

Our File/N/Réf.
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DATE 1 September 2000

TO/DEST. Co-ordinator, Planning & Environment Committee

FROM/EXP. Director Water Division
Environment & Transportation Department

SUBJECT/OBJET **NEW PROVINCIAL DRINKING WATER REGULATIONS**

RECOMMENDATION

That the Planning & Environment Committee and Council receive this report regarding the new Provincial Drinking Water Regulations for information.

1. **BACKGROUND**

Following the Walkerton E-coli drinking water outbreak, the Ontario Ministry of the Environment (MOE) announced the new initiative called "Operation Clean Water" on 8 August 2000. There were a number of announcements with respect to Operation Clean Water, with the most immediate and significant impact being the Ontario "Drinking Water Protection" Regulation 459/00, which came into effect immediately upon being published in the Ontario Gazette on 26 August 2000. As well, proposed changes to the Ontario "Waterworks and Sewage Works" Regulation Number 435/93, were also announced.

Regional staff and Eastern Ontario groups affected by these new Regulations attended an information session on the afternoon of 22 August hosted by the MOE. Based on the information provided during the Session and on the information in the New Regulations posted on the Province's Environmental Registry, Environment and Transportation Department, Health Department and Legal Department staff met to discuss the impacts on the Region.

This information report is based on staff's understanding of the impacts of these new regulations and is provided to the Planning and Environment Committee and Council for their information. The major issues in the Regulations are identified in the following sections along with the possible impacts on the Region, and as of 1 January 2001, the New City of Ottawa.

2. APPLICATION OF THE REGULATIONS

The new regulations apply to all Public and Private water treatment or distribution systems, with the following exceptions;

- A water system which obtains all of its water from another water system to which this regulation applies to.
- A water system that supplies less than 50,000 litres per day, on at least 88 days in every 90 day period, unless the system serves more than 5 private residences.
- A water system that is not capable of supplying water at a rate greater than 250,000 litres per day, unless the system serves more than five private residences.

As such, these regulations apply to all facilities owned and operated by the Region and many privately owned well water systems in our Region, which supply water to more than five private residences. The Region will work with the local office of the MOE to assess the impact of these regulations on Private Water Systems within Ottawa-Carleton. This assessment could have impacts on the Region with regards to the health of the community, and in regards to the guarantor relationship the Region has with some of these private systems.

3. ONTARIO DRINKING WATER STANDARDS

Regulation Requirements

Along with the new Ontario Drinking Water Protection regulation, the Ministry has also issued new Ontario Drinking Water Standards. These Standards replace the previous Ontario Drinking Water Objectives.

The most significant impact of changing from “Objectives” based drinking water compliance to “Standards” based drinking water compliance is that the standards now have the force of law behind them to force municipalities or suppliers to meet the compliance requirements rather than relying on “Objectives” or non-binding targets.

Operational Impacts

There are no operational impacts on the Region as we have always met the previous objectives.

Financial Impacts

There should be no financial impact due to this regulatory change.

Customer Impacts

There is no direct impact on our customers due to this change.

4. ACCREDITED LABORATORIES

Regulation Requirements

All laboratories that perform drinking water analysis must now be accredited for the tests they perform, by the Standards Council of Canada or its equivalent. The Standards Council has partnered with the Canadian Association for Environmental Analytical Laboratories (Inc.) (CAEAL) to provide this accreditation service.

The new regulations allow for a phasing in of the requirements for having all analyses carried out by an accredited laboratory. The respective dates for the phasing in period are:

a. Microbiological Parameters:

- As of 26 August 2000 - Analysis must be carried out by either a fully accredited or interim accredited laboratory.
- After 31 October 2000 - A fully accredited laboratory must carry out microbiological analysis. Interim accreditation will no longer be acceptable.

b. All other Parameters Listed in the Regulations:

- After 31 October 2000 - Either a fully accredited laboratory must carry out all analyses for these parameters or a laboratory that has begun the accreditation process for each parameter listed in the regulation.
- After 28 February 2001 - A fully accredited laboratory must carry out all analyses for these parameters. Interim accreditation will no longer be acceptable.

Operational Impacts

The Region's laboratories at the Britannia Water Purification Plant and at the R.O. Pickard Environmental Centre are currently accredited, or have interim accreditation, for all microbiological parameters. Full accreditation for the microbiological parameters is expected by the 31 October 2000 date as set out in the regulations.

The Region uses a combination of Regional, private and public laboratories to carry out water quality analysis. Staff are reviewing the most cost-effective mix of use of these laboratories based on the accreditation requirement, and on the revised water sampling frequency requirements. In all cases staff will make certain that any laboratory performing analysis on our drinking water will meet the accreditation requirements of the new regulation.

Financial Impacts

The financial impact due to the Region's accreditation requirements is estimated at \$45,000 for the Britannia laboratory. This includes the accreditation yearly fees, as well as specific laboratory protocols, which must be followed to meet the accreditation requirements. The R.O. Pickard Centre laboratory accreditation fees do not have a new financial impact since that laboratory has been accredited for various analysis since 1997, and the fees are already incorporated into the annual operating budget. We anticipate an increase from the private sector laboratories due to their accreditation requirements. Staff cannot estimate the financial impact for the private sector accreditation requirement at this time.

Customer Impacts

There is no direct customer impact due to the laboratory accreditation requirement of the regulation.

5. FREQUENCY OF SAMPLING

Regulation Requirements

The new regulations provide a detailed sampling schedule for owners based upon the source water and level of water treatment provided. The Region currently operates two surface water treatment facilities with filtration (Britannia and Lemieux Island Water Purification Plants), discharging into a single central water distribution system, and five separate ground water supply systems (Kings Park in Richmond, Carp, Vars, Munster Hamlet and Carleton Lodge). It will be necessary to ensure that our sampling programs meet the different requirements for each of these systems. Listed below are the impacts for each one of our systems:

Parameter	Britannia, Lemieux Island, and Central Distribution System	Kings Park, Carp, Vars, Munster and Carleton Lodge	General Comments
Microbiological	No impact; Region is in Compliance.	No impact; Region is in Compliance.	
Turbidity	No impact; Region is in Compliance.	Regulations necessitate additional sampling and analyses. Region will install on-line continuous monitoring at each location.	Seasonal variation in Ottawa River alkalinity, and current pH adjustment process and application point are expected to cause exceedance of WPP turbidity limit at Britannia. This exceedance will require reporting to MOH and MOE. This exceedance does not reflect impaired or adverse water quality but must be reported to remain in compliance with current Regulations.
Chlorine Residual	No impact; Region is in Compliance.	No impact; Region is in Compliance.	The chlorine residual requirements in the standards do not take into consideration the use of chloramines for final disinfection purposes. Modification to the regulations to address the use of chloramines as a final disinfectant will have to be addressed by the MOE, since it is a proven technology, and is in use by many large water systems (RMOC, Toronto).
Fluoride	No impact; Region is in Compliance.	No impact; Region is in Compliance.	
Volatile Organics	No impact; Region is in Compliance.	Regulations will necessitate additional sampling and analysis.	
Inorganics	No impact; Region is in Compliance.	No impact; Region is in Compliance.	
Nitrates/Nitrites	No impact; Region is in Compliance.	Regulations will necessitate additional sampling and analysis.	

Pesticides	No impact; Region is in Compliance.	Regulations will necessitate additional sampling and analysis.
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Operational Impacts

There are no operational impacts at the two Water Purification Plants. The frequency of analysis for the Region's Communal Well Systems will increase for some specific parameters due to the changes in the new Standards as compared to the previous Provincial Objectives. The parameters which require more frequent analysis will have little impact on the operations of the Region's Communal Well Systems since the quality of our drinking water in these systems meets or is better than the water quality limits in the Standards.

Financial Impacts

The one time financial impact of adding continuous online turbidity meters at all of the Communal Well Systems is estimated to be \$30,000. The ongoing yearly operational financial impact due to the sampling frequency and analysis requirements and the ongoing operation and maintenance of the new turbidity meters is estimated to be \$25,000.

Customer Impacts

There is no direct impact on our customers due to the sampling frequency and analysis changes in the regulations.

6. TREATMENT REQUIREMENTS

Regulation Requirements

The new Standards specify minimum acceptable levels of treatment. For any owners using a surface water (lakes or rivers) as a source, the minimum treatment requirement is chemically assisted filtration followed by disinfection that persists into the distribution system or plumbing.

For systems using groundwater as a source, the minimum level of treatment is disinfection that persists into the distribution system or plumbing.

This minimum treatment level requirement supersedes any previous C of A (Certificate of Approval) issued by the Province for any facility. All owners not currently in compliance must do so by 31 December 2002.

Operational Impacts

There are no operational impacts since the Region currently meets all of these treatment requirements.

Financial Impacts

There are no financial impacts due to this specific treatment requirement.

Customer Impacts

There are no impacts on our water customers due to this specific treatment requirement.

7. PUBLIC ACCESS TO INFORMATION

Regulation Requirements

The new regulations require specific information to be released to the general public. The owner of a water system must now prepare and submit quarterly reports to the MOE and make these reports available to the public. Each report must describe the operation of the water system and the measures taken to comply with the Regulations, including a summary of all analytical results of the drinking water sampled.

The Regulations also require the owner of a water treatment or distribution system to make available the following information without charge to any member of the public;

- A copy of every report given to the owner by an accredited laboratory on the analysis of a drinking water sample;
- A copy of every report or record made of the analysis of water samples at the water plants or in the water distribution, which are considered operational parameters. Operational parameters are specifically defined in the New Regulations. Analysis of operational parameters can be performed by on line instruments, by licensed operators or by licensed laboratory technicians;
- A copy of every approval and every directive under the Act that applies to the water system and is still in effect;
- A copy of every quarterly report;
- A copy of any “adverse water quality” reports, as defined in the regulation;
- A copy of Regulation 459/00 and of the Ontario Drinking Water Standards.

The owner must make this information available within one day of having the information in their possession, and must keep this information available for a minimum of two years. For owners

with a system (s) which serve a population of greater than 10,000 persons, the quarterly reports must be available on the World Wide Web.

The regulations also require the owner of any accredited laboratory, which prepares reports of drinking water samples and analysis for owners of water systems, to send a copy of these reports to the MOE at the same time as they are sent to the owner. This means that the MOE will receive from the Region, or the laboratories preparing reports for the Region, a copy of every water quality analysis performed on our drinking water (approximately 168,000).

Operational Impacts

The Region's Water Division currently prepares a yearly Water Quality report for our customers and Council which can be found on our Web Page (www.rmoc.on.ca/water-eau). This report will now have to be updated quarterly. Documentation of water quality samples and analysis, as well as operational parameters will have to be stored and available to the public in hard copy. The intent would be to have as much information as possible available on our Web Site for customer convenience. The hard copies of the information required to be listed will be available at the Britannia Water Purification Plant.

Financial Impacts

The financial impacts include staff time for co-ordination all of the information, inputting the data on the Web, preparing the quarterly reports, making copies available to the public, providing appropriate office space for the public to view the information, advertising to inform the public of the quarterly reports, etc. We have estimated a one time up front cost of \$100,000, with an ongoing yearly operating cost of \$50,000.

The financial impact on the Region due to the reports that each accredited lab must forward to the MOE is still unknown. It has been made clear that this cost will be passed on to the owners of the water facilities, and not the MOE.

Customer Impact

The Regional water customers will be better served in that detailed water quality information will be available in a more timely fashion.

8. STAFF TRAINING

Regulation Requirements

The new Ontario Drinking Water Protection Regulation (No. 459/00) and the proposed changes to the Ontario Waterworks and Sewage Works Regulation (No. 435/93) have impacts on staff training for both water and wastewater staff. Although the new Regulations were primarily focussed on Drinking Water facilities, the proposed changes to Ontario Regulation 435/93 impacts both the Water and Wastewater facilities in all municipalities across Ontario.

The previous requirements under Regulation 435/93 stated that owners of water and wastewater facilities (four different categories; water treatment, water distribution, wastewater treatment, wastewater collection) had to provide a minimum of 40 hours of training per year for every licensed operator. The regulations have now increased this requirement by 12 hours per year, to 52 hours per licensed operator, per year.

The regulations have also added a new category of license, called “Water Quality Analyst” for those staff that are involved in sampling and analysing drinking water, and who are not licensed operators, or members of an accredited laboratory.

Operational Impacts

The main impact on the operations of water and wastewater services will be workload. The extra 12 hours of training per year per licensed operator means that there are 12 less hours of actual work being performed. For licensed operators which work on a 24 hour, 7 day per week schedule, the replacement of these critical positions to allow the extra 12 hours of training means that they have to be replaced by other licensed operators, and in many cases on overtime.

The additional licensing requirement of Water Quality Analysts will require the Region to license another 18 staff, as well as provide 52 hours of training per year for each of them. Although the regulation exempts laboratory technologists who work in accredited laboratories from requiring the Water Quality Analysts license, the Environment and Transportation Department believes that it is in the best interest of the Region to have these staff licensed and trained.

The extra training also increases the documentation and co-ordination requirements of this training program.

Financial Impact

The Water and Water Environment Protection Divisions currently have approximately 260 licensed operators. The additional 12 hours of training per year impacts both workload and the training budget.

The estimated financial impact due to the additional staffing needs to support the operations and maintenance activities affected, and the staff training requirements, is \$300,000. The financial impact on the New City of Ottawa as of January 1 2001 will be even greater as all licensed wastewater collection operators from the local municipalities within the Region will have to be added to this estimate.

Customer Impact

The new training requirements of the regulations should have no direct impact on our water customers.

9. FACILITIES INSPECTION

Regulation Requirements

The new regulations require owners of Water Treatment facilities to have their facilities inspected by a professional engineer registered in the Province of Ontario.

The first reports are required within a specific time frame. For the Region, this includes the following facilities, with the dates of when the reports must be submitted to the MOE;

- a. Vars Water Treatment Plant and Communal System (30 November 2000)
- b. Munster Hamlet Communal Water System (31 January 2001)
- c. Lemieux Island Water Purification Plant (31 March 2001)
- d. Britannia Water Purification Plant (31 March 2001)
- e. Carleton Lodge Water System (31 March 2001)
- f. Carp Communal Water System (31 May 2001)

These reports must be prepared based on the Terms of Reference provided by the Province, and completed to the satisfaction of the MOE. The Regulations make the owner responsible for all costs, including the hiring of the Engineer and the completion of the reports. The MOE will then use this engineer's report to possibly make changes to the Certificate of Approval for each one of our facilities. As well, based on the findings of the engineer's report, the MOE will instruct the owner on the timing of the next engineer's report. An engineer's report will be required every three years for each facility, unless earlier reports are required by the MOE.

As well, the MOE has informed us that they will now be performing yearly inspections and will provide us with an inspection report for each of our facilities.

The MOE has recently completed their inspections of the Britannia and Lemieux Island Water Purification Plants. The Region has received one order for each of these facilities, which requires the Region to make application for a “permit to take water” for drawing water from the Ottawa River. The MOE inspection reports showed compliance with all other aspects.

Operational Impacts

The operational impacts due to the inspection requirements include staff time to co-ordinate an Engineering Consultant Agreement and Contract, supporting the engineer in carrying out the facility assessments, and meeting our obligations as set out in the MOE’s terms of reference. Other impacts are possible depending on any changes to each individual Certificate of Approval. Staff time will also be required to co-ordinate the yearly MOE inspections of each of our facilities.

Financial Impacts

The estimated cost to have the first engineering reports prepared for all of our facilities is \$500,000. The ongoing requirement for engineering reports is estimated at \$150,000 per year, assuming that our facilities will only require engineering reports every three years. The yearly MOE inspections will have minimal financial impact.

Customer Impact

The Engineering reports and the MOE inspection reports should have no impact on our customers.

10. SUMMARY

The new Provincial Drinking Water Regulations have substantial impacts on Water and Wastewater Facility owners across the Province of Ontario. Even though the Regulatory changes are substantial, these regulatory changes have no direct impact on the quality of the drinking water that the Region provides to our water customers since our water already meets, or is better than the new Ontario Drinking Water Standards.

The impacts on the Region’s operations are substantial when considering the requirements and the timelines in the new regulations. The impacts of the timelines are compounded when you consider that the Region, and the local municipalities, are going through an amalgamation over this same time period.

The financial impacts are estimated to be \$630,000 in one time costs, and \$570,000 in ongoing yearly operating costs. Since the Water and Wastewater services which are impacted by these changes are funded from the water and sewer rates, staff and council will have to consider how best to address these financial impacts. The Province has stated that some financial support may be available. Final details on the criteria for the Provincial funding are still unknown. Staff

will be bringing forward a report to Corporate Services and Economic Development Committee in late September or early October to specifically address the immediate financial impacts, with other financial impacts being addressed through the 2001 budget process.

The impact of these regulations on any private water systems within the Region is still unknown. Any impacts on private water systems could have a financial impact on the Region as we are the guarantor for some of these private water systems.

The Region's Water customers are also impacted by these new regulations. Customers will now have access to up to date water quality information. Our customers will also be impacted by the financial requirements of these new regulations, since the water and wastewater systems are fully rate supported.

Appendix A provides the various issues and their operational, financial and customer impacts in a condensed table format.

Regional staff have forwarded specific comments to the Province regarding the new regulations, a copy of which can be obtained from the Region's Legal Department.

*Approved by
André Proulx, P.Eng.*

AP/DW/jw

APPENDIX A

Environment and Transportation Department

Review of Ontario's New Drinking Water Regulations and Standards

<u>Regulatory Issue</u>	<u>Operational Impact</u>	<u>Financial Impact</u>	<u>Customer Impact</u>
Drinking Water Standards	<ul style="list-style-type: none"> No impact. 	<ul style="list-style-type: none"> No impact. 	<ul style="list-style-type: none"> No direct impact.
Accredited Laboratories	<ul style="list-style-type: none"> More stringent Laboratory Protocols. Co-ordination of Accreditation inspections. 	<ul style="list-style-type: none"> Ongoing yearly costs of \$45,000. 	<ul style="list-style-type: none"> No direct impact.
Frequency of Sampling	<ul style="list-style-type: none"> Increased sampling and analyses for Communal Well Systems. Increased Operation and Maintenance of new Turbidity meters. 	<ul style="list-style-type: none"> One time up front costs of \$30,000. Ongoing yearly costs of \$25,000. 	<ul style="list-style-type: none"> No direct impact.
Minimum Treatment Requirements	<ul style="list-style-type: none"> No impact. 	<ul style="list-style-type: none"> No impact. 	<ul style="list-style-type: none"> No direct impact.
Public Access to Information	<p>Staff time required to:</p> <ul style="list-style-type: none"> prepare quarterly reports; update website; assist in public inquiries; maintain all sampling information. 	<ul style="list-style-type: none"> One time up front costs of \$100,000. Ongoing yearly costs of \$50,000. 	<ul style="list-style-type: none"> Improved customer service through additional, more timely water quality information.
Staff Training	<ul style="list-style-type: none"> Additional relief staff required to allow licensed operators to attend additional 12 hours of training per year. Additional training for water quality Analyst staff. Additional licensing needed for summer relief staff. Greater co-ordination for training and work cover-off. 	<ul style="list-style-type: none"> Ongoing yearly costs of \$300,000. 	<ul style="list-style-type: none"> No direct impact.
Facility Inspection	<ul style="list-style-type: none"> Staff time to co-ordinate Eng. Agreements and Contracts. Staff time to assist the engineer in preparing the reports. Staff time to co-ordinate MOE yearly inspections. 	<ul style="list-style-type: none"> One time up front costs of \$500,000. Ongoing yearly costs of \$150,000. 	<ul style="list-style-type: none"> No direct impact.