Alternative Financing Techniques for Water and Wastewater Treatment

Robert G. Doumani

John Mascarin

Matt Novak

The Canadian Institute
Infrastructure Financing Development & Renewal in Canada

February 23-24, 2006

ALTERNATIVE FINANCING TECHNIQUES FOR WATER AND WASTEWATER TREATMENT

> Every day [in the United States], six billion gallons of clean, treated drinking water disappears, mostly due to old, leaky pipes and water mains. That's enough water to serve the population of a state the size of California.
>
> – William Henry, President of American Society of Civil Engineers

I. BACKGROUND

Canada has 20 percent of the world's fresh water within its boundaries. Many Canadians take our abundant supply of safe drinking water for granted. We simply turn on our tap without concern for the cost or quality of the substance. This precious commodity needs to be protected and sustained.

Pursuant to a May 2005 report from the Expert Panel on Water and Wastewater Strategy, *Watertight: The Case for Change in Ontario's Water and Wastewater Sector* (the "Expert Panel"), it was noted that water-related assets are wearing out and that they are not being expeditiously improved or replaced.

The current stock of water and wastewater assets in the Province of Ontario is estimated to be at approximately $72 billion - $20 billion in water treatment plants and the remainder in water distribution and collection systems. Over the next 15 years, water and wastewater investment needs in Ontario are expected to range from $30 to $40 billion. The Ministry of Public Infrastructure and Renewal has projected that, unless the rate of

capital investment increases sharply from levels in the recent past, the Province of Ontario will face a gap of approximately $18 billion between what the water systems require and what they will actually receive in funding over the next 15 years. The majority of the investment needs are related to the province's aging infrastructure.

Most of the Province's water-related infrastructure is more than 100 years old and the materials that were generally used to create Ontario's water systems are at the end of their useful life. Without a large infusion of capital investment, Ontario will see water-related disasters such as flooding, damage to roads, sewage diverted to rivers and lakes during storms and more boiled water advisories.

Ontario's water is an asset that needs to be managed in a way that protects its value. A fundamental concept of protection is the delivery of a safe and steady supply of potable water to consumers and users. It goes without saying that the absence of a safe supply of water will have severe consequences. Ontario needs to take the appropriate measures to ensure that the events that transpired at the Town of Walkerton in the summer of 2000 and the ensuing human tragedy are never repeated.

Billions of dollars in capital investment will be required over the next decade and for decades to come to rehabilitate and renew Ontario's aging water and wastewater systems. In addition, further resources will need to be directed towards compliance with increasingly stringent regulatory requirements relating to safe drinking water and sustainable water systems. Ontario's water facilities are predominantly public systems

that are owned and operated at the local government level. However, a niche market opportunity may be available for alternative financing through private corporations.

Historically, Canada's banks have been reluctant to finance infrastructure developments and, in the instances where they have financed such developments, it has traditionally been for very short periods usually capped at a 10-year amortization. The infrastructure now needs a better value for its money and longer financing options. Pursuant to the Ontario Strategic Infrastructure Financing Authority, the Province of Ontario has already used 79% of the life expectancy of its infrastructure. Furthermore, the Expert Panel determined that the investment required to return Ontario's water and wastewater systems to a state of good repair, and to maintain that condition for the indefinite future, will be between $30 and $40 billion over the next 15 years.

Maintaining the status quo is something that is just not acceptable. The Provincial Government must pursue methods to bring the status of water services into good repair while keeping rates affordable. This paper is not intended as a comprehensive guide to the Ontario water system; the paper will canvass the current state of the Province's water systems; some strengths and weaknesses of various financing relationships; and resources that are available for the renewal of Ontario's infrastructure. The paper will also highlight some unique business opportunities arising from a revised water system.

II. THE NEED FOR CAPITAL

Obtaining adequate financing directly impacts safe drinking water. It requires substantial financing to protect water at its source, for effective treatment and distribution, and for continuous monitoring and corrective action if problems are found. Municipalities can source funds for water and sewer systems primarily through five different ways:

1. directly from water rates or other revenue sources, such as development charges, special rates and user fees and charges;
2. from reserve funds (primarily for future longer term projects);
3. by borrowing money;
4. from federal and provincial loans and grants for infrastructure and renewal; and
5. from public-private relationships and arrangements.

GOVERNMENT FUNDING

i. *Federal Government Infrastructure Financing Initiatives*

Canada has committed to a *New Deal for Cities and Communities* (the "New Deal"). Its mandate is to assist municipalities in securing stable predictable and long term funding for public infrastructure. The New Deal recognizes that municipalities are in the best position to respond to local conditions and should have the flexibility to do so. Pursuant

to the New Deal, the federal government seeks to foster relationships between provinces, territories, cities, communities and the private and not-for profit sector to the benefit of citizens who live in rural and urban municipalities. In the 2004 budget, the federal government committed to providing municipalities with 100% of the goods and services tax and the federal portion of the harmonized sales tax. This commitment is proposed to provide municipalities with $7 billion in funding over a period of 10 years. Additionally, the government resolved to accelerate spending under the municipal rural infrastructure fund so that the dedicated $1 billion in funding will be spent over 5 years rather than the original 10-year plan.

a. *The Green Municipal Fund*

The Green Municipal Fund ("GMF") was established in the 2000 federal budget in order to stimulate investment in innovative municipal infrastructure projects. The GMF consists of a $550 million dollar endowment from the Ggovernment of Canada that supports partnerships leveraging the public and private sector funding to encourage municipal actions that generate measurable environmental, economic and social benefits. The funding options available to applicants for capital implementation projects are loans, grants or a combination of the two. The amount of funding ranges from a loan of up to 25% of the total eligible costs to re-loan and a grant combination of up to 80% and up to 50% of the total eligible cost, respectively. The amount of the loan is determined by the potential environmental benefits of the capital project. Both water and wastewater management are eligible areas for support by the GMF.

b. Gas Tax Funding

The federal government has resolved to share a portion of the federal gas tax with Canada's cities and municipalities. In 2006, this share will be worth $600 million and it will increase annually until it reaches $2 billion annually, to be continued indefinitely. Water and waste water systems are among the infrastructure services that will receive a portion of these funds.

ii. *Provincial Government Infrastructure Financing Initiatives*

The Ontario Infrastructure Projects Corporation, which is part of the Ministry of Public Infrastructure Renewal, was formally established on November 7, 2005. The mandate of this Crown agency is to manage Ontario's infrastructure projects by using alternative financing and procurement methods. One of its major strategies includes ReNew Ontario, the provincial government's five-year, $30 billion infrastructure plan. In accordance with its mandate, ReNewe Ontario will over the next 5 years facilitate the investment of more than $30 billion in public infrastructure by the provincial government and its partners.

a. ***Ontario's Strategic Financing Authority***

Ontario's Strategic Infrastructure Financing Authority ("OSIFA") is an agency reporting to the Minister of Public Infrastructure Renewal that has been established to offer low

cost, longer term and fixed rate financing to assist Ontario's public sector institutions in renewing their infrastructure. The objects of the OSIFA are set out in section 3 of the *Ontario Strategic Financing Authority Act, 2002*, S.O. 2002, c. 22, Sched. A, as follows:

> 1. To provide financing for municipalities and for such other public bodies as may be specified by regulation for such purposes as may be specified by regulation.
> 2. To obtain funding to finance activities.
> 3. To exercise powers under the *Corporations Tax Act* and the *Income Tax Act* regarding any bond, debenture, or other security.
> 4. To engage in other activities as the Lieutenant Governor in Council may specify.

Capital is raised from individual and institutional investors by selling infrastructure renewal bonds to form a pool that provides loans to public sector partners.

O. Reg. 109/03 – *General* authorizes OSIFA to provide financing for municipalities to construct, erect, install, expand, refurbish, alter or repair, *inter alia*, the following: water and sewage works, waste management system. OSIFA supports the provincial government's ReNew Ontario program by offering affordable financing to broader public sector borrowers.

b. *The Canada-Ontario Infrastructure Program*

The Canada-Ontario Infrastructure Program was announced in 2000 and makes available $680.7 million in federal and $1.4 billion in provincial support. The funding is targeted towards urban and rural infrastructure, with a strong emphasis on water, wastewater and waste management projects. An additional $1.5 billion, shared equally between the

federal and provincial governments and the City of Toronto, is specifically directed towards the Toronto Waterfront regeneration project.

c. *Tripartite Government Renewal Projects*

Arrangements can be made between all three levels of government to share in the infrastructure funding of specific sites. These agreements are resourceful, flexible instruments that coordinate action among the various levels of government and seek to tap into the particular expertise of each level. The intent is to produce a seamless delivery of programs and services. The purpose of these agreements is to stimulate investment and employment and revitalize inner city areas.

iii. *The Ontario Clean Water Agency*

The Ontario Clean Water Agency ("OCWA") was established by the Province of Ontario to provide arms length delivery of water and wastewater services and to give municipalities a choice in the financing of water and wastewater systems. In 2001, OCWA focused on establishing a strong foundation upon which to build the strategic policies for 2002 and beyond. OCWA provides reliable, cost effective and environmentally responsible water and wastewater services to municipalities and private industries. It offers extra consulting services undertaking construction, expansion, or upgrading their water or wastewater infrastructure. OCWA was established on November 15, 1993 under the authority of the *Capital Investment Plan Act*. The agency

makes loans to municipality to finance water and waste water facilities that have received provincial assistance under the municipal assistance program. Loans are made for terms up to 20 years at interest rates between 8.1% and 8.85% set by the province at the time the loans were granted. Additionally, OCWA has investment receivables which were supported by agreements which specify interest rates between 5.07% and 13.69%.

Although most municipalities operate water facilities themselves, approximately 25% of them contract out water and sewage operations, primarily to the OCWA. At the end of 2000, the OCWA operated 161 water treatment and 233 sewage facilities for more than 200 municipalities. Two hundred twenty-two of its 383 contracts are with small municipalities and worth less than $100,000.00 annually.

III. THE LEGISLATIVE CONTEXT

The statutory foundation of Ontario's water policy is the *Ontario Water Resources Act*, R.S.O. 1990, c. O.40. It assigns the responsibility for the supervision of all surface waters and ground waters in Ontario to the Minister of the Environment and her delegates. This broad oversight includes the powers to improve water works and facilities, carry-out inspections, make orders and enforce them. Regulations under the *Ontario Water Resources Act* specify drinking water quality requirements, licensing of well drillers, permits to take water, sewage treatment plant obligations, duties to collect and report information, and a range of other matters. Decisions of Directors under the

Ontario Water Resources Act are important and legally binding, although they may be appealed to the Environmental Review Tribunal.

i. *Walkerton*

After the water disaster in Walkerton, the provincial government established a public inquiry. This inquiry was headed by Mr. Justice O'Connor and resulted in the publication of a two-part report ("Walkerton Report") that was released in May, 2002. The first part of the Inquiry's mandate was to report on the events in Town of Walkerton and the causes of the tragedy. The second part of the mandate was to make recommendations to ensure the safety of drinking water across the Province of Ontario. The main recommendations of the Walkerton Report are divided into 5 areas:

1. Source protection;
2. Standards and technology;
3. Municipal water providers;
4. Provincial oversight; and
5. Special cases: (a) small water systems; and
   (b) First Nations water supplies.

The Walkerton Report submitted that its general goal is to ensure that the drinking water systems in Ontario deliver water with a level of risk so negligible that a reasonable and informed person would feel safe drinking the water. The report noted that over 80% of

Ontarians are served by municipally-owned water systems and that, in the future, municipalities may choose various water system relationships. These include a variety of internal management structures, regionalization or consolidation with other municipalities, and contracting with external operating agencies such as the OCWA, various private operators, or other municipalities. The Walkerton Report underscored that partnership choices must be made with a view of safety and accountability in mind. In response, new legislation was borne to activate the encompassing recommendations of the Walkerton Report.

ii. *Sustainable Water and Sewage Systems Act, 2002*

The *Sustainable Water and Sewage Systems Act, 2002***,** S.O. 2002, c. 29, received Royal Assent on December 13, 2002 but has yet to be proclaimed in force by the Lieutenant Governor in Council. The objective behind the legislation is to provide for long-term funding for sustainable water sewer systems in Ontario. Pursuant to section 24 of the *Sustainable Water and Sewage Systems Act, 2002*, there is regulation-making authority with respect to wastewater services. Regulations may specify the sources of revenue that a regulator entity is permitted to use and also limit the maximum amount of charges for services. The legislation requires all owners of water and sewer systems (mainly municipalities) to undertake a detailed analysis of their water and sewer systems. This would include a full cost accounting of all operating and capital costs, sources of revenue, and the investment required to maintain and expand their systems.

The goal of the *Sustainable Water and Sewage Systems Act, 2002* is to ensure that municipalities can finance central water and sewer services and ensure clean, safe drinking water. The purpose of the full cost recovery plan is for municipalities to determine how they will pay for the full cost of their water systems from local revenue sources, including how they will raise money to pay for future capital costs, whether from accumulated reserves or from borrowing. Municipalities must assess the cost of water in order to charge the appropriate rates and generate sufficient revenue to finance capital and operating costs. Full cost recovery is essentially a two-part process. First, it requires the operators to prepare a full cost report on all related expenses; secondly, it requires a cost recovery plan.

The Walkerton Report made an attempt to define "full cost." The definition included, at a minimum: (a) operating costs which arise from the running of the system on an ongoing basis, including the operation, repair, routine maintenance of physical assets, and general administration and billing; (b) capital costs which are incurred in the construction or replacement of water systems, which include the investments required to maintain a system that meets current and evolving standards; and (c) environmental costs which result from the impact of water takings and wastewater emissions (it was not specifically recommended that environmental costs be included in full cost recovery; however, there is a direct relation to source protection which is an endorsement by the Walkerton Report).

In the Walkerton Report, Justice O'Connor pointed out that the water rates in Ontario are comparable to the cost of cable television or Internet services. He stated that there "appears to be room for water rates to rise in cases where consumers are not paying the full cost of safe water."

The viability of full cost recovery has already been evidenced. The Town of Perth, in eastern Ontario (population: 6,000) moved to full cost recovery without any fees during the process. The result of the full cost recovery doubled the annual water and sewer rates. The Town of Perth's system is now financially sustainable for the indefinite future. Similarly, the City of Sudbury has increased its water rates consistent with the levels needed for full cost recovery.

According to estimates prepared by the Ministry of Public Infrastructure and Renewal, municipalities in Ontario in 2003 took in (as water-related revenue), only 64% of the full cost of providing water and wastewater services. One benchmark exercise went to utilities across Canada, showed that "the average rate of reinvestment was 0.40% of the total utility replacement value." This unpaid bill shows up as rust-out, less reliable service, more leaks, increasing risk to public health and convenience, environmental damage, and demands for subsidies. Another fundamental problem with low rates is that users tend to use more water than is necessary. This means more wastewater and bigger treatment plants than would otherwise be needed (resulting in overall increased costs). Rates are the most effective way of managing demand for water because it makes

consumers conscience of consumption therefore maximizing the efficiency of existing systems.

It is notable to mention that, going forward, a regulatory body may develop under the *Sustainable Water and Sewage Systems Act, 2002*. The creation of regulatory body of an Ontario Water Board had been suggested to make decisions under the *Sustainable Water and Sewage Systems Act, 2002*.

iii. *Safe Drinking Water Act, 2002*

In response to the recommendations made by Justice O'Connor in the Walkerton Report, the Provincial Government, was introduced Bill 195 into the Legislature on October 29, 2002. The bill received Royal Assent on December 13, 2002 as the *Safe Drinking Water Act, 2002*, S.O. 2002, c. 32. The regulations that support the *Safe Drinking Water Act, 2002* came into force on June 1, 2003. This safe water legislation is the most complex and comprehensive of its kind in Canada, and has an emphasis on setting up a comprehensive scheme to regulate municipal drinking water systems.

The enunciated purposes of the *Safe Drinking Water Act, 2002* are to recognize that the people of Ontario are entitled to expect their drinking water to be safe, and to provide for the protection of human health and the prevention of drinking water health hazards through the control and regulation of the drinking water systems and drinking water

testing. In essence, the *Safe Drinking Water Act, 2002* consolidates legislative and regulatory requirements regarding the treatment and distribution of drinking water in Ontario. Prior to the *Safe Drinking Water Act, 2002*, the *Ontario Water Resources Act* generally governed drinking water.

The *Safe Drinking Water Act, 2002* has a number of important features designed to protect drinking water consumers. The *Safe Drinking Water Act, 2002* creates, through regulation, legally binding standards for contaminants in drinking water. Pursuant to O. Reg. 169/03 – *Ontario Drinking-Water Quality Standards*, drinking quality standards cover three different types of contaminants:

A. Microbiological;

B. Chemical ; and

C. Radiological.

The *Safe Drinking Water Act, 2002* makes it mandatory to use licensed and accredited laboratories for drinking water testing. In order to obtain a license, laboratories must be accredited for the tests they conduct. Licenses may be issued with conditions, and the director has the authority to amend the conditions or to revoke or suspend the license if the laboratory is not in compliance with the requirements of the *Safe Drinking Water Act, 2002*. The Director may authorize the use of non-accredited laboratories and limited circumstances, particularly in situations of geographical constraints. If testing results are adverse, the *Safe Drinking Water Act, 2002* imposes a duty to record these adverse test

results and report to the Ministry of the Environment and to the local medical officer of health. Reports will have to be made in accordance with the requirements established by O. Reg. 170/03 – *Drinking-Water Systems*.

All operators of municipal drinking water systems must be trained and certified. A licensing regime is established within the *Safe Drinking Water Act, 2002*. The statute gives broad inspection powers to officers of the Ministry of the Environment and creates a new position of Chief Inspector who oversees inspections and enforcement. There are substantial penalties set out under the *Safe Drinking Water Act, 2002.* The Director may impose administrative penalties with respect to contraventions of the Act with a maximum of $10,000.00 for each day that the contravention occurs. For individuals convicted under the *Safe Drinking Water Act, 2002*, the fines range between $20,000 and $7 million, depending on the offence. Convicted individuals may also be imprisoned for certain offences. For corporations convicted under the legislation, the maximum fines payable range from $100,000 to $10 million, depending on the offence. The Court may also impose other orders and monetary penalties such as profit stripping, restitution orders or orders to prevent damage.

Under the *Safe Drinking Water Act, 2002,* owners and operators of municipal drinking water systems must obtain an approval and permit to take water. The regime includes a certificate of compliance. Section 43 of the *Safe Drinking Water Act, 2002*, states that "if a condition of a drinking water work permit so provides, no owner of the municipal water drinking system, shall put into service any works, equipment, mechanism or thing

specified until the owner or the owner's designate has given the director a certificate of compliance in such form as the director requires." It seems as though the certificate of compliance, although not mandatory, may be available at the discretion of the Ministry of Environment as an instrument similar to the prior certificate of approval.

Much of Ontario is served by very small water and wastewater systems. For example, 90% of a total number of water system treatment plants together serves only 10% of the population. It is suggested that the licensing and certification regime as set out in the *Safe Drinking Water Act, 2002* is entirely appropriate and will lead to positive change within water systems such as the amalgamation and promotion of small and municipal systems within reasonable distances from each other or the establishment of central operations units.

iv. *Municipal Act, 2001*

a. *Municipal Capital Facilities*

About 8.9 million Ontarians – 82% of the population, receive their drinking water from municipal water systems. In 1993, the former *Municipal Act,* R.S.O. 1990, c. M.45, was amended by the *Economic Development Act, 1993*, S.O. 1993, c. 26, to encourage private-public relationships and undertakings to invest in municipal infrastructure. Former section 210.1 of the *Municipal Act* allowed municipalities to enter into agreements for the provision of "municipal capital facilities" by any person, including

another municipality. This authority has been carried forward into section 110 of the *Municipal Act, 2001*, S.O. 2001, c. 25. The term "municipal capital facilities" is defined in section 2 of O. Reg. 46/94 – *Municipal and School Capital Facilities – Agreements and Tax Exemptions* to include municipal facilities for water, sewers, sewage, drainage and flood control. The authority under section 110 overrides the general prohibition against bonusing contained in section 106 by expressly allowing a municipality to provide "financial or other assistance at less than fair market value or at no cost to any person who has entered into an agreement to provide facilities under the section." Municipalities are authorized to provide assistance in many ways, such as giving or lending money or property, guaranteeing borrowing, and providing the services of municipal employees.

Additionally, municipalities entering into municipal capital facility agreements may also provide exemptions for such facilities against municipal and school taxes, as well as development charges and education development charges. However, there is a restriction under subsection 110(15) where the tax exemption under subsection 110(6) cannot be in respect of a special levy under section 311 or 312 for sewer and water.

The authority under section 110 also extends to public partnerships as municipalities can enter into agreements with other municipalities for the provision of municipal capital facilities. The power to enter into agreements relating to municipal capital facilities under section 110 is sometimes coupled the authority for municipalities to provide

systems outside their geographical boundaries pursuant to subsection 19(2) and enter into joint undertakings with other municipalities under section 20 of the *Municipal Act, 2001*.

b. *Fees and Charges*

The *Savings and Restructuring Act, 1996*, S.O. 1996, c. 1, introduced section 220.1 into the former *Municipal Act* which created new broad powers for municipalities regarding the imposition of fees and charges. Former s. 220.1 enabled municipalities to pass by-laws imposing fees or charges on any class of persons. The so-called "user fee" provisions were some of the most debated and controversial amendments contained in the *Savings and Restructuring Act, 1996*. Former s. 220.1 essentially provided that where there was a direct relationship with the ultimate user of a service, activity or property, a municipality or local board could charge any fee or charge it considered reasonable.

The original legislation was explicit in providing that a by-law could impose a user fee or charge "in the nature of a direct tax for the purpose of raising revenue". The fees and charges provisions in Part XII of the new *Municipal Act, 2001* does not contain any language authorizing fees or charges to generate general revenue.

Section 391 of the *Municipal Act, 2001* allows a by-law to impose fees and charges related to sewage and water services. Section 391 provides in part as follows:

> **391**(1) Despite any Act, a municipality and a local board may pass by-laws imposing fees or charges on any class of persons,

(a) for services or activities provided or done by or on behalf of it;

(b) for costs payable by it for services or activities provided or done by or on behalf of any other municipality or local board; and

(c) for the use of its property including property under its control.

(2) A fee or charge imposed under subsection (1) for capital costs related to sewage or water services or activities may be imposed on persons not receiving an immediate benefit from the services or activities but who will receive a benefit at some later point in time.

The ability to impose a fee or charge related to the capital costs of providing sewer and water services is new to the *Municipal Act, 2001* and is made clear by the reference in subsection 391(2).

Additional conditions respecting the imposition of user fees related to water and sewage services are specified in section 12 of O. Reg. 244/02. Conditions include restrictions on the imposition of fees and charges related to the use of the systems and on the costs recoverable, annual by-law expiration, notice and public meeting requirements and public disclosure requirements.

There may be certain advantages to utilizing user fees to recover the capital costs of water and sewer facilities since revenues do not have to be exactly matched with the cost to the municipality. There have been a number of court cases considering the fees and charge provisions, including, principally, *Urban Outdoor Trans Ad v. Scarborough (City)* (2001), 16 M.P.L.R. (2d) 241 (Ont. C.A.), which upheld a fee imposed under a sign by-

law. The Court of Appeal held that so long as revenue obtained under a user fee by-law is used to help defray costs (which term was broadly defined) for which the money was collected, the by-law and charge will be upheld. The general test is that any fee or charge imposed by a municipality must exhibit a nexus between the quantum charged and the actual cost of the service that is provided.

c. *Special Service Rates*

Section 326 of the *Municipal Act, 2001* allows municipalities to impose levies relating to a number of different services. This provision concerns special service by-laws and provides municipalities with greater authority and ability to make area-specific provision for the financing of certain enumerated services. Special charges could be imposed under the old *Municipal Act* only for heavy loads on water and sewer systems (section 218) or for areas benefiting from special sewer and water works (section 221).

Section 326 now allows a municipality to determine and impose the costs of special services not generally provided throughout the municipality by a levy on certain areas. Section 326 allows a separate charge to be levied upon those that derive a benefit from services that are not being provided or undertaken generally throughout the municipality or that are being provided or undertaken at different levels or in a different manner in different parts of the municipality.

The key concept of the scheme is that of a benefiting area. A special services area must receive a "benefit" from the service, which is specifically stated to be direct or indirect. What constitutes a direct or an indirect benefit is open to interpretation. Furthermore, the "benefit" is something that may be currently available or "will be available in the future" (see subsection 326(2)).

Subsection 326(3) imposes a restriction on designating an area or areas that do not receive special services but are intended to do so in the future. An area so designated, for a given year cannot include an area in which the additional benefits are not currently provided, but will be, received in the future unless:

(i) the expenditures necessary to make the additional benefit available in that area are in the municipality's adopted budget for that year; or

(ii) the municipality has established a reserve fund to finance those expenditures over a period of years.

For each year that the special services by-law is in force, the municipality charges a special levy under section 312 of the *Municipal Act, 2001* on the rateable property in the area designated as a benefiting area. As a special levy, the amount is added to the tax roll of the properties to which it applies and is collected as a tax of the municipality. As such the levies can be recovered as taxes and constitute a "special lien" pursuant to subsection 349(3) having "priority to every claim, privilege, lien or encumbrance of every person

except the Crown, and the lien and its priority are not lost or impaired by any neglect, omission or error of the municipality or its agents or through taking no action to register a tax arrears certificate." The Minister of Municipal Affairs and Housing has authority to make regulations prescribing special services, how they are designated, and how the costs may be recovered.

O. Reg. 305/02 – *Special Services* simply lists prescribed services but does not provide for any further matters regarding them. "Sewer systems", "water systems" and drainage and flood control systems" are all listed as special services in the regulation.

IV. PUBLIC– PUBLIC ARRANGEMENTS

i. *Ministry of Public Infrastructure Renewal*

The Ministry of Public Infrastructure and Renewal ("MPIR") is the central agency responsible for ensuring co-ordinated and integrated strategic infrastructure planning and allocations, linking policy and capital and operating financial decision-making. MPIR is the repository of the government's expertise in the area of infrastructure financing, capital procurement, initiative management, related financial analysis and asset management. One of MPIR's commitments going forward is the creation of new financing solutions. MPIR is responsible for providing central agency oversight,

management, and evaluation and recommendations with respect to financing and procurement proposals for major and minor infrastructure investment initiatives.

To ensure the effective management of the population and economic growth, the Ontario government released *ReNew Ontario* ("ReNew"), a five-year infrastructure investment plan. Over the course of the next five years, the government and its partners will invest more than $30 billion in Ontario's public infrastructure. Specifically, through ReNew the government will spend $1 billion by 2010 for initiatives supporting clean water and the environment.

ii. *Benefits of Public-Public Arrangements*

The public sector argues that public-public arrangements have many advantages over private involvement. Some benefits include the following:

- priority of the public interest over shareholder interests;
- greater accountability and an obligation to keep the revenues in the municipality;
- greater transparency because of fewer confidentiality concerns;
- lower cost of capital (at least in the municipal sector in Ontario);
- comparable levels of efficiency, expertise, innovation and a well run public utilities;

- better co-operation among agencies, greater concern with conservation, and a higher sensitivity of social concerns (for example rate setting); and
- capacity to restructure poor public sector performers.

The main attributes behind the attraction to having the public sector control Ontario's water system is; public accountability, equitable access to water and water services and environmental protection and conservation. Justice O'Connor in the Walkerton Report noted that it is unrealistic to think of several service providers either government or private actors competing in the offering of key water related services. He stated that a water system doesn't usually accommodate multiple suppliers because distinct lines of accountability for the quality and reliability of the water that has carried through its pipes is extremely difficult. Accordingly, it was suggested that it would be more appropriate to speak of designated roles for the private sector rather than speaking comprehensively about the wholesale privatization of water. According to Canadian Environmental Law Association, *Water Services in Ontario: For the Public, By the Public*, the ways in which private companies in the water supply and delivery systems vary. The most common is for municipalities to contract with private companies to design and build water treatment plant, to clean out water mains or carry out other maintenance activities, and to buy technologies from private companies for water filtration and other kinds of water treatment methods.

V. GOVERNANCE

Governance change will lead to sound business and financial decisions and eliminate the idea of unfair competition. Governance is intimately connected with the success of an organization where public resources are concerned; governance must be both prudent and accountable. The transparency which allows the public to understand and intervene is also and essential component to successful governance. Transparency has been compromised in Ontario where it is common to have the separation of short term operation and maintenance decisions from outside ownership. There are a number of ways to address the governance challenges and these have been worked into the following models.

i. *Municipal Governance Model*

In Ontario, most of the water services are governed directly by a municipal council. There are, however, other relationships such as where connecting jurisdictions having shared water systems are governed by boards representing their municipal owners which are either single tiered or lower tiered. Also, in some upper-tier municipalities, the upper-tier council and lower-tier councils separately exercise responsibility for the water-related assets they own.

There are some drawbacks to direct municipal governance. Since water infrastructure is mostly out of sight, the attention is ordinarily paid to long-term needs reflecting the

perseverance of staff rather than the fundamentals of the utility. Furthermore, reserve funds often are diverted for other municipal issues rather than being directed to water systems. In shared municipal governance, there can often be tension between the largest and smallest owners due to conflicting interests. Moreover, communities that differ from the majority because of their location can often have very little power to influence any of the government's decisions. Notwithstanding any of the concerns above, direct municipal governance is an excellent system that is able to focus more on social and political concerns.

ii. *Public Utility Model*

The *Municipal Act, 2001* allows municipalities to own corporations to deliver services. The amendment in the regulation did not include water and waste water services. A few municipalities, however, including the City of Peterborough, have achieved something used as a separate utility for water services. Other jurisdictions have also expressed the desire to corporatize. One possibility would be to create a municipal corporation that would deliver a range of services. The Cities of Kingston and Kitchener have created an approximation of such a multi-utility, and the existing utility corporation in the City of Hamilton would like to extend its corporate structure to include water and waste water. The utility model allows municipalities to hold the assets of water systems in a separate corporation.

The Expert Panel on Water and Wastewater Strategy noted that a separate corporation offers many advantages over a direct municipal government. It results in greater transparency with the municipal owner because corporations are required to file separate financial statements sharing the funds flowing between corporation and shareholder. Additionally, having a diverse board would allow the entity to draw of the expertise of objective, qualified, and professional private citizens with the appropriate business, financial and technical experience needed for success. Furthermore, there is an economic benefit for such that a corporate utility as it would be able to borrow on its own behalf to fund major projects, on market terms and conditions, without competing with other municipal needs and without the constraints of the *Municipal Act, 2001*. Notwithstanding the positive aspects above, the separate utility model has been protested because it is seen as the first step towards privatization.

iii. *Municipal Service Boards*

A municipal service board has an independent board and partially ring-fenced finances. A municipal service board is a combination of delegates from council and private citizens but it dissolves with every election. A municipal service board also holds property but only in trust for the municipality and does not have the effect of control of the capital budget. There are many limitations on municipal service boards, such as a limitation to borrowing or supply of customers outside the municipality without permission. It may however use its fees and charges in any way they see fit subject to council approval. However, upon being requested to do so, a municipal service board must turn over to the

municipality any surplus earned from operations not including amounts that may accumulate in the municipality's accounts for a reserve for capital requirements. Essentially a municipal service board is an agent and delegate of the municipality. It has no independence and does not integrate the long-term capital on day-to-day operational decision making that capital intensive businesses like water and waster water ideally should have.

iv. *Ontario Clean Water Agency Governance*

Discussion has ensued regarding changing the governing structure of the OCWA. It has been suggested that to achieve more objective governance, the board of the OCWA should consist of independent members in addition to government representation. This would allow OCWA to operate at arms-length from the provincial government. At present, the president reports to a deputy minister at the Ministry of Environment, and its board is made up entirely of senior ministry staff.

VI. PUBLIC-PRIVATE RELATIONSHIPS

i. *Introduction*

Industry Canada defines a public-private partnership as a co-operative venture for the provision of infrastructure or services, built on the expertise of each partner that best

meets clearly defined public needs, through the most appropriate allocation of resources, risks and rewards. Government ministries and agencies would pay the private sector for services or the use of assets which the parties have worked together to create. Typically, these partnerships are characterized by sharing authority and responsibility, sharing liabilities and risks, joint investments and shared rewards at the mutual benefit of the parties. In general, in a public-private relationship, the public sector maintains an oversight to the quality assessment role while the private sector is more closely involved with the actual delivery of the service or project. While there are no steadfast guidelines on how a private-public relationship operates, each relationship will be governed with regard to the specific skills and abilities that each partner brings to the table. The allocation of the risks will be governed by the ability of the private and public sector partners to efficiently and effectively mitigate their own concerns. The benefits of public-private partnerships are increased efficiency, shorter implementation time, greater innovation and ultimately greater value on the delivery of services brought about by increased competition.

It is estimated that there is an unpaid bill of $11 million for upkeep and repairs for Ontario's water systems. This economic burden may be a catalyst for very enticing private deals as municipalities are free to enter into broad agreements with private entities. The primary method to secure a public-private partnership in the municipal context is statutorily authorized through the use of municipal capital facilities agreements pursuant to section 110 of the *Municipal Act, 2001* (as discussed above).

ii. *Role of the Private Sector*

The private sector is likely to be involved in the renewal of infrastructure in either or both of the following aspects:

1. provision of external expert advisory services to government or a broader public sector entity, and
2. provision of service or finance for an initiative.

Whereas the private sector already performs a lead role in project advice and design and construction of major infrastructure assets, it is likely that the private sector will now take a lead in several expanded areas including overall procurement management of major infrastructure initiatives, sourcing and managing initiative finance, management of infrastructure assets, and providing services associated with specific infrastructure. New sources of financing will be accessed through Infrastructure Renewal Bonds, and from partnerships with financial institutions and pension funds.

The private sector can also play a crucial role in full cost recovery. There is an issue in recouping outstanding amounts for water services. It can be a highly political issue since water is a basic necessity of life, therefore municipal run water systems need to be sensitive to actions against those who do not pay for services. Instead of shutting off water services, the municipality can place a lien on a property for a bill which has not been paid. However, the drawback of this would be that the money would not be

collected until the property is sold, and this may undermine the full cost recovery in an expedited fashion. Private entities can be stricter in collection or undertake alternatives such as to require deposits from new customers or to set up a reserve against unpaid bills.

iii. *The Benefits of Public-Private Arrangements*

Some have asserted that private sector operators can provide competent service at a lower cost than the public sector. One major criticism is that the drive for profit neglects reinvestment in the future safety of the water industry since there is no long-term value for private partners. There are however, many benefits for involving the private sector in water financing. These include:

- greater access to financing and greater willingness to charge the full cost of the service;
- greater efficiencies in operating and management;
- greater technical and managerial expertise and innovation;
- flexibility in terms of management, labour and procurement;
- director expertise and legal liabilities;
- shorter implementation time;
- political disentanglement of management decisions;
- stronger incentives to comply with standards; and
- transfer of risk to the private operator.

iv. *Implications for Safety*

The decision of whether to engage a private company at a water system and under what conditions depends on a variety of considerations. These include the legal and regulatory environment in which the transfer may occur, the professionalism of the public authority, its ability to recruit expert assistance to support it in the negotiations, the integrity of the bidding process, and the existence of experienced firms who are prepared to offer their services.

v. *Operating Agreement*

There are fundamental differences between public and private objectives. The public model aims to serve the public interest under the framework of public accountability, whereas a private corporation pursues profit as its central objective. An operating agreement or contract effectively transfers responsibility for addressing a portion of the public interest to the private operator who is accountable within the terms of the contract. These agreements can be mutually beneficial by laying out respective responsibilities, allocating the benefits and assigning the risk between public and private parties.

vi. *Alternative Financing and Procurement Strategies*

At a Toronto Board of Trade luncheon on May 9, 2005, Minister David Caplan, Ontario Minister of Public Infrastructure Renewal, discussed how the government intends to deal

with Provincial infrastructure debt. The Minister noted that public infrastructure is essential to improving the quality of life and asserted that it was a priority to remedy infrastructure deficiencies. However, Minister Caplan stressed that money is not available from tax payers to renew the infrastructure and that "we need capital from other sources, from other sectors and from other partners." He termed this *alternative finance and procurement* ("AFP"). In a controversial statement, Minister Caplan emphasized that his government intends to "vigorously pursue opportunities with the private sector in the delivery and financing of public infrastructure."

Importantly, alternative financing does not affect public ownership of core public assets such as water and wastewater infrastructure. All AFP's are guided by 5 key principals articulated by Minister Caplan:

- public interest is paramount,
- accountability,
- appropriate public ownership or control,
- value for money, and
- fair, transparent and efficient processes.

Within AFP, a new management framework has been introduced for larger, complex projects. These projects will require a fully developed business case to demonstrate the public need and the public benefit before they proceed. The private sectors expertise will be useful in all aspects of a business case analysis including the areas of financing, technical, operational, public policy and implementation.

VII. FINANCING OPTIONS

The Expert Panel noted that Ontario municipalities have received a positive reception in the global investment market. Current demand for investments in Canadian and Ontario municipal issues both public and private is extremely strong. Ontario is seen as safe investment. This is evidenced by its excellent credit rating. Standard and Poors announced that it had rated 11 municipalities worldwide as AAA, its highest rating. Five of these were located in Ontario.

i. *Municipal Reserves*

A portion of annual revenues can be set aside in a special account and allowed to accumulate until withdrawn to be used for special infrastructure projects. Essentially, reserve funds pay for costs for past savings. The key advantage of using reserves is that it avoids having to go into debt and pay interest. Conversely, a negative aspect of reserves is that they reflect an unduly conservative approach to financing and may lead to neglect, which is what appeared to be the case in Walkerton.

ii. *Municipal Borrowing*

Municipalities are permitted to borrow for capital spending as long as they are within their borrowing limits as set out by the provincial government. This means a

municipalities debt charges cannot exceed 25% of its local revenue sources without the approval from the Ontario Municipal Board (pursuant to O. Reg. 799/94, as amended). It was noted in the Walkerton Report that on average, municipal debt charges did not exceed 5.1% of operating expenditures for any category of municipality. Water and sewage debt account for about 30% of the total debt incurred by Ontario municipalities, this proportion has remained roughly the same over the past 10 years. Municipal borrowing in Ontario, on average, has reportedly fallen over the same time period for about 18% of operating expenditures in 1989 to 13% in 1999. However, in light of the overwhelming need for infrastructure renewal and the increased costs of material, it is expected that the need for borrowing or private financing will increase.

A group of borrowers may finance projects through *pooled borrowing*. This can be financed through a special purpose entity making it more efficient to raise funds in the capital markets.

Borrowing offers several benefits over pay as you go and reserve funds. First, it allows the water systems to match the flow of revenues with the costs of the project over a period to better approximate its lifespan. It also gives more flexibility to deal with the capital needs when they arise, not years later. Funds cannot be and often must be legally associated through a loan agreement to the use for which they are intended.

iii. *User Pay*

A user pay system can be implemented where charges are imposed for the amount of water used and wasted. In 1990, The City of Thunder Bay's water pollution control plant provided only primary treatment. An antiquated combined sewer served a major portion of the city and when it rained, homeowners regularly complained about basement flooding. The Ministry of the Environment estimated the cost of the system upgrades could be in the $50 to $80 million range. In 1993, with the assistance of the Canadian, Ontarian and municipal governments, a comprehensive pollution prevention and control plan was initiated to better manage the storm and sanitary sewer systems, upgrade combined sewer overflows and add secondary sewage treatment facilities. Instead of relying on property taxes and provincial grants and loans, the city imposed a sewer rate at 65% of the water rate to finance the plan. By 1999, the user pay system was able to recoup all the capital and operating costs of the sanitary sewage collection and treatment works, and municipal politicians were able to balance the city's budget without raising property taxes.

iv. *Bidding Process*

The most transparent and traditionally economical way to involve the private sector as a partner is to hold a competition among prospective bidders. This will usually produce a partner with the appropriate skill, experience and resources necessary to undertake the desired service in the most efficient way possible in. Additionally, this process will often

lead to having the best possible terms in favour of the municipality. *Building a Better Tomorrow*: *An Infrastructure Planning, Financing and Procurement Framework for Ontario's Public Sector* advocated in favour of, and set out a framework for, the implementation of a competitive bidding process when choosing a partner in order to achieve the optimal partner in a transparent process. The bidding process will begin with a request for expression of interest followed by a request for qualifications to ensure that the bidders have the technical and financial capacity to undertake the task and track record in performing similar tasks. Following the submission of qualifications, there will be a request for bids where written proposals will be submitted.

v. *Finance*

Initiatives can be financed by the private sector through a bond issue or a bank loan. Some financing tools that may be effective in Ontario are value captured charges and revenue bonds. For value captured charges, incremental revenue from a specified site is relied upon as security for financing, whereas in revenue bonds, bonds are secured by dedicated revenue streams.

vi. *Leases*

The government can lease infrastructure assets to private entities based on beneficial terms. Leases may include provisions for the cost, design, building and operation of water systems for long or short term periods.

VIII. BUSINESS OPPORTUNITIES

i. *Pricing and Rates*

Ontarians are currently not paying the full cost of providing safe water and managing our water assets on a sustainable basis. Current rates charged to consumers in Canada are relatively low compared to other jurisdictions. A study completed by the National Utility Service Inc. demonstrated that Canadians, on average, are charged significantly less for their municipal water supply and water services than other developed countries. Water prices in Germany and Denmark are about four times greater than Canadian prices. It is notable to mention that Canada has posted a 100% increase in water rates from 1987 to 1999. By comparison the Netherlands, France and the United Kingdom have relatively similar water prices, and all are approximately three times higher than those in Canada. Australia and the United States have water prices that are more comparable to those in Canada although they are still approximately 10% higher. Accordingly, a rise in water supplies costs would seem consistent with current global trends and this would allow greater profit margins for private entities.

ii. *Metering*

Metering is an effective way to remind consumers of their usage rate. It additionally ensures that customers are only paying for the amount of water that they use. Environment Canada's Municipal Water Use and Pricing Survey indicates that

consumption drops when meters are installed. A further benefit to the operator of water systems with the implementation of metering is that more information is known about where water is lost between its plants and its customers. This allows for better use of repair and maintenance resources and improves accountability. The installation of meters also provides an excellent opportunity for dialogue with the consumer which is a direct benefit to either the municipality or the private entity. The City of Kenora in north-western Ontario has moved to a full metering from flat rates. The City now uses approximately one third of the volume before the metering started. This is partially due to repairs to pumping stations and an aggressive leak detection program.

iii. *Seasonal Pricing*

Demand fluctuates for water seasonally, which means that finished water can be stored in reservoirs or stand pipes for a period of time before use. Historically, summer seasons demand in water use driven by lawn watering, car washing and swimming pool filling. It may be prudent to implement a seasonal surcharge to flatten the yearly demand.

vi. *Wastewater Services*

In Ontario, the general practice is to set wastewater and treatment charges as a percentage of water supply charges. New charges could be implemented to handle and treat wastewater with charges set out with rate structures developed through the business planning process. By segregating the water charge system, rates would not be drastically

increased in the eye of the consumer. Furthermore, a compartmentalized system lends justification to the full cost recovery system.

v. *Storage*

One viable and profitable area for financing may be in the storage of treated water. Comparatively, it is exponentially more expensive to pipe water to jurisdictions without water systems instead of storing treated water. However, municipalities absorb the unnecessary costs associated with storage and the potential re-treatment of water due to cultivating bacteria. The current storage methods are a drain on municipal resources but can be opportunistic for private industry. Profit can be reaped through an efficient storage system based on the seasonal fluctuations of water demands.

VII. CONCLUSION

Without an immediate change in the operation and financing of Ontario's water and wastewater systems, an impending disaster is forthcoming. Municipal governments especially need new strategies and innovative financing techniques to renew infrastructure that has already reached 79% of its useful life expectancy. With political pressure focused on health care and the aging baby boomers, it is unlikely that the Provincial Government will be eager to hand out the $30 to $40 billion needed to place

Ontario's water system a state of good repair, and maintain that condition for the indefinite future.

While the Provincial Government has many funds in place to ignite the infrastructure renewal, there is room, and a need, for both public-public and private-public arrangements to flourish. Through consolidation, full cost recovery and greater private involvement, Ontario could emerge with a transparent, reliable water system that is economically viable for the user and independently sustainable.

The Province of Ontario has created a framework for a successful water system through legislation, and the availability of broad financing discretion in dealing with public and private entities. There is exceptional value in this massive renewal undertaking and ample opportunity for involvement and profit for all stakeholders.