

Annual Customer Seminar

Water and Waste Department
Tuesday, January 26, 2010



Agenda

- 9:00 a.m. – 9:05 a.m. Welcome
Barry MacBride, Director
- 9:05 a.m. – 9:15 a.m. Department Updates
Barry MacBride, Director
- 9:15 a.m. – 9:25 a.m. Garbage and Recycling Update
Darryl Drohomerski, Manager
of Solid Waste Services
- 9:25 am – 9:40 a.m. New Water Treatment Plant
Andy Weremy, Water
Treatment Systems Engineer

Agenda

- 9:40 a.m. – 9:55 a.m. Water Services Update
Terry Josephson, Field Service
Operations Engineer
- 9:55 a.m. – 10:15 a.m. Coffee break
- 10:15 a.m. – 10:30 a.m. Wastewater Update
Geoff Patton, Asset
Management Engineer
- 10:30 a.m. – 10:40 a.m. Update on Sewer By-law
Revisions
Arnold Permut, Wastewater
Systems Planning Engineer

Agenda

- 10:40 a.m. – 10:50 a.m. Other Department News
Barry MacBride, Director
- 10:50 a.m. – 11:00 a.m. Question Period and
Closing Remarks
Barry MacBride, Director

Water and Waste Department

Vision

Excellence in environmental services

Mission

Serving the community by providing and continually improving drinking water, wastewater, land drainage, and solid waste services to the citizens of Winnipeg

Overview

- Pandemic plan
- Corporate utility
- Strategic partner for wastewater upgrades
- Brief water supply interruption Monday, Jan. 18, 2010

Pandemic plan

- The City of Winnipeg has had a pandemic response plan in place for several years and has updated it in response to the H1N1 pandemic
- The City's Emergency Preparedness Coordinating Committee met regularly to continue with planning
- We recently completed a pandemic plan which includes provisions to maintain our essential services (e.g., water and wastewater)

Move to a Corporate Utility Council – July 22, 2009

- Arms length 100% City-owned corporation
- To operate City-owned utilities (e.g., water, wastewater, garbage, recycling)
- City Council to retain authority over capital, rates, ratification of business plans including services to the capital region
- Waiting for the Province to pass an enabling regulation

Procurement of a strategic partner

Council – November 19, 2008

- Bring private sector experience to the design, construction, finance, and potentially the operation of the wastewater treatment plants
- Authorized
 - Request for expressions of interest - complete
 - Request for qualifications - complete
 - Request for proposals - complete

Brief water supply interruption Monday, Jan. 18/10

- A widespread electric power interruption caused low water pressure for about 20 minutes for most homes and businesses starting at about 7:30 am
- Standard emergency response initiated (engine driven pumps, restart electric driven pumps)
- Water pressure returned to normal within 30 minutes
- No impact on water treatment
- No impact on wastewater treatment
- Incident report being prepared for Office of Drinking Water



Garbage and Recycling Update

Darryl Drohomerski
Manager of Solid Waste Services

Overview

- Brady Landfill
 - Brady Landfill gas project
 - Environmental licence
 - Waste reduction and recycling support levy
 - Other landfill projects
- Recycling and garbage
 - Changes in recycling for Manitobans
 - Changes for Winnipeggers
 - New automated garbage system coming February 1

Brady Landfill

- Largest landfill in Manitoba by volume and area
- Second largest in Canada by area
- 250,000 tonnes of residential garbage per year
- 90,000 tonnes of commercial garbage per year
- Large emitter of greenhouse gases
- Methane has a global warming potential 21 times that of carbon dioxide

Brady Landfill



Brady Landfill gas project

- Request for proposals (RFP) to design, build, finance, and operate a project which:
 - at a minimum would collect and flare landfill gas for a 20 year term,
 - includes the option of recovering and using:
 - landfill gas as an energy resource, and
 - any of the materials destined for disposal at the landfill (e.g., compostable materials and wood).
- Request for proposals close February 26, 2010
- Construction expected to start in fall of 2010

Brady Landfill environmental licence

- Currently operating under a permit from Province
- Submit licence application by October 2010
- Licence process includes:
 - an environmental impact assessment
 - public consultation
 - determining and implementing industry best practices
- Licence conditions may require operational changes

Waste reduction and recycling support environmental levy

- Payable to Province effective July 1, 2009
- Is intended to increase waste diversion
- Is \$10/tonne for every tonne disposed of in a landfill
- Increases our commercial tipping rate to \$43.50/tonne
- Doesn't apply to diverted waste (e.g., recycled, composted)
- Is used by the Province in part (20%) to enhance household hazardous waste and electronic waste recycling programs, and the remainder given back to municipalities for environmentally sustainable initiatives

Some other Solid Waste projects

- Wood from diseased elm trees made into hardwood flooring and furniture
- Recycling of cleaned sand from street sweepings
 - potential to reuse up to 40,000 tonnes per year
- Relocation of closed landfill from Waverley West to Brady Road Landfill
 - 3 year project by Manitoba Housing and Renewal Corporation

Changes to recycling in Manitoba

- Province has overall recycling responsibility including household hazardous waste and electronic waste
- Industry steward group, Multi Material Stewardship Manitoba, will be responsible for recycling April 1, 2010
- Goal is to make producers more responsible for their products by paying the cost of recovery of material
- Changes include:
 - adding First Nation (federal jurisdiction), public event and public space recycling to existing programs
 - options for dealing with plastic bags
 - improved beverage container recycling

Possible changes to recycling in Winnipeg

- Current blue box collection contract ends September 2010
- Public consultation in November 2009 including open houses, electronic and telephone surveys
- Collection tender included options on blue box and cart collection as well as weekly and bi-weekly service
- Report on consultation and bid opportunity results to be presented to Council in February 2010

Processing recycling – One day's worth!



Automated residential garbage collection

- Automated cart collection will replace manual collection in the northwest area starting February 1 for homes and small businesses
- Cart collection is less labour intensive, safer and more cost-effective than current style of collection
- Most cities in Canada have or are switching to cart collection
- Council will consider other areas of city as contracts expire

240 litre garbage cart



Questions





New Water Treatment Plant

Andy Weremy
Water Treatment Systems Engineer

Winnipeg's water treatment approach

- A multiple barrier approach to protect public health and enhance water quality, including:
 - protecting our water source
 - water quality sampling and testing program
 - multiple treatment processes

Our drinking water now

- Higher quality than required by drinking water guidelines set out by Health Canada
- Will smell and taste better all year
 - the taste and odour episodes experienced in past summers due to algae growth should be reduced

Our water source

- Shoal Lake



Deacon Water Treatment Plant



Pre-construction

Began sending treated water to
the city on the evening of
December 9, 2009



Water Treatment Plant

- Is about 12,000 square metres (about the footprint of the MTS Centre)
- A highly automated system that monitors and controls a wide variety of instruments, mechanical and electrical equipment
- Designed to ensure reliability
- Requires a minimum number of operators 24 hours a day to monitor and control the plant operation

Water treatment processes

- Coagulation / flocculation
- Dissolved air flotation
- Ozonation
- Filtration
- Disinfection – chlorine
- Ultraviolet light disinfection
- Fluoride and orthophosphate
- Pumping and storage

Coagulation / flocculation

- Ferric chloride coagulant is added so that particles are attracted to each other and form clumps
- Sulphuric acid is added to reduce the pH of the water and make this stage more efficient
- Some dissolved organics are also taken into the clumps
- The next step is removing the clumps



Dissolved air flotation

- The water flows into a tank along with a stream of water supersaturated with air
- Air bubbles are released which carry the clumps to the top of the tank
- A series of skimmers remove the floating clumps from the water surface



Ozonation

- Ozone:
 - is formed using liquid oxygen and electricity
 - breaks down organics, and helps filter performance
 - helps disinfect the water
 - improves taste and odor
- We add sodium bisulphite to remove leftover ozone before filtration



Filtration

- Water passes through deep bed biologically active carbon gravity filters
- The filters remove leftover particles and any remaining pathogens
- Good “bugs” growing on the filters also remove organics
- The filters are backwashed or cleaned on a regular basis



Chlorine disinfection

- Chlorine is added to kill bacteria and any viruses in the water
- Sodium hydroxide is added to raise the pH back to the original level (lowered in the first treatment process)
- A free chlorine residual is maintained in the system to meet regulations and keep the water safe

Ultraviolet light disinfection

- Ultraviolet light disinfection:
 - virtually eliminates the risk from waterborne parasites (*Cryptosporidium* and *Giardia*)
 - operating since May 2006
- Water flows through chambers and is exposed for a few seconds to UV light rays
- The UV light penetrates the parasites and destroys their ability to reproduce



Fluoride and orthophosphate

- Fluoride is added to the water to help prevent tooth decay
- Orthophosphate is added to prevent lead from old pipes leeching into the water

Deacon pumping

- Before the water treatment plant, our supply was primarily a gravity system from Deacon Reservoir to the City's pumping stations
- We now pump 24 hours per day, 365 days per year from Deacon to the city

Water quality compliance requirements

- Total coliform and E.coli:
 - samples must be negative
- Chlorine residual:
 - minimum of 0.5 parts per million free chlorine leaving the plant
 - minimum of 0.1 parts per million free chlorine in the distribution system
- Turbidity:
 - maximum 0.3 nephelometric turbidity units (NTU) for each filter 95% of time
 - maximum of 1 NTU

Water quality compliance requirements

- Total trihalomethanes:
 - 0.1 parts per million set as an annual average based on quarterly samples from distribution system
- Lead:
 - maximum 0.01 parts per million at the customer tap

Water quality before water treatment and now with treatment

Water quality parameter	Before water treatment Based on <u>2008 testing data</u>	Anticipated with water treatment	Comments
Turbidity (clearness)	0.24 to 4.11 nephelometric turbidity units	0.1 to 1.0 nephelometric turbidity units	Levels should always be lower than 1.0 coming from the water treatment plant. There may be disturbances in the distribution system (e.g., firefighting, valve operation) that could result in higher levels.
Total dissolved solids	66 to 114 parts per million	about 170 parts per million	There will be an increase due to chemical addition.
pH	7.13 to 7.68 units	7.4 to 7.8 units	There should be no noticeable change.
Alkalinity (measured as calcium carbonate)	55 to 94 parts per million	about 65 to 110 parts per million	Alkalinity should increase by about 15%.
Iron	0.02 to 0.09 parts per million	<0.1 parts per million	There should be no noticeable change.

Water quality before water treatment and now with treatment

Water quality parameter	Before water treatment Based on <u>2008 testing data</u>	Anticipated with water treatment	Comments
Chlorine (free residual)	0.10 to 1.03 parts per million	0.10 to 1.0 parts per million	The residual should stay about the same.
Sodium	1.9 to 2.5 parts per million	about 40 parts per million	There will be an increase due to chemical addition
Orthophosphate (measured as PO ₄)	1.47 to 2.12 parts per million	target of 2.0 parts per million	No change to lead control program.
Odour	35 to 150 threshold odour number units	5 to 30 threshold odour number units	Water treatment will improve the taste and odour of the water.
Colour	<5 to 6 true colour units	<5 true colour units	There should be no noticeable change.

Disinfectant plan

- Plan was to change disinfectant from free chlorine to chloramine about a year after the water treatment plant was completed
- In 2010 we will be reviewing our disinfection strategy
- We will let you know well in advance if we are going to make any changes to our disinfection program

Questions





Water Services Update

Terry Josephson
Field Service Operations Engineer

Overview

- Water main breaks
- Alternate water supply options
- Water main renewals
- Water main cleaning
- Maintaining your private service

Water main breaks



Water main breaks

- 50 breaks per month
- 600 - 700 per year
- 2 breaks per day
- Modest variation throughout the year
- Winter “feels” worse
- 432 breaks in 2009

Water main breaks - Response

- Water main break response – on the job 24 / 7
- Repair crews – 11 hours per day, 364 days per year
- If water service interrupted, repair within 24 hours
- Repairs performed on a priority basis:
 1. How long the water has been off
 2. Number of people / businesses affected
 3. Traffic concerns or lane closures
 - ❖ *Critical customers (e.g., hospitals, nursing homes)*

Water main breaks - Response

- If the break is not creating issues, we may leave the water main on while repair crews attend to more critical breaks
- Notify customers
- If you see a break, call 311

Water main breaks – Repair process

- From 311 to dispatch
- Control the leak, ensure public safety
- Obtain underground utility clearances
- Pinpoint the location of the leak
- Excavate and confirm the cause of the leak
- Repair the leak
- Backfill and temporary restoration
- Permanent restoration

Water main breaks – Repair process

- From 311 to dispatch
- Control the leak, ensure public safety
- Obtain underground utility clearances
- Pinpoint the location of the leak
- Excavate and confirm the cause of the leak
- Repair the leak
- Backfill and temporary restoration
- Permanent restoration



* *If a break occurs at night, it is controlled and the site is made safe, but the repair work begins in morning*

Water main breaks – Repair process



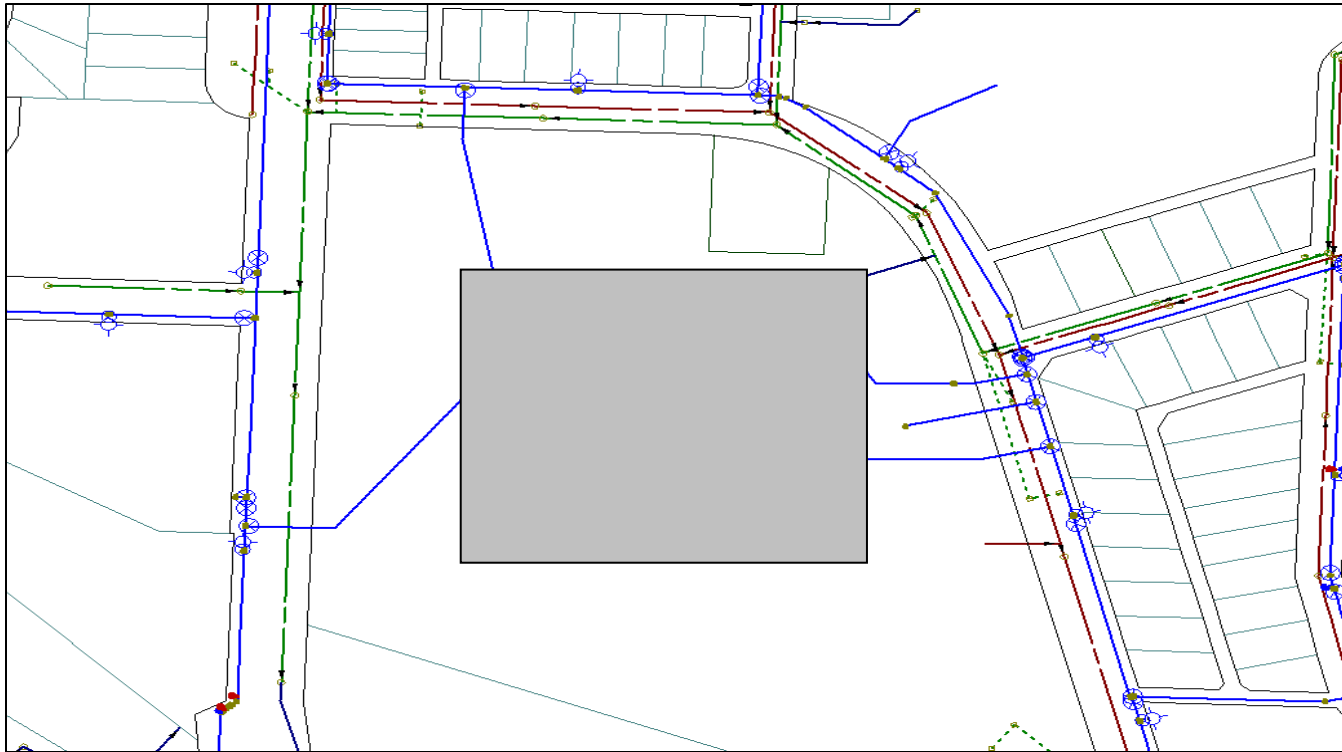
Alternate water supply – Water tanks

- If a water main or service (City side) breaks, we will provide a water tank free of charge
- Manitoba Public Health Act requires that businesses involved in commercial food preparation have a constant source of water

Alternate water supply – Continuous supply

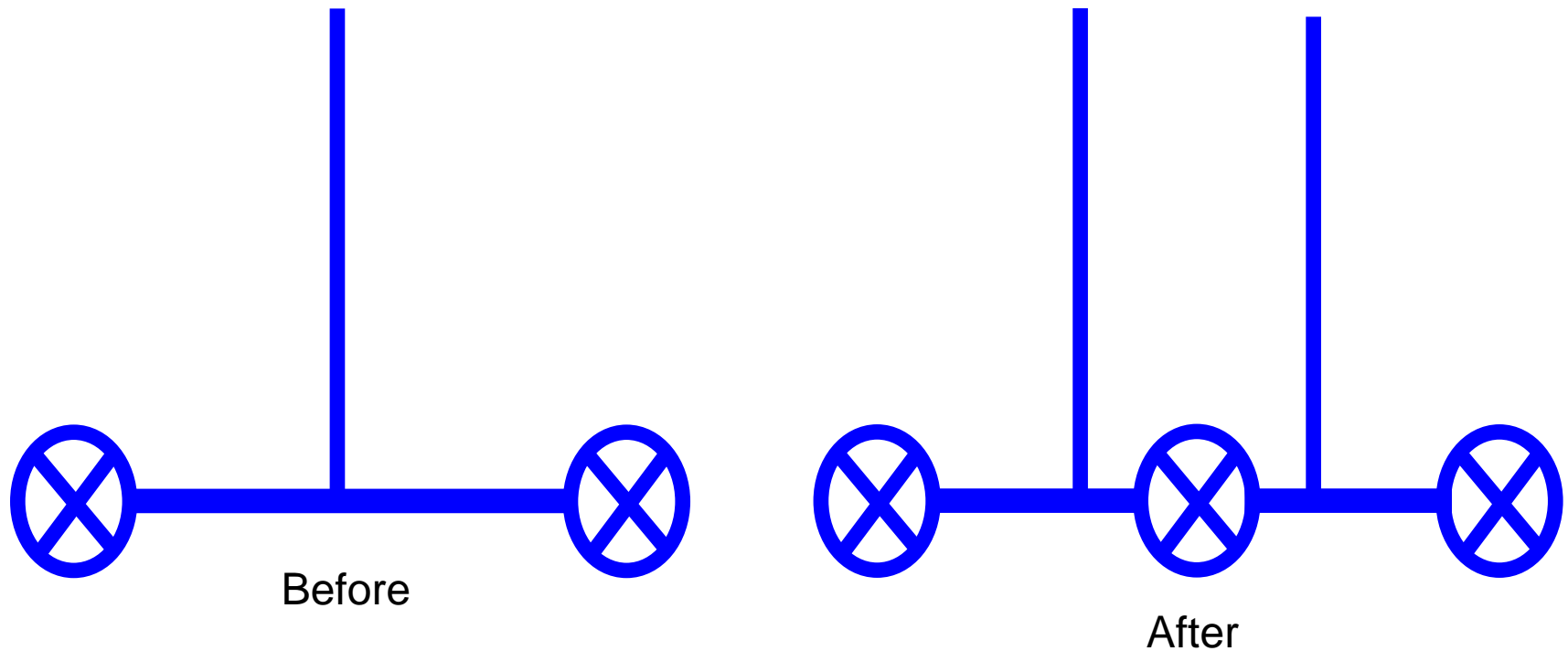
- If a continuous supply of water is required, we may be able to supply and install a temporary hose line:
 - if a fire hydrant is available
 - if the hose line does not unreasonably interfere with traffic
 - if one is available
 - for a fee of \$400
- Minimize your business' risk of service disruption by ensuring a second water service line:
 - to a different water main
 - to the same water main, valve on the water main between them

A second service line to a different water main



A second service line to the same water main

- Install a valve on the water main



Water main renewals



Water main replacement program

- We replace water mains to reduce:
 - the number of water main breaks
 - the number of service interruptions for customers
 - water loss
 - property damage
- Priority: pipes closest to the end of their useful lives

Water main replacement program

- 2009
 - replaced 12 km of water main
- Plan for 2010:
 - replace 10.7 km of water main
 - target “high consequence” water mains

Water main cleaning program



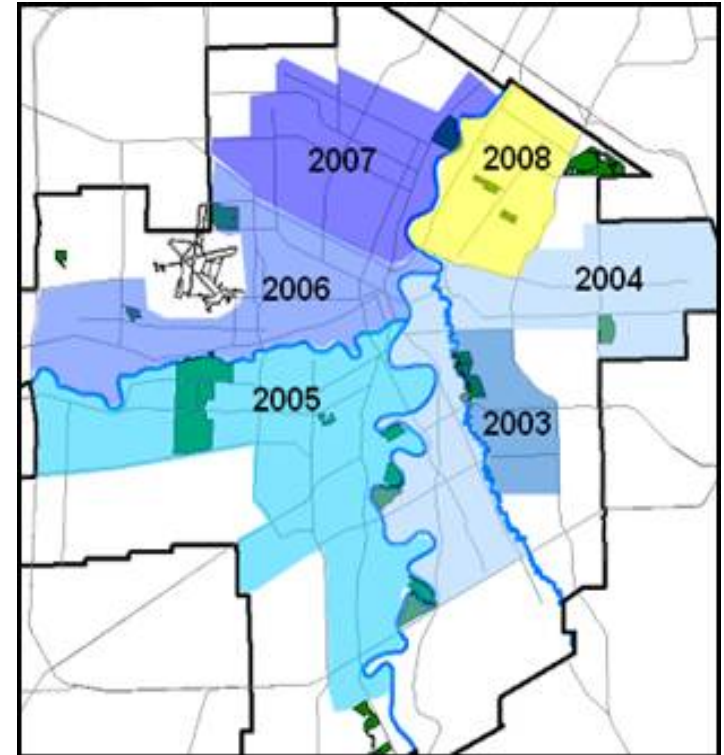
Water main cleaning program – Why?

- Improves water quality
- Removes accumulated sediment in water mains
- Restores capacity in the water mains
- Reduces “dirty water” complaints from water main breaks or valve operation
- Lower the amount of chlorine needed to disinfect

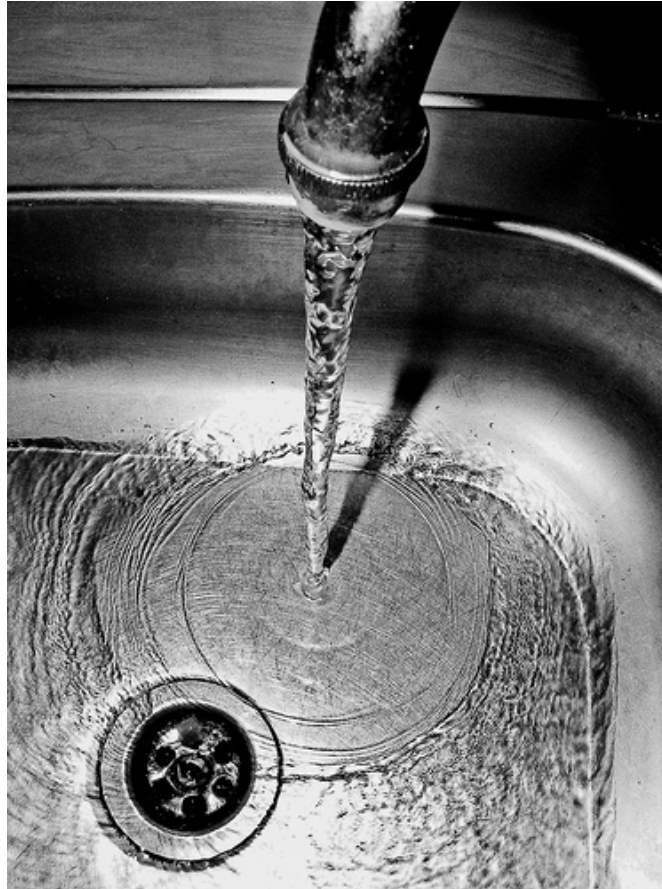


Water main cleaning program

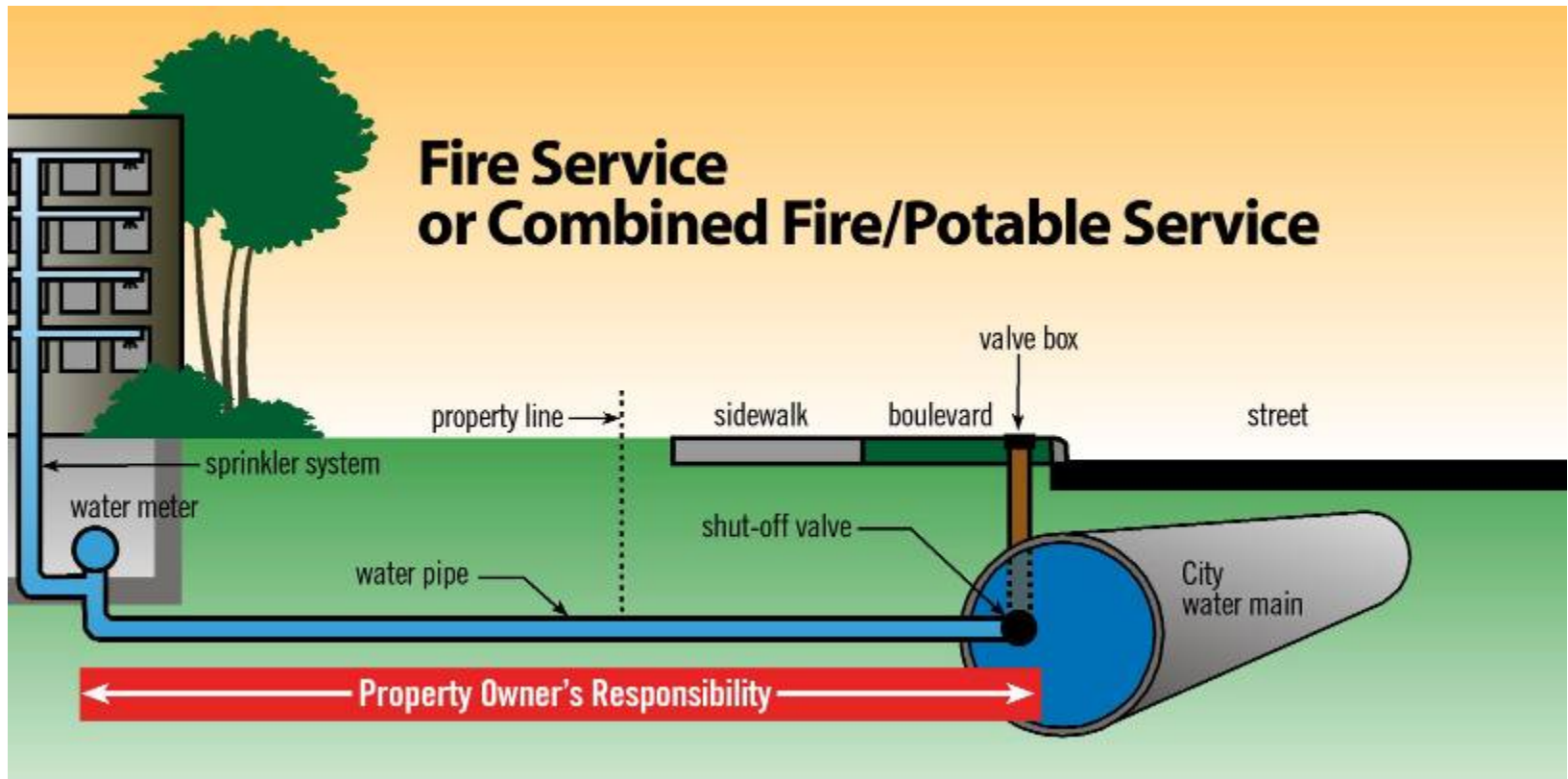
- Goal was to clean all water mains prior to the Water Treatment Plant starting up
- Cleaned entire system from 2003 – 2008
 - 2500 km of water mains
- 2009 program targeted locations to assess future cleaning needs
- Developing a plan for 2010 and beyond



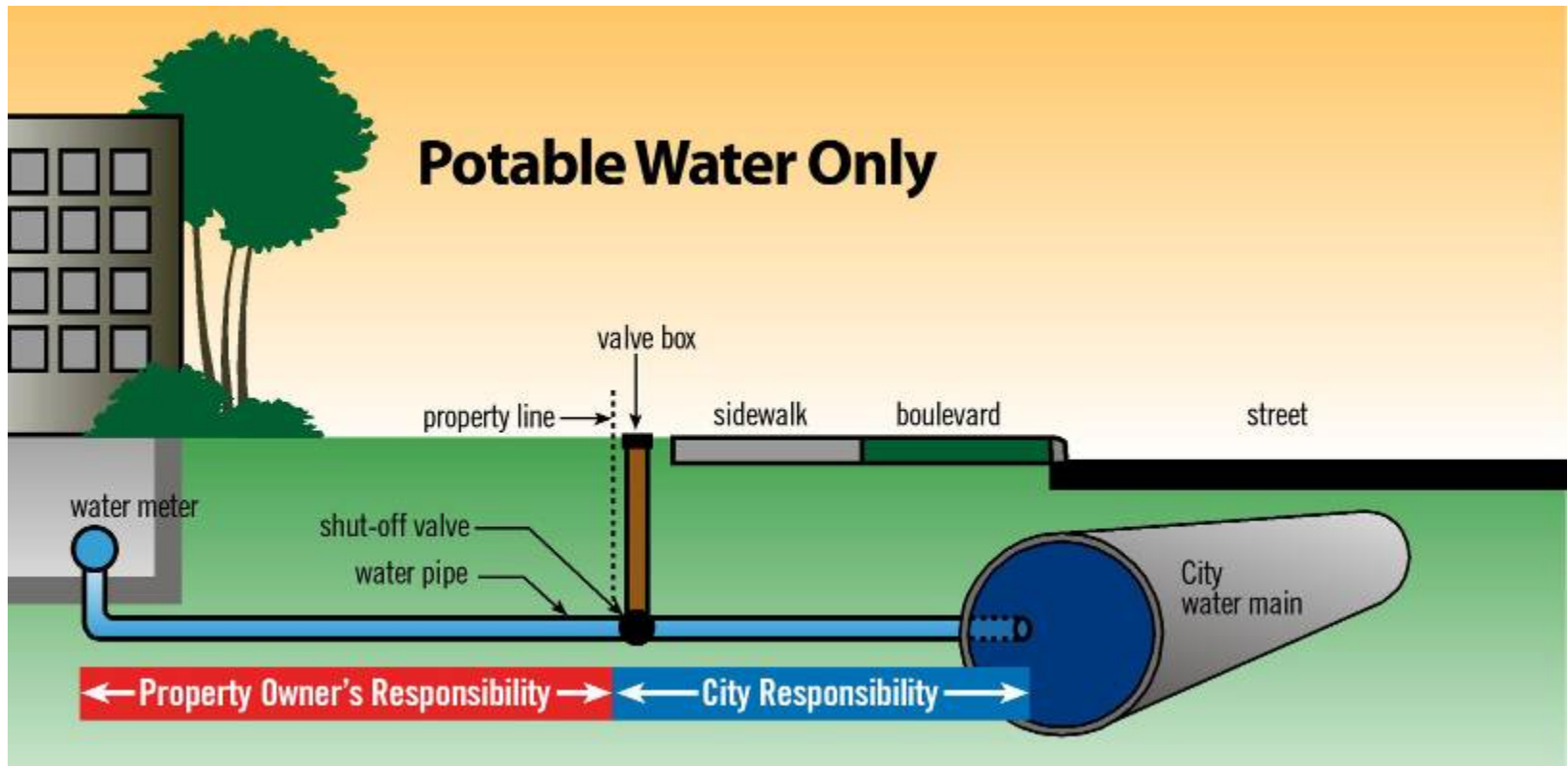
Maintaining your private service



Maintaining your private service



Maintaining your private service



Questions





Wastewater Update

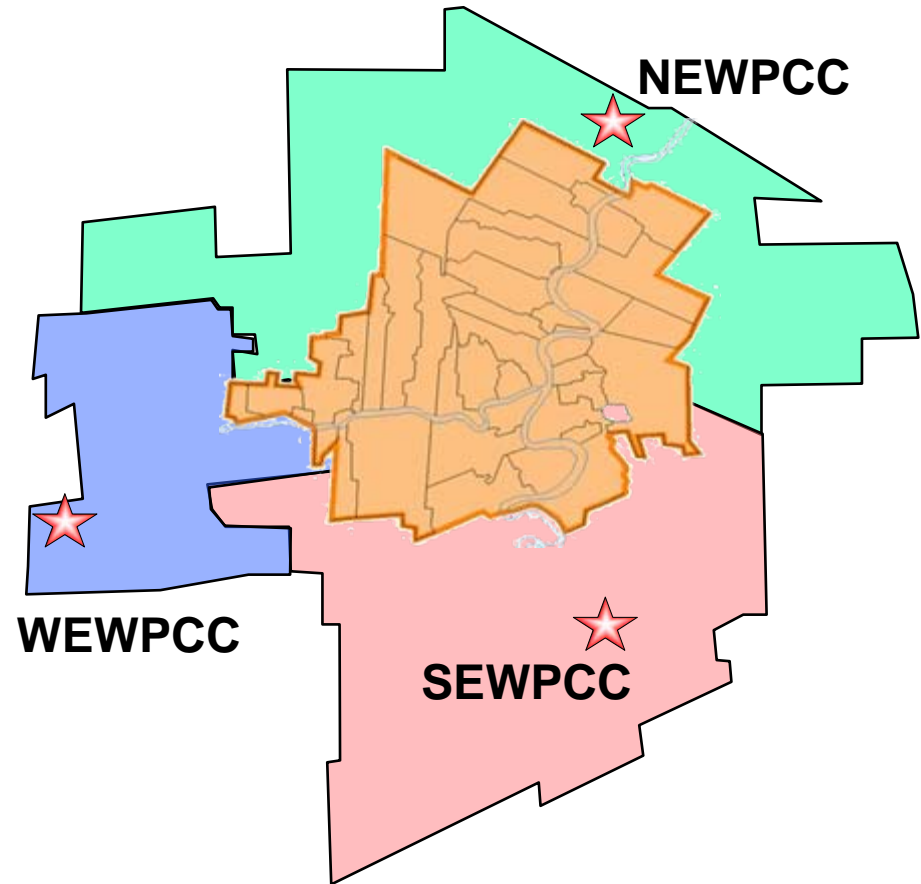
Geoffrey Patton
Asset Management Engineer

Overview

- 2010 sewer cleaning and assessment
- 2010 sewer rehabilitation program
- Sewer repairs on private property
- Flood fighting information

Winnipeg sewer system

- 1,044 km of combined sewers
- 1,324 km of wastewater sewers
- 1,630 km of storm sewers
- 172 km of storm relief sewers
- 116 km of interceptor sewers



Sewer cleaning and inspection program



Why we clean sewers

- To remove built-up debris (e.g., grease, tree roots, road sand)
- To prevent blockages and sewer backup
- To aid sewer inspections



Why we inspect sewers

- To assess sewer condition and complete repairs before collapse and possible danger to public



How we clean sewers

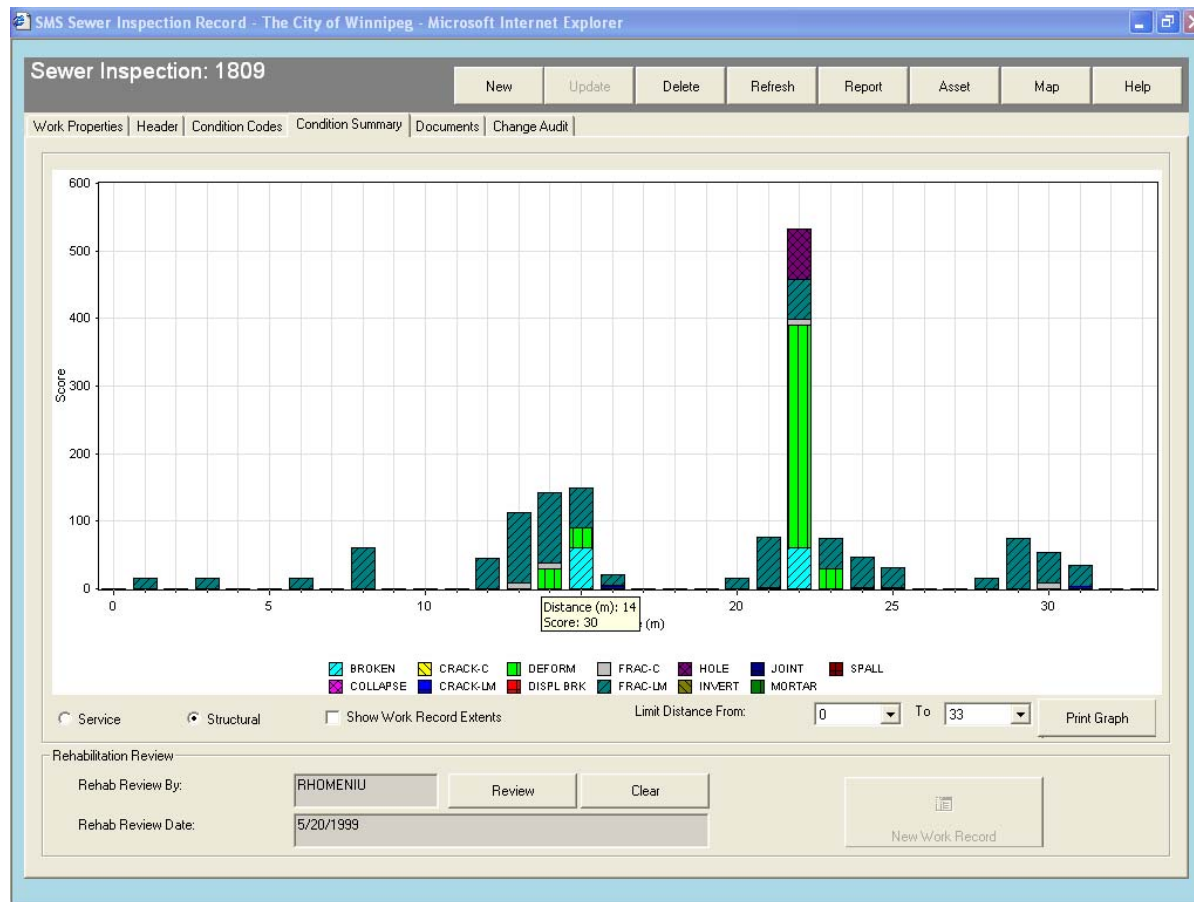
- High pressure water jets force dirt and debris down the sewer towards manholes and then removed.



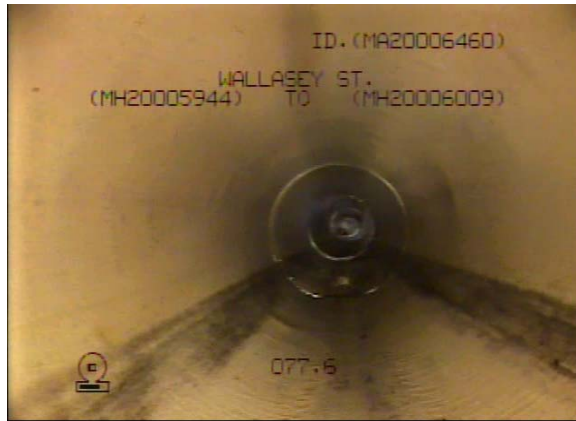
How we assess the condition of the sewers

- Nationally accredited pipeline inspectors
 - televise the sewer
 - catalogue the defects
 - rate the pipe conditions

How we assess the condition of the sewers



Sewer pipe conditions



How much we have spent

- Since 1998, we have:
 - spent about \$144 million assessing, rehabilitating and replacing sewers
 - identified an additional \$300 million in required rehabilitation work

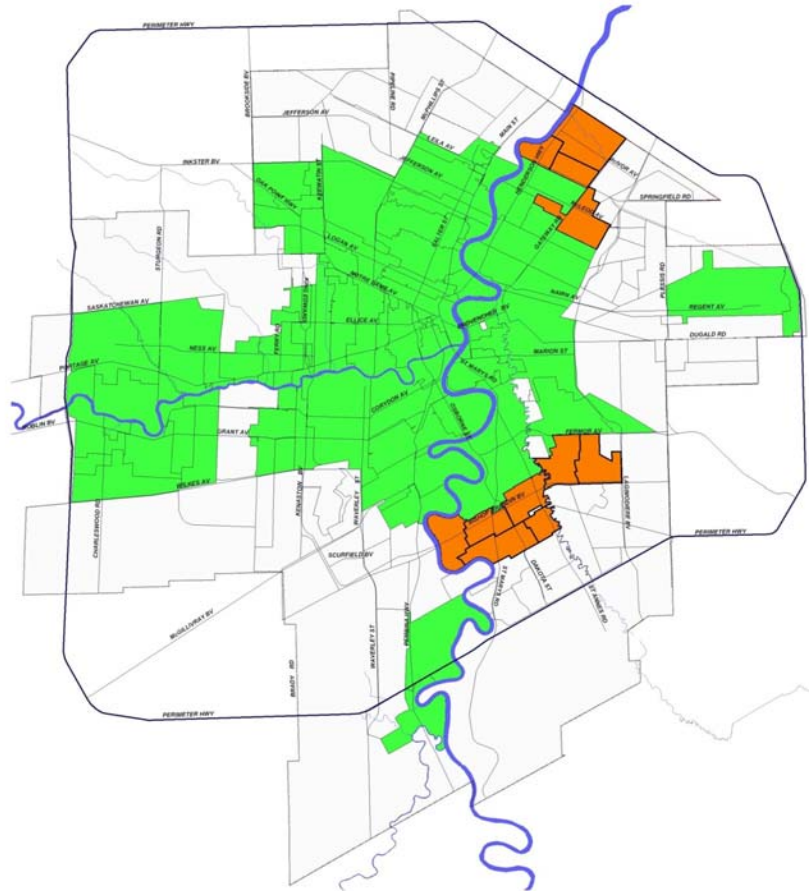
Areas we've cleaned and inspected



Inspected Sewer Districts



2010 Sewer Districts



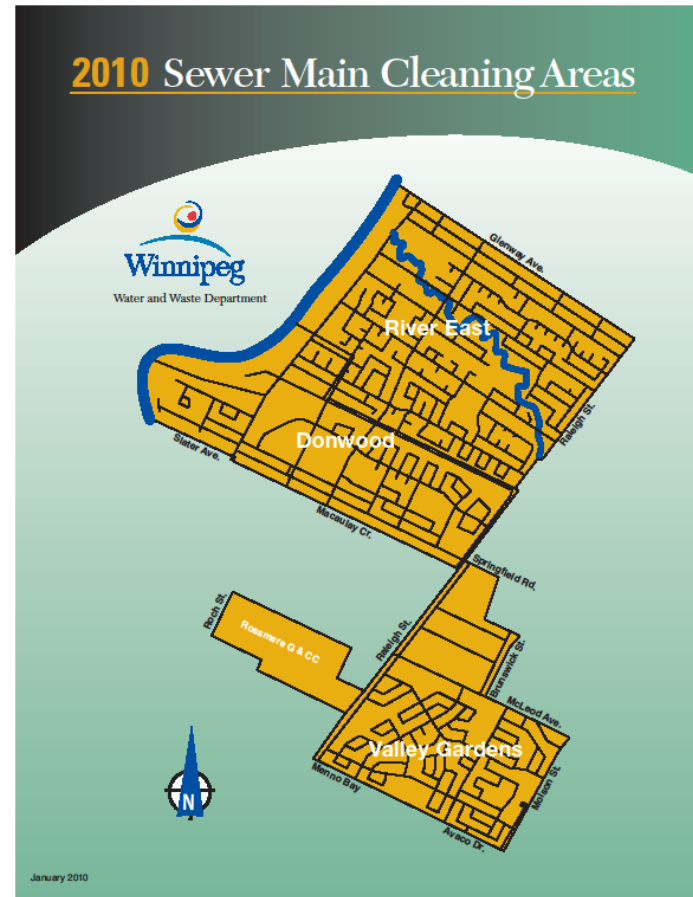
2010 sewer cleaning and assessment

- St. Vital / Niakwa Place / Southdale
 - 97 kilometres of wastewater sewers
 - \$1,715,000



2010 sewer cleaning and assessment

- Donwood / River East / Valley Gardens
 - 74 kilometres of wastewater sewers
 - \$1,345,000



Sewer cleaning and inspection progress

- 100% of the combined sewer system has been cleaned and inspected
- 56% of the wastewater sewer system will be cleaned and inspected by the end of 2010
- We expect the entire wastewater sewer system to be cleaned and inspected by the end of 2014

How you will know when we are cleaning and inspecting sewers in your area

- Mail you a notice in advance
- Deliver an information package 1 - 2 days before the cleaning
- Post the sewer cleaning area at

winnipeg.ca/waterandwaste/sewage/mainCleaning.stm



2010 sewer rehabilitation program

- \$12.6 million
- Developed from 2009 and previous assessments
- Prioritized based on:
 - severity of failure
 - sewer main size and depth
 - location (major route vs. residential street)

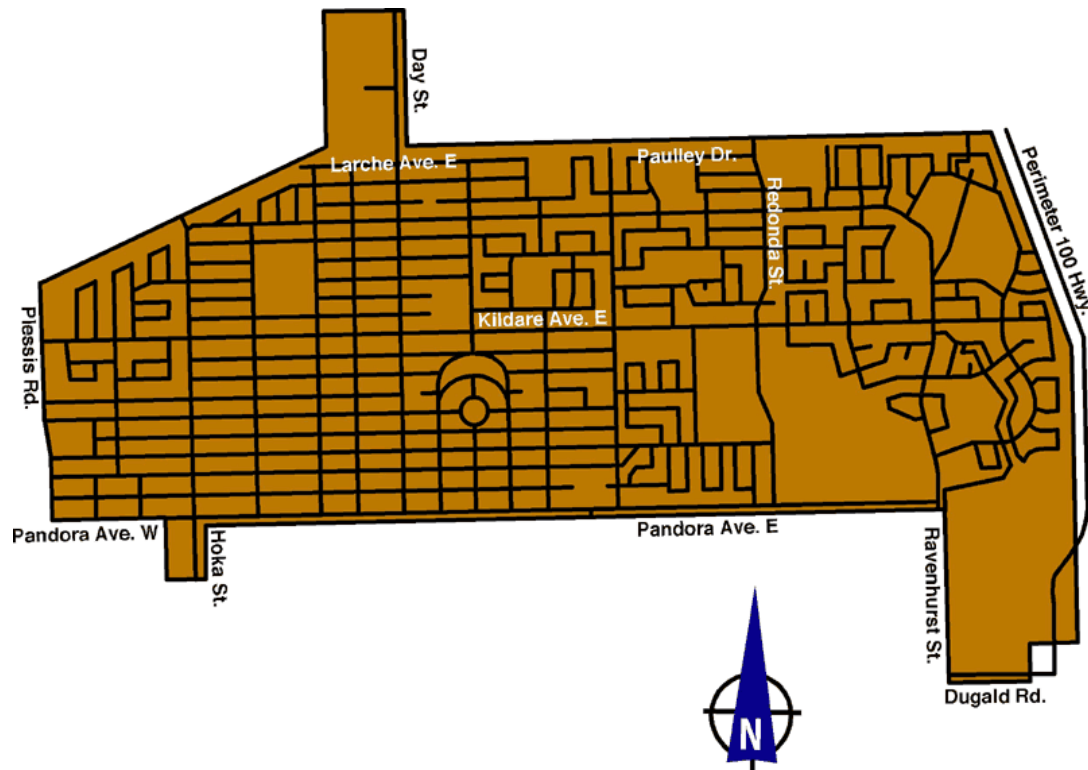
2010 sewer rehabilitation program

- Rehabilitate by trenchless technology
- Excavate and repair at isolated locations
- Full section replacement



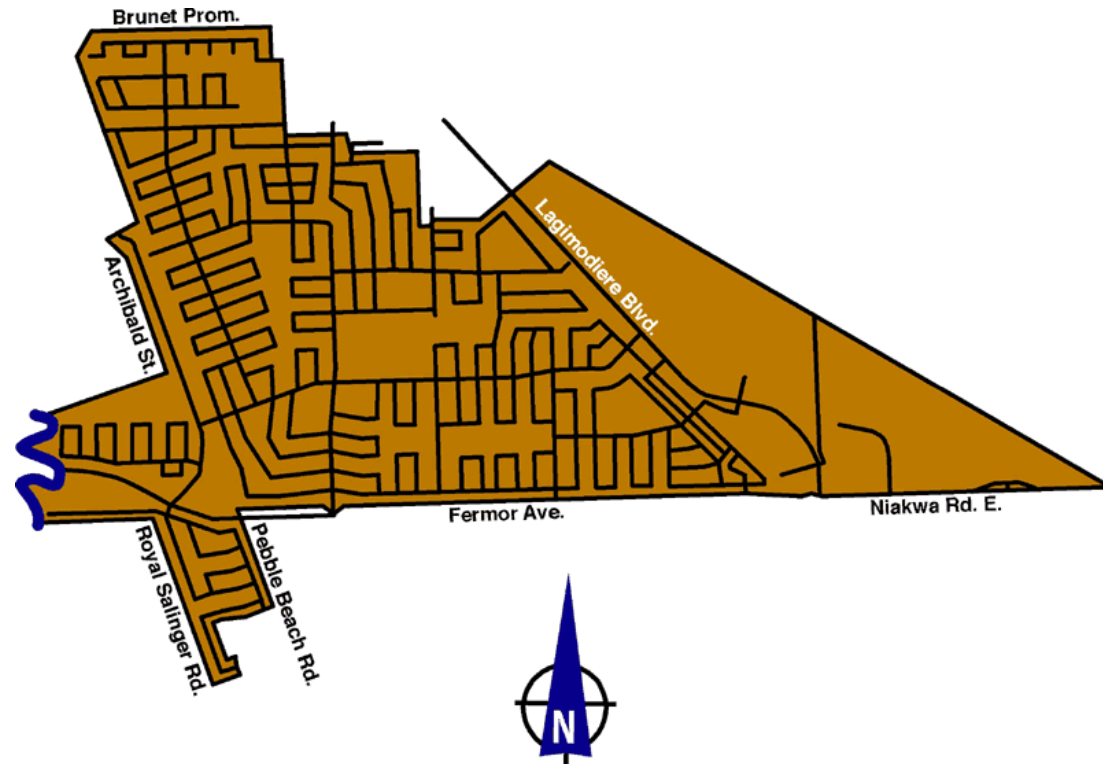
2010 sewer rehabilitation areas

- Transcona



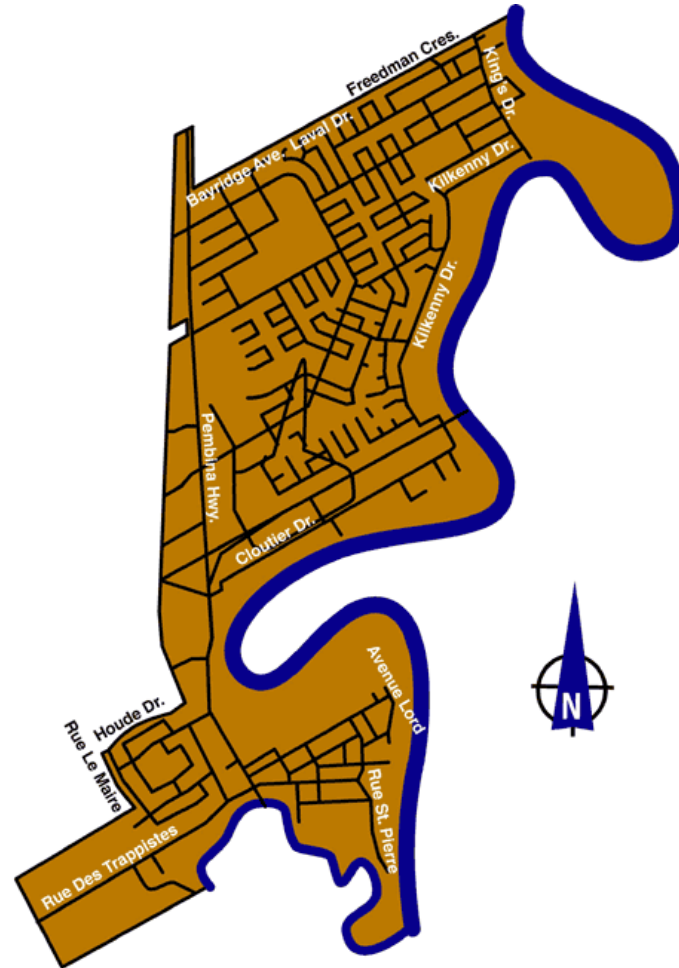
2010 sewer rehabilitation areas

- St. Boniface / Windsor Park



2010 sewer rehabilitation areas

- Fort Richmond and St. Norbert



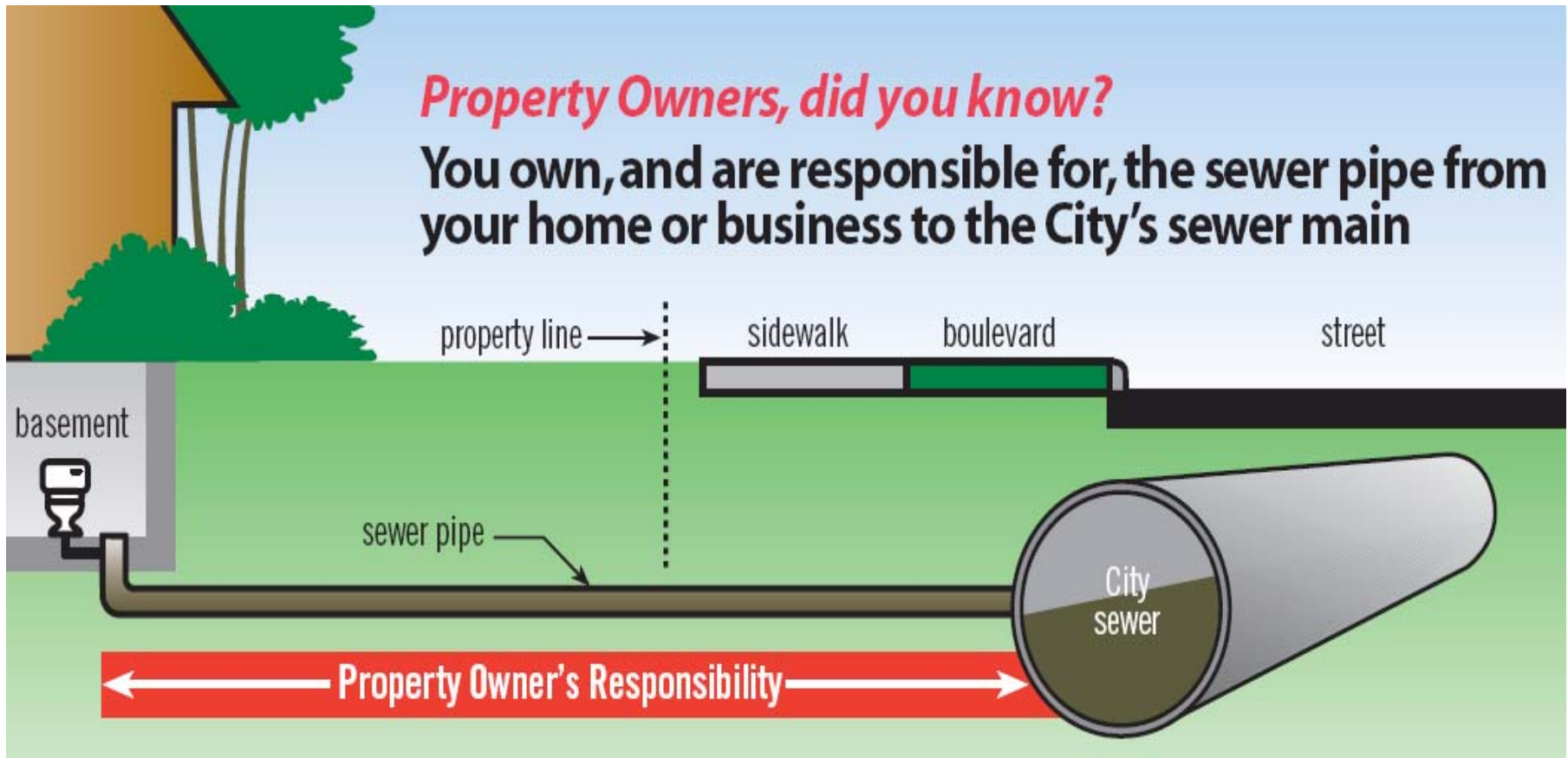


Sewer Repairs on Private Property

You own your sewer pipe

Property Owners, did you know?

You own, and are responsible for, the sewer pipe from your home or business to the City's sewer main



Typical sewer problems – Settled or collapsed line



Sewer collapse or blockage under your property

- You are responsible to arrange and pay for repairs
- You must hire a sewer contractor licensed by us
- Contact us at 311 for the list of contractors or visit winnipeg.ca/waterandwaste/dept/licensedContractors.stm
- We recommend you:
 - get at least three estimates
 - ask for and check contractor references
 - call the Better Business Bureau for a reliability report

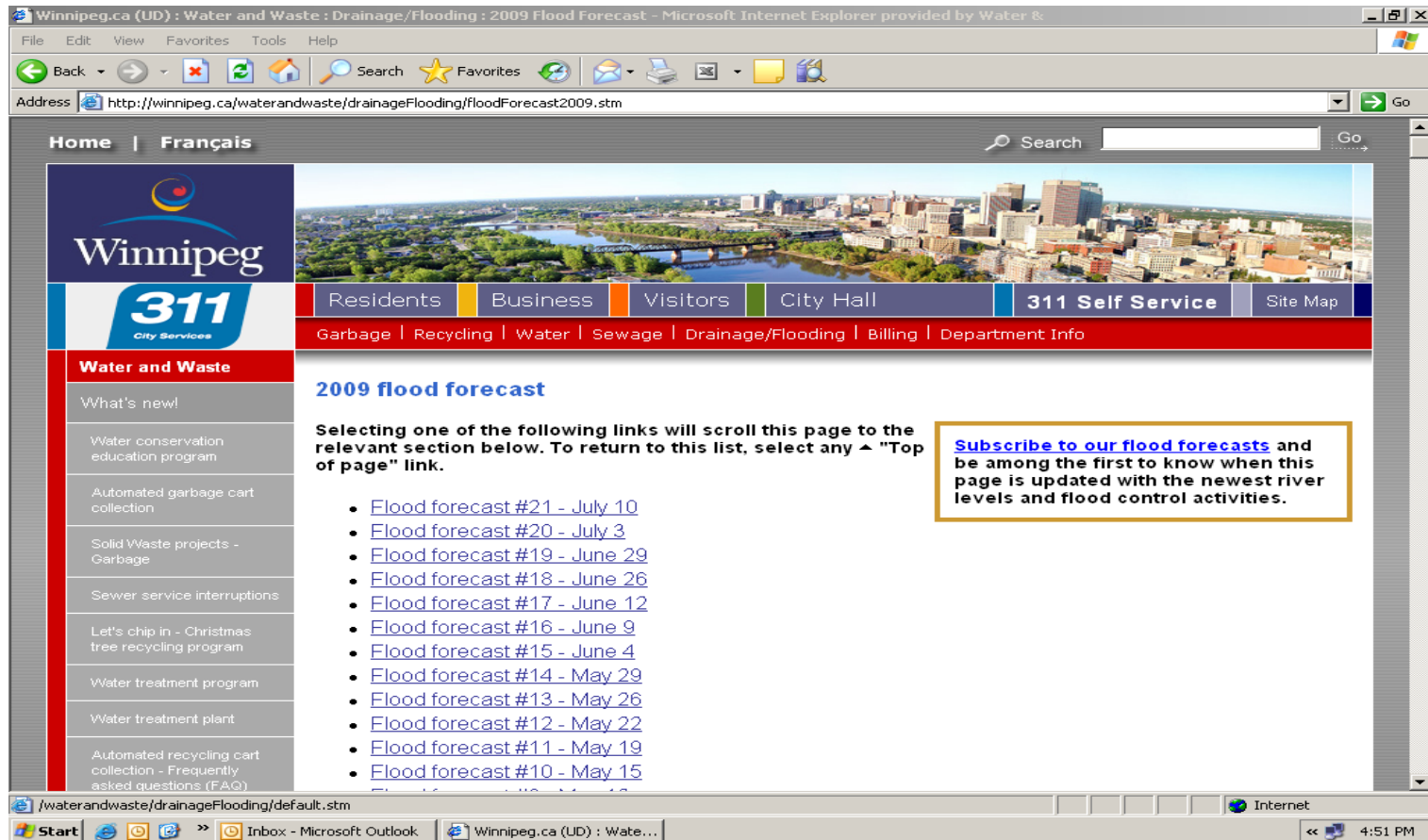
Sewer collapse or blockage under City property

- Contact us at 311
- We may ask you to:
 - arrange and pay for a second attempt to clean the sewer
 - arrange and pay for a video inspection
- If the second cleaning is unsuccessful and your sewer is still blocked, we will arrange and pay for the repair under the current City financial assistance program (Schedule “B” of the Sewer By-law)



Flood Fighting Information

winnipeg.ca/waterandwaste/drainageFlooding/floodForecast2009.stm



Questions





Update on Sewer By-law Revisions

Arnold Permut
Wastewater Systems Planning Engineer

Overview

- About the draft by-law
- Reason for the changes
- Key by-law changes
- Opportunity to provide comments

About the draft by-law

- Reviewed the existing Sewer By-law and have prepared a draft that:
 - incorporates recommendations made by the Clean Environment Commission to the Minister of Conservation in 2003
 - is written in user-friendly language
 - is ready for review and comment

Reason for the changes

- To further protect our wastewater, land drainage and river systems by:
 - increasing the restrictions on substances discharged in wastewater and land drainage,
 - preventing disposal of contaminants of concern,
 - encouraging treatment at source, and
 - improving enforcement of the by-law.

Key by-law changes

- Expanded list of substance limits and prohibitions for land drainage and wastewater discharges,
- Surcharges for nitrogen and phosphorous in wastewater discharges, and
- Licence required by food service establishments for grease interceptors

Key by-law changes

- Requirement for some businesses to prepare pollution prevention plans to focus on control and prevention at source
 - proposed to begin with metal finishing companies,
 - one year of notice before business sector is addressed,
 - additional sectors to be considered in the future

Opportunity to provide comments

- See the draft by-law and a summary of changes at winnipeg.ca/waterandwaste/sewage/projects/sewerBy-law
- You can:
 - attend a public meeting
 - provide comments by [email](#) or mail by **Friday, March 12, 2010**
- We will prepare a report after the public consultation with a recommended Sewer By-law for City Council to review and consider.

Public meetings

- Dates:
 - Tuesday, Feb. 9, 2010
 - Presentation 5:30 – 7:30 p.m.
6:00 - 6:30 p.m.
 - Wednesday, Feb. 10, 2010
 - Presentation 9:00 – 11:00 a.m.
9:30 - 10:00 a.m.
- Location:
 - Masonic Memorial Temple, 420 Corydon Avenue

For more information

- If you have any questions about the public meetings or the draft by-law, please contact:
 - Arnold Permut
Wastewater Systems Planning Engineer
 - by phone at 986-4817
 - by [email](#)

Questions





2010 Water and Sewer Rates

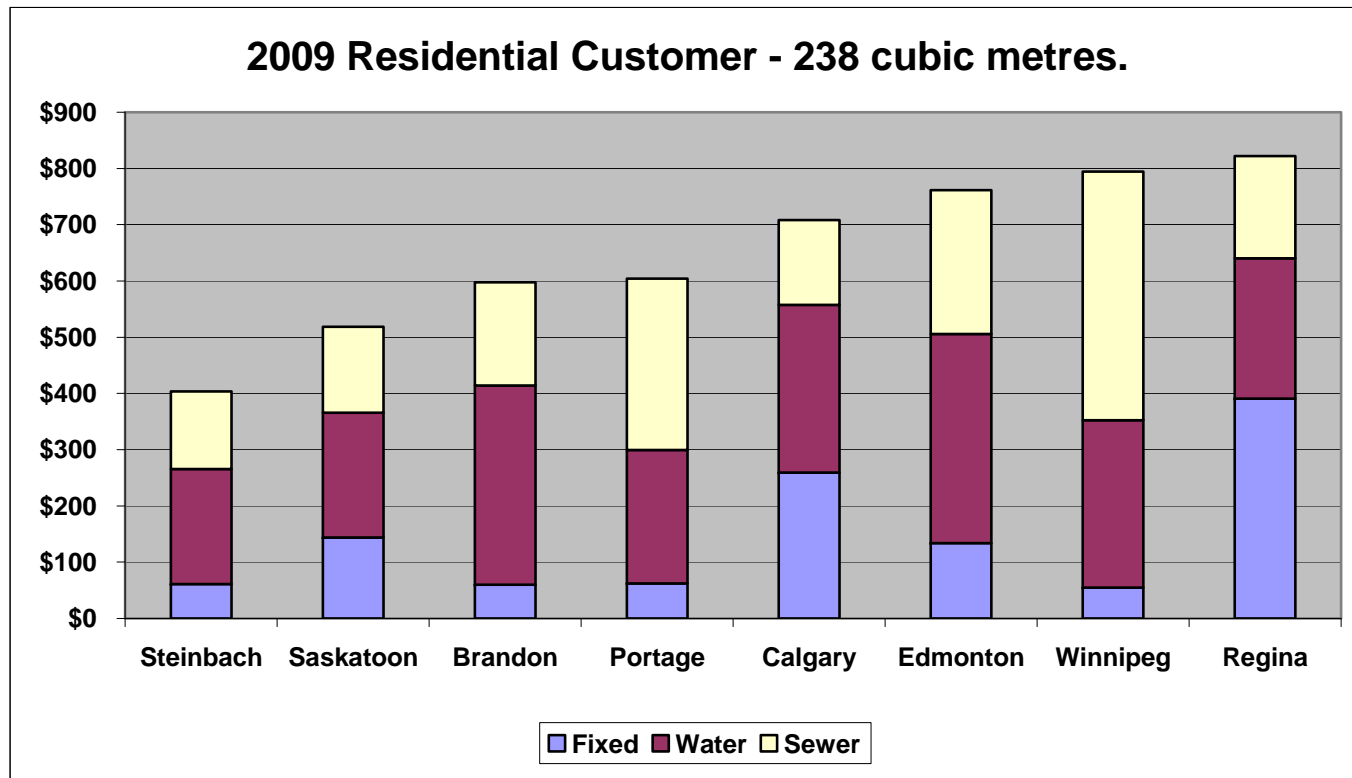
Barry MacBride, Director

Customer impact

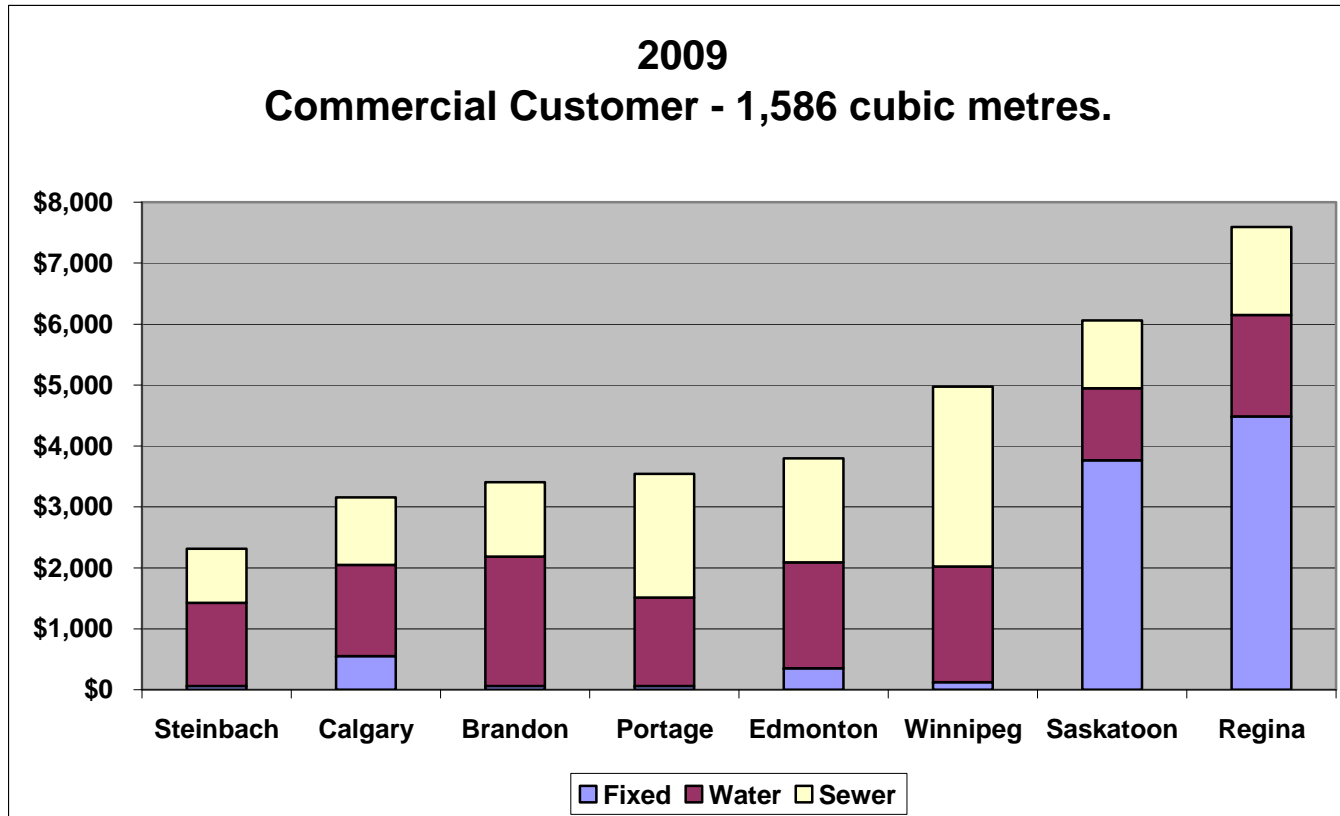
- 2010 combined rate is \$3.20 per cubic metre, for combined water block 1, or \$3.20 per 1,000 litres
 - water - \$1.29 per 1000 litres
 - wastewater - \$1.91 per 1000 litres
- Average monthly cost is \$68.05
- 3.13 litres per penny

	Annual Cons. 000s of cu.m	2009	2010	Increase	
				\$	%
Residential	238	\$ 795.38	\$ 816.60	\$ 21.22	2.7%
Small Business	1,586	\$ 4,921.45	\$ 5,061.34	\$ 139.89	2.8%
Large Business	17,730	\$ 51,619.95	\$ 53,180.16	\$ 1,560.21	3.0%
Large Industrial	254,500	\$ 708,565.82	\$ 730,461.56	\$ 21,895.74	3.1%

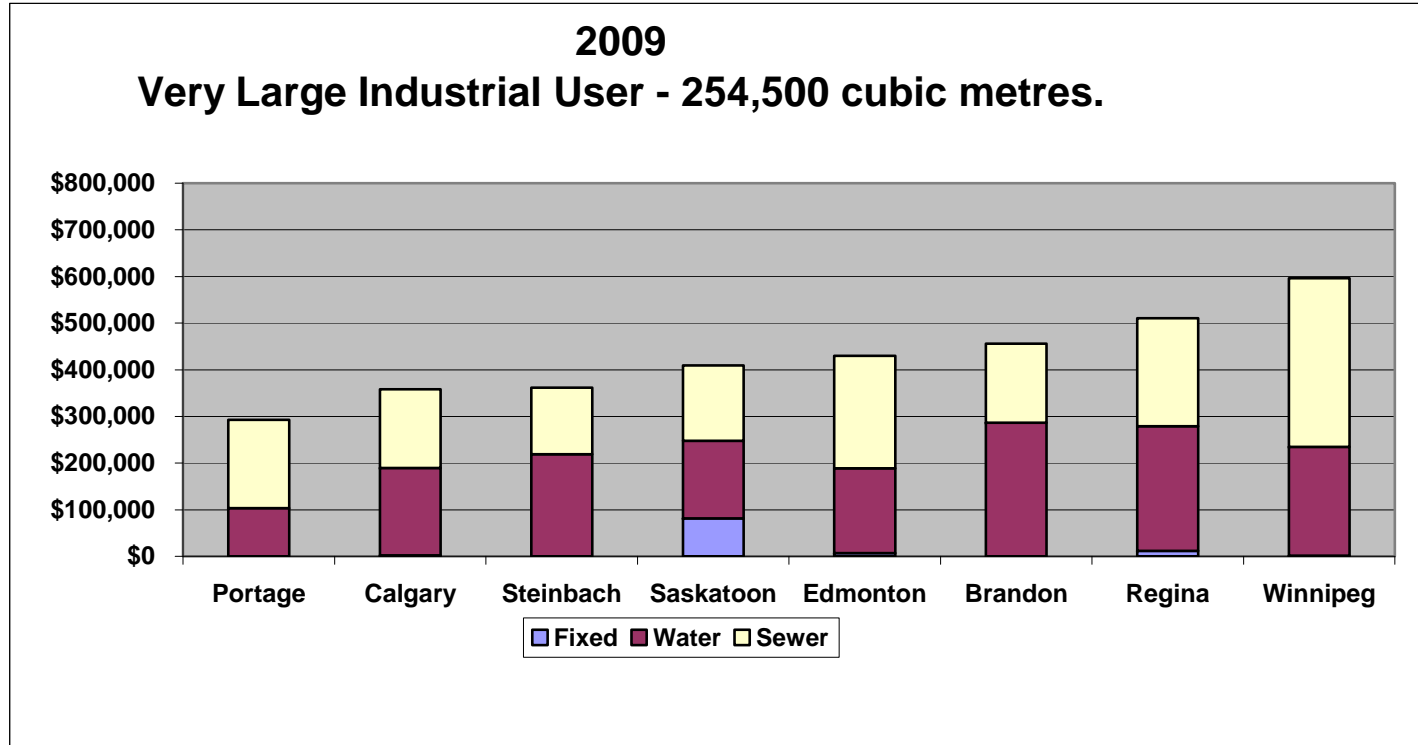
Residential rate - Benchmarking



Commercial rate - Benchmarking



Large industrial rate - Benchmarking



How we determine rates?

- We forecast revenue requirements over the next ten years
 - capital expenditure program
 - financing: reserves, cash to capital (“pay as you go”), debt
 - operating costs including finance payments
- We forecast sales over 10 years
- We develop a rate plan so that
 - revenue = cost
- We recommend a one year rate to Council
 - traditional reviewed in November of each year

Water projections

WATERWORKS SYSTEM FUND Financial Projection 2010-2019 (\$000s)

O:\Fa\DCAPP\Rate Model W&S\2010\2010RTS_02.xls\WATER_REPORT Values

Waterworks System	2009 Budget	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Revenue											
Sales Revenue	89,292	89,431	91,482	93,680	96,504	97,966	98,425	98,789	99,383	100,051	100,639
Non Rate Revenue	4,950	3,345	3,613	3,928	4,034	3,716	3,171	2,953	3,161	3,377	3,603
Total Revenue	94,242	92,776	95,095	97,608	100,538	101,682	101,596	101,742	102,544	103,428	104,242
Expenditures											
Operating	52,386	60,085	62,115	63,821	63,972	63,925	64,178	64,336	64,596	64,963	66,336
Fire Hydrant Maintaince Expense	0	3,708	3,708	3,708	3,708	3,708	3,708	3,708	3,708	3,708	3,708
Debt Service	17,992	17,979	18,259	18,551	18,220	16,690	14,230	12,400	12,585	12,780	12,982
Transfer to Watermain Renewal Reserve	10,000	10,500	11,000	11,500	12,000	12,500	13,000	13,500	14,000	14,500	15,000
Total Expenditures	80,378	92,272	95,082	97,580	97,900	96,823	95,116	93,944	94,889	95,951	98,026
Surplus(Deficit) for the year	13,864	504	13	28	2,638	4,859	6,480	7,798	7,655	7,476	6,216
Opening Working Capital		50,362	31,533	21,476	10,978	3,551	512	2,386	5,940	8,595	11,072
Appropriated to Capital		(14,121)	(10,070)	(10,525)	(10,065)	(8,050)	(5,000)	(5,000)	(5,000)	(5,000)	(5,000)
Other Changes in Working Capital		(5,213)	0	0	0	151	393	756	0	0	0
Ending Working Capital		31,533	21,475	10,978	3,551	511	2,385	5,940	8,594	11,070	12,289
Working Capital as a % of Sales	0%	35%	23%	12%	4%	1%	2%	6%	9%	11%	12%

Water Rate	Block 1 (\$dollars)	1.25	1.29	1.34	1.38	1.43	1.44	1.44	1.45	1.45	1.45	1.45
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Rate Change	Block 1	2.9%	2.9%	3.9%	3.0%	3.6%	0.7%	0.0%	0.7%	0.0%	0.0%	0.0%
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Long-Term Debt Summary											
New debt, Water Treatment Plant	0										
Debt outstanding, closing year end balance	173,029	167,160	161,012	154,571	148,045	142,009	136,933	132,853	128,588	124,128	119,466

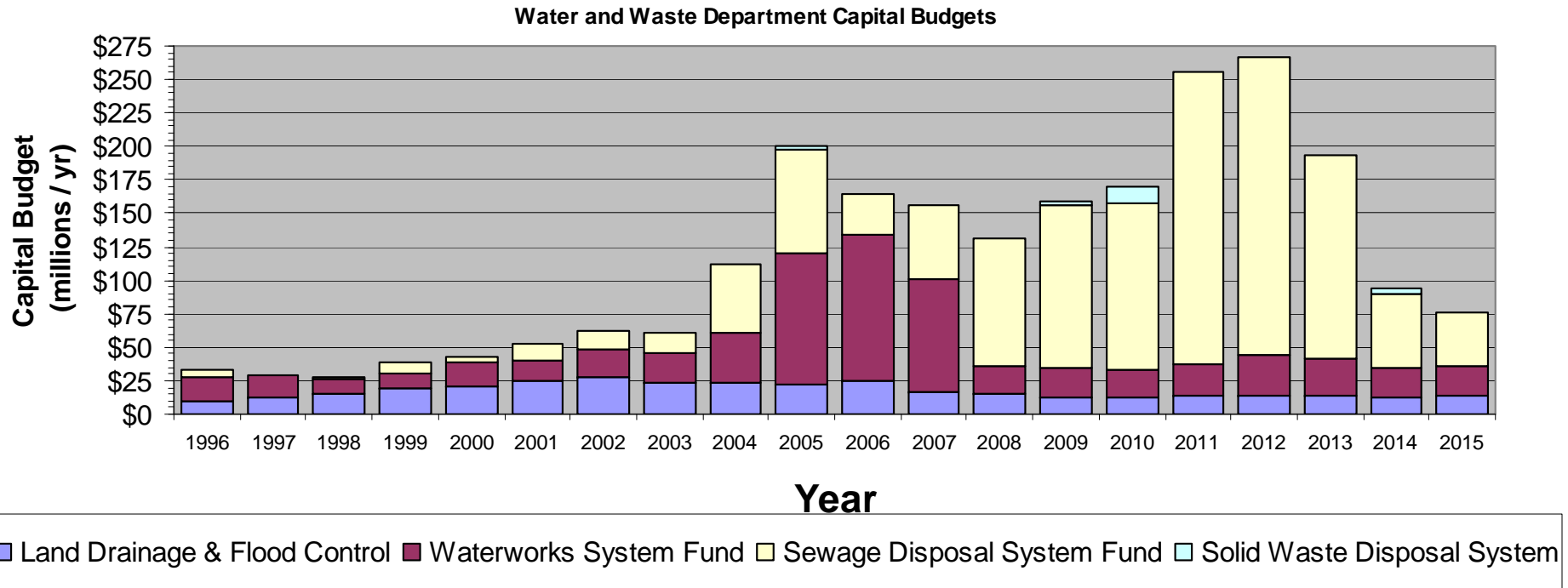
Environmental projects financing

Sewer Utility Environmental Projects and Financing Schedule \$000s

Year	Annual Capital Expenditure	Project Financing					Balance	
		Volume Rate ¹	Fed/Prov	Debt	Retained Earnings	Total	Debt	Reserve
to 2006	44,001	90,944	-	-	-	90,944	-	46,943
2007	19,430	9,959	8,200	-	-	18,159	-	45,672
2008	28,783	8,514	3,866	-	10,022	22,402	-	39,291
2009	15,783	10,887	4,794	-	3,291	18,972	-	42,480
2010	97,912	11,993	20,105	-	23,334	55,432	-	0
2011	150,324	14,714	64,035	68,000	3,575	150,324	68,000	0
2012	154,709	17,710	51,000	86,000	-	154,710	154,000	(0)
2013	137,686	20,685	52,000	65,000	-	137,685	219,000	0
2014	184,082	21,266	52,000	110,816	-	184,082	329,816	0
2015	21,288	21,288	-	-	-	21,288	329,816	0
2016	21,294	21,294	-	-	-	21,294	329,816	0
2017	21,352	21,352	-	-	-	21,352	329,816	(0)
2018	30,445	21,445	-	9,000	-	30,445	338,816	-
2019	31,148	21,559	-	9,589	-	31,148	348,405	-
2020	30,060	21,500	-	8,560	-	30,060	356,965	-
2021	27,000	21,500	-	5,500	-	27,000	362,465	-
2022	26,150	22,000	-	4,150	-	26,150	366,615	-
2023	26,090	22,000	-	4,090	-	26,090	370,705	-
2024	25,248	22,000	-	3,248	-	25,248	373,953	-
2025	21,200	22,000	-	-	-	22,000	373,953	800
2026	21,120	22,500	-	-	-	22,500	373,953	2,180
2027	21,000	22,500	-	-	-	22,500	373,953	3,680
2028	21,250	22,500	-	-	-	22,500	373,953	4,930
2029	21,150	22,500	-	-	-	22,500	373,953	6,280
2030	21,000	22,500	-	-	-	22,500	373,953	7,780
Total to 2019	958,237	313,610	256,000	348,405	40,222	958,237	348,405	-
Total to 2030	1,219,505	557,110	256,000	373,953	40,222	1,227,285	373,953	7,780

¹ Includes Interest

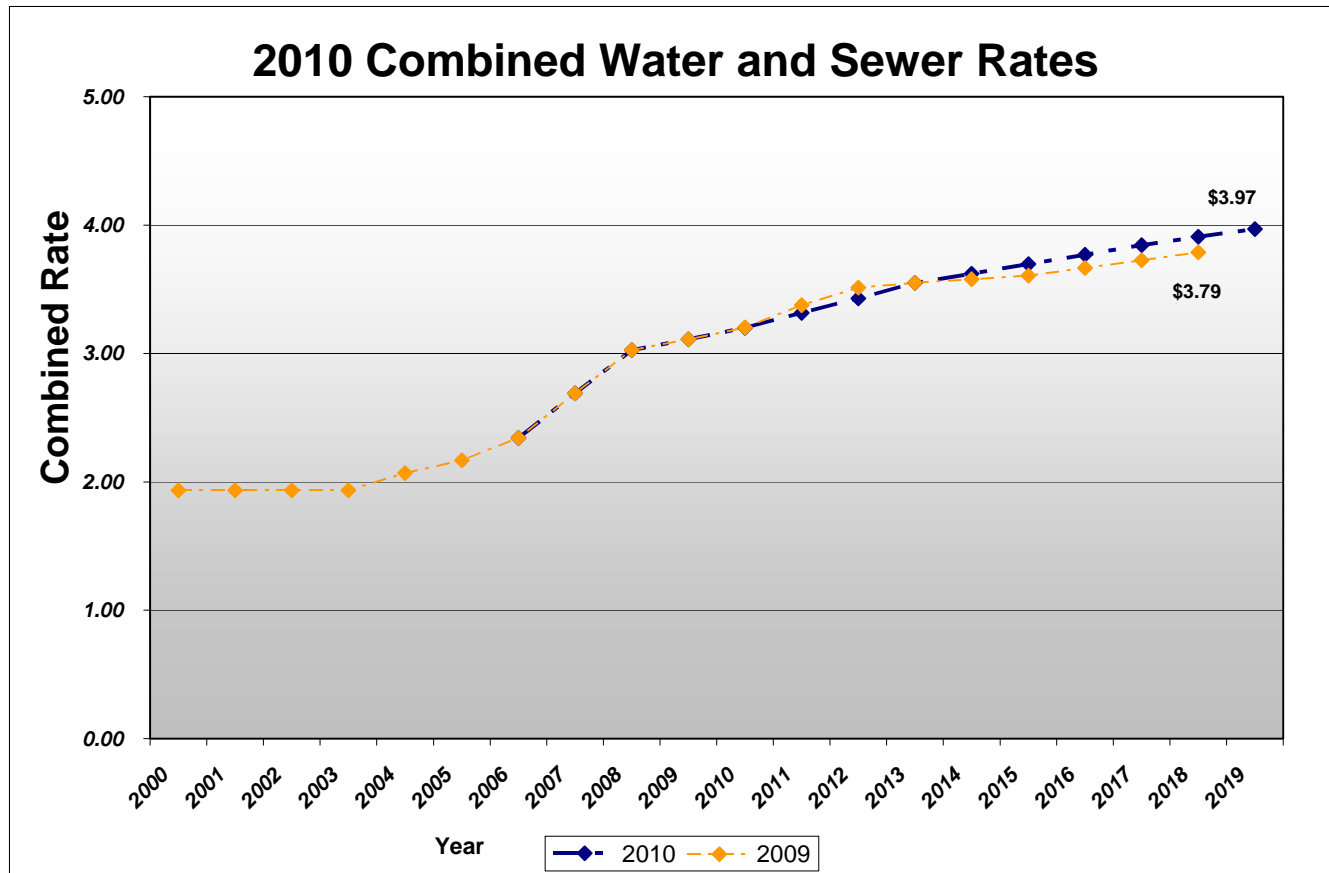
Capital budget 1996-2015



Wastewater cost projections

Wastewater Improvement Projects	2009 Rate Plan
Capital Cost Estimates (\$millions)	
Component	Cost (millions)
Disinfection	\$ 24.74
Effluent Nutrient Control	\$ 668.39
CSO Control Program	\$ 450.72
Biosolids Program	\$ 62.73
TOTAL Environmental Projects	\$ 1,206.59
CEC Additional Recommendations	\$ 8.47
<i>Misc upgrades not in above</i>	\$ 2.80
GRAND TOTAL	\$ 1,217.86

2010 vs. 2009 combined rate forecast



Future rate uncertainty

- There are works pending that could significantly impact future rates:
 - controversy again about the need to remove nitrogen
 - potential for Federal funding for wastewater improvements
 - ongoing asset management studies of the infrastructure deficit

Rates - Future improvements

- Cost of service rates
 - a cost of service rate study will begin March 2010 to look at equity between customer groups
- Winter cost averaging
- Land drainage utility
- Capital region servicing

Hauled wastewater charges

- Base charge (current)
 - \$2.51 per kilolitre
 - billed to hauler
 - covers median cost for “household wastewater”
- Additional fee for non-household wastewater effective January 1, 2010
 - \$7.15 per kilolitre
 - billed to generator on quarterly basis starting April 2010
 - to cover additional cost of treating “median” industrial wastewater

Summary

- Rates are increasing faster than inflation due to required improvements:
 - to remove nitrogen and phosphorous in treated wastewater
 - to reduce combined sewer overflows
 - for water treatment
 - to reflect the impact of increased construction costs

Question period and closing remarks

Barry MacBride
Director



winnipeg.ca/waterandwaste