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YORK REGION'S INTEGRATED MANAGEMENT SYSTEM 2010 UPDATE REPORT FOR WATER, WASTEWATER AND WASTE MANAGEMENT

The Environmental Services Committee recommends:

- 1. Receipt of the presentation by Brett Bloxam, Director, Operations Maintenance and Monitoring, Environmental Services regarding Operations Maintenance and Monitoring Status Update; and**
- 2. Adoption of the recommendation contained in the following report dated April 29, 2011 from the Commissioner of Environmental Services.**

1. RECOMMENDATION

It is recommended that this report be received for information.

2. PURPOSE

This report satisfies the commitment made in York Region's Integrated Management System and due diligence requirements with respect to Element 20 of the Ministry of the Environment's Drinking Water Quality Management Standard (DWQMS), to update Council on the status of York Region's environmental and quality management systems, including ISO 14001, ISO 9001, and the Drinking Water Quality Management Standard on an annual basis.

3. BACKGROUND

Adoption of the Drinking Water Quality Management Standard is a regulatory requirement

The Ministry of the Environment adopted quality management for drinking water systems, as recommended by Justice O'Connor in the Part II Report of the Walkerton Inquiry. It was also recommended that a quality management standard specifically designed for drinking water systems be developed and implemented in Ontario, which led to creation of the Drinking Water Quality Management Standard. The requirement to implement a Drinking Water Quality Management System is mandated through the *Safe Drinking Water Act, 2002*.

York Region receives “Full Scope-Entire Accreditation” for its Drinking Water Quality Management System from the Canadian General Standards Board

The Drinking Water Quality Management Standard provides minimum requirements for an operating authority to document a quality management system in an operational plan for each subject drinking water system that it operates, which must be accepted by the Ministry of the Environment. The Operational Plan for York Region’s nine drinking water systems was submitted under the “Full Scope-Entire Accreditation” option according to the Ministry of the Environment’s Accreditation Protocol (July 2007) in mid December 2008. This option required full implementation of the entire Drinking Water Quality Management Standard and full system audit, which included an off-site documentation audit and on-site verification audit. On December 10, 2009, York Region was awarded Full Scope-Entire Accreditation by the third party accreditation body- Canadian General Standards Board.

York Region merges Drinking Water Quality Management Standard, ISO 14001, ISO 9001 standards into an Integrated Management System

In March 2009, endorsement by Regional Council to implement ISO 14001 for Waste Management provided an opportunity to integrate existing Quality (ISO 9001) and Environmental (ISO 14001) Management Systems with the Drinking Water Quality Management System into the Region’s Integrated Management System. Experience gained through the ISO 9001 program leveraged York Region to successfully adopt components of the Province’s Drinking Water Quality Management Standard. The standards and common requirements that make up York Region’s Integrated Management System are summarized in Table 1.

Table 1
Summary of Standards and Common Requirements Comprising York Region's
Integrated Management System

Standard	Overview	Common Requirements of Management Systems
ISO 14001	Internationally recognized standard of excellence that categorizes activities and processes contributing to sound environmental management	• Policies that outline commitments, responsibilities and processes • Document and records management
ISO 9001	Internationally recognized standard of excellence that focuses on quality management in fulfilling a customer's quality and regulatory requirements	• Trained and competent resources • Operational control and monitoring
DWQMS	Province of Ontario standard that focuses on quality management by facilitating the operating authority's ability to consistently produce and/or deliver drinking water meeting applicable legislative, regulatory and owner requirements	• Corrective and preventive action to prevent recurrence • Internal and compliance audit processes • Management review process

Waste management facilities successfully achieve ISO 14001 registration

On August 26, 2010, a third party registrar completed a registration audit for seven of the Region's waste management facilities. The registration audit included interviews with staff, examination of records, and observation of work practices to determine how compliant actual processes are with the ISO 14001 standard. Following a technical review of the registration audit findings, the third party registrar approved ISO 14001 registration of the following facilities on October 29, 2010:

- Asian Long-Horned Beetle Site
- East Gwillimbury Household Hazardous Waste Depot
- Georgina Waste Transfer Station
- Georgina Household Hazardous Waste Depot
- Markham Household Hazardous Waste Depot
- McCleary Court Community Environmental Centre
- Vaughan Household Hazardous Waste Depot

4. ANALYSIS AND OPTIONS

Management review meetings integrated to satisfy all of the Region's management systems standards

In accordance with the Region's Integrated Management System (ISO 9001, ISO 14001, and the Drinking Water Quality Management Standard), Management Review meetings are integrated to satisfy all three management system standards. Meetings are held in the first quarter, encompassing previous year's performance and the third quarter, encompassing performance in the first three quarters for the current year. The Environmental Services Department's Regulatory Compliance and Policy group is responsible for facilitating these semi-annual meetings. At a minimum, the Commissioner of Environmental Services, the Director of Operations, Maintenance and Monitoring, the Manager of Solid Waste Operations and Optimization, and at least one member of Top Management must be in attendance. The Commissioner of Environmental Services is also delegated the authority to represent "Corporate Top Management", including the Owner (Regional Council) and Chief Administrative Officer as indicated in the Region's Drinking Water Quality Management Standard Operational Plan.

Management review is an important mechanism used to assess the management system to ensure its continuing adequacy, suitability and effectiveness, as well as to evaluate system performance, and address any decisions or actions necessary to improve the program. Requirements for management review are dictated by each management system standard that currently comprises the Region's Integrated Management System. To satisfy each management system standard, the following must be considered:

- Integrated Management System Policy
- Operational Performance
- External Communication and Customer/Consumer Feedback
- Legal and Other Requirements
- Management System Performance
- Environmental Management Programs
- Summary of Audit Results
- Emergency Response Testing
- Action Items from Previous Management Review
- Comments, Suggestions, Recommendations for Improvement

In addition to requirements listed above, the Ministry of the Environment's Drinking Water Quality Management Standard has specific requirements for management review as it relates to municipal drinking water systems. A supplemental report has been provided which outlines the Drinking Water Quality Management Standard management review requirements and performance results for York Region's drinking water systems in 2010. Performance results indicate successful implementation and operation of the Ministry's Drinking Water Quality Management Standard requirements (*see Attachment 1*).

York Region continues to evaluate its conformance against each management system standard

Both ISO 9001 and ISO 14001, along with the Drinking Water Quality Management Standard emphasize the importance of audits as a management tool for monitoring and verifying the effective implementation of an organization's policy for quality and/or environmental management. A distinct benefit of the audit process is to ensure compliance with legal requirements. In 2010, 27 internal, five compliance, and four external (surveillance) audits were completed at the Region's water, wastewater and waste management facilities. A summary of the Region's water, wastewater and waste management facility audits completed in 2010 are listed in Table 2.

Table 2
Summary of Audits for Water, Wastewater and Waste Management Facilities
2010

Facility Type	Internal Audit(s) (internal review to confirm compliance with ISO/DWQMS requirements)	Compliance Audit(s) (to confirm compliance with legal requirements)	External Audit(s) (external review to confirm ISO/DWQMS registration/accreditation)
Water	21	0	1
Wastewater		0	3
Waste Management	6	5	
2010 Total	27	5	4

York Region will implement an internal compliance audit program using a three phase approach, starting in 2011

Compliance audits are required periodically by the ISO 14001 standard. In 2008, a three-year compliance audit program was completed whereby audits were conducted by an external consultant. In the spirit of continual improvement, a three-phase approach to internalizing the compliance audit program is underway. A summary of the three phase approach is outlined below.

Phase 1

- York staff shadow consultant as they conduct compliance audits
- York staff enhance auditing qualifications and apply for auditing designations
- Standard set of procedures and a defined methodology with prescribed checklists developed and applied during compliance audits

Phase 2

- York staff supported by consultant throughout the compliance audit process
- Review and update standard set of procedures, methodology and checklists

Phase 3

- Consultant performs verification audits on a select number of compliance audits performed by York staff
- Review and update standard set of procedures, methodology and checklists

The intent of developing and implementing an internal Compliance Audit Program is to develop qualified in-house capability to conduct this recurring work, reduce the turn around time in completing audit finding reports, and foster a learning development opportunity for Regional staff in attaining auditing certification. This will be accomplished while still maintaining the integrity and value of compliance audits through appropriate training, and the use of prescribed procedures and checklists developed by an experienced consultant. As management system audits are a long-term recurring program activity, the business case exists to conduct more of this audit work with qualified internal resources, while still ensuring the right balance of internal and external audits are completed. Verification audits will still be conducted by third party consultants as part of the internal compliance audit program.

Continual improvement in management systems motivates adoption of root cause analysis in corrective action plans

Corrective action in the spirit of continual improvement is emphasized within the Region's Integrated Management System. The goal of identifying root causes is to reduce unnecessary effort and resources, contain errors, and prevent reoccurrence. In June 2010, a well attended root cause analysis was conducted to investigate variations in calibration and asset tagging procedures for water and wastewater equipment. Corrective actions were derived from the workshop and are currently being implemented. Moving forward, a cross section of affected staff are better engaged in root cause analysis. As appropriate, a root cause analysis approach will be incorporated with corrective actions in response to non-conformances raised during audits.

Findings from the 2010 Management Review continue to demonstrate that York Region meets all commitments prescribed through management standards

Outputs from management review meetings include any decisions and action items related to possible changes to the policy, objectives, targets, and other elements of the Integrated Management System. Generation of action items not only demonstrates commitment to continual improvement, but also confirms interaction with members of Top Management to adjust, revise and improve the management system. Action items from the management review meeting, which tend to be administrative in nature are recorded, tracked and reported by staff at subsequent management review meetings.

York Region's management review process demonstrates management system commitments are met with respect to providing water, wastewater, and waste

management services that protect public health, and the environment while meeting the needs of our growing and thriving communities. Below is a summary of key action items generated from the Drinking Water Quality Management Standard, ISO 9001 and ISO 14001 management review meeting on September 29, 2010.

- Improve dissemination of information related to compliance results
- Ensure pertinent Operations staff review compliance audit report findings
- Present all applicable regulations and correspondences with external agencies as a reference for management
- Include updates in management review report on source water protection assessment reports
- Investigate the completion date of “State of the Aquifer and Lake” report
- Added statement explaining how the Integrated Waste Management Master Plan will address updates to the Waste Diversion Act
- Follow-up on Departmental Incident Communication Plan

As stated above these items are primarily administrative in nature and demonstrate a rigorous commitment to continuous improvement through our integrated management system.

Available resources are important in maintaining the Region’s integrated management system

Resources are broadly defined as things needed to adequately implement and maintain management systems, including financial resources, human, and physical work environment. As part of the maintenance and continual improvement of the management systems, resources required to operate the system are discussed at management review. Since August 2010, employees from both the Environmental Services Department and waste management operating contractors contribute to maintaining the existing management systems.

Following completion of Phase 1 of the internal Compliance Audit Program, the detailed resource requirements to implement subsequent phases of the program will be considered. Any additional resource requirements will be brought forward as part of the 2012/2013 budget approval process and will include a business case analysis.

5. FINANCIAL IMPLICATIONS

Approximately \$50,000 was spent to maintain and expand the Region’s integrated management system in 2010

The external costs of maintaining the Region’s existing management system (ISO 9001, ISO 14001, and Drinking Water Quality Management Standard), as well as expanding the ISO 14001 program to include waste management systems and facilities in 2010 was

approximately \$50,000. Out of this total, approximately \$18,000 was spent on annual external (surveillance) audits performed by the third party registrar. All associated costs were included in the 2010 Environmental Services Operating Budget.

6. LOCAL MUNICIPAL IMPACT

In accordance with the *Safe Drinking Water Act, 2002*, each local municipality is required to develop and implement a Drinking Water Quality Management System for their drinking water systems. Accreditation status may vary across municipalities depending on the selected accreditation option and the scheduling availability of the Canadian General Standards Board (CGSB) to complete on-site and verification audits. The accreditation status of York Region and the nine local municipalities is summarized in Table 3.

Table 3
Summary of Drinking Water Quality Management System Accreditation Status
for York Region and Local Municipalities

Municipality	Accreditation Option	Status
Town of Aurora	Full Scope – Entire Accreditation	On-site verification audit scheduled March 29, 2011
Town of Georgina	Full Scope - Entire Accreditation	On-site verification audit completed February 9, 2011
Town of East Gwillimbury	Full Scope – Entire Accreditation	Awaiting on-site verification audit to be scheduled by CGSB*
Township of King	Limited Scope – Entire Accreditation	Achieved
Town of Markham	Full Scope – Entire Accreditation	Achieved
Town of Newmarket	Full Scope – Entire Accreditation	On-site verification audit scheduled April 1, 2011
Town of Richmond Hill	Full Scope – Entire Accreditation	Achieved
City of Vaughan	Full Scope – Entire Accreditation	Achieved
The Town of Whitchurch-Stouffville	Full Scope – Entire Accreditation	On-site verification audit scheduled March 30 and 31, 2011
York Region	Full Scope – Entire Accreditation	Achieved

* Canadian General Standards Board (CGSB) was contracted by the Ministry of the Environment as the sole accrediting body for the Drinking Water Quality Management Standard.

7. CONCLUSION

Management review is an important part of the success of the Region's Integrated Management System and a significant source of continuous improvement. By communicating our performance to Regional Council it demonstrates leadership and commitment to ongoing review and evaluation of the Region's environmental and quality management system.

For more information on this report, please contact Laura McDowell, Director of Environmental Promotion and Protection at (905) 830-4444 Ext. 5077.

The Senior Management Group has reviewed this report.

(The attachment referred to in this clause is attached to this report.)

WATER SUMMARY REPORT FOR REGIONAL COUNCIL

REPORTING PERIOD:

JANUARY 1 TO DECEMBER 31, 2010

REGULATORY COMPLIANCE AND POLICY

ENVIRONMENTAL PROMOTION AND PROTECTION BRANCH

ENVIRONMENTAL SERVICES DEPARTMENT



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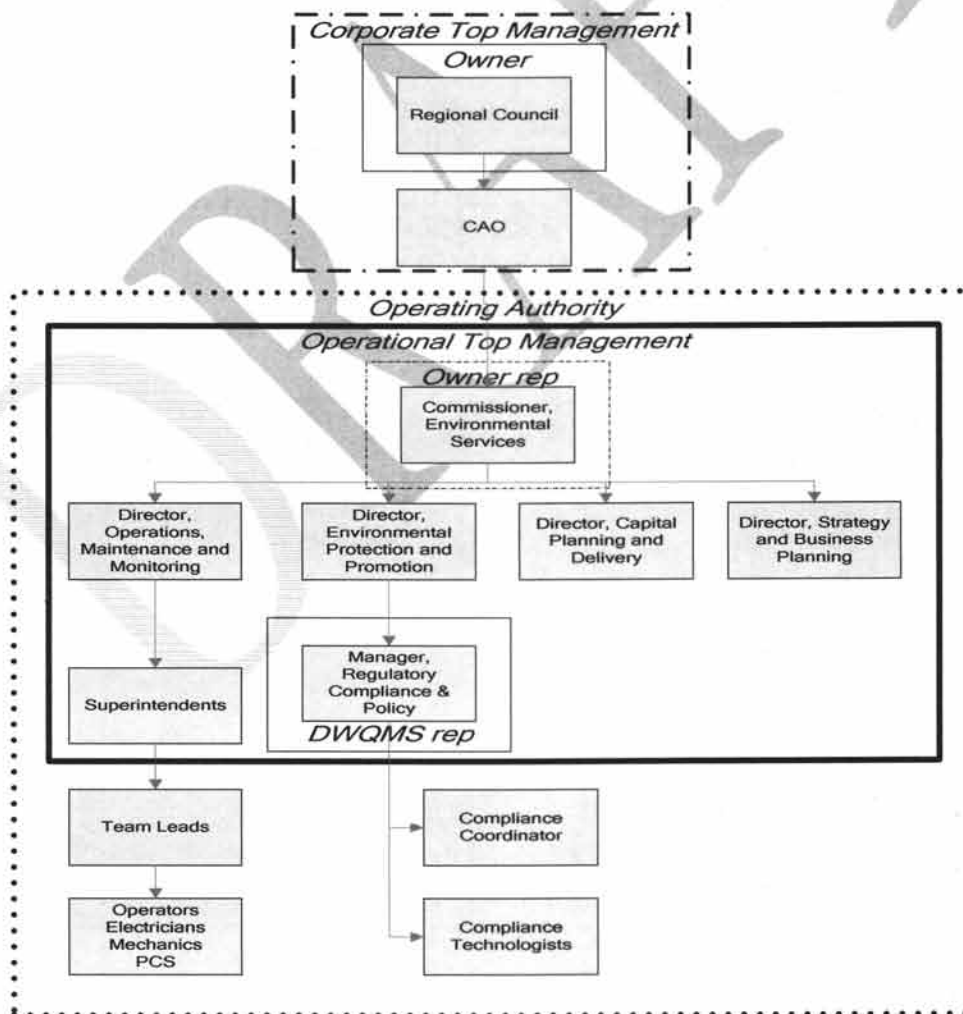
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FOREWORD

In accordance with the Drinking Water Quality Management Standard Management Review meetings are held twice annually with Operational Top Management (Figure 1). The purpose is to review the management system to ensure its continuing adequacy, suitability and effectiveness, as well as evaluating the performance of the system, and address any decisions or actions necessary to improve the program. Owners of the drinking water system, who also form Corporate Top Management (Regional Council) are to be provided with an understanding of York Region's Drinking Water Quality Management System. The Water Summary Report for Regional Council has been provided, which outlines the Drinking water Quality Management Standard management review requirements and performance results for York Region's drinking water systems in 2010. Performance results indicate successful implementation and operation of the Ministry's Drinking Water Quality Management Standard requirements.

Figure 1
Organizational Structure of Roles



1.0 REVIEW OF IMS POLICY

The “Integrated Management System Policy” was originally developed in December 2008 and it outlines the commitments we make for our management systems. It provided an opportunity to integrate existing Quality and Environmental Management Systems along with the Drinking Water Quality Management Standard into an Integrated Management System (IMS)

The management system policies for Environmental Services indicate that the IMS Policy must be reviewed on an annual basis.

The policy was last updated on January 22, 2010 and reviewed at the March 24, 2010 Management Review meeting. The IMS Policy was reviewed for continuing suitability during the March 23, 2011 Management Review meeting.

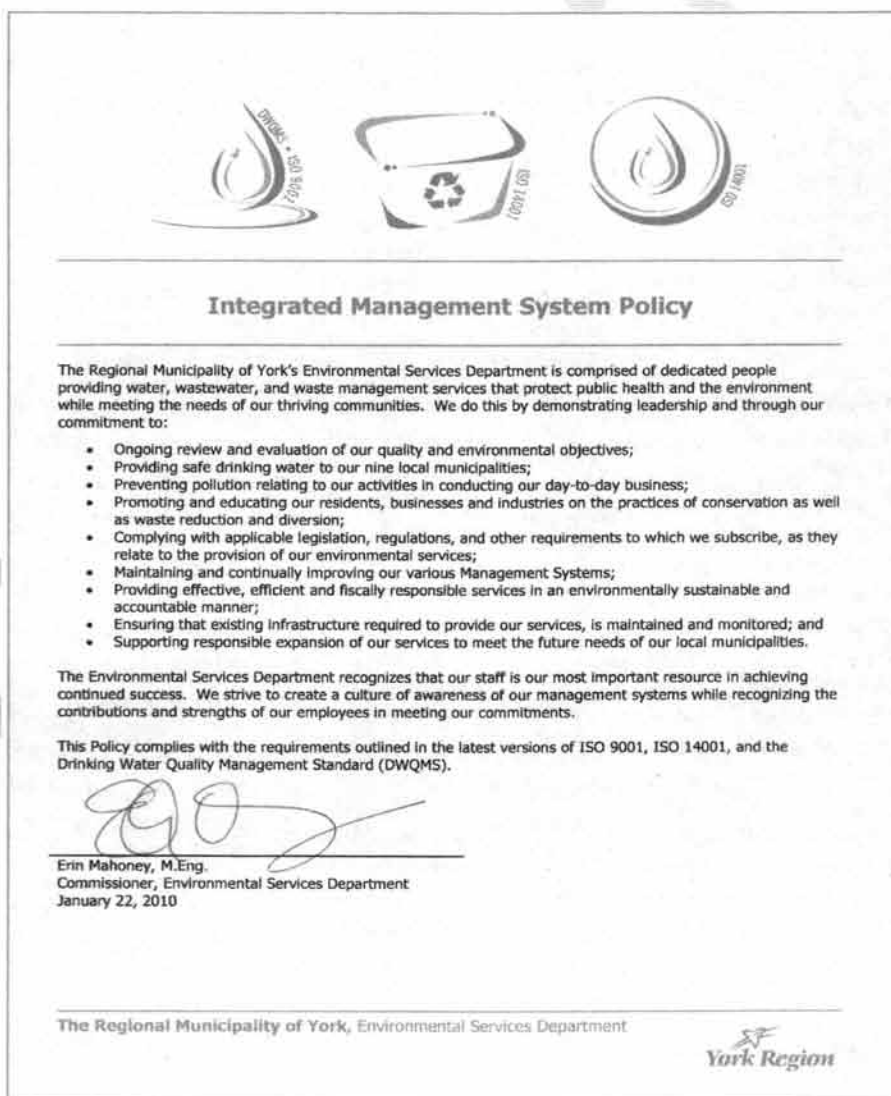


FIGURE 2: INTEGRATED MANAGEMENT SYSTEM POLICY

2.0 OPERATIONAL PERFORMANCE

The operational performance section outlines how the drinking-water systems are performing, highlighting any operational issues that require attention from the management team.

2.1 INCIDENTS OF REGULATORY NON-COMPLIANCE

All regulatory non-compliances, identified during the MOE inspection process, will be reported during management review.

TABLE 1: MOE INSPECTIONS FOR WATER, WASTEWATER AND SOLID WASTE

<i>System:</i>	<i>Year:</i>	<i># MOE Inspections Completed:</i>	<i># Non-Compliance Findings:</i>	<i># Best Practice Recommendations:</i>
Water	2008	14	1	6
	2009	22	1	5
	2010	9	0	1

In 2010, there were no regulatory non-conformances and only one best practice recommendations identified by the Ministry of the Environment (MOE) during inspections of the Region's water facilities.

The best practice identified by the MOE in 2010 during inspections of water facilities was a recommendation to ensure all operations staff review the requirements of the Operating and Emergency Procedure entitled "High and Low Lockout Alarms" on an annual basis. A recurring task in Intalex requires the procedure to be reviewed on an annual basis.

2.2 INCIDENTS OF ADVERSE DRINKING-WATER TESTS

To assist in the detection of real-time performances in the drinking-water systems, programs exist such as online monitoring through Supervisory Control and Data Acquisition (SCADA) and a rigorous sampling program scheduled in SiteFX. These monitoring and testing methods verify the quality of the drinking water. All reportable incidences are tracked and reported, but not all incidences are considered adverse. True adverse results will be reported separately during management review.

TABLE 2: SUMMARY OF DRINKING-WATER TESTS

<i>Year:</i>	<i>Parameter:</i>	<i>Quarter 1</i>	<i>Quarter 2</i>	<i>Quarter 3</i>	<i>Quarter 4</i>	<i>Total</i>
2010	# micro tests performed	2,164	1981	2215	2,081	8,441
	# micro exceedances	0	0	1	0	1

Georgina WTP

Year:	Parameter:	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total
				(coliform)		
	# reported adverse (all other parameters*)	2 Georgina WTP (sodium) Keswick WTP (fluoride)	2 Schomberg Well 3 (CL residual) NMKT Magna (CL residual)	3 Keswick (fluoride x2) Kleinburg Well 2 (lead)	3 NMKT Glenway (CL residual) Keswick WTP (fluoride) AUR/NMKT BV (Cl residual)	10
	# reported system adverse (**)	0	0	2 Ansorveldt (pressurex2)	2 Ansorveldt (pressure) Jefferson (pressure)	4

NOTE: micro (microbiology), Cl (chlorine).

*All other parameters as required by Schedules 1, 2 and 3 in O.Reg. 169/03, and Schedules 6, 10, 23 and 24 in O.Reg. 170/03.

**The number of reported system adverse relates to water system pressure and are not considered adverse conditions by regulation; rather it is a best practice reporting recommendation from the Ministry of the Environment.

2.3 DEVIATIONS FROM CRITICAL CONTROL POINT (CCP) LIMITS AND RESPONSE ACTIONS

This section is a requirement of the DWQMS Management Review process. A critical control point (CCP) is considered an essential step or point in the subject system where you apply control, to prevent or eliminate a drinking-water health hazard or to reduce it to an acceptable level. In York Region's drinking-water systems, CCPs include, but are not limited to:

- primary disinfection;
- secondary disinfection;
- system pressure; and
- turbidity (for surface water).

A critical control limit is considered the point at which a response procedure is initiated for each CCP.

Critical Control Points (CCPs) and limits were established for each drinking-water system facility through the risk assessment exercise in late 2008. CCPs are monitored and tracked through the SCADA system and responded to with the use of the Operating and Emergency Procedures.

In all cases where there was a possibility of improperly disinfected water being directed to the distribution system, the system functioned properly to lock-out the treatment process, record the information in the SCADA system and operators responded to the alarm. If there was an adverse sample received, operators used applicable Operating and Emergency Procedures to respond and report as required to the Ministries of the Environment and Health, and other parties. Note: system lock-out levels are set well above regulatory requirements to ensure proactive response.

2.4 OPERATIONAL KEY PERFORMANCE INDICATORS (KPIs)

The operational performance section of management review is used to cover operational performance parameters that are tracked and measured in our drinking-water, wastewater and solid waste management systems. A number of health-related water quality parameters will be reported. There are many operational control measures in place to assist in maintaining peak performance of our systems and to ensure regulatory requirements and stakeholder expectations are met. SCADA, Maximo (a computerized work management system), SiteFX (a scheduled sampling program), Operator training and numerous Operating and Emergency Procedures are examples of the control measures that help to ensure peak operational performance.

TABLE 3: KEY PERFORMANCE INDICATORS FOR COMPLIANCE

INDICATOR	2009	2010 Q1	2010 Q2	2010 Q3	2010 Q4	2010
WATER						
Turbidity - average value for turbidity (NTU) (Objective: <1 NTU)	0.1563	0.104	0.093	0.103	0.108	0.102
Trihalomethanes (THMs) - average value for THMs (mg/L) (Maximum Acceptable Concentration (MAC): 0.100 mg/L)	0.0208	0.0174	0.0202	0.0185	0.0171	0.018
Coliforms - number of occurrences with TC counts (P/A) (MAC: absent/not detected)	3	0	0	1	0	1
Nitrates - average value for nitrates (mg/L) (MAC: 10 mg/L)	0.1915	0.1840	0.1440	0.1495	0.1359	0.1534
Lead - average value for lead (mg/L) (MAC: 0.01 mg/L)	0.0001	0.0003	0.0002	0.0002	0.0003	0.0002
Boil water advisories – number issued by York Region	0	0	0	0	0	0
WATER & WASTEWATER						
Percentage of staff meeting York Region training requirements of 50 hours per year (cumulative by quarter) (target 100%)	100%	4%	36%	56%	99%	99%*

Almost all operational key performance indicators (KPIs) are within regulatory requirements with the exception of one KPIs related to coliforms. One coliform sample was received from Georgina Water Treatment Plant in Q3 of 2010. Although this target has not been met, the incident was reported (as required) and effectively actioned (with respect to response and follow-up) to the satisfaction of the Ministries of Environment and Health.

* One employee was away on short term disability and was unable to complete all training requirements within 2010.

2.5 RAW WATER SUPPLY AND DRINKING WATER QUALITY TRENDS

As part of each Municipal Drinking Water Licence (MDWL) application, York Region is required to provide information pertaining to raw water supply and drinking water quality trends. This information should identify key water quality issues that need to be addressed by Management.

In general, all key parameters meet the Ontario Drinking Water Standards (ODWS). Iron is one of the main exceptions in most of the well sites, as it is consistently over the minimum detection limit (MDL) of 0.3 mg/L. This is a characteristic of the York Region aquifers (Genivar, 2007)¹. Chloride and sodium show some increase over time, but minimal when compared against the ODWS aesthetic objectives. Production wells where sodium is above the reportable level of 20mg/l are monitored for compliance issues. York Region surpasses the required sampling frequency and results consistently meet or are below health related limits. Quarterly water quality is reviewed against all standards and reported to Operations, Maintenance and Monitoring.

There are key parameters that can be considered as indicators of human influence, such as road salting and agricultural activities. These parameters include chloride, sodium, nitrate, sulphate and phosphate. In addition, general water quality conditions, such as conductivity, pH, iron, manganese, total trihalomethanes, and total haloacetic acids are considered parameters of interest, as they affect water quality and treatment.

Annual Water Quality Report

Section 11 of Ontario Regulation 170/03 requires that an Annual Report be prepared for water systems by February 28th each year. The reports describe the operation of water supply systems owned and operated by York Region, as well as the quality of drinking water. The 2010 Annual Water Quality Reports were completed by the Regulatory Compliance and Policy Group using operational data. Data from the water quality reports are available to the public through the york.ca website.

http://www.york.ca/Services/Water/Water+Quality+Reports/default_Annual_WQ_Reports_New.htm

2.6 EXTERNAL COMMUNICATION AND CUSTOMER/CONSUMER FEEDBACK

A procedure for communication is required in all management system standards. Our procedure outlines communication with various levels of the organization and its' stakeholders. This section of management review provides a summary of communication received from our customers/consumers regarding water services.

2.6.1 DRINKING WATER SYSTEMS

- May 20, 2010: A resident inquired about the status of the Sharon Elevated Tank. The OMM Manager received the inquiry and forwarded it to the assigned Project Manager for follow-up.

¹ Genivar Ontario Inc. 2007.2007. Water Quality Characterization and Issues identification for Municipal Groundwater Supply System-Final Report.

The Project Manager promptly replied by providing a project status update. The resident was satisfied with York Region's response and follow-up.

- June 25, 2010: A resident was concerned about teenagers loitering near the Georgina Water Treatment Plant and the community tap. The Team Lead contacted the York Regional Police (YRP) who flagged this area as a 'high complaint zone' meaning any future concerns would be dispatched immediately to the police department. The Team Lead contacted the resident and provided his direct contact information, as well as the contact for the YRP local office. The resident was satisfied with York Region's response and follow-up.
- August 15, 2010: A resident was concerned because there was only a "trickle of water" from the taps in her house in Maple. The phone call was received by the Environmental Services' Water Resources group and forwarded to OMM for follow-up. Wide spread power outages had occurred due to a storm event in the local area. The Director, OMM contacted the resident and indicated power had been restored and water reservoirs were filling up. The resident was satisfied with York Region's response and follow-up.
- November 23, 2010: A resident was concerned about a chlorine smell from water out of the tap in the resident's home in Ansnorveldt. An Operator investigated the concern and took a water sample (tested for chlorine residual). The sample was within normal range. The Operator had a discussion with the resident about water treatment process. The resident was satisfied with York Region's response and follow-up.
- December 29, 2010: A resident was concerned about flooding on sidewalks and backyards near London Road Elevated Tank. Resident did not leave contact information, but the incident was appropriately addressed (details are outlined in section 4.7: Action Items from Emergency Follow-Up Meeting, London Road Elevated Tank).

2.6.2 OTHER COMMUNICATION

Communication material is developed and delivered to York Region residents throughout the year. A York Works newsletter is distributed semi-annually (Volume 16 delivered Spring 2010). The york.ca website has links to a plethora of communication material for residents. Numerous media releases are also available to residents. The following topics have been delivered to York Region residents through media releases:

March 2010

- March 25, 2010: Celebrate Sustainable Works with York Region this April and May

April 2010

- April 19, 2010: York Region launches bathroom renovation contest

May 2010

- May 10, 2010: The Regional Municipality of York celebrates national public works week with free family fun day
- May 18, 2010: York Region's Grade 4 students ride the environmental wave at York Children's Water Festival
- May 21, 2010: The Regional Municipality of York recommends new measures to curb phosphorus levels in Lake Simcoe watershed

- May 25, 2010: The Regional Municipality of York's annual rain barrel sale promotes smart use of environmental resources

June 2010

- June 9, 2010: The Regional Municipality of York rain barrel sales event overwhelmingly popular success
- June 18, 2010: The Regional Municipality of York supports the proposed Water Opportunities and Water Conservation Act
- June 28, 2010: The Regional Municipality of York opens new Schomberg Water Treatment Plant

July 2010

- July 5, 2010: The Regional Municipality of York reminds residents to be water-conscious, especially in hot weather
- July 7, 2010: The Regional Municipality of York reminds residents to water wisely during hot summer months

August 2010

- August 13, 2010: The Regional Municipality of York reminds residents to water lawns and gardens sparingly throughout August
- August 16, 2010: The Regional Municipality of York requests water conservation assistance from City of Vaughan residents
- August 17, 2010: The Regional Municipality of York thanks City of Vaughan residents for water conservation efforts

September 2010

- September 24, 2010: The Regional Municipality of York begins consultation on Long-Term Water Conservation Strategy
- September 24, 2010: The Regional Municipality of York launches Long-Term Water Conservation Strategy with "Water Cafes"

October 2010

- October 15, 2010: The Regional Municipality of York provides free water-use audits to local industrial, commercial and institutional businesses
- October 22, 2010: The Regional Municipality of York ranks first in the GTA for quality of municipal drinking water

November 2010

- November 3, 2010: The Regional Municipality of York offers rebates on purchase of humidifiers for York Region residents

3.0 MANAGEMENT SYSTEM PERFORMANCE

This section outlines how defined processes in the management systems are performing systemically.

3.1 THE RISK ASSESSMENT PROCESS

Element 7 of the DWQMS requires a risk assessment process to be documented that identifies potential hazardous events and associated hazards then assesses and ranks risks related to each hazardous event. Furthermore, control measures must be identified and critical control points must be realized. Reliability and redundancy of equipment must also be considered. The currency of information and assumptions used in the risk assessment process must be verified annually and a re-assessment of the risks in the drinking-water systems must occur every 36 months.

The risk assessment database contains all drinking-water facilities and their associated risks. The database was created and is maintained by the Regulatory Compliance and Policy group, however the risk assessment is completed by Operations, Maintenance and Monitoring staff. The full database, "RiskAnalysisDB," can be found in:

\\ykr-fs1.ykregion.ca/tw_water_wastewater\$/Administration/A00 - Administration General/Compliance Portfolio/DWQMS/CCPDB/

3.1.1 CHANGES TO THE RISK ASSESSMENT PROCESS

- With the rollout of the new management system tracking software, Intelix 5, a review of the current risk assessment database was conducted. Intelix allows custom modules to be developed, enabling the design of a risk assessment module in the software. The addition of this module will eliminate the need for an external database, which is currently being used to capture the risk assessment findings. In the interim, a test version of the risk assessment module in Intelix has been created and is currently under review.
- The DWQMS requires an annual risk review and a risk re-assessment every three years. These risk assessment-related tasks have been scheduled in Intelix. The annual risk review was completed during the Quality/Environmental Management System Planning Workshop held on March 18, 2010 and the re-assessment is scheduled for March 2012.

3.1.2 NEW SITE ASSESSMENTS

- The Schomberg Water Treatment Plant experienced a DWQMS risk assessment in January 2010. The only critical control points found were chlorine, UV disinfection and treated turbidity, all of which either have redundancy back up or are locked out through SCADA, if required.
- Future assessments/reviews include: Nobleton Well 4, Nobleton Elevated Tank, Ballantrae Wells (following upgrades), Georgina Water Treatment Plant (following upgrades), new King City Elevated Tank and Mount Albert Well 3.

3.2 SUMMARY OF AUDIT RESULTS

Audits are required in all management systems. Internal audits are designed to evaluate conformance. York Region policy specifies that each drinking water and wastewater system facility is audited internally once every three years. A procedure has been developed that outlines the internal audit process (i.e. scheduling, audit preparation, conducting the audit and reporting results).

All internal and third-party audit results are communicated during management review. All internal and third-party audit reports are available in Intelix. All action items generated from audits are issued through Intelix.

3.2.1 INTERNAL AUDITS

- Twenty-one internal audits for the DWQMS, ISO 9001 and ISO 14001 management systems were completed in 2010. One major NCR (relating to missing calibration stickers on new equipment) and twelve minor NCRs were identified through the internal audit process. Fifteen Preventative Action Reports were issued, which reinforces continual improvement in the system
- No compliance audits were conducted for water and wastewater facilities in 2010. Action items derived from previous compliance audits conducted between 2006 and 2008 by an external consultant have either been resolved or assigned for further action.
- On March 1, 2011 a revised Request for Proposal to develop an in-house compliance audit was released to proponents.

3.2.2 THIRD-PARTY AUDITS

- A DWQMS Surveillance System Audit was scheduled to be conducted by the Canadian General Standards Board (CGSB) on December 10, 2010. All recent versions of documentation requested by the CGSB, including the Region's DWQMS Operational Plan were submitted on October 29, 2010. No findings report on the surveillance system audit has been received.
- ISO 9001:2008 External Surveillance Audit (SGS) – January 25-27, 2010. Four minor NCRs were identified. A corrective action plan was developed and approved by the registrar on February 10, 2010. The audit itinerary and report are available in Intelix.

3.3 EMERGENCY RESPONSE TESTING

Emergency preparedness and management is essential for the provision of safe drinking water. An emergency is considered a potential situation or service interruption that may result in the loss of the ability to maintain a supply of safe drinking water. There are approximately 30 procedures that have been developed to effectively handle emergency situations in our drinking water systems.

Several methodologies have been identified to train staff and test emergency procedures including:

- large-scale mock emergency testing of procedures related to a specific event
- small-scale, localized emergency testing that audits a specific procedure

- requirement for staff to review all emergency procedures annually during the "Emergency Procedures Review and Sign-Off" (required by December 31st of each calendar year and tracked in Intelex)

- participation in the York Region annual emergency exercise

Results of emergency response testing will be reported during management review.

3.3.1 EMERGENCY TESTS

May 31, 2010 "Operation Strike Three"

In 2010, York Region's annual emergency exercise dubbed "Operation Strike Three" involved York Region's Corporate Emergency Management and York Regional Police, in partnership with Environmental Services, City of Vaughan and Town of Markham. The Regional Emergency Operations Centre (REOC) was fully activated and operational. This emergency exercise satisfies the Region's Integrated Management System Policy on Emergency Preparedness and Response.

The exercise presented a severe weather scenario resulting in a prolonged blackout, water supply disruption and a plane crash. First responders were required to deal with a plane crash and its effects. The exercise called for an evacuation, where hundreds of residents were advised to evacuate the area, and the establishment of a Reception Centre. The Regional Emergency Control Group (RECG) provided support to the site and both municipalities.

"Operation Strike Three" was a functional exercise utilizing a simulation cell (simcell). The "simcell" simulated communications between the REOC, the site, and the Town of Markham and City of Vaughan EOC's. The simcell was the main driver of the exercise, delivering messages by telephone to the REOC.

3.4 ACTION ITEMS FROM PREVIOUS MANAGEMENT REVIEW(S)

Action items from management review meetings are initiated to address deficiencies in the management systems. At each management review, the status of action items from previous management reviews will be reported.

The previous Integrated Management System Review Meeting was held on September 29, 2010. Meeting minutes are in Intelex, as well as in eDOCS (reference 2596305). Below is a summary of the action items generated from that meeting (three of 10 action items remain open, two are overdue).

TABLE 5: ACTION ITEMS FROM PREVIOUS MANAGEMENT REVIEW MEETING

ITEM No.	STATUS	DESCRIPTION	ACTION TAKEN	PERSON RESPONSIBLE	TARGET DATE
00001	Closed	Follow up on the results of the E. coli sampling.	February 13, 2011: The Management Review report indicated an E.Coli result at Newmarket Glenway tank. Following further review the sample was taken while the tank was out of service for cleaning and maintenance. There was no regulatory sample collected at this location that had a positive E.Coli result. The report was corrected to reflect this.	Brett Bloxam	December 31, 2010

ITEM No.	STATUS	DESCRIPTION	ACTION TAKEN	PERSON RESPONSIBLE	TARGET DATE
00002	Closed	Communicate with Operation, Maintenance and Monitoring any compliance abnormalities upon discovery (include Brett Bloxam, Laura McDowell and Michele Samuels)	Upon discovery, a Compliance Technologist is to confirm either in Site FX, adverse water quality database or Team Lead before it is communicated to the Program Manager, Compliance and Management Systems (C&MS). Once confirmed, the Program Manager, C&MS emails the Director, Operations Maintenance and Monitoring (OMM), Director, Environmental Promotion and Protection and the Manager, Regulatory Compliance and Policy advising them of the abnormality along with the action taken by OMM staff.	Joe Vieira	December 31, 2010

ITEM No.	STATUS	DESCRIPTION	ACTION TAKEN	PERSON RESPONSIBLE	TARGET DATE
00003	Open	Include Operations Maintenance and Monitoring (OMM) in review of the audit report before reporting to Committee and Council.	Once compliance audits are completed in 2011, the findings will be circulated to OMM staff for comment, as well as any subsequent Council Report.	Joe Vieira	December 31, 2010
00004	Closed	Review the proposed list of facilities to be audited in each phase of the internal Compliance Audit Program and ensure comments are captured before the Request for Proposal is released.	Operations Maintenance and Monitoring staff was consulted prior to the release of the Request For Proposal to Develop an In-house Compliance Audit Program.	Joe Vieira	December 31, 2010
00005	Open	Create fact sheets on regulations, comments, letters, and collaborations with local municipalities. To be used as a high level of communication for management.	Currently being developed	Lisa Lin	June 31, 2011
00006	Closed	Report at the 2011 March Management Review Meeting, the updates to the assessment reports.	Updates to the Source Water Protection Risk Assessment Reports are included in Management Review Report	Joe Vieira	March 31, 2011

ITEM No.	STATUS	DESCRIPTION	ACTION TAKEN	PERSON RESPONSIBLE	TARGET DATE
00007	Closed	Follow up with Water Resources group to determine if subsequent State of the Aquifer reports can be finalized by the fall Management Review Meeting.	State of the Aquifer Reports for the previous reporting year is completed by the spring of the subsequent year. At year end Management Review Reports, raw water trend data will be reported for that reporting year.	Joe Vieira	March 31, 2011

ITEM No.	STATUS	DESCRIPTION	ACTION TAKEN	PERSON RESPONSIBLE	TARGET DATE
00008	Closed	Add a statement explaining how the Integrated Waste Management Master Plan will address Waste Diversion Act updates in the Management Review Report.	The following statement (provided by Dave Gordon) was added to the Management Review Report under the Waste Diversion Act: (WDA). "The Region's Integrated Waste Management Master Plan will examine the implications related to changes to the WDA, as well as anticipate how new Extended Producer Responsibility could affect the quantity and types of waste the Region manages, and what impacts this will have on the Region's solid waste programs/ infrastructure".	Joe Vieira	March 31, 2011
00009	Open	Follow up with Laura McDowell about the Departmental Incident Communication Plan.	A follow up email was sent following the September 2010 Management Review Meeting.	Joe Vieira	December 31, 2010

ITEM No.	STATUS	DESCRIPTION	ACTION TAKEN	PERSON RESPONSIBLE	TARGET DATE
00010	Closed	Ensure that the March 2011 Management Review Report is sent out two weeks ahead of the meeting.	Management Review Report was issued on March 9, 2011. Two weeks in advance of the March 22, 2011 Management Review Meeting	Joe Vieira	March 1, 2011

3.5 STATUS OF OTHER MANAGEMENT ACTION ITEMS IDENTIFIED BETWEEN REVIEWS

In addition to action items generated through the management review process, other management action items, identified between management reviews, to address deficiencies in the management systems, will be reported at each management review.

Action items raised at water Emergency Follow-Up Meetings will be reviewed at management review. Emergency Follow-Up Meetings are held after an incident has occurred in the management systems. There were no water Emergency Follow-Up Meetings held in 2010.

3.6 CHANGES THAT COULD AFFECT THE MANAGEMENT SYSTEMS

Similar to the management review requirements in ISO 9001 and 14001, the changes that could affect the management systems allow for discussion of changes that have occurred within the organization or management system over the review period. This section provides an opportunity to report plans for the management system and program updates.

3.6.1 NEW THIRD PARTY AUDITOR REQUIREMENTS

a) Describe the Root Cause

All future corrective action reports submitted by York Region in response to raised Non-conformity Reports by our third party auditor, SGS SSC Canada Inc. now require a root cause to be identified and clearly stated. SGS expects clients to have a defined process for root cause analysis (i.e. Fault Tree, 5 Whys, and Fishbone). This new stipulation was mandated by SGS through its accreditation body, the ANSI-ASQ National Accreditation Board.

b) Recommended Guidelines for Completing Non-Conformity Reports to SGS

The corrective action taken by York staff must be verified to ensure that it was effective in resolving the non-conformity. There are many methods that may be used. The method must be identified and will be reviewed by the third party auditor.

3.6.2 DWQMS DRINKING WATER WORKS PERMITS AND LICENSES

As part of the *Safe Drinking Water Act*, Ontario Regulation 453/07, York Region officially received Drinking Water Works Permits and Municipal Drinking Water Licences for the first eight drinking water systems on January 29, 2010 and for the York Drinking Water System on March 12, 2010:

- Ansnorveldt Drinking Water System
- Ballantrae/Musselman's Lake Drinking Water System
- Georgina Drinking Water System
- Kleinburg Drinking Water System
- King City Drinking Water System
- Nobleton Drinking Water System
- Mount Albert Drinking Water System
- Schomberg Drinking Water System
- York Drinking Water System

3.6.3 MUNICIPAL DRINKING WATER LICENSING PROGRAM ACCREDITATION DELAY

The Canadian General Standards Board (CGSB), the Accreditation Body for the Province's Municipal Drinking Water Licensing Program released a Communication Update on March 30, 2010 to address the recent audit backlog situation. The CGSB attributes the backlog situation to normal start up issues, including ongoing program development, attempting to maintain a team that is relative to the size of the program, as well as auditor shortages.

A concerted effort is underway to address bottlenecks in the Accreditation Program process. Steps to rectify the situation include securing additional auditors, incorporating the program knowledge gained over the last year to optimize resources, and re-evaluating the internal audit team resources to ensure the highest level of client service.

The CGSB has assured that they will correct the audit backlog situation by the fall of 2010. In the interim, the Accreditation Program continues and York Region's first surveillance audit was scheduled for December 10, 2010. All requested documentation has been submitted to CGSB, however no audit findings have been shared with York Region, although it is expected during summer 2011.

3.6.4 ADMINISTRATION CHANGE TO MUNICIPAL DRINKING WATER LICENSING PROGRAM ACCREDITATION CERTIFICATES

The Accreditation Program Agreement between the CGSB and York Region was executed in December 2009, however the agreement was signed before the list of York Region's Drinking Water Systems were finalized on January 29th and March 12, 2010. In the Agreement, there is a stipulation that requires York Region to inform CGSB of any changes that impact the Accreditation Program. A revised agreement along with an updated list of York Region Drinking Water Systems (Schedule B) was executed by the Director, Environmental Promotion and Protection on September 2, 2010.

3.6.5 RISK ASSESSMENT MODULE AVAILABLE THROUGH INTELEX

To comply with DWQMS requirement to identify, rank and mitigate potential hazards, a new module is being designed within Intelix. The hazard assessment is currently kept in an Access database, which became unreliable and susceptible to uncontrolled data entry. The advantage of housing the Hazard database in Intelix is that it allows operations staff access to their specific sites assessment and have better control of data entered. The Hazard Database is scheduled to be completed in May 2011.

3.7 RESOURCES TO MAINTAIN THE MANAGEMENT SYSTEMS

Resources are broadly defined as those things needed to implement and maintain the management systems – they include human, physical work environment and financial resources. As part of the maintenance and continual improvement of the management systems, resources required to run the system will be discussed at management review.

- Resources in Regulatory Compliance and Policy (2010) that help to maintain the existing management systems:
 - Manager, Regulatory Compliance and Policy
 - Program Manager, Management Systems and Compliance
 - Compliance Technologists/Compliance Project Coordinator (4 PFT)
 - ISO Students (1 TFT, 1 Summer Student)

- 25 Internal Auditors from the Environmental Services Department [including Operations, Maintenance and Monitoring (OMM), Capital, Planning and Delivery (CPD), and Environmental Promotion and Planning (EPP)]
- Resources in Operations, Maintenance and Monitoring that help to maintain the existing management systems: 88 PFTs

Out of the June 10, 2010 “Root Cause Analysis (RCA) Workshop on Recurring Non-Conformity Related to Calibration and Asset Tagging” an action item was raised to communicate the need for additional resources to manage the calibration work demand. In 2010, there is only one Instrument Technician along with a temporary full time employee for support is dedicated to the calibration, repairing and replacing of equipment/instruments. It is estimated there are over 5,000 pieces of equipment/instruments within Operations Maintenance and Monitoring facilities and approximately 75 per cent require calibration annually in order to meet regulatory requirements.

To meet additional work demands, the PCS/SCADA group have developed a business case for additional resources in the 2011 budget. One additional PCS/SCADA staffing complement was approved in the 2011 budget.

- External audit costs incurred in 2010 relating to continued ISO 9001/ISO 14001 registration, \$17,965.73
- Intelix 5 upgrade
 - Intelix on-site end user training (2 days) provided to Regional staff, \$3,898.50
- Internal Auditor Training
 - Internal audit on-site training on DWQMS and ISO 14001/9001 (2 days) provided to Regional staff, \$3,616.00
- Regulatory Requirements Index
 - Consultant reviewed all applicable legislation and standards related to water, wastewater and solid waste activities and developed Regulatory Requirements Index: \$4,802.50

3.8 INFRASTRUCTURE REVIEW

A summary of York Region's infrastructure maintenance, rehabilitation and renewal programs are documented to ensure adequate infrastructure is in place to operate and maintain our systems. The Environmental Services Department has extensive infrastructure management programs, such as the Infrastructure Improvement Program (IIP) and Maximo. This section of management review will be used to report on system reliability, system capacity and an update from the IIP.

TABLE 6: SUMMARY OF INFRASTRUCTURE REVIEW PROGRAMS

	2009	Q1	Q2	Q3	Q4	2010
SYSTEM RELIABILITY (WATER & WASTEWATER)						
Number of scheduled Preventive Maintenance work orders	27,367	5,715	5,874	5,322	6,771	23,682
Number of Preventive Maintenance work orders identified as unplanned/unscheduled (by reported date)	2,269	528	705	911	707	2,851
Watermain breaks	4	1	1	1	0	3
Watermain breaks caused by incorrect stakeout	0	0	0	0	0	0
SYSTEM CAPACITY (WATER)						
Days with water restrictions	0	0	0	0	0	0
ML distributed	119,746	N/A	59,814	N/A	63,412	123,226
Per capita demand (L/day)	335	N/A	325	N/A	344	335

- Consultant reviewed all applicable legislation and standards related to water, wastewater and solid waste activities and developed Regulatory Requirements Index: \$4,802.50

3.9 INFRASTRUCTURE REVIEW

A summary of York Region's infrastructure maintenance, rehabilitation and renewal programs are documented to ensure adequate infrastructure is in place to operate and maintain our systems. The Environmental Services Department has extensive infrastructure management programs, such as the Infrastructure Improvement Program (IIP) and Maximo. This section of management review will be used to report on system reliability, system capacity and an update from the IIP.

3.9.1 WATER AND WASTEWATER INFRASTRUCTURE STATUS REPORT

On an annual basis, a Water and Wastewater Infrastructure Status Report updates Regional Council on the status of priority water and wastewater infrastructure projects required to meet system demands identified as triggers for release of additional capacity and approvals under the *Planning Act*.

Below is a link to the 2010 infrastructure status report:

<http://www.york.ca/NR/rdonlyres/hasjre2nzolxvhlor5makjxlu47cjoyu24vqsrgt4d5hcudc42rqgiyh5ufwovkziume4x34yiwyxjfy2ur36h3pf/rpt+7+cls+4.pdf>

3.10 OPERATIONAL PLAN: CURRENCY, CONTENT, UPDATES

As part of the DWQMS requirements, an Operating Authority is required to document a QMS for each drinking-water system in the form of an Operational Plan. The Operational Plan is required by the Director's Direction; therefore it must be submitted to the MOE for acceptance. Essentially, the Operational Plan is the document that describes how the Regional Municipality of York plans to meet the requirements of the DWQMS. It is then the responsibility of the Operating Authority to implement the plan.

The Operational Plan was submitted to the Ministry of the Environment (MOE) and the Canadian General Standards Board (CGSB, the accreditation body) on December 22, 2008. The current revision of the DWQMS Operational Plan is available through Intelix. At least annually, as scheduled through Intelix, a periodic document review occurs on the Operational Plan. The Operational Plan was reviewed and revision two was released in July 2010 in response to the recommendations made by the CGSB during the DWQMS On-Site Verification Audit in August 2009. Document Change Requests may be issued at any time if changes to the Operational Plan are required to ensure it is current. The next periodic document review, including a review of system descriptions and process flow charts, is scheduled in August 2011.

3.11 DWQMS FINANCIAL PLAN

In Part Two of the Walkerton Inquiry Report, Justice Dennis O'Connor highlighted the importance of ensuring that municipalities plan for the long-term financial sustainability of their drinking-water systems to guarantee the safety of their drinking water into the future.

As part of the province's commitment to implement all of Justice O'Connor's Walkerton Inquiry recommendations, the Minister of the Environment (MOE) has made a regulation (O. Reg. 453/07) under the Safe Drinking Water Act, 2002 (SDWA) that prescribes the requirements for Financial Plans to be prepared as part of the Municipal Drinking-Water Licence Program set out in Part V of the SDWA.

Watson & Associates Economists Ltd. was retained by York Region to prepare a water financial plan as part of the five submission requirements for the purposes of obtaining a municipal drinking water license as per the *Safe Drinking Water Act, 2002*. The Region's Water Financial Plan was approved by Regional Council on June 24, 2010.

In general, the Region's financial plan presents an in-depth analysis of capital and operating needs, a review of current and future demand versus supply, and consideration of available funding sources. The financial plan spans a period of at least six years, with the ability to amend the plan at any time, and add information beyond what is prescribed in the guidelines, if deemed necessary.

Below is a link to the approved water financial plan:

<http://www.york.ca/NR/rdonlyres/yddxfmqti4mmswilzpegloos3aptiu5ysco6meqhedm4gfu24wafp7mftfhh33yowtvd3mr24ighgw5k4ackup4h/rpt+6+cls+1.pdf>

4.0 COMMENTS, SUGGESTIONS, RECOMMENDATIONS FOR IMPROVEMENT

Staff suggestions and recommendations for improvement are an integral part of the management review process.

- Three future initiatives currently being developed for implementation in 2011:
 - Enhance IMS training program with the addition of interactive training videos for new staff, along with refresher training and quiz modules on selected topics available on Intelex.
 - Develop a Request for Proposal to Develop an Improvement (Enhancement) Plan for the Region's Integrated Management System.
 - Investigate other procedures, programs or activities in areas within the Environmental Services Department where a management system or at least some form of quality control/ quality assurance could be applied.
 - Submit an improvement (enhancement) plan.
 - Evaluate and prioritize activities from the improvement (enhancement) plan.
 - The facilitation of a root cause analysis workshop on a re-occurring operational non-conformance.



Operations, Maintenance and Monitoring Branch Status Update

Presentation to Environmental
Services Committee

Brett Bloxam
May 11th, 2011

#3345571

Overview

- ❑ Key Water and Wastewater Objectives
- ❑ Managing Risk and Compliance
- ❑ Operational Excellence
- ❑ Current Challenges and Accomplishments



Key water and wastewater objectives

- ❑ Provide clean and safe drinking water
- ❑ Support population and employment growth
- ❑ Proactively manage \$2.6 Billion in assets
- ❑ Return good quality effluent to the environment
- ❑ Minimize risk through compliance with Legislation and Drinking Water Quality Management Standard



Water and Wastewater service delivery supports York Region's thriving communities



Environmental Services Committee / May 11, 2011

Slide 3

Proactively managing risk and compliance

- ❑ Efficient and cost effective 24/7 delivery of water and wastewater services
- ❑ Ensure 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



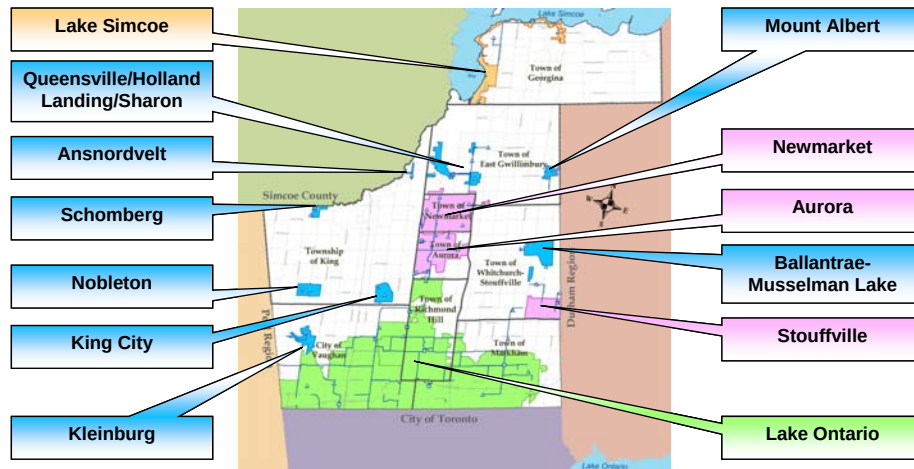
Operations, Maintenance & Monitoring is responsible for operating, maintaining and protecting assets valued over \$2.6 billion



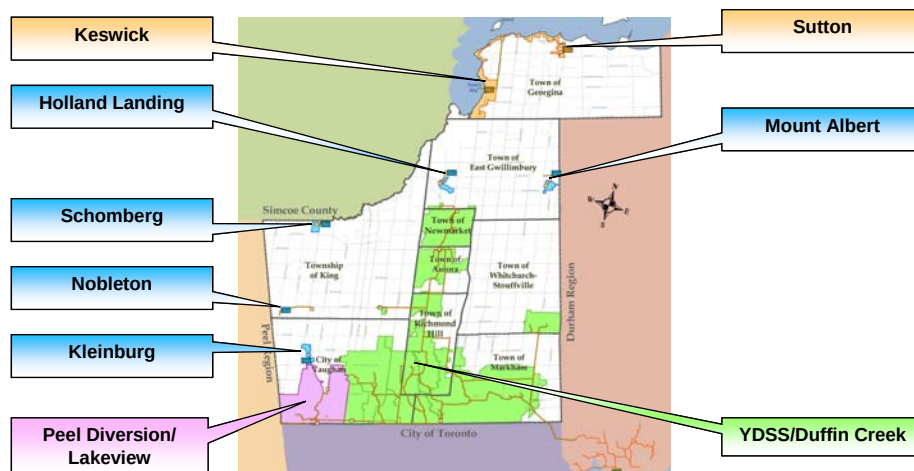
Environmental Services Committee / May 11, 2011

Slide 4

Sustainable drinking water supply Where does it come from...



State-of-the-art sanitary sewage servicing Where does it all go...



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



Ensuring safe drinking water and protecting the environment requires top marks



Environmental Services Committee / May 11, 2011

Slide 7

Participation in rigorous audit program

Audit Type	Standard/Regulation	Frequency	Facilities Audited in 2010
Internal Audits	ISO 9001 ISO 14001 DWQMS	Each facility audited every 3 years	21 internal audits
MOE Inspections	Ontario Water Resources Act	Frequency not regulated, typically inspected annually	1 Wastewater (4 inspections in 2009)
	Safe Drinking Water Act	Frequency is regulated. Inspected annually, in some cases twice a year. Approximately one third of inspections are unannounced	14 Water
Compliance Audits	ISO 14001	Periodically	*42 selected for 2011 per multi year audit plan (0 in 2010)
External Audits	ISO 9001 ISO 14001 DWQMS	Annually Bi-Annually Annually	8 Water 8 Wastewater Document surveillance audit initiated

52 facilities were audited in 2010



Environmental Services Committee / May 11, 2011

Slide 8

MOE inspections – water and wastewater

System:	Year:	# MOE Inspections Completed	# Non-Compliance Findings	# Best Practice Recommendations
Water	2009-2010	14	2	1
Wastewater	2009-2010	1	0	1

- ❑ 100% of operators compliant with required training hours
- ❑ 99.71% score on MOE facility inspection reports
- ❑ 99.99% of drinking water samples met the standard
- ❑ 15 adverse water quality incidents reported to the Ministry of the Environment and Medical Officer of Health



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



Environmental Services Committee / May 11, 2011

Slide 9

Annual Chief Drinking Water Inspector Report results

	2009-2010 Facility Inspection Rating (%)	2009-2010 Water Quality (% of Tests Meeting Standards)
Durham	99.71	99.92
Halton	99.39	99.95
Peel	97.07	99.96
Toronto	100.00	99.91
York	99.71	99.99

9 local municipalities scored an average of 98.76% for facility inspections and 99.88% of drinking water samples met Ontario water quality standard

York Region is a leader in drinking water quality



Environmental Services Committee / May 11, 2011

Slide 10

10,465 treated water tests taken in 2010

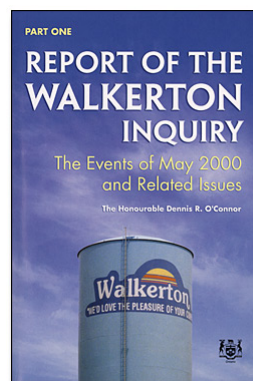
Type of Test	Number of Tests Performed	Examples of parameters
Microbiological	8625	E.coli, total coliforms
Organics	949	disinfection by-products (Trihalomethanes, Haloacetic Acids), pesticides, herbicides
Inorganics	891	fluoride, sodium, nitrates



Comprehensive testing ensures high quality water is consistently delivered to customers

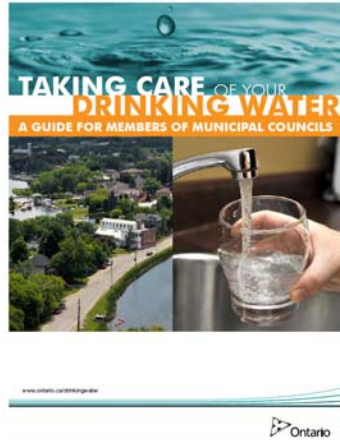
Safe Drinking Water Act – Standard of Care

- ❑ Section 19 of the Safe Drinking Water Act requires people with decision making authority, such as councillors, to exercise a level of care, diligence and skill a reasonably prudent person would be expected to hold
- ❑ “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 January 1st, 2013



Guide distributed to committee members at local Councils. Regional staff available to provide information and respond to questions.

Safe Drinking Water Act – Standard of Care



- ❑ 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 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

Delivering operational excellence

- ❑ Energy audits completed at 7 key water and wastewater facilities
- ❑ Upgrading energy efficient equipment reduces energy cost at Leslie PS
- ❑ University of Toronto Drinking Water Research Group – process optimization improves water quality in Georgina
- ❑ Partnership with George Brown College to develop advanced maintenance training for Operators
- ❑ Measuring performance using key indicators - participation in OMBI
- ❑ Developed Operations, Maintenance and Monitoring business improvement plan
- ❑ 5 year computerized work management system (Maximo) plan
- ❑ Robust asset management programs balance performance and lifecycle costs



Keeping downward pressure on costs through key efficiency initiatives

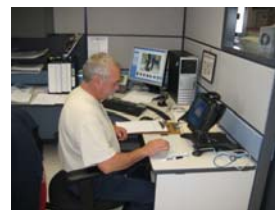
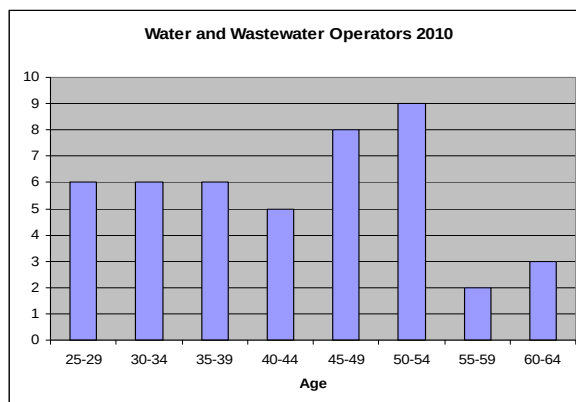
OMM 2011 continuous improvement initiatives

- ❑ Collaboration
 - ❑ Ensure operators provide input to capital infrastructure
 - ❑ Collaborate with local municipal and interregional partners with service delivery
- ❑ Accountability
 - ❑ Accountability of staff to Council, the public and stakeholders for programs and services
- ❑ Compliance
 - ❑ Manage water and wastewater regulatory and quality requirements
- ❑ Efficiency and Effectiveness
 - ❑ Focus on service and aligning activities to achieve results and operational excellence



Focused vision and key initiatives drive operational excellence

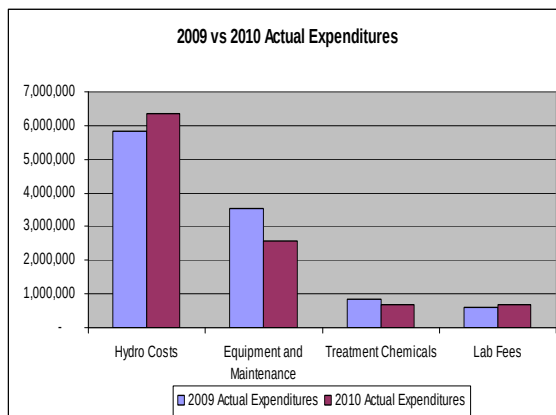
Finding the next generation of operators



Proactive succession plan in place to address looming Provincial shortage of qualified operators

Operations budget drivers

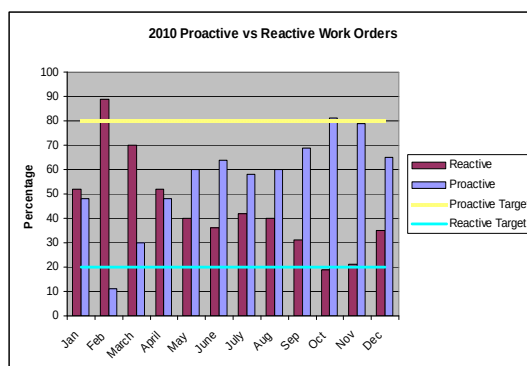
- ❑ Energy (Hydro and Fuel)
- ❑ Salaries
- ❑ Chemical costs
- ❑ Equipment costs
- ❑ Asset maintenance
- ❑ Training
- ❑ Health and Safety
- ❑ Maintaining Compliance
- ❑ Laboratory fees
- ❑ Purchased water costs



Operations continues to look for efficiencies to balance costs with service delivery expectations and compliance

Improved maintenance practices realize benefits

- ❑ Increased preventative maintenance and inspections to prevent high cost of failure repairs
- ❑ Better understanding of maintenance cost due to improved use of computerized work management system (Maximo)
- ❑ Better planning and scheduling of work
- ❑ Improved proactive vs. reactive maintenance



Strong proactive maintenance programs reduce high cost of reactive maintenance

Addressing our current challenges

- ❑ Maintaining compliance with regulations, York Region ISO programs and Drinking Water Quality Management Standard
- ❑ New and changing regulations for health and safety
- ❑ Long term proactive asset maintenance and management
- ❑ Continued investment in water and wastewater systems
- ❑ Retaining and attracting staff in competitive market
- ❑ Supporting 120 active capital projects, with over 50 in construction in 2011
- ❑ Operating facilities during capital expansion
- ❑ Future resources to operate and maintain a more complex and expanded asset base



Operations well positioned to successfully tackle these challenges



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Key Accomplishments

- ❑ 99.71% score on MOE inspection reports
- ❑ 99.99% of drinking water samples met Ontario drinking water standard
- ❑ Significant increase in proactive vs. reactive maintenance
- ❑ Reduce vehicle fuel consumption by 2%
- ❑ Enhanced utility locate program
- ❑ 5 year Maximo plan and Business Improvement Plan developed
- ❑ External recognition through 2011 Ontario Water Works Association Annual Conference
- ❑ Strong participation in Earth Hour at key facilities



Operations continues to deliver operational excellence



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Questions