

Water

Includes:

- *Water Supply & Treatment*
- *Water Distribution*

Service Overview

DESCRIPTION

- To provide citizens with the supply, storage, treatment, pumping, distribution and metering of potable water in order to ensure a safe and adequate supply of water for residential and commercial use.

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
No. of residential accounts	174,341	175,627	176,991	178,488	176,362
No. of commercial and industrial accounts	10,111	10,150	10,204	10,215	10,170
Average daily volume of water pumped (ML/D)	232	221	220	227	225
Average volume of water pumped daily per capita (litres)	361	342	340	350	348
Kilometres of distribution water mains	2,416.0	2,436.2	2,450.2	2,460.6	2440.7
Kilometres of feeder mains	155.3	155.4	155.4	156.2	156.6
Kilometres of water mains cleaned	129	424	596	504	413
No. of water main breaks	1,009	512	484	728	683
No. of hydrants	19,670	19,890	20,079	20,210	19,962
No. of water quality samples taken	30,166	34,958	33,880	37,155	34,040
Average monthly residential water bill	18.75	17.74	16.90	18.46	17.96
No. of reservoirs	4	4	4	4	4
Reservoir capacity (ML)	9,489	9,489	9,489	9,489	9,489

Strategic Direction

LINK TO *PLAN WINNIPEG*

- 3D-01 Commit Foremost to the Maintenance and Renewal of Existing Infrastructure
- 3D-05 Protect and Manage Potable Water Supply and Source

SYNOPSIS OF POLICY DIRECTION

- Water quality is regulated by the Provincial Drinking Water Safety Act.
- Water quality standards are established through Guidelines for Canadian Drinking Water Quality.
- Water Works By-law No. 504/73

KEY FACTORS INFLUENCING SERVICE DELIVERY

Water Conservation

The per capita water usage in Winnipeg is 15% less than it was in the early 1990's, and is continuing to decline. While water conservation will lower costs in the long-term, short-term rate increases may be required.

Regulation

As a result of the Walkerton incident, the water industry in Winnipeg is more strictly regulated. Operating costs are increasing due to Operator Certification, Facility Certification and increased levels of water quality monitoring, testing, reporting, infrastructure assessment and public information. Customer expectations have also increased the level of public accountability.

Industry conditions dictate that increased regulations must be adhered to, including the associated acts and regulations (The Drinking Water Safety Act) and operator certification requirements.

Winnipeg is committed to meeting the Guidelines for Canadian Drinking Water Quality for turbidity, trihalomethanes, taste and odour. With greater regulations anticipated, the construction of the water treatment plant (WTP) by the end of 2008 will ensure that the City meets these standards.

Capital Costs

Since 2005, capital construction costs inflation has been increased by approximately 30%. The cost of the WTP is now estimated at \$300 million which is an increase of \$70 million from the previous estimate of \$230 million.

An aging infrastructure results in increased watermain breaks that disrupt service.

Less work has been performed in the Watermain Renewal Program due to the capital construction inflation and the frontage levy being fixed.

Human Resources

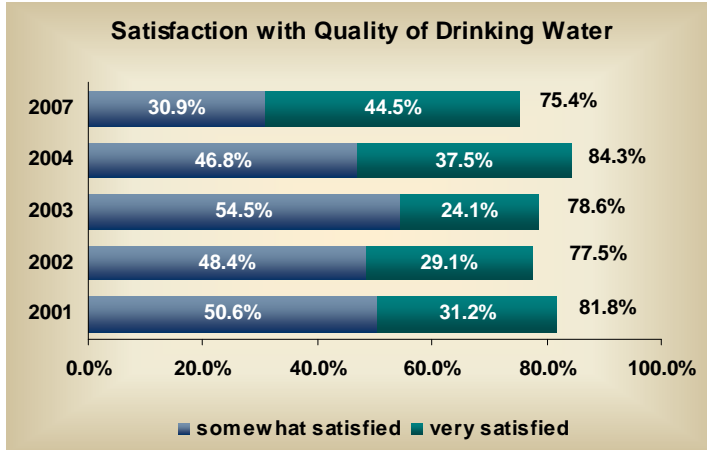
Workforce demographics is making it increasingly difficult to fill vacant professional positions and there is considerable "knowledge loss" as City staff retire.

SUMMARY OF GOALS AND STRATEGIES

- 1. To improve the state of the environment / improve public health**
 - Improve water quality by increasing the level of treatment with the implementation of a new water treatment facility in 2008.
 - Protect aquatic health by implementing measures and practises to minimize discharge of chloraminated water into watercourses.
- 2. To exceed our customers needs and expectations**
 - Establish service levels (eg. Duration that water service is interrupted during a water main break).
 - Continue to train field staff and dispatchers in customer service.
- 3. To increase the efficiency and effectiveness of our services**
 - Update Water By-law.
 - Develop program for renewal of private water service connections.
- 4. To implement best practices throughout the Department**
 - Expand / formalize / exercise standard operating procedures, special operating procedures and emergency response plans.
 - Implement work management / asset management best practices and technology in water treatment and transmission.
- 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 water treatment plant by ensuring staff are fully trained in treatment processes.
 - Develop formalized training procedures / evaluation.
- 6. To improve information management in the Department.**
 - Expand the utilization of Synergen - custom reports, GIS interface, timekeeping interface to provide improved information for decision making.
 - Expand the use of technology in the field.

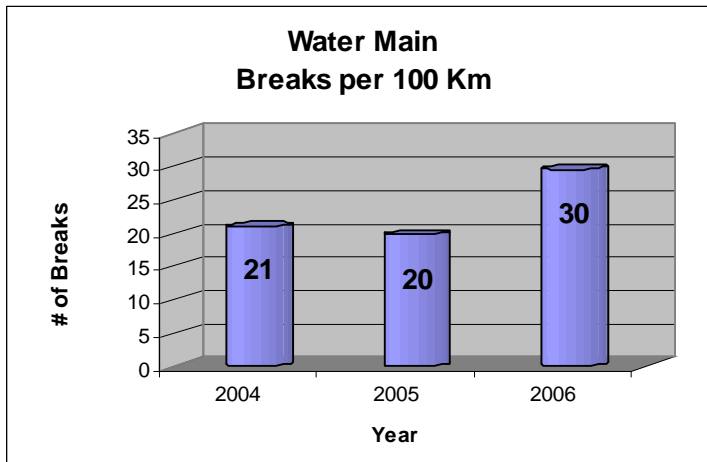
Performance Information

CITIZEN SATISFACTION



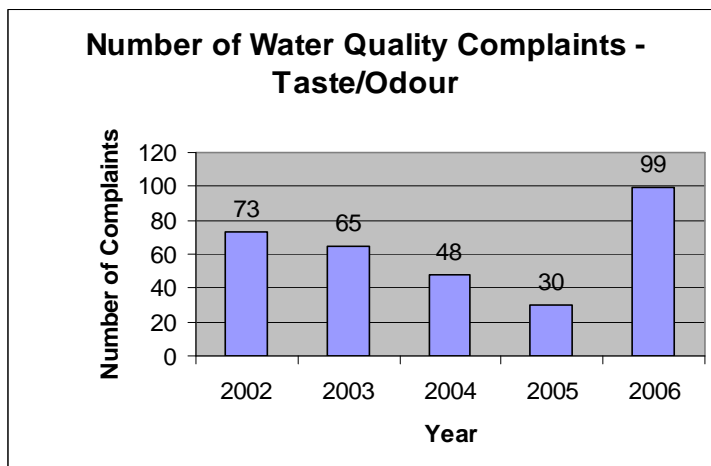
About 75% of citizens are satisfied with the quality of drinking water, a slight decline from 2004 (85%).
 City of Winnipeg, Public Opinion Survey, August 2007

EFFECTIVENESS MEASURES



Water main breaks are caused by a number of contributing factors such as age, material and the condition of the piping. Winnipeg's soil is highly conductive and corrodes metallic pipes from the outside in. Frost penetration and lack of insulating snow cover during winter months is also an issue.

Although not illustrated, over the past 2 decades the number of breaks has been reduced from about 6 to 2 per day due to cathode protection in metallic mains and the use of PVC pipes for renewals.



The number of water quality complaints varies yearly due to algae buildup. Improved taste, odour and appearance will be added benefits of the water treatment plant which will become operational in 2008.

Component Testing

Component Tested	Guideline or Reg	02	03	04	05	06
		Average				
Turbidity	No more than 1.0 NTU	0.60	0.60	0.55	0.52	0.75
Chlorine (Combined)	No more than 3 mg/L	0.90	0.43	0.87	0.82	0.85
Chlorine (Free)	No guideline	0.46	0.43	0.47	0.46	0.46
Trihalomethanes	No more than 100 ug/L	116	121	83	115	103
Fluoride	No more than 1.5 mg/L	0.81	0.81	0.80	0.85	0.83

Water tests are conducted to measure how water changes within the distribution system and ensure that the water supplied meets Provincial and Federal Health Guidelines. In addition to the testing for residual chlorine, bacteria, protozoa, fluoride and orthophosphate, tests measure routine water chemistry, metals and disinfection by-products.

The table to the left highlights the results from 2002 to 2006, for water testing by the City for the most significant test components. The new Water Treatment Plant will increase the number of favourable test results and ensure conformity with guidelines and regulations. Some tests results exceed the guideline for turbidity, but the annual average is below the guideline. The annual average for trihalomethanes exceeded the guideline. For a more complete list of results, please refer to the City of Winnipeg Intranet site, Water + Waste Department web page at

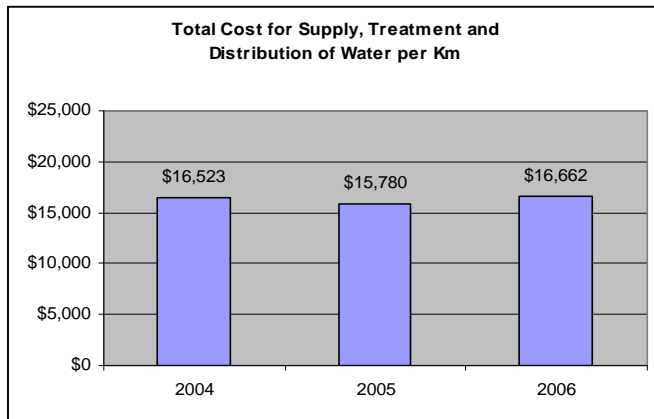
<http://winnipeg.ca/waterandwaste/water/testResults/Winnipeg.stm>.

Coliform Testing

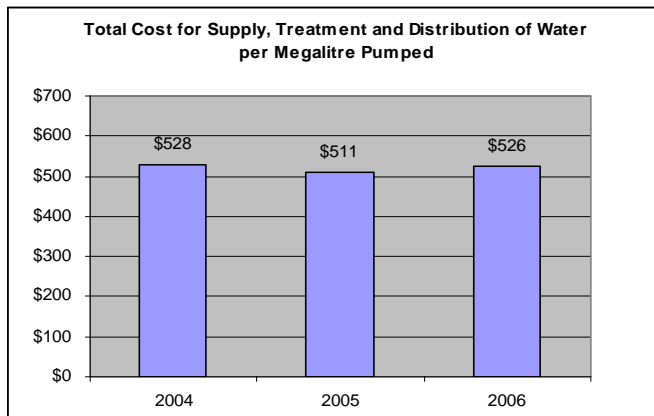
	Guide or Reg	02	03	04	05	06
		Number of Samples	1820 samples	3208	3308	3091
Times coliform bacteria show up in test	<10 % positives	1%	1%	1%	0%	1%

Winnipeg's water is frequently tested for coliform and less than 1% of the samples are positive for coliform bacteria, well below the guideline of less than 10%.

EFFICIENCY MEASURES

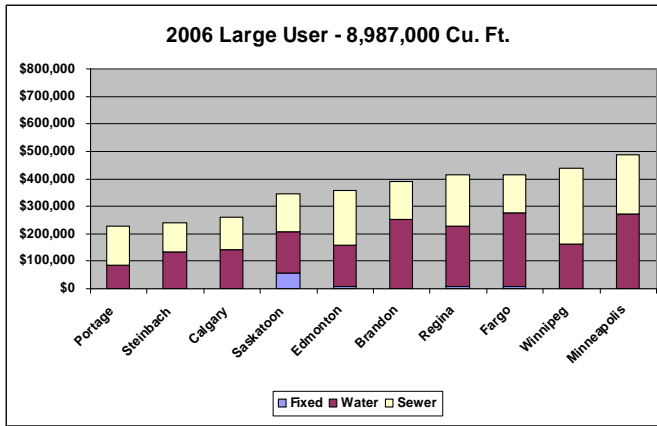


Total cost for water supply, treatment and distribution of water per km has been relatively stable over the past 3 years. Total cost for water supply, treatment and distribution includes operational costs, support service costs for engineering, finance and administration, information systems and technology, customer services, environmental standards and human resources. Also included are debt and finance charges, taxes and employee benefits.



Total cost for supply, treatment and distribution of water per megalitre pumped has been stable over the past 3 years. Total cost for Supply, Treatment and distribution of water per megalitre pumped includes costs as noted in the chart above divided by the volume of water pumped annually at 3 regional pumping stations: McPhillips, W.D. Hurst and G.C. MacLean.

BENCHMARKING INFORMATION



Water and sewer rates are compared to other cities annually (see charts below). 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.

