

Operations, Maintenance and Monitoring Branch Status Update

**Presentation to Environmental
Services Committee**

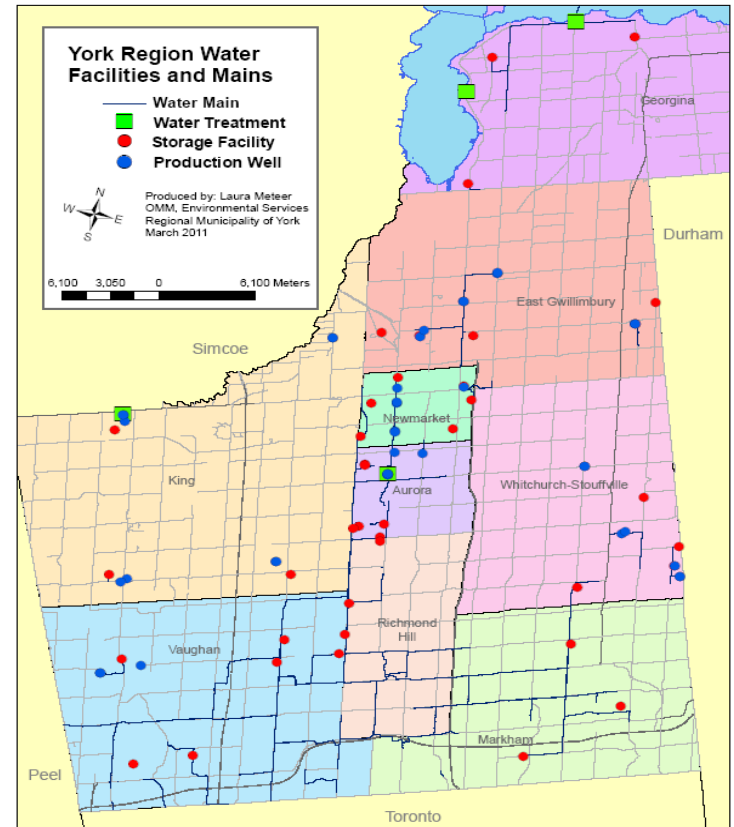
Brett Bloxam
May 9th, 2012

Overview

- ❑ Water and Wastewater - Key Objectives
- ❑ Standard of Care
- ❑ Operational Excellence
- ❑ Accomplishments, Planned Initiatives and Challenges

Water and Wastewater Overview

- ❑ Complex water system includes 4 treatment plants, 40 wells, 42 storage facilities and 312 kilometres of watermain
- ❑ Wastewater system includes the York Durham Sewage System, 8 wastewater treatment plants and 278 kilometres of sewer
- ❑ Inter-Municipal agreements with Toronto, Peel and Durham
- ❑ Enhanced treatment technology to meet regulatory needs
- ❑ Robust Supervisory Control and Data Acquisition (SCADA) system to continuously monitor facilities



Complex and integrated water and wastewater systems serving 1 million residents

Proactively Managing Risk and Compliance

- ❑ Efficient and cost effective 24/7 delivery of water and wastewater services
- ❑ Compliance with legislation and Drinking Water Quality Management System
- ❑ Operate, maintain and inspect our assets
- ❑ Maintain Supervisory Control and Data Acquisition (SCADA) system and calibrate instrumentation
- ❑ Communicate with our local municipalities, stakeholders and support Capital Delivery
- ❑ Provide a safe working environment



Operations, Maintenance & Monitoring is responsible for operating, maintaining and protecting assets valued over \$3 billion

Operations, Maintenance and Monitoring Branch Strategic Direction



- Manage risk through Integrated Management Systems to comply with complex regulations
- Proactively manage \$3 billion in assets
 - Realizing operating efficiencies through leveraging technology , training, economies of scale and cost control
 - Collaboration for success in two-tier service delivery

- Support efficient building of advanced water and wastewater infrastructure
- Prudently maintaining asset base through program driven work
- Provide “on the ground” programs for inflow and infiltration reduction
- Process optimization at water and wastewater facilities

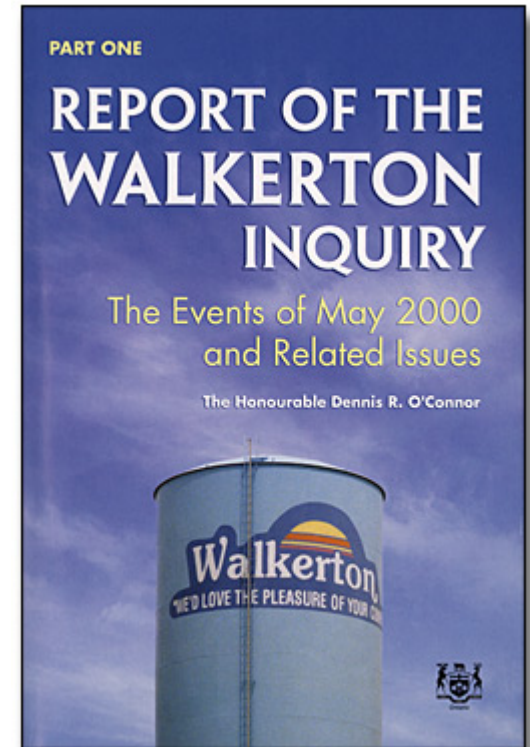
Operational excellence in delivering high quality water and returning treated water to the environment

Successful Alignment with Corporate Strategies



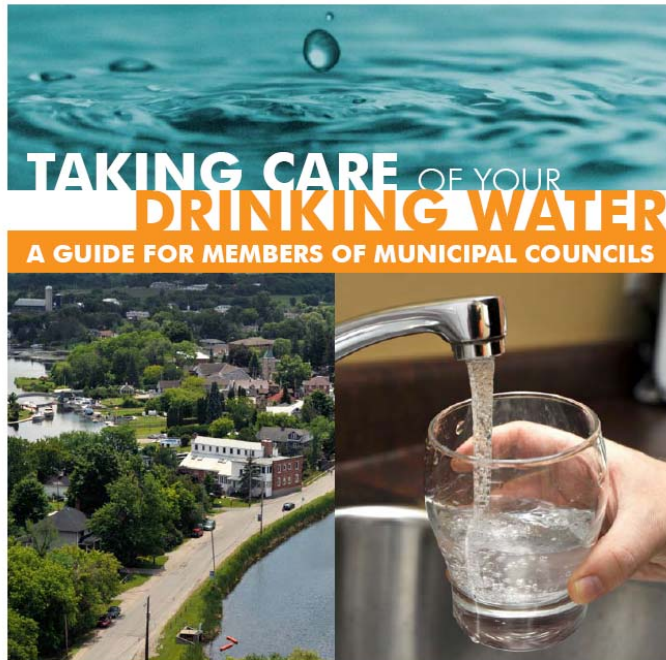
Safe Drinking Water Act, 2002 – Standard of Care

- ❑ Section 19 of the *Safe Drinking Water Act, 2002* legally requires people with decision making authority, such as Councillors and staff, to exercise a level of care, diligence and skill that a reasonably prudent person would be expected to hold and act competently
- ❑ “Taking Care Of Your Drinking Water – A Guide for Members of Municipal Councils” is now available from the Ministry of the Environment
- ❑ Statutory Standard of Care comes into effect on December 31st, 2012



**Guide distributed to committee members at local Council meetings.
Regional staff are available to provide information and respond to questions**

Safe Drinking Water Act, 2002 – Standard of Care



www.ontario.ca/drinkingwater



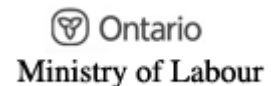
- ❑ Taking Care of Your Drinking Water - A Guide for Members of Municipal Councils is available at http://www.ontario.ca/drinkingwater/dw_el_prd_043831.pdf
- ❑ Training for Councillors is voluntary and is available at the Walkerton Clean Water Centre www.wcwc.ca and through Association of Municipalities of Ontario (AMO) www.amo.on.ca

Ensuring the safety of Ontario's drinking water is a shared responsibility

Proactively Managing Risk Through Audits and Inspections



- ❑ Drinking Water Quality Management Standard (DWQMS)
- ❑ ISO 9001 and 14001 (internal and external audits)
- ❑ Ministry of the Environment
- ❑ Electrical Safety Association
- ❑ Compliance Audits (internal and external)
- ❑ Health and Safety audits and inspections
- ❑ Ministry of Labour



Providing safe drinking water and protecting the environment requires top marks

Regional Participation in Rigorous Audit Program



Audit Type	Standard/Regulation	Frequency	Facilities Audited in 2011
Internal Audits	ISO 9001 ISO 14001 DWQMS	Currently Each facility is audited every 3 years	16 multi-facility internal audits conducted
MOE Inspections	Ontario Water Resources Act	Frequency not regulated, typically inspected annually	13 Wastewater
	Safe Drinking Water Act, 2002	Frequency is regulated. Inspected annually, in some cases twice a year. Approximately one third of inspections are unannounced	15 Water
Compliance Audits	ISO 14001	Periodically	40 facilities
External Audits	ISO 9001 ISO 14001 DWQMS	Annually Bi-Annually Annually	8 Water 5 Wastewater Year 2 document surveillance audit initiated
Health & Safety Audits	Occupation Health and Safety Act	Periodically	7 Facilities

104 audits of water and wastewater facilities were completed in 2011

MOE Inspections – Water and Wastewater



System:	Year:	# MOE Inspections Completed	# Non-Compliance Findings	# Best Practice Recommendations
Water	2011	16	0	4
Wastewater	2011	13	3	1

- ❑ 100% of operators compliant with required training hours
- ❑ 99.71 score on MOE water facility inspection reports in 2010
- ❑ Zero non-compliances on MOE water facility inspection reports in 2011
- ❑ 21 adverse water quality incidents reported to the Ministry of the Environment and Medical Officer of Health
- ❑ 11,301 treated water tests taken in 2011



York Region water and wastewater operations continue to receive top marks from Ministry of the Environment inspections

Participation in Corporate Emergency Planning



- ❑ Risk Assessment and emergency planning essential for provision of safe drinking water and part of DWQMS Operating Plan
- ❑ Approximately 30 procedures developed to effectively handle emergency situations in our drinking water systems
- ❑ Participate in Corporate emergency training programs and in annual Corporate Emergency Exercise

Approaches to train staff and test emergency procedures include:

- 10 Large-scale mock emergency testing of procedures related to a specific event
- 10 Small-scale, localized emergency testing that audits a specific procedure
- 10 Requirement for staff to review all emergency procedures annually
- 10 Emergency procedures review and sign-off



Additional Activities Related to Standard of Care

- ❑ Overall Responsible Operator (ORO) has been designated in compliance with O. Reg 170/03
- ❑ DWQMS includes an Operating Plan and risk assessment review
- ❑ Annual State of Infrastructure report presented to Council
- ❑ Infrastructure Improvement Plan identifies critical infrastructure for rehabilitation and replacement
- ❑ Annual Quality Report and Schedule 22 Report submitted to province and made available to public

☒ **CHECK YOUR KNOWLEDGE**

Ask yourself these questions to check your current level of knowledge about your drinking water system and oversight responsibilities.

☐ Have I had a tour of our drinking water facility?	☐ Am I aware of the risks currently facing our water sources, drinking water facilities and infrastructure? What are the plans to address these risks?
☐ Am I familiar with our municipal drinking water systems including: a. the water source?	☐ If there is an emergency with the drinking water system, what are my responsibilities?

☒ **WHAT SHOULD I BE ASKING?**

When decisions come before your council relating to drinking water, you want to understand the impacts on your community and public health. While every situation will be different, the following are some preliminary questions you might want to ask:

☐ What are the risks to public health?	☐ How will this decision impact our community's demand for water?
☐ Are there any areas of risk that council needs to address?	☐ How are we managing our drinking water infrastructure? Is our infrastructure sustainable for future generations?
☐ What checks and balances are in place to ensure the continued safety of our drinking water?	☐ Are there any emerging issues related to our drinking water that council should be aware of?
☐ Are we meeting our legislative and regulatory requirements?	☐ What is the emergency management plan for a negative drinking water event? What is the role of council in a drinking water emergency?
☐ What is the public health impact or long-term cost of deferring this decision?	☐ Have staff taken required training and upgrading?
☐ Will this decision affect our drinking water sources?	

**Be informed. Ask questions. Get answers.
It's your duty.**

Are there areas for improvement?

If you can't answer any of these questions, review them with municipal staff.
Training on a variety of drinking water topics is also available through the Walkerton Clean Water Centre.
Visit the Centre's website at www.wccwc.ca to view its course catalogue.

Regional staff available to provide information and answer questions

Delivering Operational Excellence

- ❑ Organized to provide more engineering support and enhance coordination of asset inspection and maintenance
- ❑ Create training opportunities which promote succession planning and increased skill sets
- ❑ Evaluate and analyze system monitoring, alarms and response protocols for efficiencies
- ❑ Using performance indicators, continue to evolve computerized maintenance management system to ensure operations and assets are managed effectively



Maintaining quality and keeping downward pressure on costs through key efficiency initiatives

Water & Wastewater Industry Leadership

- ❑ Partnership with University of Toronto Drinking Water Research Group and Water Research Foundation
- ❑ Presentations at industry conferences and committees
- ❑ Children's Water Festival and National Public Works Week
- ❑ Leadership in research and innovation through key partnerships and Showcasing Water Innovation provincial funding



Operations continue to be leaders in water & wastewater industry

Key Role in Capital Projects

- ❑ Continue to maintain compliance operating facilities during construction of complex capital projects
- ❑ Key operations involvement in all capital projects
- ❑ Supporting 120 active capital projects, with over 56 in construction in 2012
- ❑ Integrated operating strategies required to support capital project needs



Maintaining compliance and operational excellence during construction of complex capital projects

Operations, Maintenance and Monitoring

Service Volume Indicators

	2005	2011	% Chg
Number of Facilities Managed	106	143	34.9%
Kilometres of Water and Sewer Mains Maintained	400 km	590 km	47.5%
Built Assets	\$1.2B	\$3.0B	150.0%
Operators required for day to day operations	46	53	13.2%

Need to maintain the right balance of human resources and technology to manage growing asset base

Key Accomplishments

- ❑ Zero non-compliances on MOE water facility inspection reports in 2011
- ❑ Implemented comprehensive health and safety programs
- ❑ Participation in the Sewer Use By-Law and Hauled Wastewater Program policy development
- ❑ Partnership with ON1Call for infrastructure locates
- ❑ 5 year Maximo plan and Business Improvement Plan developed and recommendations being delivered
- ❑ Developed integrated infrastructure and streambank hazard monitoring program with TRCA
- ❑ Participation in energy efficiency programs at key facilities
- ❑ Positive results from 2011 Employee Satisfaction survey



Technology and automation optimizes staff resources and reduces risk

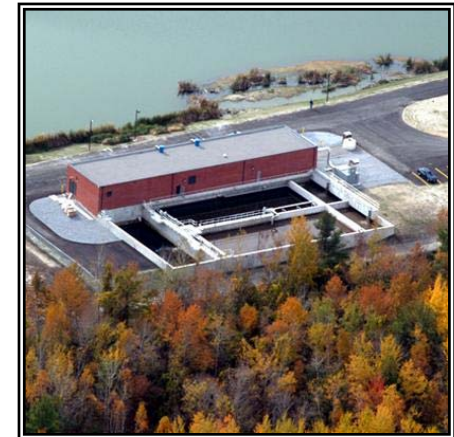
Planned Initiatives for 2012 & 2013

- ❑ Implement a Hub reporting strategy to improve performance measurement
- ❑ Further leverage technology by creating mobile workforce
- ❑ Review key business drivers
- ❑ Improve inventory and purchasing practices
- ❑ Continue to partner with local municipalities and Conservation Authorities
- ❑ Process optimization at water and wastewater facilities
- ❑ Leadership in research and innovation through key partnerships and Showcasing Water Innovation provincial funding

Effective resource management will ensure return on capital investment and maintain levels of service

Addressing Current and Future Challenges

- ❑ Maintaining compliance leadership
- ❑ Long term proactive maintenance and asset management programs
- ❑ Continued investment in water and wastewater systems
- ❑ Retaining and attracting staff in a changing and competitive market
- ❑ Future resources to operate and maintain a more complex and expanded asset base
- ❑ Aging infrastructure and maintaining state of good repair
- ❑ Working with Regional Public Works Commissioners of Ontario to secure limited service continuance agreement



Operations well positioned to successfully tackle these challenges

Questions