



21. Wastewater Services

WHAT IS THE SERVICE?

Wastewater Services include the collection of wastewater from customers through the collection system to treatment facilities for safe and effective treatment and disposal. OMBI municipalities ensure that adequate capacity is maintained in the collection systems and treatment plants to service existing communities and to provide opportunities for future economic development.

The collection and safe/effective treatment of wastewater is important to a community's continued health and well-being. Treatment standards established by provincial and federal agencies ensure that the impact of wastewater treatment on the natural environment is minimized.

Wastewater services comprise:

- ▶ Collection of wastewater from customers via the municipal sewage systems
- ▶ Operation of wastewater treatment facilities
- ▶ Disposal of wastewater in accordance with federal and provincial regulations

Wastewater services are provided to residential and ICI (industrial, commercial and institutional) sector customers. The quality of wastewater discharged into the municipal sewage system is controlled through municipal sewer-use by-laws. Funding for wastewater services is generally through municipal water rates, which usually include a sewer surcharge based on water usage to recover the costs of wastewater collection and treatment.

WHAT ARE THE MAJOR SERVICE DELIVERY ISSUES?

Ongoing issues related to Wastewater Services are:

- ▶ Legislation - more legislation which results in increased operating costs and construction cost
- ▶ Staffing - shortage of qualified/certified operations staff
- ▶ Training – programs for licensing and certification of operations staff and the upgrading of licenses for staff in accordance with Ministry of the Environment (MOE) requirements
- ▶ Climate Change – negative impacts of more severe and frequent extreme weather events causing both wastewater collection and wastewater treatment systems to be overloaded

WHAT ARE THE RESULTS?

Figures 21.2 and 21.4 use the term “integrated systems” to describe the municipal results presented for those cities or regional municipalities that have full responsibility for ownership and service delivery of all wastewater infrastructure and activities including wastewater collection, wastewater conveyance, treatment and disposal.

The Regional Municipalities of Niagara, Waterloo and York do not operate integrated systems. They are responsible for wastewater conveyance, treatment and disposal only, whereas the collection of wastewater is the responsibility of local municipalities within their regions.

How much treated wastewater is produced in each municipality?

FIG. 21.1 Megalitres of Treated Wastewater per 100,000 Population

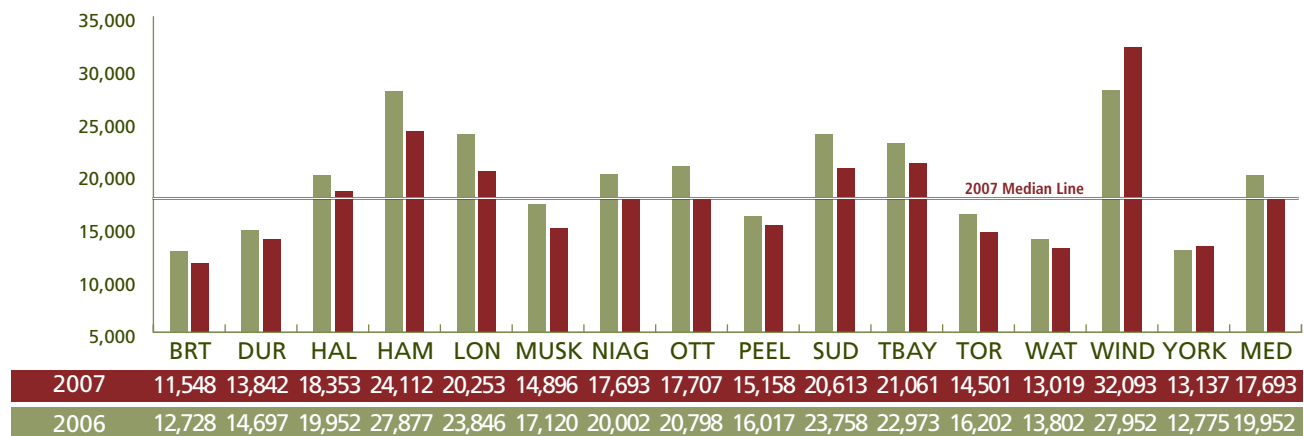
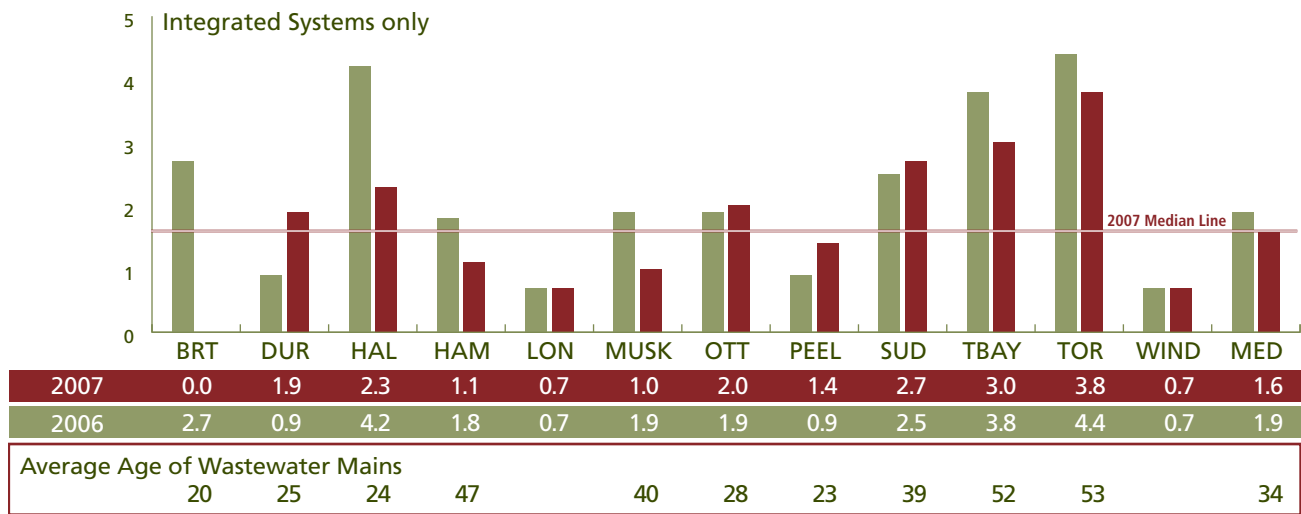


Figure 21.1 shows the volume of treated wastewater per 100,000 persons. These volumes are shown in megalitres (one megalitre is equivalent to one million litres) and includes wastewater from both the residential and ICI sectors which can vary in significance by municipality.

How many wastewater mains back up?

FIG. 21.2 Annual Number of Wastewater Main Backups per 100 Km of Wastewater Main



Note: London and Windsor 2007 data not available for age of water mains.

Figure 21.2 shows the number of times a municipal wastewater main (sewer) backed up per 100 kilometers of wastewater pipe. The age of the watermain has been added to provide additional contextual information when considering the municipal result.

The annual number of wastewater backups is directly related to the design of the wastewater collection system e.g., the extent to which storm sewers are connected to or combined with sanitary sewers (resulting in increased flow). Design, age and condition of the wastewater collection infrastructure combined with localized major precipitation events can result in flows that exceed system capacity, resulting in sewer backups.

How much does wastewater treatment and disposal cost?

FIG. 21.3 Operating Cost of Wastewater Treatment/Disposal per Megalitre Treated

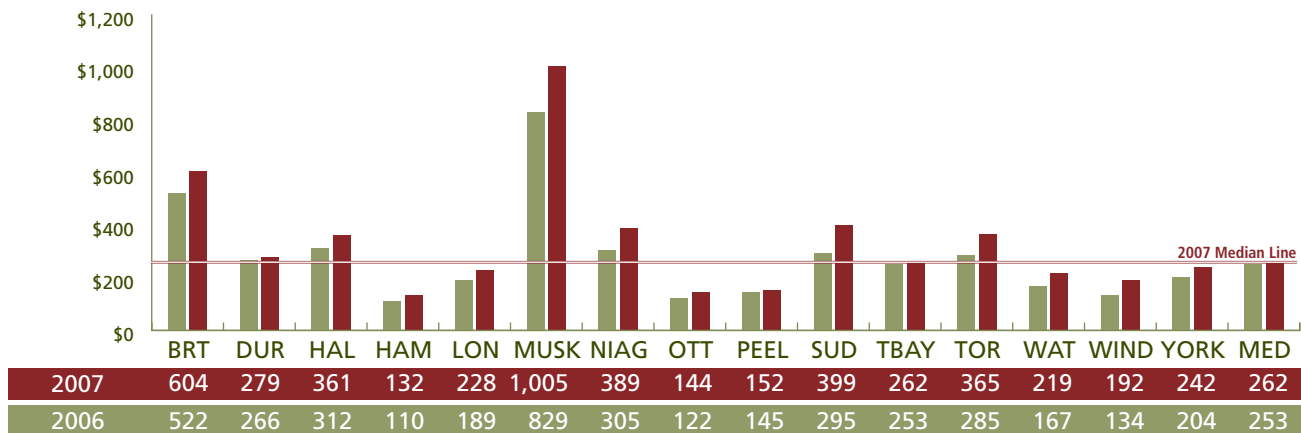


Figure 21.3 shows the cost of treating wastewater and disposing of bio-solids per megalitre of wastewater. Bio-solids are primarily organic accumulated solids separated from wastewater

that have been stabilized by treatment. Wastewater is treated to meet or exceed the provincial Ministry of the Environment regulations and standards.

Municipalities providing service over a broad geographic area generally have higher operating costs due to the number and type of wastewater treatment facilities operated and the distance between the individual systems. This affects the daily operating costs for both the collection and treatment of wastewater, most significantly in Muskoka and Brant.

How much does wastewater collection cost?

FIG. 21.4 Operating Cost of Wastewater Collection per Km of Pipe

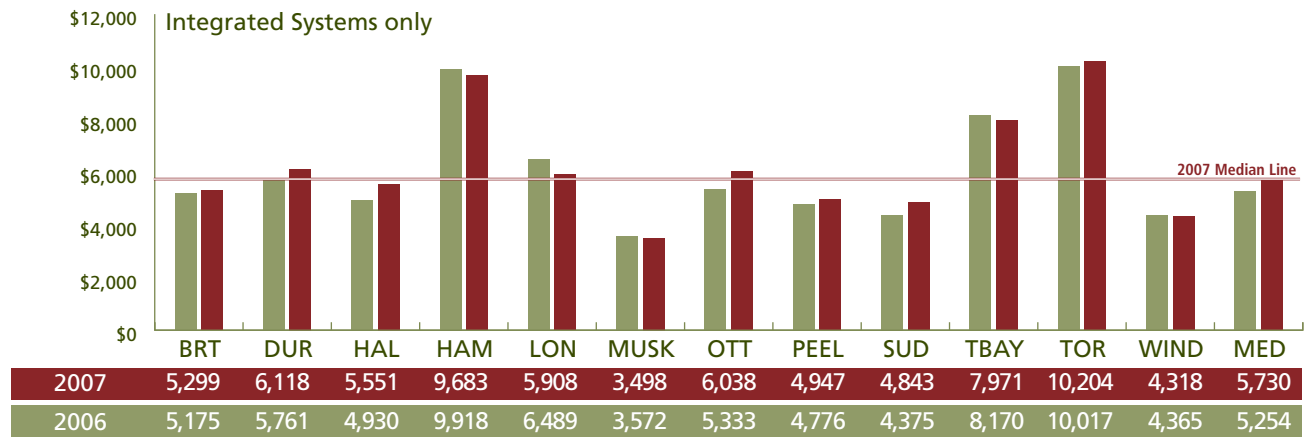


Figure 21.4 shows the annual cost of wastewater collection per kilometre of wastewater pipe (sewer) of integrated systems.

WHAT SHOULD YOU CONSIDER WHEN REVIEWING THESE RESULTS?

Each municipality’s results are influenced to varying degrees by a number of factors, including:

- ▶ Size of the ICI sectors - respective volume of wastewater generated relative to the total system demand
- ▶ Urban density - proximity of pipes to other utilities increases the cost for infrastructure repair and replacement)
- ▶ Treatment plants/processes - number, size and complexity of the wastewater collection systems and treatment plants operated, the sensitivity of lakes, rivers and streams to receive treated wastewater dictating the complexity and cost of required treatment processes and specific municipal requirements for the quality of wastewater treatment which may exceed legislative requirements
- ▶ Maintenance policies - frequency of wastewater collection system maintenance activities, collection system age, condition and type of pipe material
- ▶ Climate change – negative impacts associated with more severe and frequent extreme weather events

For more information about the results, contact the Municipality’s representative listed in Appendix F, page 94.