

Wastewater

Includes:

- *Wastewater Collection*
- *Wastewater Treatment*

Service Overview

DESCRIPTION

To provide property owners with the collection, transmission, disposal, treatment and monitoring of wastewater in order to ensure the environmentally appropriate handling of high volume sewage discharge.

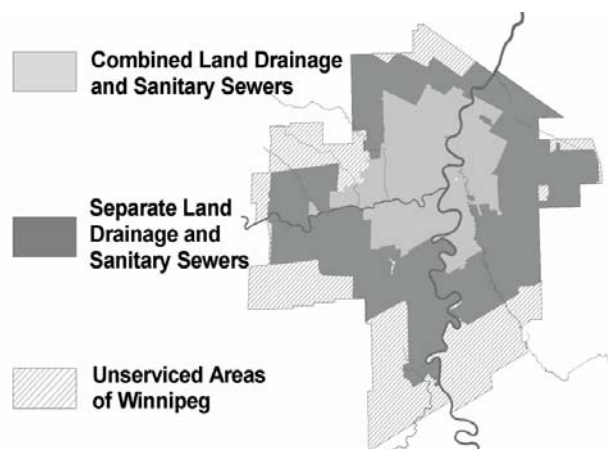
KEY GOALS

1. To improve the state of the environment / improve public health.
2. To exceed our customer's needs and expectations.
3. To increase the efficiency and effectiveness of our services.
4. To implement best practices throughout the Department.
5. To maintain a high quality working environment for our staff.
6. To improve information management in the Department.

SERVICE LEVEL STATISTICS

Description	2003	2004	2005	2006	4 Year Average
Number of billed sewer accounts	183,240	184,472	185,770	187,228	185,178
Number of complaints – raw sewer backup	735	866	527	587	679
Number of complaints – clean sewer backup	432	489	78	351	338
Volume of wastewater processed (ML/D)	263.6	349.4	338.6	281.1	308.2
Kilometres of collection system pipeline*	2,449.5	2,462.3	2,469.7	2,474.8	2,464.1
Number of lift stations	71	71	71	71	
Number of diversion chambers	11	11	11	10	11
Kilometres of sewer inspected and cleaned	149	159	147	139	149
Number of industrial waste samples conducted	6,606	7,166	9,185	10,547	8,376
Number of treatment plant samples taken	49,998	70,557	75,799	85,350	70,426
Number of maintenance holes	44,136	44,446	44,634	44,734	44,488
Average monthly residential sewer bill	18.62	20.06	21.92	25.98	21.65
*includes wastewater, combined and interceptor sewers					

The map below shows the distribution of Winnipeg's sewer system by location and type respectively.



Strategic Direction

LINK TO PLAN WINNIPEG

- 3D-01 Commit Foremost to the Maintenance and Renewal of Existing Infrastructure
- 3D-06 Provide Wastewater Management
- 5A-05 Address Water, Air, and Noise Pollution
- 5A-07 Minimize Impact of Odour from Wastewater Treatment

SYNOPSIS OF POLICY DIRECTION

Under the Environment Act, the City requires licenses to operate the three water pollution control centers.

Sewer By-law No. 7070/97

KEY FACTORS INFLUENCING SERVICE DELIVERY

The wastewater improvement program mandated by the Environment Act licenses, is currently estimated at \$1.2 billion which may increase as much as 50% before the 25 year wastewater system improvement timeframe is completed. Stricter licenses are increasing capital and operating costs.

Infrastructure needs to be replaced as an aging infrastructure increases the risk of a spill or flood. Capital construction costs have risen by 30% over the past year.

There is an increase in public accountability and a public interest in improving the quality of Lake Winnipeg.

Per capita use of water in Winnipeg is continuing to decline and while water conservation will lower costs in the long-term, short-term rate increases may be required.

Workforce demographics is making it increasingly difficult to fill professional vacant positions such as

engineers, as there is considerable "knowledge loss" as City staff retire.

Provincial legislation will likely ban/limit application of biosolids to agricultural land so alternate disposal methods will be investigated. This will increase capital and operating costs.

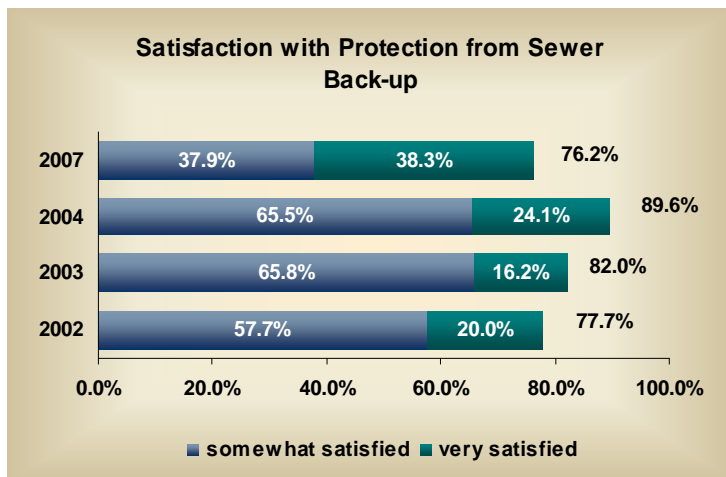
SUMMARY OF GOALS AND STRATEGIES

1. **To improve the state of the environment / improve public health**
 - Implement wastewater improvements (e.g. Ensure hauled wastewater does not affect treatment processes or the environment).
 - Continually improve the Environment Management System policies and procedures.
 - Implement measures and practices to protect river quality by reducing nutrients (nitrogen and phosphorus) in treated wastewater (per licensing requirements).
2. **To exceed our customers needs and expectations**
 - Establish service levels.
 - Continue to train field staff and dispatchers in customer service.
3. **To increase the efficiency and effectiveness of our services**
 - Update Wastewater By-law.
 - Continue to roll out the private wastewater system inspection program.
4. **To implement best practices throughout the Department**
 - Expand / formalize / exercise standard operating procedures, special operating procedures and emergency response plans.

- Implement CWMS best practises and technology in waste water collection and treatment.
- 5. To maintain a high quality working environment for our staff**
- Improve safety and health practices by undertaking job hazard analysis and implementing safe work procedures.
 - Develop an organization with capacity to meet new regulations and operate the wastewater facilities.
- Improve employee performance management practices.
 - Develop formalized training procedures / evaluation.
- 6. To improve information management in the Department**
- Expand the utilization of Synergen - custom reports, GIS interface, timekeeping interface.
 - Expand the use of technology in the field.

Performance Information

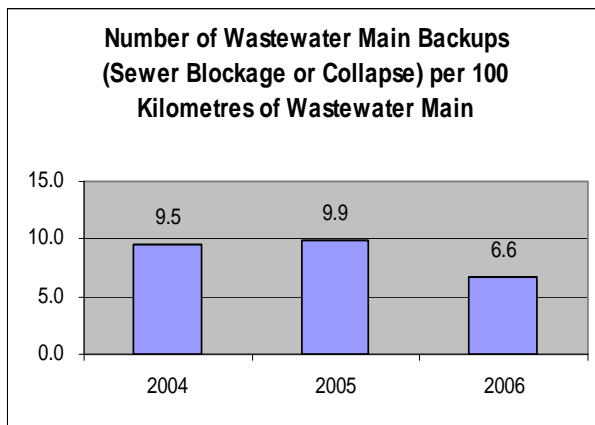
CITIZEN SATISFACTION



Citizen satisfaction for protection from sewer back up declined to 76% in 2007 compared to 89% in 2004.

Source: City of Winnipeg, CAO Secretariat 2007 Survey

EFFECTIVENESS MEASURES



This graph represents the number of wastewater main backups due to a sewer blockage or collapse.

Number of Wastewater Pumping Station Failures	
Year	# of Failures
2004	N/A
2005	6
2006	1

In 2006, there was only one wastewater pumping station failure. A wastewater lift station failure is defined as an occurrence which results in basement flooding or sanitary sewage overflow to a receiving stream except in wet weather conditions.

WATER POLLUTION CONTROL CENTRES
Monthly Averages Exceeding Limits for
TSS and CBOD5 Tests

Location	Year	Total Suspended Solids (mg/L)	CBOD5 (mg/L)
		>30	>25
NEWPCC	2005 ^a	1	1
	2006	0	0
SEWPCC	2006 ^b	1	0
		>30	>25
WEWPCC	2004 ^c	0	0
	2005	1	0
	2006	0	0
		>45	>25

Notes:

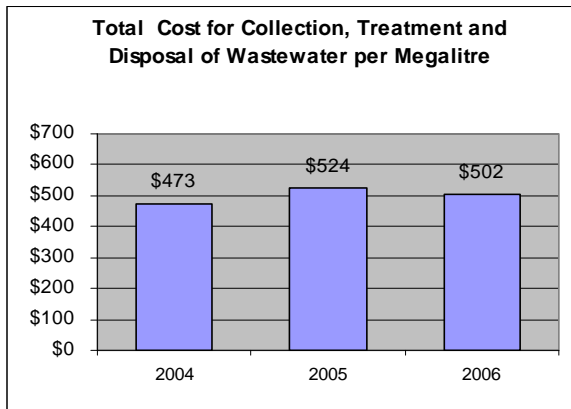
- a Licence 2684 RR (NEWPCC), reporting in effect on June 1, 2005
- b Licence 2716 (SEWPCC), reporting in effect on March 1, 2006
- c Licence 2669 ER (WEWPCC), reporting in effect on September 2004

Monthly averages are used in the table above. New licence requirements will be based on a 30 day rolling average.

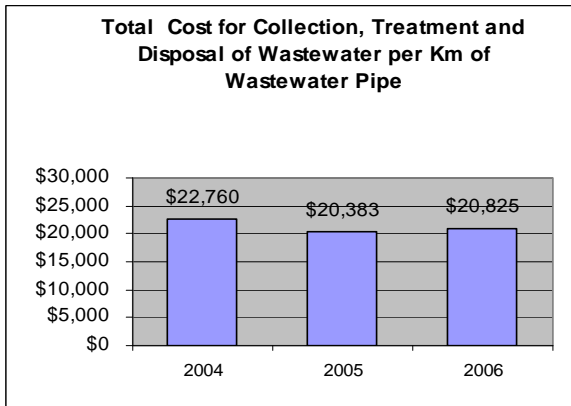
Higher TSS is an indication that the treatment process is not operating as designed. Five-day Carbonaceous Biochemical Oxygen Demand (CBOD5) measures the amount of oxygen consumed by living organisms (bacteria) in decomposition of organics in wastewater. It is a measure of the "strength" of sewage or as in this case, of the effluent. Operational measures are being implemented and the plants are being upgraded to consistently meet these limits.

The licences and monitoring results are published on the department website, <http://winnipeg.ca/waterandwaste/sewage/wpcclisemmonitor.stm>.

EFFICIENCY MEASURES



Total cost includes operational expenses related to collection, interception and treatment, support service expenses for engineering, finance and administration, environmental standards, information systems and technology, customer services and human resources. It also includes debt and finance charges, taxes and employee benefits.



Costs for collection, treatment and disposal of wastewater are the same as described in the charts to the above. Wastewater pipe consists of combined sewers, interceptors and sanitary sewers and excludes all land drainage and storm relief sewer mains.

BENCHMARKING INFORMATION

The three charts below show water and sewer rates compared to other cities annually. Winnipeg's combined water and sewer rate, although increasing, remains competitive to cities of similar size. The majority of cities surveyed reported rate increases. There has also been a move in several cities to increase fixed charges or replace variable rates with fixed charges.

