

Attachment 3 – Letter to Jennifer Vigano, Programs Coordinator, Canadian Council of Ministers of the Environment, from Frank Quarisa, Director, Wastewater Treatment, Toronto Water, dated January 31, 2008



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Ms. Jennifer Vigano
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Dear Ms. Vigano:

Re: CCME Municipal Wastewater Effluent Strategy

This letter is submitted on behalf of the City of Toronto, as our comments on the proposed Municipal Wastewater Effluent Strategy ("Strategy"). We have summarized what we perceive to be the most significant issues with the draft document. Although we have provided detailed comments in some areas, this submission does not contain comprehensive detailed comments on all parts of the Strategy.

We support and share the objective of the Strategy to improve the protection of the environment and human health. Our hope is that our comments will strengthen this document and facilitate its implementation.

Source Control

Although sewer use by-laws can assist municipalities in controlling industrial/commercial sewer discharges for regulated parameters, tracking the source of all spills and discharges can be very difficult and at most times impossible after the event. Identification of upstream pollutants would be particularly difficult for large municipalities with combined sewers and complex sewer networks.

Residential discharges include many contaminants in products such as detergents, soaps, pharmaceuticals and personal care products which the Ontario Ministry of the Environment is currently researching and which are outside of municipal control. The Federal and Provincial governments have a role in assisting municipalities to achieve a non-toxic effluent, and must provide greater regulation in permitting the sale and use of toxic chemicals in the residential, industrial and commercial sectors.

Model Sewer Use Bylaw

CCME has indicated it will not require mandatory adoption or implementation of the CCME Model Sewer Use Bylaw. While this is encouraging, municipalities may be pressured to adopt the CCME Model Sewer Use Bylaw. Further discussion is warranted with CCME on how the Model Sewer Use Bylaw limits were derived. There are issues around the feasibility of compliance of industrial discharges, how the limits may impact the local wastewater treatment plant, and enforcement resources needed for a municipality to ensure compliance of the Bylaw.

The CCME Model Sewer Use Bylaw contains 39 parameter limits. These were compared with Toronto's existing Sewer Use Bylaw, one of the strictest in Canada. 18 limits are lower than Toronto's, 9 limits are the same as Toronto's, 8 limits are higher than Toronto's, and 4 limits would be new to Toronto. If Toronto were to implement the 18 lower parameter limits, this may pose significant technical difficulty for certain industries to achieve these limits. It is expected that this would place a good portion of the industrial sector out of compliance. For instance, Toronto's zinc limit is 2 mg/L and the proposed CCME limit is 0.03 mg/L. Currently, a number of Toronto industries do not consistently achieve the 2 mg/L limit. A limit of 0.03 mg/L may be technically impossible and off-site hazardous waste disposal would be required for compliance.

If Toronto were to adopt the limits which are higher than the current Toronto Bylaw limits, there may be impacts to the treatment plants and biosolids program. For example, Toronto's Sewer Use Bylaw limit is presently 2 mg/L for copper and the CCME draft Bylaw is 5 mg/L. This could adversely impact our biosolids quality with respect to copper content, and would be a backward step for Toronto following its release of a comprehensive Sewer Use Bylaw with Pollution Prevention in 2000.

The four new parameters in the CCME draft bylaw which are not included in Toronto's Bylaw are Ammonia, Chlorides, Sulphates and Sulphide. The benefit of including these new limits is unclear. Furthermore, a chloride limit could place municipalities with combined sewer systems at risk for non-compliance as a result of winter road salting operations.

The draft CCME Model Bylaw requires additional study and research by CCME, and full dialogue with municipal and industrial stakeholders. We would be pleased to consult further with the CCME on this topic.

Combined Sewer Overflows

The recommendation to develop a long-term plan to reduce CSO/SSOs is strongly supported. Ontario's Procedure F-5-5 was cited and indeed a number of municipalities in Ontario such as Toronto, Hamilton, Ottawa, Windsor, London, Kingston, St. Catharines and others, have developed long-term plans and are in the midst of implementing them.

The definition for sanitary sewer overflows (SSO) in the draft document is "A discharge of untreated or raw wastewater to the environment that occurs on an infrequent basis". This definition should be clarified. It is vague, does not include the system or locations that the discharge is occurring from, and does not include the circumstances under which the discharge is occurring. The Strategy requires that national overflow standards be met, and that sanitary sewer overflows be recorded and eliminated. The vagueness in the definition of an SSO makes it unclear what must be controlled and reported. Furthermore the costs and the efforts needed to control or even to monitor SSOs have not been presented.

In setting monitoring and reporting requirements, the expense and value of any data that may be collected as well as practical difficulties must be considered. There are many differences in municipal sewer systems. Some municipalities have hundreds of CSO locations. Some of these locations are within the sewer system and discharge to other sewers. Furthermore, the frequency of CSOs is very dependent upon weather conditions. For some storm events, the volume of the CSO event is minimal. The requirement of recording every single CSO and SSO event will be very difficult and very costly, and will not necessarily yield useful data. The effort and cost associated with this activity would be better directed at developing and implementing plans to address CSO discharges. Further, as an alternative to costly monitoring, many municipalities in developing their CSO control plans, have developed computer simulation models of their systems, which can be used to estimate frequencies and volumes of overflows for a given rainfall period.

The requirement of no increase in CSO frequency due to development should not be applied effectively immediately as time is needed for the implementation of the long-term CSO control plan. Development should be allowed with some conditions tied to the progress of the implementation.

In section 1.4 (page 5) on measures to reduce CSO, the separation of sewers is highlighted as it is recommended where possible, and other measures are not listed. However in Technical Supplement 2 (page 57) it is acknowledged that "in highly urbanized areas, sewer separation may not be advisable as storm sewers may also be highly contaminated". Many studies including those undertaken in Toronto have also concluded that stormwater runoff is highly polluted and that sewer separation does not achieve the required environmental improvements. On the same page, other measures such as storage and treatment facilities are mentioned. It is recommended that instead of highlighting a specific measure such as sewer separation to reduce CSOs, a larger number of possible measures be listed. It is only in the development of the long-term CSO control plan such as the Pollution Prevention and Control Plan (PPCP) used in Ontario that specific measures should be selected to meet the objectives. This is in keeping with the spirit of a Class Environmental Assessment (EA) study where many options are evaluated together, and with input from the public, a preferred solution is developed which may incorporate a series of measures to meet the objectives for that plan.

Monitoring

The proposal suggests that compliance for TSS, BOD and TP be determined on a monthly average basis. This will have an impact on large facilities such as Toronto's where compliance for TSS and BOD are currently determined on an annual average basis.

Monitoring frequencies proposed in the Strategy do not seem to reflect risk associated with the different type of facilities. Large facilities are at a lesser risk for process upsets than smaller ones since they tend to better absorb variability in influent characteristics. However when upsets do occur, it can take weeks to re-establish treatment and stabilize the effluent. In this context, monthly average basis compliance becomes impossible to meet without significant amounts of plant redesign, expansion and additional redundant equipment and tankage.

Effluent Discharge Objectives (EDO's), Toxicity and Risk Assessment

We agree that a watershed approach would be the most appropriate for ERA's and for EDO determination, as recommended by CCME (Technical Supplement 2, Page 6). However, the timelines provided will not allow for effective implementation of a watershed based approach and the required coordination between many different entities. Responsibility and funding for ERA's should be addressed – all municipalities within any given watershed may not have the resources with which to accomplish this task.

It is stipulated in the Strategy that the default mixing zone for lakes and reservoirs not exceed 100 m in length with a maximum dilution factor of 1:10. While it may be possible to use jurisdictional limits for mixing zone dimensions and dilution factors, we understand that the default dilution factor applies without exception for ammonia. As we noted in previous correspondence, it is our position that the mixing zone requirements are not appropriate for facilities with engineered outfalls and jet diffusion. A 100-m limit is not appropriate on a diffuser assembly that is a kilometer in length and where the effluent plume would need to be several kilometers in length before it could impact the shoreline.

Rather than imposing absolute mixing zone criteria, mixing zone criteria should be site-specific and based on the characteristics of the receiving water body. Many facilities have already collected and compiled data and developed outfall models. These models should be used at the time of design approval to determine the size and location of the mixing zone and the assimilative capacity of the water body under varying seasonal

conditions. Provided that certain criteria are met, the use of existing data and models should be allowable under the MWWE strategy to support the use of jurisdictional limits.

Modeling for ammonia toxicity needs to consider receiver pH, alkalinity and temperature. The fraction of unionized ammonia can vary significantly depending on pH and temperature of both the receiving water body and wastewater discharge. Further detail is required on when and how the pH stabilization test would be allowed. False positives in toxicity testing are a concern that should be addressed.

Timelines

It is difficult to understand how individual timelines in the draft Strategy would be integrated. For example, owners are asked to estimate the actual costs of implementation of the Strategy within six years, but jurisdictions must also provide access to funding mechanisms to owners to meet the risk-based timelines within six years (it is unclear how funding will be provided before costs of implementation are determined). We suggest that timelines be tied to completion of previous activities. Funding must be in place before timelines begin.

Some of the timelines in the Strategy are not achievable. For example, increases to operating budgets to accommodate increased sampling frequency by accredited laboratories may not be possible within the allotted time of one year. Recording of CSO events at hundreds of outfall locations, aside from not necessarily being the most effective allocation of funds as previously discussed, may not be achievable within the allotted five years.

Municipalities need a clear understanding of when the timeline will be triggered. The Strategy implies that the clock starts when the Ministers sign the Strategy this Spring; the Fisheries Act implies that the clock starts in 2010.

Funding

The City of Toronto has already committed to addressing the impacts of non-point sources as a way to significantly improve environmental conditions in local receiving waters. This has been done through the implementation of our Wet Weather Flow Master Plan. The Plan implementation is estimated at one billion dollars. Toxicity testing for ammonia under the CCME Strategy may necessitate upgrades to our facilities which have been estimated at approximately half a billion dollars. An expenditure of half a billion dollars toward upgrades for ammonia toxicity would effectively redirect these funds from our broader improvements to achieve an environmental improvement that would only be significant at the point of discharge.

It does not appear that the cost of upgrading the Toronto facilities to achieve the Strategy's requirements with respect to ammonia have been factored into the cost of the strategy. The Economic Plan in Technical Supplement 1 appears to recommend funding from higher levels of government only for small municipalities. Given the dollars involved, it is still not clear that the net benefits to large receiving bodies of water (such as Lake Ontario in the case of Toronto) warrant the proposed expenditures given the large number of potential alternate uses for the funding.

In addition to concerns about funding, we also have concerns about the capacity (human resources of owners & consultants, construction industry, etc.) to meet the requirements of the Strategy within the proposed timelines. The level of activity within this industry remains high and skilled resources are scarce at all levels. Competition for the limited skilled resources, equipment and raw materials will drive up both capital and operating costs.

Conclusion

The Strategy's requirements will have significant cost implications for all municipalities and do not fully correlate to the net environmental benefits it will achieve. It seems clear that the full financial implications of the Strategy have not been fully assessed. As noted previously, we strongly believe that funding must be in place before timelines are imposed.

The draft Strategy refers to the current round of consultation "a final review of the Strategy with stakeholders". Due to the fact that many of the comments provided involve requests for clarification (about mixing zones, EDO determination, timelines, etc.) we suggest that further consultation is needed after release of the next version of the document.

We suggest pilot implementation of certain parts of the Strategy at select plants of various sizes prior to full-scale applicability. Pilot implementation might clarify some of the Strategy requirements and alleviate some of municipalities' concerns with respect to feasibility. It would also provide an opportunity to identify additional improvements to the Strategy.

Thank you for the opportunity to comment on the draft Strategy. If you have any questions about our comments, please contact me at 416-392-8230. We look forward to working with you as you finalize the Strategy.

Sincerely,

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