              | YES                                     | NO                |
| Erie Beach V     | 236             | 125             | 111                        | 13                               | 98                       | 2                              | 1.9%                                | 159                                    | 239              | YES                                     | NO                |
| Highgate V       | 418             | 176             | 130                        | 16                               | 115                      | 10                             | 8.8%                                | 130                                    | 197              | NO                                      | NO                |
| Thamesville V    | 925             | 402             | 734                        | 132                              | 603                      | 0                              | 0.0%                                | 1,058                                  | 1,596            | YES                                     | YES               |
| Wheatley V       | 1,557           | 642             | 2,175                      | 126                              | 2,049                    | 170                            | 8.3%                                | 2,404                                  | 3,625            | YES                                     | YES               |
| Camden Tp        | 2,067           | 806             | 966                        | 222                              | 744                      | 120                            | 16.2%                               | 462                                    | 697              | YES                                     | NO                |
| Chatham Tp       | 5,987           | 2,519           | 3,199                      | 403                              | 2,796                    | 389                            | 13.9%                               | 2,177                                  | 3,284            | YES                                     | NO                |
| Dover Tp         | 3,973           | 1,594           | 2,718                      | 409                              | 2,309                    | 244                            | 10.6%                               | 2,342                                  | 3,533            | YES                                     | YES               |

### ADDITIONAL DEBT CAPACITY CALCULATION BY MUNICIPALITY (1997\$)

| Municipality     | Population<br># | Households<br># | Own Fund Revenues          |                                  |                          | Debt Charges                   |                                     | Additional Debt<br>Which Can Be Issued |                  | Does the Municipality<br>Have Municipal |                   |
|------------------|-----------------|-----------------|----------------------------|----------------------------------|--------------------------|--------------------------------|-------------------------------------|--|------------------|---|-------------------|
|                  |                 |                 | Total<br>Revenues<br>\$000 | Less: Ontario<br>Grants<br>\$000 | Net<br>Revenues<br>\$000 | Total Debt<br>Charges<br>\$000 | Debt as a %<br>of Net Revenues<br>% | 10 Year<br>\$000                       | 20 Year<br>\$000 | Water<br>(Yes/No)                       | Sewer<br>(Yes/No) |
|                  |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Harwich Tp       | 6,116           | 2,793           | 5,468                      | 559                              | 4,910                    | 636                            | 12.9%                               | 4,157                                  | 6,270            | YES                                     | NO                |
| Howard Tp        | 2,249           | 947             | 1,588                      | 312                              | 1,277                    | 198                            | 15.5%                               | 850                                    | 1,282            | NO                                      | NO                |
| Orford Tp        | 1,283           | 501             | 880                        | 287                              | 593                      | 184                            | 31.1%                               | (254)                                  | (383)            | NO                                      | NO                |
| Raleigh Tp       | 5,209           | 1,934           | 2,185                      | 371                              | 1,814                    | 258                            | 14.2%                               | 1,375                                  | 2,074            | YES                                     | YES               |
| Romney Tp        | 1,946           | 823             | 1,189                      | 137                              | 1,052                    | 96                             | 9.1%                                | 1,173                                  | 1,770            | NO                                      | YES               |
| Tilbury East Tp  | 2,273           | 817             | 1,702                      | 384                              | 1,319                    | 314                            | 23.8%                               | 109                                    | 165              | YES                                     | YES               |
| Zone Tp          | 987             | 411             | 392                        | 130                              | 261                      | 30                             | 11.4%                               | 249                                    | 376              | NO                                      | NO                |
| Lambton Co       | 52,419          | 22,820          | 63,595                     | 31,166                           | 32,429                   | 3,021                          | 9.3%                                | 35,722                                 | 53,881           | YES                                     | NO                |
| Sarnia C         | 69,657          | 30,322          | 54,188                     | 3,036                            | 51,152                   | 3,923                          | 7.7%                                | 62,261                                 | 93,912           | YES                                     | YES               |
| Forest T         | 2,795           | 1,238           | 2,407                      | 306                              | 2,101                    | 24                             | 1.2%                                | 3,517                                  | 5,304            | YES                                     | YES               |
| Petrolia T       | 4,809           | 1,853           | 4,530                      | 649                              | 3,881                    | 169                            | 4.4%                                | 5,627                                  | 8,487            | YES                                     | YES               |
| Bosanquet T      | 4,899           | 3,598           | 3,702                      | 460                              | 3,242                    | 237                            | 7.3%                                | 4,028                                  | 6,075            | YES                                     | NO                |
| Alvinston V      | 977             | 420             | 667                        | 83                               | 583                      | 0                              | 0.0%                                | 1,024                                  | 1,545            | YES                                     | YES               |
| Arkona V         | 511             | 196             | 445                        | 50                               | 394                      | 56                             | 14.2%                               | 299                                    | 452              | YES                                     | YES               |
| Grand Bend V     | 954             | 1,096           | 1,506                      | 95                               | 1,411                    | 85                             | 6.0%                                | 1,884                                  | 2,841            | YES                                     | YES               |
| Oil Springs V    | 728             | 294             | 406                        | 83                               | 322                      | 42                             | 12.9%                               | 274                                    | 413              | YES                                     | YES               |
| Point Edward V   | 2,277           | 968             | 2,800                      | 151                              | 2,649                    | 304                            | 11.5%                               | 2,518                                  | 3,798            | YES                                     | YES               |
| Thedford V       | 814             | 339             | 488                        | 129                              | 359                      | 23                             | 6.4%                                | 469                                    | 707              | YES                                     | YES               |
| Watford V        | 1,633           | 666             | 1,219                      | 173                              | 1,046                    | 70                             | 6.7%                                | 1,342                                  | 2,024            | YES                                     | YES               |
| Wyoming V        | 2,077           | 811             | 1,089                      | 169                              | 920                      | 88                             | 9.6%                                | 995                                    | 1,501            | YES                                     | YES               |
| Brooke Tp        | 1,877           | 656             | 1,801                      | 436                              | 1,365                    | 209                            | 15.3%                               | 929                                    | 1,401            | YES                                     | NO                |
| Dawn Tp          | 1,503           | 542             | 1,674                      | 327                              | 1,347                    | 305                            | 22.7%                               | 222                                    | 335              | YES                                     | NO                |
| Enniskillen Tp   | 3,159           | 1,120           | 2,453                      | 545                              | 1,908                    | 419                            | 22.0%                               | 407                                    | 614              | YES                                     | NO                |
| Euphemia Tp      | 1,076           | 412             | 791                        | 374                              | 418                      | 80                             | 19.3%                               | 168                                    | 254              | YES                                     | NO                |
| Moore Tp         | 10,684          | 4,033           | 8,266                      | 347                              | 7,919                    | 530                            | 6.7%                                | 10,182                                 | 15,358           | YES                                     | YES               |
| Plympton Tp      | 5,119           | 2,014           | 3,642                      | 548                              | 3,094                    | 442                            | 14.3%                               | 2,328                                  | 3,511            | YES                                     | YES               |
| Sombra Tp        | 4,081           | 1,724           | 3,019                      | 380                              | 2,639                    | 346                            | 13.1%                               | 2,206                                  | 3,328            | YES                                     | YES               |
| Warwick Tp       | 2,446           | 840             | 1,973                      | 449                              | 1,525                    | 484                            | 31.8%                               | (725)                                  | (1,094)          | YES                                     | YES               |
| Lanark Co        | 54,451          | 27,323          | 25,845                     | 15,675                           | 10,171                   | 425                            | 4.2%                                | 14,875                                 | 22,436           | NO                                      | NO                |
| Smiths Falls ST  | 9,001           | 4,079           | 14,764                     | 3,338                            | 11,425                   | 2,228                          | 19.5%                               | 4,414                                  | 6,658            | YES                                     | YES               |
| Almonte T        | 4,352           | 1,822           | 4,258                      | 591                              | 3,667                    | 196                            | 5.4%                                | 5,060                                  | 7,632            | YES                                     | YES               |
| Carleton Place T | 7,483           | 3,346           | 9,454                      | 760                              | 8,694                    | 2,455                          | 28.2%                               | (1,975)                                | (2,979)          | YES                                     | YES               |
| Perth T          | 5,524           | 2,894           | 6,255                      | 611                              | 5,644                    | 0                              | 0.0%                                | 9,911                                  | 14,949           | YES                                     | YES               |
| Bathurst Tp      | 2,971           | 1,274           | 1,080                      | 299                              | 780                      | 9                              | 1.1%                                | 1,311                                  | 1,977            | NO                                      | NO                |
| Beckwith Tp      | 4,689           | 2,302           | 1,910                      | 335                              | 1,575                    | 53                             | 3.4%                                | 2,395                                  | 3,612            | NO                                      | NO                |
| North Burgess Tp | 1,134           | 1,241           | 556                        | 87                               | 469                      | 1                              | 0.2%                                | 818                                    | 1,234            | NO                                      | NO                |

### ADDITIONAL DEBT CAPACITY CALCULATION BY MUNICIPALITY (1997\$)

| Municipality                  | Population<br># | Households<br># | Own Fund Revenues          |                                  |                          | Debt Charges                   |                                     | Additional Debt<br>Which Can Be Issued |                  | Does the Municipality<br>Have Municipal |                   |
|-------------------------------|-----------------|-----------------|----------------------------|----------------------------------|--------------------------|--------------------------------|-------------------------------------|--|------------------|---|-------------------|
|                               |                 |                 | Total<br>Revenues<br>\$000 | Less: Ontario<br>Grants<br>\$000 | Net<br>Revenues<br>\$000 | Total Debt<br>Charges<br>\$000 | Debt as a %<br>of Net Revenues<br>% | 10 Year<br>\$000                       | 20 Year<br>\$000 | Water<br>(Yes/No)                       | Sewer<br>(Yes/No) |
|                               |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Drummond Tp                   | 2,866           | 1,594           | 1,231                      | 272                              | 959                      | 5                              | 0.5%                                | 1,649                                  | 2,487            | NO                                      | NO                |
| North Elmsley Tp              | 2,824           | 1,333           | 835                        | 136                              | 700                      | 0                              | 0.0%                                | 1,229                                  | 1,853            | NO                                      | NO                |
| Montague Tp                   | 2,830           | 1,199           | 1,539                      | 491                              | 1,048                    | 33                             | 3.2%                                | 1,605                                  | 2,421            | YES                                     | YES               |
| Pakenham Tp                   | 1,872           | 835             | 1,242                      | 200                              | 1,042                    | 45                             | 4.3%                                | 1,512                                  | 2,280            | NO                                      | NO                |
| Ramsay Tp                     | 4,011           | 1,579           | 1,833                      | 365                              | 1,468                    | 67                             | 4.6%                                | 2,108                                  | 3,180            | NO                                      | NO                |
| South Sherbrooke Tp           | 670             | 865             | 539                        | 77                               | 462                      | 2                              | 0.4%                                | 797                                    | 1,202            | NO                                      | NO                |
| Lanark Highlands Tp           | 4,224           | 2,960           | 3,359                      | 1,446                            | 1,912                    | 5                              | 0.2%                                | 3,326                                  | 5,017            | NO                                      | NO                |
| Leeds & Grenville Co          | 68,840          | 34,450          | 35,055                     | 24,802                           | 10,253                   | 191                            | 1.9%                                | 16,663                                 | 25,133           | NO                                      | NO                |
| Brockville C                  | 21,103          | 9,933           | 36,142                     | 7,598                            | 28,544                   | 3,924                          | 13.7%                               | 22,556                                 | 34,022           | YES                                     | YES               |
| Gananoque ST                  | 4,973           | 2,364           | 7,627                      | 1,511                            | 6,116                    | 383                            | 6.3%                                | 8,050                                  | 12,142           | YES                                     | YES               |
| Prescott ST                   | 3,999           | 2,066           | 5,293                      | 304                              | 4,989                    | 498                            | 10.0%                               | 5,264                                  | 7,940            | YES                                     | YES               |
| Kemptville T                  | 2,721           | 1,363           | 3,299                      | 365                              | 2,933                    | 436                            | 14.9%                               | 2,088                                  | 3,150            | YES                                     | YES               |
| Athens V                      | 947             | 419             | 583                        | 66                               | 517                      | 58                             | 11.3%                               | 499                                    | 752              | NO                                      | NO                |
| Cardinal V                    | 1,580           | 788             | 1,607                      | 95                               | 1,512                    | 123                            | 8.2%                                | 1,789                                  | 2,698            | YES                                     | YES               |
| Merrickville V                | 995             | 462             | 1,301                      | 135                              | 1,166                    | 0                              | 0.0%                                | 2,047                                  | 3,088            | YES                                     | YES               |
| Newboro V                     | 283             | 170             | 170                        | 21                               | 149                      | 3                              | 1.7%                                | 245                                    | 369              | NO                                      | NO                |
| Westport V                    | 645             | 358             | 832                        | 76                               | 756                      | 19                             | 2.5%                                | 1,196                                  | 1,804            | YES                                     | YES               |
| Augusta Tp                    | 7,285           | 2,836           | 2,144                      | 361                              | 1,783                    | 8                              | 0.5%                                | 3,073                                  | 4,636            | NO                                      | NO                |
| Bastard and South Burgess Tp  | 2,508           | 1,887           | 1,550                      | 323                              | 1,227                    | 19                             | 1.6%                                | 2,018                                  | 3,044            | NO                                      | NO                |
| North Crosby Tp               | 983             | 1,071           | 620                        | 163                              | 457                      | 35                             | 7.7%                                | 556                                    | 839              | NO                                      | NO                |
| South Crosby Tp               | 1,771           | 1,606           | 894                        | 184                              | 710                      | 61                             | 8.6%                                | 818                                    | 1,234            | NO                                      | NO                |
| Edwardsburgh Tp               | 4,566           | 1,968           | 2,356                      | 297                              | 2,059                    | 58                             | 2.8%                                | 3,211                                  | 4,843            | YES                                     | YES               |
| Elizabethtown Tp              | 7,240           | 2,772           | 2,030                      | 588                              | 1,442                    | 71                             | 4.9%                                | 2,036                                  | 3,071            | NO                                      | NO                |
| South Elmsley Tp              | 3,312           | 1,926           | 835                        | 164                              | 671                      | 0                              | 0.0%                                | 1,179                                  | 1,778            | NO                                      | NO                |
| Front of Escott Tp            | 1,194           | 778             | 520                        | 95                               | 426                      | 0                              | 0.0%                                | 748                                    | 1,128            | NO                                      | NO                |
| South Gower Tp                | 2,280           | 939             | 1,275                      | 93                               | 1,182                    | 24                             | 2.1%                                | 1,905                                  | 2,873            | YES                                     | NO                |
| Kitley Tp                     | 2,236           | 939             | 995                        | 308                              | 686                      | 7                              | 1.0%                                | 1,158                                  | 1,747            | NO                                      | NO                |
| Front of Leeds & Lansdowne Tp | 4,798           | 2,571           | 1,837                      | 201                              | 1,636                    | 92                             | 5.6%                                | 2,226                                  | 3,358            | YES                                     | NO                |
| Rear of Leeds & Lansdowne Tp  | 2,689           | 1,997           | 1,206                      | 256                              | 950                      | 36                             | 3.8%                                | 1,416                                  | 2,136            | NO                                      | NO                |
| Oxford (on Rideau) Tp         | 6,160           | 2,518           | 1,587                      | 314                              | 1,273                    | 80                             | 6.3%                                | 1,672                                  | 2,522            | YES                                     | NO                |
| Wolford Tp                    | 1,455           | 671             | 602                        | 163                              | 439                      | 17                             | 3.8%                                | 655                                    | 988              | NO                                      | NO                |
| Front of Yonge Tp             | 2,337           | 1,141           | 727                        | 125                              | 602                      | 3                              | 0.5%                                | 1,037                                  | 1,564            | NO                                      | NO                |
| Rear of Yonge and Escott Tp   | 1,883           | 840             | 440                        | 139                              | 300                      | 23                             | 7.5%                                | 368                                    | 555              | NO                                      | NO                |
| Lennox and Addington Co       | 35,531          | 17,136          | 20,853                     | 12,325                           | 8,528                    | 320                            | 3.8%                                | 12,727                                 | 19,198           | NO                                      | NO                |
| Napanee T                     | 4,955           | 2,546           | 5,958                      | 1,033                            | 4,926                    | 420                            | 8.5%                                | 5,701                                  | 8,599            | YES                                     | YES               |
| Bath V                        | 1,274           | 577             | 2,135                      | 66                               | 2,069                    | 61                             | 3.0%                                | 3,202                                  | 4,829            | NO                                      | YES               |

### ADDITIONAL DEBT CAPACITY CALCULATION BY MUNICIPALITY (1997\$)

| Municipality                    | Population<br># | Households<br># | Own Fund Revenues          |                                  |                          | Debt Charges                   |                                     | Additional Debt<br>Which Can Be Issued |                  | Does the Municipality<br>Have Municipal |                   |
|---------------------------------|-----------------|-----------------|----------------------------|----------------------------------|--------------------------|--------------------------------|-------------------------------------|--|------------------|---|-------------------|
|                                 |                 |                 | Total<br>Revenues<br>\$000 | Less: Ontario<br>Grants<br>\$000 | Net<br>Revenues<br>\$000 | Total Debt<br>Charges<br>\$000 | Debt as a %<br>of Net Revenues<br>% | 10 Year<br>\$000                       | 20 Year<br>\$000 | Water<br>(Yes/No)                       | Sewer<br>(Yes/No) |
|                                 |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Newburgh V                      | 712             | 295             | 212                        | 38                               | 174                      | 4                              | 2.3%                                | 278                                    | 419              | NO                                      | NO                |
| Adolphustown Tp                 | 848             | 653             | 300                        | 54                               | 246                      | 18                             | 7.3%                                | 307                                    | 462              | NO                                      | NO                |
| Amherst Island Tp               | 386             | 262             | 1,739                      | 1,347                            | 392                      | 7                              | 1.7%                                | 642                                    | 969              | NO                                      | NO                |
| Camden East Tp                  | 4,518           | 1,805           | 1,770                      | 634                              | 1,136                    | 7                              | 0.6%                                | 1,943                                  | 2,931            | YES                                     | NO                |
| Denbigh Abinger and Ashby Tp    | 628             | 1,096           | 491                        | 270                              | 221                      | 27                             | 12.4%                               | 196                                    | 295              | NO                                      | NO                |
| Ernestown Tp                    | 11,343          | 4,338           | 7,445                      | 546                              | 6,899                    | 132                            | 1.9%                                | 11,189                                 | 16,876           | YES                                     | YES               |
| North Fredericksburgh Tp        | 3,095           | 1,275           | 904                        | 144                              | 760                      | 37                             | 4.9%                                | 1,072                                  | 1,617            | YES                                     | YES               |
| South Fredericksburgh Tp        | 1,147           | 518             | 804                        | 94                               | 710                      | 17                             | 2.4%                                | 1,129                                  | 1,703            | YES                                     | NO                |
| Kaladar Anglesea & Effingham Tp | 1,429           | 1,279           | 733                        | 167                              | 566                      | 0                              | 0.0%                                | 994                                    | 1,499            | NO                                      | NO                |
| Richmond Tp                     | 3,829           | 1,481           | 1,534                      | 283                              | 1,251                    | 5                              | 0.4%                                | 2,160                                  | 3,259            | NO                                      | YES               |
| Sheffield Tp                    | 1,367           | 1,011           | 948                        | 234                              | 714                      | 24                             | 3.4%                                | 1,084                                  | 1,635            | NO                                      | NO                |
| Middlesex Co                    | 61,407          | 22,547          | 24,176                     | 14,098                           | 10,078                   | 358                            | 3.6%                                | 15,181                                 | 22,898           | NO                                      | YES               |
| London C                        | 320,099         | 141,056         | 445,417                    | 129,677                          | 315,740                  | 18,262                         | 5.8%                                | 426,140                                | 642,768          | YES                                     | YES               |
| Parkhill T                      | 1,677           | 667             | 1,287                      | 169                              | 1,119                    | 0                              | 0.0%                                | 1,964                                  | 2,963            | YES                                     | YES               |
| Strathroy T                     | 10,981          | 4,393           | 8,987                      | 866                              | 8,122                    | 1,562                          | 19.2%                               | 3,288                                  | 4,960            | NO                                      | YES               |
| Ailsa Craig V                   | 947             | 383             | 586                        | 78                               | 508                      | 0                              | 0.0%                                | 892                                    | 1,346            | YES                                     | YES               |
| Glencoe V                       | 2,054           | 884             | 2,182                      | 463                              | 1,720                    | 222                            | 12.9%                               | 1,460                                  | 2,202            | YES                                     | YES               |
| Lucan V                         | 1,845           | 708             | 1,959                      | 165                              | 1,794                    | 244                            | 13.6%                               | 1,436                                  | 2,166            | YES                                     | YES               |
| Newbury V                       | 404             | 169             | 233                        | 20                               | 213                      | 15                             | 7.0%                                | 270                                    | 407              | YES                                     | YES               |
| Wardsville V                    | 423             | 175             | 182                        | 55                               | 126                      | 5                              | 4.0%                                | 187                                    | 282              | NO                                      | YES               |
| Adelaide Tp                     | 2,000           | 621             | 868                        | 126                              | 742                      | 192                            | 25.9%                               | (47)                                   | (71)             | YES                                     | NO                |
| Biddulph Tp                     | 2,194           | 743             | 1,045                      | 208                              | 836                      | 76                             | 9.0%                                | 937                                    | 1,414            | YES                                     | YES               |
| Caradoc Tp                      | 6,117           | 2,248           | 2,320                      | 460                              | 1,860                    | 226                            | 12.2%                               | 1,675                                  | 2,526            | YES                                     | NO                |
| Delaware Tp                     | 2,465           | 751             | 1,102                      | 210                              | 892                      | 79                             | 8.8%                                | 1,013                                  | 1,528            | YES                                     | NO                |
| North Dorchester Tp             | 8,144           | 2,973           | 3,429                      | 465                              | 2,964                    | 147                            | 5.0%                                | 4,170                                  | 6,290            | YES                                     | YES               |
| Ekfrid Tp                       | 2,202           | 830             | 1,037                      | 386                              | 650                      | 109                            | 16.7%                               | 379                                    | 572              | YES                                     | NO                |
| Lobo Tp                         | 5,464           | 1,819           | 2,460                      | 269                              | 2,192                    | 149                            | 6.8%                                | 2,802                                  | 4,226            | YES                                     | YES               |
| London Tp                       | 4,741           | 1,752           | 3,092                      | 629                              | 2,463                    | 181                            | 7.3%                                | 3,057                                  | 4,611            | YES                                     | YES               |
| McGillivray Tp                  | 1,843           | 623             | 1,423                      | 269                              | 1,154                    | 211                            | 18.2%                               | 548                                    | 827              | YES                                     | NO                |
| Metcalfe Tp                     | 1,033           | 341             | 452                        | 148                              | 304                      | 51                             | 16.9%                               | 173                                    | 260              | NO                                      | NO                |
| Mosa Tp                         | 1,304           | 485             | 716                        | 349                              | 366                      | 48                             | 13.0%                               | 307                                    | 464              | YES                                     | NO                |
| West Nissouri Tp                | 3,347           | 1,217           | 1,412                      | 223                              | 1,189                    | 155                            | 13.0%                               | 1,003                                  | 1,512            | YES                                     | NO                |
| East Williams Tp                | 1,311           | 450             | 786                        | 189                              | 597                      | 136                            | 22.8%                               | 93                                     | 140              | YES                                     | YES               |
| West Williams Tp                | 911             | 315             | 752                        | 168                              | 584                      | 45                             | 7.6%                                | 713                                    | 1,076            | YES                                     | YES               |
| Northumberland Co               | 75,448          | 34,798          | 38,799                     | 22,089                           | 16,711                   | 1,665                          | 10.0%                               | 17,647                                 | 26,617           | NO                                      | NO                |
| Campbellford T                  | 3,305           | 1,690           | 3,505                      | 320                              | 3,185                    | 360                            | 11.3%                               | 3,063                                  | 4,620            | YES                                     | YES               |

### ADDITIONAL DEBT CAPACITY CALCULATION BY MUNICIPALITY (1997\$)

| Municipality      | Population<br># | Households<br># | Own Fund Revenues |                         |                 | Debt Charges          |                                | Additional Debt<br>Which Can Be Issued |         | Does the Municipality<br>Have Municipal |          |
|-------------------|-----------------|-----------------|-------------------|-------------------------|-----------------|-----------------------|--------------------------------|--|---------|---|----------|
|                   |                 |                 | Total<br>Revenues | Less: Ontario<br>Grants | Net<br>Revenues | Total Debt<br>Charges | Debt as a %<br>of Net Revenues | 10 Year                                | 20 Year | Water                                   | Sewer    |
|                   |                 |                 | \$000             | \$000                   | \$000           | \$000                 | %                              | \$000                                  | \$000   | (Yes/No)                                | (Yes/No) |
| Cobourg T         | 15,037          | 6,718           | 19,198            | 692                     | 18,506          | 1,793                 | 9.7%                           | 19,903                                 | 30,021  | YES                                     | YES      |
| Port Hope T       | 11,040          | 4,615           | 11,133            | 1,361                   | 9,773           | 466                   | 4.8%                           | 13,889                                 | 20,950  | YES                                     | YES      |
| Brighton T        | 4,199           | 2,002           | 2,205             | 374                     | 1,831           | 104                   | 5.7%                           | 2,482                                  | 3,743   | YES                                     | YES      |
| Colborne V        | 1,968           | 865             | 1,578             | 477                     | 1,101           | 34                    | 3.1%                           | 1,692                                  | 2,553   | YES                                     | YES      |
| Hastings V        | 1,106           | 535             | 1,222             | 177                     | 1,045           | 62                    | 5.9%                           | 1,402                                  | 2,115   | YES                                     | YES      |
| Alnwick Tp        | 973             | 951             | 450               | 97                      | 353             | 0                     | 0.0%                           | 621                                    | 936     | YES                                     | NO       |
| Brighton Tp       | 3,418           | 1,611           | 1,505             | 248                     | 1,256           | 40                    | 3.2%                           | 1,926                                  | 2,906   | NO                                      | NO       |
| Cramahe Tp        | 3,060           | 1,437           | 1,599             | 404                     | 1,194           | 3                     | 0.3%                           | 2,074                                  | 3,129   | NO                                      | NO       |
| Haldimand Tp      | 4,131           | 1,744           | 2,278             | 543                     | 1,735           | 105                   | 6.0%                           | 2,310                                  | 3,484   | YES                                     | NO       |
| Hamilton Tp       | 9,470           | 4,290           | 4,000             | 574                     | 3,426           | 309                   | 9.0%                           | 3,843                                  | 5,796   | YES                                     | YES      |
| Hope Tp           | 3,612           | 1,443           | 1,659             | 281                     | 1,378           | 73                    | 5.3%                           | 1,907                                  | 2,877   | NO                                      | NO       |
| Murray Tp         | 6,841           | 2,742           | 2,855             | 393                     | 2,462           | 24                    | 1.0%                           | 4,153                                  | 6,264   | NO                                      | NO       |
| Percy Tp          | 3,062           | 1,482           | 1,720             | 454                     | 1,266           | 14                    | 1.1%                           | 2,125                                  | 3,205   | YES                                     | YES      |
| Seymour Tp        | 4,226           | 2,673           | 1,637             | 503                     | 1,134           | 8                     | 0.7%                           | 1,933                                  | 2,915   | NO                                      | NO       |
| Perth Co          | 42,038          | 15,265          | 12,955            | 7,418                   | 5,537           | 79                    | 1.4%                           | 9,169                                  | 13,830  | NO                                      | NO       |
| Stratford C       | 27,563          | 12,186          | 38,940            | 5,247                   | 33,692          | 1,934                 | 5.7%                           | 45,576                                 | 68,744  | YES                                     | YES      |
| St Marys ST       | 5,493           | 2,378           | 7,452             | 807                     | 6,645           | 547                   | 8.2%                           | 7,829                                  | 11,809  | YES                                     | YES      |
| Listowel T        | 5,262           | 2,306           | 5,647             | 337                     | 5,310           | 910                   | 17.1%                          | 2,934                                  | 4,426   | YES                                     | YES      |
| Mitchell T        | 3,518           | 1,470           | 2,834             | 322                     | 2,512           | 155                   | 6.2%                           | 3,325                                  | 5,015   | YES                                     | YES      |
| Milverton V       | 1,539           | 621             | 967               | 230                     | 738             | 28                    | 3.8%                           | 1,097                                  | 1,655   | YES                                     | YES      |
| Blanshard Tp      | 1,953           | 646             | 1,045             | 195                     | 850             | 89                    | 10.5%                          | 866                                    | 1,305   | NO                                      | NO       |
| Downie Tp         | 2,338           | 811             | 950               | 196                     | 754             | 96                    | 12.8%                          | 647                                    | 975     | YES                                     | NO       |
| North Easthope Tp | 2,102           | 712             | 967               | 191                     | 776             | 59                    | 7.6%                           | 951                                    | 1,435   | YES                                     | NO       |
| South Easthope Tp | 1,837           | 631             | 657               | 118                     | 539             | 52                    | 9.6%                           | 584                                    | 880     | NO                                      | NO       |
| Ellice Tp         | 3,104           | 1,030           | 1,536             | 347                     | 1,189           | 253                   | 21.3%                          | 311                                    | 470     | YES                                     | NO       |
| Elma Tp           | 3,978           | 1,351           | 2,255             | 396                     | 1,858           | 212                   | 11.4%                          | 1,777                                  | 2,680   | YES                                     | NO       |
| Fullarton Tp      | 1,627           | 532             | 921               | 244                     | 678             | 115                   | 17.0%                          | 380                                    | 573     | NO                                      | YES      |
| Hibbert Tp        | 1,340           | 461             | 1,254             | 220                     | 1,034           | 105                   | 10.2%                          | 1,076                                  | 1,623   | NO                                      | NO       |
| Logan Tp          | 2,184           | 690             | 1,201             | 282                     | 919             | 208                   | 22.7%                          | 151                                    | 228     | NO                                      | NO       |
| Mornington Tp     | 3,381           | 907             | 1,215             | 269                     | 946             | 223                   | 23.6%                          | 93                                     | 141     | YES                                     | NO       |
| Wallace Tp        | 2,382           | 719             | 1,380             | 223                     | 1,158           | 82                    | 7.1%                           | 1,458                                  | 2,199   | YES                                     | NO       |
| Peterborough Co   | 49,417          | 31,227          | 12,366            | 5,880                   | 6,486           | 0                     | 0.0%                           | 11,389                                 | 17,179  | NO                                      | NO       |
| Peterborough C    | 66,494          | 29,742          | 109,886           | 30,672                  | 79,213          | 6,858                 | 8.7%                           | 90,921                                 | 137,140 | YES                                     | YES      |
| Havelock V        | 1,307           | 573             | 1,491             | 609                     | 882             | 66                    | 7.5%                           | 1,087                                  | 1,639   | YES                                     | YES      |
| Lakefield V       | 2,387           | 1,097           | 4,831             | 803                     | 4,028           | 414                   | 10.3%                          | 4,163                                  | 6,280   | YES                                     | YES      |
| Norwood V         | 1,349           | 614             | 1,838             | 610                     | 1,228           | 304                   | 24.7%                          | 23                                     | 35      | YES                                     | YES      |

### ADDITIONAL DEBT CAPACITY CALCULATION BY MUNICIPALITY (1997\$)

| Municipality               | Population<br># | Households<br># | Own Fund Revenues          |                                  |                          | Debt Charges                   |                                     | Additional Debt<br>Which Can Be Issued |                  | Does the Municipality<br>Have Municipal |                   |
|----------------------------|-----------------|-----------------|----------------------------|----------------------------------|--------------------------|--------------------------------|-------------------------------------|--|------------------|---|-------------------|
|                            |                 |                 | Total<br>Revenues<br>\$000 | Less: Ontario<br>Grants<br>\$000 | Net<br>Revenues<br>\$000 | Total Debt<br>Charges<br>\$000 | Debt as a %<br>of Net Revenues<br>% | 10 Year<br>\$000                       | 20 Year<br>\$000 | Water<br>(Yes/No)                       | Sewer<br>(Yes/No) |
|                            |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Millbrook V                | 1,210           | 524             | 1,308                      | 164                              | 1,145                    | 32                             | 2.8%                                | 1,788                                  | 2,697            | YES                                     | YES               |
| Asphodel Tp                | 2,418           | 1,042           | 1,482                      | 650                              | 832                      | 5                              | 0.6%                                | 1,425                                  | 2,149            | YES                                     | NO                |
| Belmont and Methuen Tp     | 2,877           | 3,478           | 1,885                      | 707                              | 1,178                    | 17                             | 1.4%                                | 1,950                                  | 2,941            | NO                                      | NO                |
| Burleigh and Anstruther Tp | 1,391           | 2,196           | 1,545                      | 291                              | 1,254                    | 0                              | 0.0%                                | 2,202                                  | 3,322            | NO                                      | NO                |
| Chandos Tp                 | 633             | 1,418           | 832                        | 195                              | 636                      | 0                              | 0.0%                                | 1,117                                  | 1,685            | NO                                      | NO                |
| Douro Tp                   | 3,511           | 1,371           | 1,380                      | 400                              | 980                      | 0                              | 0.0%                                | 1,720                                  | 2,595            | NO                                      | NO                |
| Dummer Tp                  | 2,847           | 1,854           | 1,487                      | 414                              | 1,073                    | 1                              | 0.0%                                | 1,881                                  | 2,837            | NO                                      | YES               |
| Ennismore Tp               | 4,239           | 1,984           | 2,257                      | 390                              | 1,867                    | 0                              | 0.0%                                | 3,278                                  | 4,945            | YES                                     | NO                |
| Galway and Cavendish Tp    | 685             | 2,123           | 1,174                      | 175                              | 999                      | 0                              | 0.0%                                | 1,754                                  | 2,646            | NO                                      | NO                |
| Harvey Tp                  | 3,059           | 3,262           | 2,684                      | 613                              | 2,071                    | 60                             | 2.9%                                | 3,217                                  | 4,852            | YES                                     | NO                |
| North Monaghan Tp          | 1,158           | 413             | 452                        | 67                               | 385                      | 0                              | 0.0%                                | 676                                    | 1,020            | NO                                      | NO                |
| Otonabee Tp                | 5,060           | 2,008           | 2,248                      | 719                              | 1,529                    | 41                             | 2.7%                                | 2,395                                  | 3,613            | YES                                     | NO                |
| Smith Tp                   | 8,692           | 4,514           | 3,548                      | 923                              | 2,625                    | 0                              | 0.0%                                | 4,609                                  | 6,952            | YES                                     | YES               |
| Cavan Tp                   | 5,344           | 1,905           | 2,108                      | 320                              | 1,788                    | 46                             | 2.5%                                | 2,819                                  | 4,252            | NO                                      | NO                |
| South Monaghan Tp          | 1,250           | 851             | 557                        | 134                              | 424                      | 13                             | 3.0%                                | 656                                    | 990              | NO                                      | NO                |
| Prescott and Russell Co    | 70,505          | 27,717          | 29,980                     | 19,060                           | 10,920                   | 70                             | 0.6%                                | 18,682                                 | 28,178           | NO                                      | NO                |
| Hawkesbury T               | 9,871           | 4,355           | 10,694                     | 497                              | 10,197                   | 1,252                          | 12.3%                               | 9,113                                  | 13,746           | YES                                     | YES               |
| Rockland T                 | 7,547           | 2,875           | 5,373                      | 754                              | 4,619                    | 1,291                          | 28.0%                               | (959)                                  | (1,447)          | YES                                     | YES               |
| Vankleek Hill T            | 1,941           | 873             | 1,830                      | 318                              | 1,512                    | 26                             | 1.7%                                | 2,474                                  | 3,731            | YES                                     | YES               |
| Casselman V                | 2,586           | 1,029           | 1,584                      | 86                               | 1,498                    | 50                             | 3.4%                                | 2,277                                  | 3,435            | YES                                     | YES               |
| L'Orignal V                | 1,971           | 826             | 1,078                      | 118                              | 960                      | 58                             | 6.1%                                | 1,276                                  | 1,925            | YES                                     | YES               |
| St. Isidore V              | 740             | 336             | 804                        | 49                               | 755                      | 0                              | 0.0%                                | 1,326                                  | 2,000            | YES                                     | YES               |
| Caledonia Tp               | 1,441           | 550             | 1,228                      | 326                              | 902                      | 271                            | 30.1%                               | (322)                                  | (485)            | NO                                      | YES               |
| Cambridge Tp               | 6,002           | 2,160           | 2,484                      | 391                              | 2,093                    | 443                            | 21.2%                               | 564                                    | 851              | YES                                     | YES               |
| Clarence Tp                | 10,069          | 3,654           | 4,446                      | 780                              | 3,666                    | 388                            | 10.6%                               | 3,708                                  | 5,594            | YES                                     | YES               |
| East Hawkesbury Tp         | 3,153           | 1,338           | 1,633                      | 320                              | 1,313                    | 275                            | 20.9%                               | 374                                    | 565              | NO                                      | YES               |
| West Hawkesbury Tp         | 2,957           | 1,139           | 1,048                      | 209                              | 838                      | 28                             | 3.3%                                | 1,279                                  | 1,929            | YES                                     | YES               |
| Longueuil Tp               | 1,336           | 605             | 658                        | 59                               | 600                      | 12                             | 2.0%                                | 969                                    | 1,462            | NO                                      | NO                |
| South Plantagenet Tp       | 1,788           | 685             | 1,544                      | 441                              | 1,103                    | 208                            | 18.9%                               | 474                                    | 715              | NO                                      | NO                |
| Russell Tp                 | 11,417          | 3,938           | 6,213                      | 437                              | 5,775                    | 775                            | 13.4%                               | 4,696                                  | 7,084            | YES                                     | YES               |
| Alfred and Plantagenet Tp  | 7,686           | 3,354           | 4,314                      | 874                              | 3,440                    | 403                            | 11.7%                               | 3,209                                  | 4,840            | YES                                     | YES               |
| Prince Edward Co           | 22,504          | 11,331          | 10,637                     | 6,239                            | 4,398                    | 0                              | 0.0%                                | 7,722                                  | 11,648           | NO                                      | NO                |
| Picton T                   | 4,077           | 2,161           | 4,361                      | 492                              | 3,869                    | 60                             | 1.6%                                | 6,371                                  | 9,610            | YES                                     | YES               |
| Bloomfield V               | 667             | 280             | 443                        | 82                               | 361                      | 65                             | 18.0%                               | 176                                    | 266              | YES                                     | YES               |
| Wellington V               | 1,470           | 804             | 1,479                      | 83                               | 1,396                    | 241                            | 17.2%                               | 760                                    | 1,146            | YES                                     | YES               |
| Ameliasburgh Tp            | 5,119           | 2,335           | 1,926                      | 306                              | 1,620                    | 84                             | 5.2%                                | 2,256                                  | 3,403            | YES                                     | NO                |

### ADDITIONAL DEBT CAPACITY CALCULATION BY MUNICIPALITY (1997\$)

| Municipality                    | Population<br># | Households<br># | Own Fund Revenues          |                                  |                          | Debt Charges                   |                                     | Additional Debt<br>Which Can Be Issued |                  | Does the Municipality<br>Have Municipal |                   |
|---------------------------------|-----------------|-----------------|----------------------------|----------------------------------|--------------------------|--------------------------------|-------------------------------------|--|------------------|---|-------------------|
|                                 |                 |                 | Total<br>Revenues<br>\$000 | Less: Ontario<br>Grants<br>\$000 | Net<br>Revenues<br>\$000 | Total Debt<br>Charges<br>\$000 | Debt as a %<br>of Net Revenues<br>% | 10 Year<br>\$000                       | 20 Year<br>\$000 | Water<br>(Yes/No)                       | Sewer<br>(Yes/No) |
|                                 |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Athol Tp                        | 1,290           | 687             | 339                        | 107                              | 232                      | 4                              | 1.9%                                | 376                                    | 567              | NO                                      | NO                |
| Hallowell Tp                    | 4,101           | 1,849           | 1,240                      | 265                              | 975                      | 14                             | 1.4%                                | 1,615                                  | 2,435            | NO                                      | YES               |
| Hillier Tp                      | 1,700           | 901             | 607                        | 170                              | 436                      | 0                              | 0.1%                                | 763                                    | 1,151            | NO                                      | NO                |
| North Marysburgh Tp             | 1,165           | 753             | 413                        | 66                               | 347                      | 12                             | 3.6%                                | 522                                    | 787              | NO                                      | NO                |
| South Marysburgh Tp             | 848             | 552             | 398                        | 89                               | 309                      | 1                              | 0.3%                                | 537                                    | 810              | NO                                      | NO                |
| Sophiasburgh Tp                 | 2,067           | 1,009           | 1,423                      | 115                              | 1,309                    | 4                              | 0.3%                                | 2,273                                  | 3,429            | NO                                      | NO                |
| Renfrew Co                      | 77,036          | 36,944          | 28,987                     | 14,452                           | 14,535                   | 1,226                          | 8.4%                                | 16,910                                 | 25,506           | NO                                      | NO                |
| Pembroke C                      | 13,445          | 6,161           | 18,447                     | 3,150                            | 15,298                   | 1,518                          | 9.9%                                | 16,201                                 | 24,438           | YES                                     | YES               |
| Arnprior T                      | 6,376           | 3,036           | 8,443                      | 1,324                            | 7,119                    | 909                            | 12.8%                               | 6,114                                  | 9,222            | YES                                     | YES               |
| Deep River T                    | 4,278           | 1,891           | 5,147                      | 342                              | 4,805                    | 193                            | 4.0%                                | 7,083                                  | 10,684           | YES                                     | YES               |
| Renfrew T                       | 7,665           | 3,555           | 8,481                      | 2,212                            | 6,269                    | 179                            | 2.9%                                | 9,750                                  | 14,707           | YES                                     | YES               |
| Petawawa T                      | 14,446          | 3,828           | 6,268                      | 1,313                            | 4,954                    | 341                            | 6.9%                                | 6,306                                  | 9,512            | YES                                     | YES               |
| Barry's Bay V                   | 1,055           | 531             | 1,379                      | 277                              | 1,103                    | 28                             | 2.5%                                | 1,740                                  | 2,625            | YES                                     | YES               |
| Beachburg V                     | 803             | 357             | 504                        | 96                               | 408                      | 25                             | 6.0%                                | 544                                    | 821              | YES                                     | NO                |
| Braeside V                      | 546             | 222             | 280                        | 38                               | 241                      | 0                              | 0.0%                                | 424                                    | 639              | YES                                     | NO                |
| Chalk River V                   | 923             | 389             | 709                        | 192                              | 517                      | 19                             | 3.6%                                | 777                                    | 1,172            | YES                                     | YES               |
| Cobden V                        | 902             | 461             | 948                        | 215                              | 734                      | 122                            | 16.7%                               | 429                                    | 648              | YES                                     | YES               |
| Eganville V                     | 1,255           | 596             | 1,573                      | 387                              | 1,186                    | 214                            | 18.0%                               | 580                                    | 875              | YES                                     | YES               |
| Killaloe V                      | 656             | 324             | 620                        | 196                              | 424                      | 29                             | 6.9%                                | 540                                    | 815              | YES                                     | YES               |
| Admaston Tp                     | 1,528           | 755             | 823                        | 426                              | 397                      | 18                             | 4.5%                                | 571                                    | 861              | NO                                      | NO                |
| North Algona Tp                 | 596             | 590             | 347                        | 132                              | 214                      | 0                              | 0.0%                                | 376                                    | 568              | NO                                      | NO                |
| South Algona Tp                 | 328             | 375             | 310                        | 186                              | 124                      | 0                              | 0.0%                                | 218                                    | 329              | NO                                      | NO                |
| Alice and Fraser Tp             | 3,955           | 1,482           | 1,605                      | 513                              | 1,092                    | 75                             | 6.8%                                | 1,394                                  | 2,102            | NO                                      | NO                |
| Bagot and Blythfield Tp         | 1,256           | 1,401           | 1,044                      | 365                              | 678                      | 1                              | 0.2%                                | 1,181                                  | 1,781            | NO                                      | NO                |
| Bromley Tp                      | 1,170           | 455             | 806                        | 345                              | 461                      | 46                             | 9.9%                                | 490                                    | 739              | NO                                      | NO                |
| Brougham Tp                     | 227             | 401             | 424                        | 87                               | 338                      | 0                              | 0.0%                                | 593                                    | 895              | NO                                      | NO                |
| Brudenell and Lyndoch Tp        | 734             | 560             | 536                        | 263                              | 273                      | 0                              | 0.0%                                | 479                                    | 723              | NO                                      | NO                |
| Grattan Tp                      | 1,248           | 661             | 772                        | 484                              | 288                      | 0                              | 0.0%                                | 505                                    | 762              | NO                                      | NO                |
| Griffith and Matawatchan Tp     | 339             | 552             | 409                        | 153                              | 256                      | 0                              | 0.0%                                | 450                                    | 679              | NO                                      | NO                |
| Hagarty and Richards Tp         | 1,604           | 1,206           | 870                        | 391                              | 479                      | 0                              | 0.0%                                | 842                                    | 1,269            | NO                                      | NO                |
| Head Clara and Maria Tp         | 264             | 314             | 268                        | 89                               | 178                      | 0                              | 0.0%                                | 313                                    | 472              | NO                                      | NO                |
| Horton Tp                       | 2,325           | 1,144           | 1,109                      | 420                              | 689                      | 45                             | 6.6%                                | 890                                    | 1,342            | NO                                      | NO                |
| McNab Tp                        | 5,523           | 2,439           | 2,389                      | 874                              | 1,515                    | 2                              | 0.1%                                | 2,645                                  | 3,990            | NO                                      | NO                |
| Radcliffe Tp                    | 1,058           | 974             | 533                        | 230                              | 303                      | 0                              | 0.0%                                | 531                                    | 801              | NO                                      | NO                |
| Raglan Tp                       | 834             | 493             | 415                        | 210                              | 204                      | 20                             | 9.8%                                | 218                                    | 328              | NO                                      | NO                |
| Rolph Buchanan Wylie & McKay Tp | 1,822           | 977             | 1,469                      | 225                              | 1,244                    | 0                              | 0.0%                                | 2,184                                  | 3,295            | YES                                     | YES               |

### ADDITIONAL DEBT CAPACITY CALCULATION BY MUNICIPALITY (1997\$)

| Municipality                   | Population<br># | Households<br># | Own Fund Revenues          |                                  |                          | Debt Charges                   |                                     | Additional Debt<br>Which Can Be Issued |                  | Does the Municipality<br>Have Municipal |                   |
|--------------------------------|-----------------|-----------------|----------------------------|----------------------------------|--------------------------|--------------------------------|-------------------------------------|--|------------------|---|-------------------|
|                                |                 |                 | Total<br>Revenues<br>\$000 | Less: Ontario<br>Grants<br>\$000 | Net<br>Revenues<br>\$000 | Total Debt<br>Charges<br>\$000 | Debt as a %<br>of Net Revenues<br>% | 10 Year<br>\$000                       | 20 Year<br>\$000 | Water<br>(Yes/No)                       | Sewer<br>(Yes/No) |
|                                |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Ross Tp                        | 1,873           | 891             | 997                        | 417                              | 580                      | 6                              | 1.1%                                | 973                                    | 1,468            | YES                                     | NO                |
| Sebastopol Tp                  | 559             | 585             | 420                        | 220                              | 199                      | 0                              | 0.0%                                | 350                                    | 528              | NO                                      | NO                |
| Sherwood Jones and Burns Tp    | 2,047           | 1,253           | 973                        | 452                              | 520                      | 0                              | 0.0%                                | 914                                    | 1,378            | NO                                      | NO                |
| Westmeath Tp                   | 2,442           | 1,341           | 1,314                      | 554                              | 761                      | 29                             | 3.9%                                | 1,130                                  | 1,705            | NO                                      | NO                |
| Wilberforce Tp                 | 1,796           | 990             | 936                        | 477                              | 459                      | 0                              | 0.0%                                | 806                                    | 1,215            | NO                                      | NO                |
| Stafford & Pembroke Tps        | 4,603           | 1,915           | 1,930                      | 431                              | 1,499                    | 97                             | 6.5%                                | 1,947                                  | 2,936            | YES                                     | YES               |
| Simcoe Co                      | 205,990         | 99,541          | 99,412                     | 50,528                           | 48,884                   | 1,751                          | 3.6%                                | 73,534                                 | 110,915          | NO                                      | NO                |
| Barrie C                       | 71,413          | 29,475          | 86,680                     | 11,425                           | 75,255                   | 3,325                          | 4.4%                                | 108,786                                | 164,087          | YES                                     | YES               |
| Orillia C                      | 26,072          | 11,627          | 37,808                     | 8,154                            | 29,654                   | 2,215                          | 7.5%                                | 36,513                                 | 55,075           | YES                                     | YES               |
| Collingwood T                  | 14,673          | 7,839           | 18,322                     | 737                              | 17,585                   | 1,311                          | 7.5%                                | 21,670                                 | 32,686           | YES                                     | YES               |
| Midland T                      | 14,284          | 6,170           | 12,606                     | 707                              | 11,899                   | 1,028                          | 8.6%                                | 13,671                                 | 20,621           | YES                                     | YES               |
| Penetanguishene T              | 6,794           | 2,893           | 5,912                      | 666                              | 5,246                    | 838                            | 16.0%                               | 3,328                                  | 5,019            | YES                                     | YES               |
| Wasaga Beach T                 | 7,463           | 7,174           | 9,353                      | 1,178                            | 8,175                    | 1,772                          | 21.7%                               | 1,907                                  | 2,877            | YES                                     | YES               |
| Innisfil T                     | 22,523          | 10,742          | 12,865                     | 1,004                            | 11,860                   | 1,137                          | 9.6%                                | 12,841                                 | 19,369           | YES                                     | YES               |
| Bradford - West Gwillimbury T  | 18,222          | 6,520           | 18,784                     | 621                              | 18,163                   | 722                            | 4.0%                                | 26,820                                 | 40,454           | YES                                     | YES               |
| New Tecumseth T                | 20,767          | 8,269           | 13,833                     | 1,048                            | 12,785                   | 1,061                          | 8.3%                                | 14,995                                 | 22,617           | YES                                     | YES               |
| Essa Tp                        | 15,745          | 4,495           | 3,738                      | 836                              | 2,902                    | 130                            | 4.5%                                | 4,180                                  | 6,305            | YES                                     | YES               |
| Tiny Tp                        | 8,204           | 8,398           | 4,335                      | 981                              | 3,353                    | 136                            | 4.0%                                | 4,936                                  | 7,445            | YES                                     | NO                |
| Adjala-Tosorontio Tp           | 8,896           | 3,019           | 3,037                      | 554                              | 2,483                    | 40                             | 1.6%                                | 4,078                                  | 6,151            | YES                                     | NO                |
| Clearview Tp                   | 11,684          | 5,044           | 6,238                      | 1,773                            | 4,466                    | 345                            | 7.7%                                | 5,421                                  | 8,176            | YES                                     | YES               |
| Oro-Medonte Tp                 | 15,516          | 7,232           | 6,507                      | 1,262                            | 5,245                    | 17                             | 0.3%                                | 9,092                                  | 13,714           | YES                                     | YES               |
| Ramara Tp                      | 7,331           | 5,437           | 5,012                      | 921                              | 4,091                    | 29                             | 0.7%                                | 6,978                                  | 10,525           | YES                                     | YES               |
| Severn Tp                      | 9,757           | 5,723           | 6,075                      | 819                              | 5,255                    | 93                             | 1.8%                                | 8,572                                  | 12,930           | YES                                     | YES               |
| Springwater Tp                 | 14,073          | 5,230           | 5,826                      | 851                              | 4,975                    | 369                            | 7.4%                                | 6,144                                  | 9,267            | YES                                     | YES               |
| Tay Tp                         | 10,058          | 5,356           | 6,179                      | 1,246                            | 4,933                    | 391                            | 7.9%                                | 5,918                                  | 8,926            | YES                                     | YES               |
| Stormont,Dundas & Glengarry Co | 60,739          | 25,034          | 25,289                     | 17,758                           | 7,531                    | 0                              | 0.0%                                | 13,224                                 | 19,946           | NO                                      | NO                |
| Cornwall C                     | 46,802          | 20,222          | 82,100                     | 26,526                           | 55,574                   | 5,765                          | 10.4%                               | 57,091                                 | 86,113           | YES                                     | YES               |
| Alexandria T                   | 3,272           | 1,573           | 4,163                      | 183                              | 3,980                    | 307                            | 7.7%                                | 4,830                                  | 7,286            | YES                                     | YES               |
| Chesterville V                 | 1,458           | 637             | 1,347                      | 112                              | 1,236                    | 184                            | 14.9%                               | 874                                    | 1,319            | YES                                     | YES               |
| Finch V                        | 441             | 202             | 366                        | 32                               | 335                      | 2                              | 0.6%                                | 573                                    | 865              | YES                                     | YES               |
| Iroquois V                     | 1,206           | 564             | 1,242                      | 59                               | 1,183                    | 8                              | 0.6%                                | 2,025                                  | 3,055            | YES                                     | YES               |
| Lancaster V                    | 727             | 335             | 588                        | 121                              | 467                      | 63                             | 13.5%                               | 378                                    | 570              | YES                                     | YES               |
| Maxville V                     | 826             | 327             | 628                        | 77                               | 551                      | 1                              | 0.3%                                | 958                                    | 1,445            | NO                                      | YES               |
| Morrisburg V                   | 2,362           | 1,108           | 1,936                      | 129                              | 1,807                    | 116                            | 6.4%                                | 2,354                                  | 3,551            | YES                                     | YES               |
| Winchester V                   | 2,275           | 963             | 2,131                      | 101                              | 2,029                    | 163                            | 8.0%                                | 2,418                                  | 3,647            | YES                                     | YES               |
| Charlottenburgh Tp             | 7,670           | 3,139           | 3,833                      | 605                              | 3,228                    | 258                            | 8.0%                                | 3,855                                  | 5,814            | YES                                     | YES               |



### ADDITIONAL DEBT CAPACITY CALCULATION BY MUNICIPALITY (1997\$)

| Municipality                 | Population<br># | Households<br># | Own Fund Revenues          |                                  |                          | Debt Charges                   |                                     | Additional Debt<br>Which Can Be Issued |                  | Does the Municipality<br>Have Municipal |                   |
|------------------------------|-----------------|-----------------|----------------------------|----------------------------------|--------------------------|--------------------------------|-------------------------------------|--|------------------|---|-------------------|
|                              |                 |                 | Total<br>Revenues<br>\$000 | Less: Ontario<br>Grants<br>\$000 | Net<br>Revenues<br>\$000 | Total Debt<br>Charges<br>\$000 | Debt as a %<br>of Net Revenues<br>% | 10 Year<br>\$000                       | 20 Year<br>\$000 | Water<br>(Yes/No)                       | Sewer<br>(Yes/No) |
|                              |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Cornwall Tp                  | 6,608           | 2,519           | 3,052                      | 289                              | 2,763                    | 220                            | 8.0%                                | 3,305                                  | 4,986            | YES                                     | YES               |
| Finch Tp                     | 2,582           | 950             | 1,174                      | 331                              | 842                      | 187                            | 22.2%                               | 163                                    | 246              | YES                                     | YES               |
| Kenyon Tp                    | 3,336           | 1,430           | 1,718                      | 474                              | 1,244                    | 133                            | 10.7%                               | 1,248                                  | 1,882            | YES                                     | NO                |
| Lancaster Tp                 | 3,684           | 1,766           | 1,542                      | 342                              | 1,200                    | 0                              | 0.0%                                | 2,108                                  | 3,179            | NO                                      | NO                |
| Lochiel Tp                   | 2,921           | 1,195           | 1,776                      | 727                              | 1,048                    | 108                            | 10.3%                               | 1,081                                  | 1,631            | YES                                     | YES               |
| Matilda Tp                   | 3,321           | 1,301           | 1,779                      | 318                              | 1,461                    | 204                            | 14.0%                               | 1,132                                  | 1,707            | NO                                      | NO                |
| Mountain Tp                  | 3,319           | 1,271           | 1,199                      | 399                              | 799                      | 0                              | 0.0%                                | 1,403                                  | 2,117            | NO                                      | NO                |
| Osnabruk Tp                  | 4,568           | 1,862           | 2,709                      | 518                              | 2,191                    | 115                            | 5.3%                                | 3,038                                  | 4,583            | YES                                     | YES               |
| Roxborough Tp                | 3,383           | 1,304           | 2,146                      | 555                              | 1,590                    | 383                            | 24.1%                               | 105                                    | 158              | YES                                     | YES               |
| Williamsburgh Tp             | 3,335           | 1,346           | 1,377                      | 306                              | 1,072                    | 70                             | 6.6%                                | 1,388                                  | 2,094            | NO                                      | YES               |
| Winchester Tp                | 3,445           | 1,242           | 1,461                      | 451                              | 1,009                    | 201                            | 19.9%                               | 361                                    | 545              | NO                                      | YES               |
| Victoria Co                  | 62,944          | 33,917          | 34,921                     | 21,706                           | 13,215                   | 747                            | 5.7%                                | 17,955                                 | 27,083           | NO                                      | NO                |
| Lindsay T                    | 16,590          | 7,662           | 20,328                     | 913                              | 19,414                   | 2,621                          | 13.5%                               | 15,677                                 | 23,647           | YES                                     | YES               |
| Bobcaygeon V                 | 2,472           | 1,464           | 2,122                      | 83                               | 2,039                    | 204                            | 10.0%                               | 2,150                                  | 3,242            | YES                                     | YES               |
| Fenelon Falls V              | 1,806           | 1,029           | 1,905                      | 104                              | 1,801                    | 0                              | 0.0%                                | 3,163                                  | 4,771            | YES                                     | YES               |
| Omeme V                      | 1,097           | 521             | 651                        | 76                               | 575                      | 0                              | 0.0%                                | 1,009                                  | 1,522            | YES                                     | YES               |
| Sturgeon Point V             | 89              | 127             | 96                         | 12                               | 84                       | 0                              | 0.0%                                | 148                                    | 224              | YES                                     | NO                |
| Woodville V                  | 688             | 295             | 641                        | 40                               | 601                      | 92                             | 15.3%                               | 411                                    | 621              | YES                                     | NO                |
| Bexley Tp                    | 1,209           | 1,276           | 1,024                      | 93                               | 931                      | 25                             | 2.7%                                | 1,456                                  | 2,196            | NO                                      | YES               |
| Carden Tp                    | 803             | 788             | 623                        | 132                              | 491                      | 1                              | 0.2%                                | 855                                    | 1,289            | NO                                      | NO                |
| Dalton Tp                    | 426             | 299             | 226                        | 90                               | 136                      | 0                              | 0.0%                                | 239                                    | 361              | NO                                      | NO                |
| Eldon Tp                     | 2,804           | 1,677           | 1,074                      | 346                              | 728                      | 19                             | 2.5%                                | 1,149                                  | 1,732            | YES                                     | NO                |
| Emily Tp                     | 6,254           | 2,681           | 2,103                      | 381                              | 1,723                    | 171                            | 9.9%                                | 1,821                                  | 2,747            | YES                                     | NO                |
| Fenelon Tp                   | 5,567           | 3,773           | 1,922                      | 434                              | 1,488                    | 0                              | 0.0%                                | 2,613                                  | 3,941            | YES                                     | NO                |
| Laxton Digby and Longford Tp | 994             | 1,047           | 593                        | 103                              | 489                      | 0                              | 0.0%                                | 859                                    | 1,296            | NO                                      | NO                |
| Mariposa Tp                  | 6,839           | 2,841           | 2,889                      | 635                              | 2,254                    | 85                             | 3.8%                                | 3,362                                  | 5,072            | YES                                     | NO                |
| Ops Tp                       | 4,107           | 1,659           | 1,646                      | 179                              | 1,467                    | 18                             | 1.2%                                | 2,449                                  | 3,695            | NO                                      | NO                |
| Somerville Tp                | 2,092           | 2,296           | 1,080                      | 199                              | 880                      | 59                             | 6.7%                                | 1,133                                  | 1,709            | NO                                      | YES               |
| Verulam Tp                   | 3,950           | 2,479           | 1,287                      | 309                              | 978                      | 4                              | 0.4%                                | 1,689                                  | 2,547            | YES                                     | NO                |
| Manvers Tp                   | 5,157           | 2,003           | 2,054                      | 402                              | 1,652                    | 4                              | 0.2%                                | 2,875                                  | 4,337            | YES                                     | NO                |
| Wellington Co                | 69,348          | 27,269          | 38,325                     | 22,265                           | 16,059                   | 392                            | 2.4%                                | 25,448                                 | 38,384           | NO                                      | NO                |
| Guelph C                     | 89,257          | 37,622          | 105,733                    | 14,896                           | 90,837                   | 10,020                         | 11.0%                               | 89,125                                 | 134,431          | YES                                     | YES               |
| Fergus T                     | 8,008           | 3,353           | 11,404                     | 362                              | 11,042                   | 1,482                          | 13.4%                               | 8,976                                  | 13,539           | YES                                     | YES               |
| Harriston T                  | 1,900           | 815             | 1,440                      | 251                              | 1,189                    | 0                              | 0.0%                                | 2,088                                  | 3,150            | YES                                     | YES               |
| Mount Forest T               | 4,164           | 1,977           | 3,091                      | 427                              | 2,664                    | 0                              | 0.0%                                | 4,678                                  | 7,056            | YES                                     | YES               |
| Palmerston T                 | 2,350           | 959             | 1,764                      | 266                              | 1,498                    | 0                              | 0.0%                                | 2,630                                  | 3,968            | YES                                     | YES               |

### ADDITIONAL DEBT CAPACITY CALCULATION BY MUNICIPALITY (1997\$)

| Municipality                 | Population<br># | Households<br># | Own Fund Revenues          |                                  |                          | Debt Charges                   |                                     | Additional Debt<br>Which Can Be Issued |                  | Does the Municipality<br>Have Municipal |                   |
|------------------------------|-----------------|-----------------|----------------------------|----------------------------------|--------------------------|--------------------------------|-------------------------------------|--|------------------|---|-------------------|
|                              |                 |                 | Total<br>Revenues<br>\$000 | Less: Ontario<br>Grants<br>\$000 | Net<br>Revenues<br>\$000 | Total Debt<br>Charges<br>\$000 | Debt as a %<br>of Net Revenues<br>% | 10 Year<br>\$000                       | 20 Year<br>\$000 | Water<br>(Yes/No)                       | Sewer<br>(Yes/No) |
|                              |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Arthur V                     | 1,960           | 824             | 1,743                      | 140                              | 1,603                    | 111                            | 6.9%                                | 2,038                                  | 3,074            | YES                                     | YES               |
| Clifford V                   | 722             | 326             | 839                        | 66                               | 774                      | 0                              | 0.0%                                | 1,358                                  | 2,049            | YES                                     | YES               |
| Drayton V                    | 1,333           | 496             | 873                        | 38                               | 835                      | 25                             | 3.0%                                | 1,288                                  | 1,943            | YES                                     | YES               |
| Elora V                      | 3,116           | 1,277           | 2,278                      | 118                              | 2,161                    | 122                            | 5.7%                                | 2,934                                  | 4,425            | YES                                     | YES               |
| Erin V                       | 2,414           | 927             | 1,388                      | 65                               | 1,323                    | 28                             | 2.2%                                | 2,123                                  | 3,202            | YES                                     | NO                |
| Arthur Tp                    | 2,472           | 904             | 1,267                      | 342                              | 924                      | 255                            | 27.6%                               | (166)                                  | (250)            | NO                                      | NO                |
| Eramosa Tp                   | 5,764           | 2,108           | 2,547                      | 196                              | 2,351                    | 169                            | 7.2%                                | 2,939                                  | 4,433            | YES                                     | YES               |
| Erin Tp                      | 7,468           | 2,808           | 2,589                      | 401                              | 2,188                    | 41                             | 1.9%                                | 3,557                                  | 5,366            | YES                                     | NO                |
| West Garafraxa Tp            | 3,341           | 1,587           | 1,920                      | 236                              | 1,684                    | 59                             | 3.5%                                | 2,539                                  | 3,830            | NO                                      | NO                |
| Guelph Tp                    | 3,045           | 1,069           | 1,302                      | 73                               | 1,230                    | 10                             | 0.8%                                | 2,089                                  | 3,151            | YES                                     | YES               |
| West Luther Tp               | 1,114           | 419             | 619                        | 232                              | 387                      | 93                             | 24.1%                               | 23                                     | 35               | NO                                      | NO                |
| Maryborough Tp               | 2,573           | 1,213           | 1,519                      | 140                              | 1,380                    | 180                            | 13.1%                               | 1,157                                  | 1,746            | YES                                     | YES               |
| Minto Tp                     | 2,357           | 870             | 1,505                      | 377                              | 1,129                    | 106                            | 9.4%                                | 1,238                                  | 1,867            | NO                                      | NO                |
| Nichol Tp                    | 3,999           | 1,349           | 1,466                      | 138                              | 1,328                    | 26                             | 1.9%                                | 2,151                                  | 3,244            | NO                                      | YES               |
| Peel Tp                      | 4,294           | 1,293           | 1,510                      | 286                              | 1,224                    | 141                            | 11.6%                               | 1,156                                  | 1,743            | NO                                      | NO                |
| Pilkington Tp                | 2,369           | 810             | 1,074                      | 147                              | 926                      | 14                             | 1.5%                                | 1,527                                  | 2,303            | NO                                      | NO                |
| Puslinch Tp                  | 4,585           | 1,885           | 1,975                      | 337                              | 1,637                    | 2                              | 0.1%                                | 2,859                                  | 4,312            | NO                                      | NO                |
| Algoma D                     |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Sault Ste Marie C            | 78,399          | 32,711          | 126,193                    | 49,815                           | 76,379                   | 8,363                          | 11.0%                               | 75,371                                 | 113,686          | YES                                     | YES               |
| Elliot Lake C                | 12,387          | 6,272           | 27,734                     | 14,037                           | 13,697                   | 472                            | 3.4%                                | 20,737                                 | 31,279           | YES                                     | YES               |
| Blind River T                | 3,911           | 1,893           | 4,213                      | 1,439                            | 2,774                    | 63                             | 2.3%                                | 4,432                                  | 6,685            | YES                                     | YES               |
| Bruce Mines T                | 589             | 311             | 775                        | 213                              | 563                      | 37                             | 6.5%                                | 730                                    | 1,102            | YES                                     | YES               |
| Thessalon T                  | 1,371           | 616             | 2,429                      | 1,232                            | 1,197                    | 81                             | 6.8%                                | 1,532                                  | 2,310            | YES                                     | YES               |
| Hilton Beach V               | 223             | 157             | 403                        | 45                               | 359                      | 47                             | 13.0%                               | 302                                    | 456              | YES                                     | YES               |
| Iron Bridge V                | 716             | 367             | 522                        | 213                              | 309                      | 0                              | 0.0%                                | 543                                    | 819              | NO                                      | NO                |
| Day and Bright Additional Tp | 255             | 409             | 324                        | 165                              | 159                      | 0                              | 0.0%                                | 279                                    | 421              | NO                                      | NO                |
| Hilton Tp                    | 223             | 300             | 341                        | 102                              | 240                      | 0                              | 0.0%                                | 421                                    | 635              | NO                                      | NO                |
| Jocelyn Tp                   | 248             | 337             | 350                        | 96                               | 254                      | 45                             | 17.5%                               | 133                                    | 201              | NO                                      | NO                |
| Johnson Tp                   | 667             | 502             | 819                        | 289                              | 530                      | 21                             | 3.9%                                | 784                                    | 1,183            | YES                                     | YES               |
| Laird Tp                     | 986             | 505             | 561                        | 239                              | 322                      | 4                              | 1.2%                                | 538                                    | 811              | NO                                      | NO                |
| Macdonald Meredith et al Tp  | 1,504           | 747             | 849                        | 292                              | 556                      | 9                              | 1.6%                                | 913                                    | 1,377            | NO                                      | NO                |
| Michipicoten Tp              | 3,744           | 1,750           | 5,618                      | 529                              | 5,089                    | 672                            | 13.2%                               | 4,217                                  | 6,361            | YES                                     | YES               |
| Plummer Additional Tp        | 664             | 487             | 825                        | 394                              | 430                      | 28                             | 6.6%                                | 558                                    | 841              | YES                                     | NO                |
| Prince Tp                    | 965             | 430             | 521                        | 163                              | 358                      | 22                             | 6.2%                                | 473                                    | 713              | NO                                      | NO                |
| St Joseph Tp                 | 1,108           | 903             | 1,053                      | 376                              | 677                      | 45                             | 6.7%                                | 871                                    | 1,314            | YES                                     | YES               |
| Tarbutt and Tarbutt Add'l Tp | 432             | 394             | 386                        | 94                               | 292                      | 27                             | 9.4%                                | 321                                    | 484              | NO                                      | NO                |

### ADDITIONAL DEBT CAPACITY CALCULATION BY MUNICIPALITY (1997\$)

| Municipality              | Population<br># | Households<br># | Own Fund Revenues          |                                  |                          | Debt Charges                   |                                     | Additional Debt<br>Which Can Be Issued |                  | Does the Municipality<br>Have Municipal |                   |
|---------------------------|-----------------|-----------------|----------------------------|----------------------------------|--------------------------|--------------------------------|-------------------------------------|--|------------------|---|-------------------|
|                           |                 |                 | Total<br>Revenues<br>\$000 | Less: Ontario<br>Grants<br>\$000 | Net<br>Revenues<br>\$000 | Total Debt<br>Charges<br>\$000 | Debt as a %<br>of Net Revenues<br>% | 10 Year<br>\$000                       | 20 Year<br>\$000 | Water<br>(Yes/No)                       | Sewer<br>(Yes/No) |
|                           |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Thessalon Tp              | 709             | 405             | 508                        | 252                              | 255                      | 2                              | 0.7%                                | 436                                    | 658              | NO                                      | NO                |
| Thompson Tp               | 105             | 113             | 144                        | 68                               | 76                       | 0                              | 0.0%                                | 133                                    | 201              | NO                                      | NO                |
| Hornepayne Tp             | 1,424           | 604             | 2,785                      | 866                              | 1,919                    | 5                              | 0.3%                                | 3,331                                  | 5,024            | YES                                     | YES               |
| The North Shore Tp        | 665             | 388             | 743                        | 360                              | 382                      | 0                              | 0.0%                                | 671                                    | 1,013            | YES                                     | YES               |
| White River Tp            | 933             | 459             | 1,737                      | 495                              | 1,243                    | 47                             | 3.7%                                | 1,855                                  | 2,799            | YES                                     | YES               |
| Shedden Tp                | 809             | 405             | 784                        | 317                              | 467                      | 0                              | 0.0%                                | 821                                    | 1,238            | YES                                     | YES               |
| Dubreuilville Tp          | 864             | 340             | 1,134                      | 293                              | 841                      | 0                              | 0.0%                                | 1,477                                  | 2,227            | YES                                     | YES               |
| Cochrane D                |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Timmins C                 | 45,692          | 19,133          | 68,791                     | 24,834                           | 43,957                   | 3,501                          | 8.0%                                | 52,595                                 | 79,332           | YES                                     | YES               |
| Cochrane T                | 4,339           | 1,848           | 6,203                      | 1,689                            | 4,514                    | 1,046                          | 23.2%                               | 582                                    | 878              | YES                                     | YES               |
| Hearst T                  | 5,529           | 2,409           | 9,007                      | 2,719                            | 6,287                    | 644                            | 10.2%                               | 6,517                                  | 9,830            | YES                                     | YES               |
| Iroquois Falls T          | 5,581           | 2,400           | 6,590                      | 1,105                            | 5,486                    | 1,157                          | 21.1%                               | 1,503                                  | 2,268            | YES                                     | YES               |
| Kapuskasing T             | 9,658           | 4,171           | 20,211                     | 9,373                            | 10,838                   | 1,334                          | 12.3%                               | 9,660                                  | 14,570           | YES                                     | YES               |
| Smooth Rock Falls T       | 1,877           | 786             | 2,624                      | 238                              | 2,386                    | 110                            | 4.6%                                | 3,418                                  | 5,156            | YES                                     | YES               |
| Black River - Matheson Tp | 3,178           | 1,459           | 4,562                      | 1,658                            | 2,905                    | 20                             | 0.7%                                | 4,958                                  | 7,478            | YES                                     | YES               |
| Moonbeam Tp               | 1,185           | 981             | 992                        | 445                              | 546                      | 22                             | 4.1%                                | 802                                    | 1,209            | YES                                     | YES               |
| Glackmeyer Tp             | 1,059           | 515             | 602                        | 357                              | 245                      | 16                             | 6.6%                                | 316                                    | 476              | NO                                      | YES               |
| Fauquier-Strickland Tp    | 671             | 392             | 1,017                      | 266                              | 751                      | 32                             | 4.2%                                | 1,096                                  | 1,653            | YES                                     | YES               |
| Val Rita-Harty Tp         | 1,085           | 411             | 869                        | 315                              | 554                      | 35                             | 6.4%                                | 724                                    | 1,092            | YES                                     | YES               |
| Mattice - Val Cote Tp     | 888             | 406             | 1,069                      | 283                              | 786                      | 0                              | 0.0%                                | 1,381                                  | 2,082            | YES                                     | YES               |
| Opasatika Tp              | 358             | 145             | 615                        | 184                              | 431                      | 0                              | 0.0%                                | 756                                    | 1,141            | YES                                     | YES               |
| Moosonee Dev Area Bd      | 1,539           | 669             | 3,279                      | 1,254                            | 2,025                    | 142                            | 7.0%                                | 2,560                                  | 3,862            | YES                                     | YES               |
| Kenora D                  |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Dryden T                  | 6,300           | 2,822           | 20,491                     | 6,322                            | 14,169                   | 171                            | 1.2%                                | 23,681                                 | 35,719           | YES                                     | YES               |
| Keewatin T                | 1,994           | 929             | 3,950                      | 1,978                            | 1,972                    | 119                            | 6.0%                                | 2,629                                  | 3,965            | YES                                     | YES               |
| Kenora T                  | 9,715           | 4,387           | 24,994                     | 8,846                            | 16,148                   | 535                            | 3.3%                                | 24,593                                 | 37,095           | YES                                     | YES               |
| Sioux Lookout T           | 3,073           | 1,401           | 7,203                      | 2,041                            | 5,163                    | 501                            | 9.7%                                | 5,548                                  | 8,368            | YES                                     | YES               |
| Jaffray Melick T          | 4,012           | 1,704           | 4,950                      | 2,541                            | 2,409                    | 212                            | 8.8%                                | 2,739                                  | 4,132            | YES                                     | YES               |
| Ignace Tp                 | 1,605           | 909             | 2,300                      | 830                              | 1,470                    | 73                             | 5.0%                                | 2,069                                  | 3,120            | YES                                     | YES               |
| Machin Tp                 | 1,037           | 638             | 1,175                      | 355                              | 820                      | 20                             | 2.4%                                | 1,299                                  | 1,960            | YES                                     | NO                |
| Red Lake Tp               | 2,061           | 969             | 3,871                      | 1,238                            | 2,633                    | 323                            | 12.3%                               | 2,353                                  | 3,550            | NO                                      | YES               |
| Ear Falls Tp              | 1,097           | 544             | 2,643                      | 842                              | 1,801                    | 22                             | 1.2%                                | 3,007                                  | 4,536            | YES                                     | YES               |
| Barclay Tp                | 1,416           | 619             | 760                        | 129                              | 631                      | 53                             | 8.5%                                | 733                                    | 1,105            | NO                                      | NO                |
| Pickle Lake Tp            | 489             | 276             | 1,425                      | 525                              | 900                      | 0                              | 0.0%                                | 1,580                                  | 2,383            | YES                                     | YES               |
| Golden Tp                 | 2,183           | 974             | 4,105                      | 733                              | 3,372                    | 203                            | 6.0%                                | 4,498                                  | 6,785            | YES                                     | YES               |
| Sioux Narrows Tp          | 360             | 548             | 710                        | 275                              | 436                      | 0                              | 0.0%                                | 765                                    | 1,154            | NO                                      | NO                |

### ADDITIONAL DEBT CAPACITY CALCULATION BY MUNICIPALITY (1997\$)

| Municipality                  | Population<br># | Households<br># | Own Fund Revenues          |                                  |                          | Debt Charges                   |                                     | Additional Debt<br>Which Can Be Issued |                  | Does the Municipality<br>Have Municipal |                   |
|-------------------------------|-----------------|-----------------|----------------------------|----------------------------------|--------------------------|--------------------------------|-------------------------------------|--|------------------|---|-------------------|
|                               |                 |                 | Total<br>Revenues<br>\$000 | Less: Ontario<br>Grants<br>\$000 | Net<br>Revenues<br>\$000 | Total Debt<br>Charges<br>\$000 | Debt as a %<br>of Net Revenues<br>% | 10 Year<br>\$000                       | 20 Year<br>\$000 | Water<br>(Yes/No)                       | Sewer<br>(Yes/No) |
|                               |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Manitoulin D                  |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Gore Bay T                    | 895             | 412             | 1,031                      | 288                              | 743                      | 0                              | 0.0%                                | 1,304                                  | 1,967            | YES                                     | YES               |
| Little Current T              | 1,450           | 687             | 4,189                      | 2,219                            | 1,970                    | 76                             | 3.9%                                | 2,926                                  | 4,414            | YES                                     | YES               |
| Assiginack Tp                 | 751             | 724             | 1,146                      | 438                              | 708                      | 0                              | 0.0%                                | 1,244                                  | 1,876            | YES                                     | YES               |
| Barrie Island Tp              | 59              | 78              | 93                         | 58                               | 35                       | 0                              | 0.0%                                | 62                                     | 94               | NO                                      | NO                |
| Billings Tp                   | 481             | 584             | 602                        | 217                              | 385                      | 4                              | 1.2%                                | 645                                    | 973              | YES                                     | NO                |
| Burpee Tp                     | 219             | 183             | 164                        | 69                               | 95                       | 0                              | 0.0%                                | 167                                    | 252              | NO                                      | NO                |
| Carnarvon Tp                  | 1,043           | 675             | 1,326                      | 423                              | 904                      | 6                              | 0.7%                                | 1,543                                  | 2,327            | YES                                     | YES               |
| Cockburn Island Tp            | 2               | 84              | 113                        | 59                               | 54                       | 2                              | 3.9%                                | 79                                     | 120              | NO                                      | NO                |
| Gordon Tp                     | 448             | 466             | 337                        | 129                              | 208                      | 2                              | 0.9%                                | 352                                    | 530              | YES                                     | NO                |
| Howland Tp                    | 928             | 875             | 1,396                      | 424                              | 972                      | 0                              | 0.0%                                | 1,707                                  | 2,574            | YES                                     | NO                |
| Rutherford & George Island Tp | 379             | 222             | 451                        | 126                              | 325                      | 35                             | 10.6%                               | 328                                    | 494              | YES                                     | YES               |
| Sandfield Tp                  | 245             | 308             | 289                        | 84                               | 205                      | 0                              | 0.0%                                | 359                                    | 542              | NO                                      | NO                |
| Tehkummah Tp                  | 339             | 339             | 466                        | 189                              | 277                      | 3                              | 1.1%                                | 466                                    | 703              | YES                                     | NO                |
| Nipissing D                   |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| North Bay C                   | 55,165          | 22,541          | 79,942                     | 26,411                           | 53,531                   | 5,741                          | 10.7%                               | 53,671                                 | 80,954           | YES                                     | YES               |
| Cache Bay T                   | 673             | 252             | 467                        | 172                              | 295                      | 15                             | 5.0%                                | 414                                    | 625              | YES                                     | NO                |
| Mattawa T                     | 2,428           | 1,045           | 2,114                      | 558                              | 1,556                    | 124                            | 8.0%                                | 1,861                                  | 2,807            | YES                                     | YES               |
| Sturgeon Falls T              | 6,161           | 2,693           | 16,139                     | 9,395                            | 6,744                    | 631                            | 9.4%                                | 7,409                                  | 11,175           | YES                                     | YES               |
| Airy Tp                       | 796             | 416             | 530                        | 191                              | 339                      | 0                              | 0.0%                                | 595                                    | 898              | NO                                      | NO                |
| Bonfield Tp                   | 2,027           | 949             | 1,096                      | 420                              | 677                      | 0                              | 0.0%                                | 1,188                                  | 1,792            | NO                                      | NO                |
| Caldwell Tp                   | 1,569           | 791             | 1,475                      | 415                              | 1,060                    | 18                             | 1.7%                                | 1,736                                  | 2,618            | YES                                     | YES               |
| Calvin Tp                     | 562             | 261             | 564                        | 111                              | 454                      | 0                              | 0.0%                                | 797                                    | 1,202            | NO                                      | NO                |
| Chisholm Tp                   | 1,191           | 563             | 786                        | 350                              | 436                      | 22                             | 5.0%                                | 612                                    | 923              | NO                                      | NO                |
| East Ferris Tp                | 4,153           | 1,779           | 1,933                      | 487                              | 1,446                    | 0                              | 0.0%                                | 2,538                                  | 3,829            | NO                                      | YES               |
| Field Tp                      | 639             | 389             | 467                        | 188                              | 280                      | 17                             | 6.2%                                | 369                                    | 557              | NO                                      | YES               |
| Mattawan Tp                   | 102             | 80              | 173                        | 44                               | 128                      | 0                              | 0.0%                                | 226                                    | 340              | NO                                      | NO                |
| Springer Tp                   | 2,434           | 1,088           | 1,214                      | 362                              | 852                      | 62                             | 7.3%                                | 1,058                                  | 1,596            | YES                                     | NO                |
| Temagami Tp                   | 864             | 642             | 1,399                      | 435                              | 964                      | 21                             | 2.2%                                | 1,545                                  | 2,330            | YES                                     | YES               |
| Papineau-Cameron Tp           | 925             | 482             | 650                        | 170                              | 480                      | 0                              | 0.0%                                | 843                                    | 1,271            | NO                                      | NO                |
| Parry Sound D                 |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Kearney T                     | 706             | 1,064           | 970                        | 260                              | 710                      | 30                             | 4.2%                                | 1,037                                  | 1,564            | NO                                      | NO                |
| Parry Sound T                 | 5,991           | 2,811           | 8,137                      | 1,586                            | 6,551                    | 580                            | 8.9%                                | 7,428                                  | 11,204           | YES                                     | YES               |
| Powassan T                    | 1,122           | 458             | 1,169                      | 221                              | 948                      | 95                             | 10.0%                               | 999                                    | 1,507            | YES                                     | YES               |
| Trout Creek T                 | 669             | 228             | 332                        | 80                               | 252                      | 7                              | 2.7%                                | 396                                    | 597              | NO                                      | NO                |
| Burk's Falls V                | 909             | 466             | 840                        | 240                              | 599                      | 0                              | 0.0%                                | 1,052                                  | 1,587            | YES                                     | YES               |

### ADDITIONAL DEBT CAPACITY CALCULATION BY MUNICIPALITY (1997\$)

| Municipality            | Population<br># | Households<br># | Own Fund Revenues          |                                  |                          | Debt Charges                   |                                     | Additional Debt<br>Which Can Be Issued |                  | Does the Municipality<br>Have Municipal |                   |
|-------------------------|-----------------|-----------------|----------------------------|----------------------------------|--------------------------|--------------------------------|-------------------------------------|--|------------------|---|-------------------|
|                         |                 |                 | Total<br>Revenues<br>\$000 | Less: Ontario<br>Grants<br>\$000 | Net<br>Revenues<br>\$000 | Total Debt<br>Charges<br>\$000 | Debt as a %<br>of Net Revenues<br>% | 10 Year<br>\$000                       | 20 Year<br>\$000 | Water<br>(Yes/No)                       | Sewer<br>(Yes/No) |
|                         |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Magnetawan V            | 230             | 150             | 276                        | 56                               | 220                      | 0                              | 0.0%                                | 386                                    | 583              | NO                                      | NO                |
| Rosseau V               | 284             | 161             | 211                        | 35                               | 175                      | 0                              | 0.0%                                | 308                                    | 465              | NO                                      | NO                |
| South River V           | 1,080           | 481             | 1,150                      | 230                              | 920                      | 0                              | 0.0%                                | 1,616                                  | 2,437            | YES                                     | NO                |
| Sundridge V             | 979             | 472             | 962                        | 187                              | 775                      | 0                              | 0.0%                                | 1,361                                  | 2,053            | NO                                      | YES               |
| Armour Tp               | 1,289           | 1,140           | 940                        | 275                              | 665                      | 60                             | 9.1%                                | 744                                    | 1,122            | NO                                      | NO                |
| Carling Tp              | 989             | 1,525           | 1,452                      | 221                              | 1,231                    | 0                              | 0.0%                                | 2,161                                  | 3,259            | NO                                      | NO                |
| Chapman Tp              | 594             | 722             | 533                        | 159                              | 374                      | 0                              | 0.0%                                | 657                                    | 991              | NO                                      | NO                |
| Christie Tp             | 541             | 916             | 728                        | 171                              | 557                      | 0                              | 0.0%                                | 977                                    | 1,474            | NO                                      | NO                |
| Foley Tp                | 1,427           | 1,380           | 1,717                      | 235                              | 1,482                    | 0                              | 0.0%                                | 2,602                                  | 3,925            | NO                                      | NO                |
| Hagerman Tp             | 452             | 868             | 646                        | 124                              | 522                      | 0                              | 0.0%                                | 916                                    | 1,382            | NO                                      | NO                |
| North Himsworth Tp      | 2,993           | 1,326           | 4,257                      | 1,743                            | 2,515                    | 143                            | 5.7%                                | 3,413                                  | 5,148            | YES                                     | YES               |
| South Himsworth Tp      | 1,518           | 615             | 892                        | 271                              | 621                      | 37                             | 6.0%                                | 828                                    | 1,249            | NO                                      | NO                |
| Humphrey Tp             | 1,049           | 1,736           | 1,948                      | 261                              | 1,687                    | 0                              | 0.0%                                | 2,962                                  | 4,468            | NO                                      | NO                |
| Joly Tp                 | 258             | 214             | 237                        | 87                               | 150                      | 0                              | 0.0%                                | 264                                    | 398              | NO                                      | NO                |
| Machar Tp               | 868             | 808             | 1,000                      | 297                              | 704                      | 13                             | 1.9%                                | 1,141                                  | 1,721            | NO                                      | NO                |
| McDougall Tp            | 2,162           | 1,237           | 2,024                      | 280                              | 1,744                    | 0                              | 0.0%                                | 3,062                                  | 4,619            | YES                                     | YES               |
| McKellar Tp             | 854             | 1,287           | 962                        | 244                              | 717                      | 0                              | 0.0%                                | 1,260                                  | 1,900            | NO                                      | NO                |
| McMurrich Tp            | 552             | 533             | 513                        | 188                              | 325                      | 0                              | 0.0%                                | 570                                    | 860              | NO                                      | NO                |
| Nipissing Tp            | 1,501           | 1,107           | 935                        | 339                              | 596                      | 2                              | 0.3%                                | 1,032                                  | 1,557            | NO                                      | NO                |
| Perry Tp                | 2,023           | 1,416           | 1,142                      | 341                              | 801                      | 0                              | 0.0%                                | 1,407                                  | 2,122            | NO                                      | YES               |
| Ryerson Tp              | 582             | 527             | 601                        | 205                              | 396                      | 0                              | 0.0%                                | 696                                    | 1,050            | NO                                      | NO                |
| Strong Tp               | 1,349           | 879             | 954                        | 279                              | 675                      | 0                              | 0.0%                                | 1,186                                  | 1,788            | NO                                      | NO                |
| The Archipelago Tp      | 634             | 3,130           | 14,785                     | 10,945                           | 3,839                    | 73                             | 1.9%                                | 6,227                                  | 9,392            | NO                                      | YES               |
| Rainy River D           |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Fort Frances T          | 8,514           | 3,788           | 25,030                     | 8,442                            | 16,588                   | 747                            | 4.5%                                | 23,881                                 | 36,020           | YES                                     | YES               |
| Rainy River T           | 921             | 461             | 1,354                      | 443                              | 911                      | 113                            | 12.5%                               | 802                                    | 1,210            | YES                                     | YES               |
| Alberton Tp             | 904             | 328             | 444                        | 88                               | 356                      | 0                              | 0.0%                                | 624                                    | 942              | NO                                      | NO                |
| Atikokan Tp             | 3,632           | 1,651           | 7,168                      | 2,080                            | 5,088                    | 458                            | 9.0%                                | 5,714                                  | 8,619            | YES                                     | YES               |
| Chapple Tp              | 893             | 373             | 1,125                      | 584                              | 541                      | 45                             | 8.4%                                | 631                                    | 952              | YES                                     | YES               |
| Emo Tp                  | 1,197           | 506             | 1,399                      | 454                              | 945                      | 0                              | 0.0%                                | 1,659                                  | 2,502            | YES                                     | YES               |
| La Vallee Tp            | 1,036           | 370             | 583                        | 309                              | 274                      | 0                              | 0.0%                                | 481                                    | 725              | NO                                      | NO                |
| McCrosson and Tovell Tp | 208             | 160             | 247                        | 128                              | 120                      | 0                              | 0.0%                                | 211                                    | 318              | NO                                      | NO                |
| Morley Tp               | 500             | 181             | 576                        | 281                              | 295                      | 1                              | 0.2%                                | 514                                    | 775              | NO                                      | NO                |
| Morson Tp               | 188             | 336             | 216                        | 81                               | 135                      | 0                              | 0.0%                                | 238                                    | 358              | NO                                      | NO                |
| Dawson Tp               | 582             | 320             | 625                        | 470                              | 155                      | 0                              | 0.0%                                | 272                                    | 410              | NO                                      | NO                |

### ADDITIONAL DEBT CAPACITY CALCULATION BY MUNICIPALITY (1997\$)

| Municipality                  | Population<br># | Households<br># | Own Fund Revenues          |                                  |                          | Debt Charges                   |                                     | Additional Debt<br>Which Can Be Issued |                  | Does the Municipality<br>Have Municipal |                   |
|-------------------------------|-----------------|-----------------|----------------------------|----------------------------------|--------------------------|--------------------------------|-------------------------------------|--|------------------|---|-------------------|
|                               |                 |                 | Total<br>Revenues<br>\$000 | Less: Ontario<br>Grants<br>\$000 | Net<br>Revenues<br>\$000 | Total Debt<br>Charges<br>\$000 | Debt as a %<br>of Net Revenues<br>% | 10 Year<br>\$000                       | 20 Year<br>\$000 | Water<br>(Yes/No)                       | Sewer<br>(Yes/No) |
|                               |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Sudbury D                     |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Espanola T                    | 5,144           | 2,177           | 6,554                      | 772                              | 5,783                    | 6                              | 0.1%                                | 10,114                                 | 15,255           | YES                                     | YES               |
| Massey T                      | 1,063           | 482             | 738                        | 269                              | 469                      | 44                             | 9.3%                                | 517                                    | 780              | YES                                     | NO                |
| Webbwood T                    | 554             | 235             | 282                        | 105                              | 177                      | 44                             | 24.7%                               | 4                                      | 6                | NO                                      | YES               |
| Baldwin Tp                    | 646             | 336             | 343                        | 110                              | 233                      | 1                              | 0.4%                                | 403                                    | 608              | NO                                      | NO                |
| Casimir Jennings & Appleby Tp | 1,142           | 711             | 1,599                      | 425                              | 1,174                    | 111                            | 9.5%                                | 1,279                                  | 1,929            | NO                                      | YES               |
| Chapleau Tp                   | 2,872           | 1,225           | 3,614                      | 1,038                            | 2,577                    | 82                             | 3.2%                                | 3,950                                  | 5,958            | YES                                     | YES               |
| Cosby Mason and Martland Tp   | 1,493           | 927             | 1,313                      | 401                              | 912                      | 25                             | 2.8%                                | 1,424                                  | 2,149            | NO                                      | YES               |
| Hagar Tp                      | 881             | 376             | 798                        | 382                              | 415                      | 28                             | 6.6%                                | 536                                    | 808              | NO                                      | YES               |
| Nairn Tp                      | 400             | 200             | 385                        | 55                               | 330                      | 0                              | 0.0%                                | 579                                    | 874              | YES                                     | NO                |
| Ratter and Dunnet Tp          | 1,248           | 517             | 810                        | 424                              | 386                      | 12                             | 3.0%                                | 595                                    | 898              | YES                                     | YES               |
| The Spanish River Tp          | 1,476           | 763             | 1,170                      | 623                              | 547                      | 73                             | 13.4%                               | 447                                    | 674              | NO                                      | YES               |
| Thunder Bay D                 |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Thunder Bay C                 | 113,562         | 47,586          | 192,223                    | 57,909                           | 134,315                  | 5,557                          | 4.1%                                | 196,814                                | 296,865          | YES                                     | YES               |
| Geraldton T                   | 2,578           | 1,274           | 6,121                      | 2,764                            | 3,358                    | 422                            | 12.6%                               | 2,929                                  | 4,418            | YES                                     | YES               |
| Longlac T                     | 1,833           | 768             | 2,866                      | 822                              | 2,044                    | 102                            | 5.0%                                | 2,874                                  | 4,335            | YES                                     | YES               |
| Marathon T                    | 4,702           | 1,790           | 11,039                     | 3,257                            | 7,782                    | 1,385                          | 17.8%                               | 3,938                                  | 5,941            | YES                                     | YES               |
| Conmee Tp                     | 682             | 264             | 761                        | 272                              | 490                      | 0                              | 0.0%                                | 860                                    | 1,297            | NO                                      | NO                |
| Dorion Tp                     | 465             | 211             | 515                        | 192                              | 323                      | 28                             | 8.7%                                | 369                                    | 556              | NO                                      | NO                |
| Gillies Tp                    | 487             | 206             | 347                        | 196                              | 152                      | 4                              | 2.5%                                | 240                                    | 362              | NO                                      | NO                |
| Neebing Tp                    | 902             | 566             | 786                        | 387                              | 399                      | 16                             | 4.0%                                | 587                                    | 886              | NO                                      | NO                |
| Nipigon Tp                    | 2,095           | 895             | 2,012                      | 497                              | 1,516                    | 77                             | 5.1%                                | 2,123                                  | 3,202            | YES                                     | YES               |
| O'Connor Tp                   | 708             | 261             | 498                        | 284                              | 213                      | 0                              | 0.0%                                | 375                                    | 565              | NO                                      | NO                |
| Oliver Tp                     | 2,488           | 895             | 1,287                      | 453                              | 834                      | 53                             | 6.4%                                | 1,089                                  | 1,642            | NO                                      | NO                |
| Paipoonge Tp                  | 3,064           | 1,096           | 1,923                      | 508                              | 1,415                    | 31                             | 2.2%                                | 2,268                                  | 3,421            | YES                                     | NO                |
| Schreiber Tp                  | 1,762           | 772             | 2,444                      | 731                              | 1,713                    | 140                            | 8.2%                                | 2,027                                  | 3,058            | YES                                     | YES               |
| Shuniah Tp                    | 2,144           | 2,039           | 2,078                      | 526                              | 1,551                    | 0                              | 0.0%                                | 2,724                                  | 4,109            | NO                                      | NO                |
| Terrace Bay Tp                | 2,309           | 909             | 3,503                      | 420                              | 3,083                    | 0                              | 0.0%                                | 5,413                                  | 8,164            | YES                                     | YES               |
| Manitouowadge Tp              | 3,554           | 1,400           | 4,966                      | 933                              | 4,034                    | 310                            | 7.7%                                | 4,907                                  | 7,402            | YES                                     | YES               |
| Beardmore Tp                  | 391             | 228             | 1,139                      | 294                              | 846                      | 0                              | 0.0%                                | 1,485                                  | 2,239            | YES                                     | NO                |
| Nakina Tp                     | 536             | 327             | 1,446                      | 481                              | 966                      | 0                              | 0.0%                                | 1,695                                  | 2,557            | YES                                     | YES               |
| Red Rock Tp                   | 1,237           | 510             | 2,700                      | 291                              | 2,409                    | 45                             | 1.9%                                | 3,912                                  | 5,901            | YES                                     | YES               |
| Timiskaming D                 |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Charlton T                    | 275             | 118             | 207                        | 73                               | 134                      | 0                              | 0.0%                                | 235                                    | 355              | YES                                     | NO                |
| Cobalt T                      | 1,351           | 613             | 1,848                      | 672                              | 1,177                    | 164                            | 14.0%                               | 913                                    | 1,377            | YES                                     | YES               |
| Englehart T                   | 1,655           | 741             | 1,898                      | 770                              | 1,128                    | 12                             | 1.0%                                | 1,899                                  | 2,865            | YES                                     | YES               |

**ADDITIONAL DEBT CAPACITY CALCULATION BY MUNICIPALITY  
(1997\$)**

| Municipality    | Population<br># | Households<br># | Own Fund Revenues          |                                  |                          | Debt Charges                   |                                     | Additional Debt<br>Which Can Be Issued |                  | Does the Municipality<br>Have Municipal |                   |
|-----------------|-----------------|-----------------|----------------------------|----------------------------------|--------------------------|--------------------------------|-------------------------------------|--|------------------|---|-------------------|
|                 |                 |                 | Total<br>Revenues<br>\$000 | Less: Ontario<br>Grants<br>\$000 | Net<br>Revenues<br>\$000 | Total Debt<br>Charges<br>\$000 | Debt as a %<br>of Net Revenues<br>% | 10 Year<br>\$000                       | 20 Year<br>\$000 | Water<br>(Yes/No)                       | Sewer<br>(Yes/No) |
|                 |                 |                 |                            |                                  |                          |                                |                                     |  |                  |   |                   |
| Haileybury T    | 4,666           | 1,966           | 5,395                      | 2,446                            | 2,948                    | 68                             | 2.3%                                | 4,701                                  | 7,091            | YES                                     | YES               |
| Kirkland Lake T | 10,330          | 5,093           | 20,550                     | 9,156                            | 11,394                   | 555                            | 4.9%                                | 16,112                                 | 24,302           | YES                                     | YES               |
| Latchford T     | 328             | 192             | 559                        | 220                              | 339                      | 0                              | 0.0%                                | 596                                    | 898              | YES                                     | YES               |
| New Liskeard T  | 4,986           | 2,189           | 5,788                      | 1,884                            | 3,904                    | 51                             | 1.3%                                | 6,499                                  | 9,803            | YES                                     | YES               |
| Thornloe V      | 130             | 49              | 105                        | 51                               | 54                       | 4                              | 7.8%                                | 65                                     | 98               | NO                                      | YES               |
| Armstrong Tp    | 1,303           | 510             | 1,374                      | 399                              | 975                      | 60                             | 6.1%                                | 1,292                                  | 1,949            | YES                                     | YES               |
| Brethour Tp     | 170             | 62              | 195                        | 146                              | 49                       | 0                              | 0.0%                                | 86                                     | 129              | NO                                      | NO                |
| Casey Tp        | 411             | 146             | 308                        | 213                              | 95                       | 12                             | 12.4%                               | 84                                     | 127              | NO                                      | YES               |
| Chamberlain Tp  | 366             | 156             | 385                        | 201                              | 185                      | 4                              | 2.1%                                | 296                                    | 447              | NO                                      | NO                |
| Coleman Tp      | 489             | 299             | 662                        | 191                              | 471                      | 2                              | 0.3%                                | 816                                    | 1,230            | YES                                     | NO                |
| Dack Tp         | 462             | 168             | 286                        | 166                              | 120                      | 20                             | 16.6%                               | 71                                     | 108              | NO                                      | NO                |
| Dymond Tp       | 1,242           | 432             | 1,337                      | 243                              | 1,094                    | 78                             | 7.1%                                | 1,377                                  | 2,077            | YES                                     | YES               |
| Evanturel Tp    | 513             | 204             | 426                        | 200                              | 225                      | 18                             | 8.0%                                | 270                                    | 407              | NO                                      | NO                |
| Harley Tp       | 617             | 210             | 441                        | 287                              | 153                      | 0                              | 0.0%                                | 269                                    | 406              | NO                                      | NO                |
| Harris Tp       | 535             | 228             | 184                        | 107                              | 77                       | 0                              | 0.0%                                | 134                                    | 203              | NO                                      | NO                |
| Hilliard Tp     | 245             | 88              | 303                        | 193                              | 110                      | 10                             | 9.0%                                | 124                                    | 187              | NO                                      | NO                |
| Hudson Tp       | 455             | 307             | 288                        | 162                              | 126                      | 0                              | 0.0%                                | 221                                    | 333              | NO                                      | NO                |
| James Tp        | 491             | 268             | 642                        | 147                              | 495                      | 0                              | 0.0%                                | 868                                    | 1,310            | YES                                     | YES               |
| Kerns Tp        | 408             | 140             | 272                        | 156                              | 116                      | 14                             | 12.5%                               | 102                                    | 153              | NO                                      | NO                |
| Larder Lake Tp  | 925             | 538             | 1,054                      | 377                              | 677                      | 0                              | 0.0%                                | 1,188                                  | 1,792            | YES                                     | YES               |
| McGarry Tp      | 1,050           | 488             | 1,556                      | 635                              | 921                      | 48                             | 5.2%                                | 1,283                                  | 1,934            | YES                                     | YES               |
| Gauthier Tp     | 134             | 69              | 175                        | 84                               | 91                       | 0                              | 0.0%                                | 159                                    | 240              | NO                                      | YES               |
| Matachewan Tp   | 427             | 270             | 296                        | 118                              | 178                      | 0                              | 0.0%                                | 312                                    | 470              | YES                                     | NO                |