HALIFAX
REGIONAL MUNICIPALITY

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Item No. 11.3.1
Halifax Regional Council
April 27, 2010

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY: Carl Yates, General Manager, Halifax Water

DATE: April 22, 2010

SUBJECT: **CCME Wastewater Strategy and Draft Federal Regulations**

ORIGIN

Draft regulations under the Fisheries Act as published in Canada Gazette Part 1, March 20, 2010.

RECOMMENDATION

It is recommended that the Mayor send a letter to the federal and provincial Ministers of Environment, outlining the following concerns with the draft regulations under the Fisheries Act as published in Canada Gazette Part 1, March 20, 2010:

1. The federal regulations should reflect the approved CCME Wastewater Strategy signed on February 17, 2009 between the provinces and federal government, particularly in relation to management of combined sewer overflows.
2. There needs to be a dedicated funding program to implement the strategy, otherwise the regulations will impose significant hardship on municipalities. The funding formula should provide for one third each from the federal and provincial levels, and one third from municipalities and/or water utilities.
3. The impacts on land development and re-development need to be clarified, as related to limitations on overflows.

BACKGROUND

CCME Strategy:

The Canada Council of Ministers of Environment (CCME) signed the Canada-wide Strategy for the Management of Municipal Wastewater (the Strategy) on February 17, 2009. The Strategy has two main goals: Improved human health and environmental protection, and improved clarity about the way municipal wastewater effluent is managed and regulated. The Strategy defines national performance standards (NPS) for treated wastewater effluent: Carbonaceous Biochemical Oxygen Demand (CBOD5) - 25 mg/L; Total Suspended Solids (TSS) - 25 mg/L1; and Total Residual Chlorine (TRC) - 0.02 mg/L. This is equivalent to secondary-level treatment, and the chlorine standard effectively requires an alternative to chlorine disinfection such as ultraviolet (UV) light.

The Strategy also sets national standards for combined sewer overflows (CSOs) and sanitary sewer overflows (SSOs). Combined sewers are designed and operated to contain both sanitary sewage and stormwater runoff, while sanitary sewers are designed and operated to contain only household and commercial sanitary sewage. New development has required separate sanitary sewers since around the 1960s, but the older parts of Halifax and Dartmouth contain extensive areas of combined sewers. Both sanitary and combined sewers may overflow in wet weather, but particularly combined sewers which are intended to capture stormwater.

The national standards for combined sewer overflows are:
• no increase in combined sewer overflow frequency due to development or redevelopment, unless it occurs as part of an approved combined sewer overflow management plan;
• no combined sewer overflow discharge during dry weather, except during spring thaw and emergencies; and
• removal of floatable materials where feasible.

The national standards for sanitary sewer overflows are:
• sanitary sewer overflow frequencies will not increase due to development or redevelopment; and
• sanitary sewer overflows will not occur during dry weather, except during spring thaw and emergencies.

The Strategy document makes it clear that the objective for SSOs is elimination over time, and the objectives for CSOs is better management to reduce impacts over time.

Initial risk assessments relating to environmental risk from the effluent must be done for each wastewater treatment facility (WWTF) to establish the risk score, and this score determines the time within which the WWTF must comply with the NPS: High risk 10 years; medium risk 20 years; low risk 30 years. The main implication is for the three Harbour Solutions WWTFs, which were designed as advanced primary systems, and must be upgraded to secondary level treatment. The Halifax and Dartmouth WWTFs are medium risk, providing 20 years for the upgrade. However, if the risk associated with combined sewer overflows is greater than the WWTF risk, then 30 years is provided to address both the WWTF and CSOs. This requires further analysis, but may apply to the Halifax and Dartmouth WWTFs. The Herring Cove WWTF is low risk and therefore must be

upgraded in 30 years.

The Strategy sets out requirements for compliance monitoring, and for public reporting of results including overflow events. It provides for a five-year time frame for jurisdictions to develop environmental monitoring requirements. It also includes a requirement for toxicity testing of treated effluent. Environmental Risk Analysis studies of receiving waters must be conducted for each WWTF to determine if provincial jurisdictions need to set any standards more stringent, or in addition to, the NPS standards, for any parameters which exceed environmental objectives in the receiving waters downstream of the treated wastewater effluent discharge point.

DISCUSSION

Federal Regulations:
The federal government, through Environment Canada, has released a set of draft regulations under the Fisheries Act which were published in the Canada Gazette part 1 on March 20, 2010. There is a 60-day period provided for comments, due on May 19. These regulations are intended to implement the CCME Strategy at the federal level. However, the regulations as drafted depart in some significant ways from the wording and intent of the approved CCME Strategy. The draft regulations were published with a Regulatory Impact preamble, which sets out the rationale for the regulations including a cost-benefit analysis. The costs attributed for Nova Scotia fall well short of those anticipated by Halifax Water for our systems alone, and the benefits for Nova Scotia appear to be significantly inflated.

The major areas of departure of the regulations from the CCME Strategy (which the federal government signed as a CCME member) are as follows:

CSO Management: The Strategy indicates that CSOs may not increase in frequency due to development or re-development of lands, and that the long-term goal is better management to reduce impacts. However, the draft federal regulations require submission of a plan "for the modifications to the wastewater system that are envisaged to eliminate ... the deposit of effluent that contains deleterious substances via any overflow point of a combined sewer and a proposed schedule for implementation of the plan". This is very different from the CCME Strategy. Elimination of CSO overflows will entail significant additional costs for Halifax Water and our customers, discussed below.

Ammonia Standards: The regulations set a new standard for un-ionized ammonia, which was not part of the CCME Strategy. This may have cost implications, depending on the need for reduction of ammonia levels at some WWTFs, which has yet to be determined. Costs potentially could be in the tens of millions.

Environmental Effects Monitoring: The regulations set out new and extensive requirements for monitoring of water quality, invertebrate organisms and fish in the receiving waters. This will require consulting studies at each location, with cost implications in the hundreds of thousands over a period of years.

Administrative: There are also additional administrative requirements for transitional permits until a WWTF becomes fully compliant; for developing emergency response and reporting plans; and reporting of results. Required studies and monitoring may involve costs in the $2 million range.

Major Cost Implications:

CCME Strategy (Approved February 17, 2009)
The major costs will result from CSO management and WWTF upgrades to secondary treatment. The Halifax, Dartmouth and Herring Cove WWTFs will have to be upgraded. The Eastern Passage WWTF would also require upgrading but an upgrade to secondary treatment and capacity expansion is already planned and initiated. Some additional costs for studies and monitoring will also be incurred.

Treatment Plant Upgrades	$120,000,000
SSO Elimination	$650,000,000
CSO Management	$230,000,000 *
Total	$1,000,000,000

* The costs of CSO management will be difficult to estimate until more clarity is provided on the degree of CSO reduction required.

Federal Regulations (Draft issued March 20, 2010)
Elimination of CSOs will involve some combination of combined sewer separation to keep stormwater out of the system, and storage to capture peak flows for later release and treatment, avoiding overflow events. The cost and practical difficulties of achieving elimination of CSOs in the older parts of Halifax and Dartmouth will be significant.

CCME Strategy costs	$1,000,000,000
Additional cost to eliminate CSOs	$1,000,000,000
Total	$2,000,000,000

All of these cost estimates are order of magnitude only, and will be further refined as the requirements of the Strategy and regulations become more clear, and with more detailed engineering study.

The cost of CSO elimination required by the federal regulations will be in addition to the costs of SSO elimination already anticipated from the CCME Strategy. Our understanding is that all of these costs would be incurred within the overall 30-year time frame of the Strategy.

According to the Strategy, management of CSOs and SSOs has implications for land development or re-development, and depending on the final form of the federal regulations. SSOs must be eliminated, and CSOs either reduced or eliminated. New development has the inevitable effect of increasing both downstream SSO and CSO events through the introduction of additional base flow to the systems. Implications include the need to avoid increases in overflow frequency unless a

management plan has been approved by regulatory authorities; and the need to fully assess available system capacity and project the impacts on overflows from developments considered at the cumulative sewershed level. Limitations on land development may be required to avoid worsening any CSO or SSO overflow situations, and reductions will be required in the long term. The cost implications of this, and who would pay, is unclear at this time.

As yet, there has been no commitment of federal or provincial funding programs specifically to provide cost-sharing to address the requirements for compliance with the Strategy or regulations. Without a dedicated funding program, utilities and municipalities would have to increase rates dramatically to implement the Strategy.

BUDGET IMPLICATIONS

The cost implications of the CCME Strategy and federal regulations are huge. Who will be required to pay has not been determined at this time, although the wastewater charges on water bills is one likely possibility. Another possibility might be charges attached to land development or redevelopment as related to the impact on sewer overflows. Determining who should pay and how much will be a later exercise, requiring more clarity around the final form of the regulations.

FINANCIAL MANAGEMENT POLICIES / BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation. Federal and/or provincial cost-sharing has yet to be committed to address these costs.

ALTERNATIVES

None are possible, as the requirements are defined by the CCME Strategy and the final form of federal regulations and provincial wastewater approvals.

ATTACHMENTS

None.

A copy of this report can be obtained online at http://www.halifax.ca/council/agendasc/cagenda.html then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

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