

REGIONAL MUNICIPALITY OF OTTAWA CARLETON
 MUNICIPALITÉ RÉGIONALE D'OTTAWA CARLETON

MEMORANDUM
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Our File/N/Réf. S.1.2.56
 Your File/V/Réf.

DATE 2 March 1998

TO/DEST. The Chair and Members of Council

FROM/EXP. Environment and Transportation Commissioner
 Regional Solicitor

SUBJECT/OBJET **MUNSTER HAMLET WASTEWATER TREATMENT SYSTEM
 STATUS REPORT**

BACKGROUND

The sewage for Munster Hamlet is treated through a system of lagoons and spray irrigation. It has been known for some time that the existing lagoons are hydraulically overloaded and in need of repair.

To that end an environment study process was undertaken pursuant to the *Environmental Assessment Act*. The outcome of this process was a recommendation to proceed with enlarged and rehabilitated lagoons along with spray irrigation over an increased area. Through the capital budget process, Council authorised staff to proceed with this project. As of this date, the detailed design drawings for stage one, the rehabilitation of the treatment lagoons has been submitted to the Ministry of the Environment in support of an application for a certificate of approval. The application for the certificate of approval for stage two, the expanded spray irrigation field, is scheduled for submission in April.

Staff are proceeding on the basis of the existing Council authority. Accordingly, the present plan of staff is to proceed with an advertisement of a call for tenders for stage one of the capital improvements in late March with the tender closing in late April. Construction is scheduled to begin in June, 1998. The second phase of the capital work, the spray irrigation fields, is to be constructed in spring, 1999.

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DELTA PROPOSAL

Discussions took place between staff and Delta in January, 1998 with respect to the possibility of using Delta's Snowfluent[®] technology as an alternate manner of dealing with the effluent from the Munster Lagoons. A concept brief was submitted by Delta to the Ministry of the Environment on 27 January 1998 with a copy being received by staff on 30 January 1998. This concept involved a combination of Delta's Snowfluent[®] technology, similar to that used in Westport, for winter wastewater flows as well as a recirculating intermittent sand filtration system with a subsurface discharge for summer wastewater flows.

A process of the exchange of questions and responses between staff and Delta continued through February, 1998 culminated in a proposal submitted to the Region on 24 February 1998 which provided further details and elaboration to the concept earlier submitted by Delta. Further questions were submitted by staff to Delta to which some responses were received on Friday, 27 February 1998. Finally a meeting was held on 2 March 1998 to which councillors were invited, to permit the in person discussion of concerns by staff with respect to the proposal by Delta.

In order to ensure that the Region has the best possible advice on this matter, the services of Anthony J. Crutcher, P. Eng. and Andrew Lugowski, P. Eng. of Constoga-Rovers & Associates (CRA) and Dr. Keith Murphy of McMaster University, Department of Civil Engineering were retained. CRA has extensive experience in the area of hydrogeology and Dr. Murphy is a recognised expert in the area of intermittent sand filtration. These three individuals were also present at the meeting of 2 March 1998 as well as representatives from the Ministry of the Environment and the Mayor of the Township of Goulbourn.

ANALYSIS

Regional staff readily acknowledge that the technologies proposed by Delta can work in suitable locations. The question that must be addressed is whether the technologies as presented in the proposal by Delta will work on the site in question. It has been suggested by Delta's engineers that this question is one that should be left to the detailed design stage. In the opinion of staff, this is not a matter of detailed engineering, rather it is a matter of conceptual engineering and that unless satisfied that a concept can work, staff do not believe that it is appropriate to pursue this issue further.

In determining which technologies are acceptable there are a number of fundamental principles that must be observed. Most importantly, the technology must meet the guidelines established by the Ministry of the Environment which include all applicable environmental standards. Further, the technology used cannot have an impact on lands not owned by the Region

Staff acknowledge that the Snowfluent[®] technology provides an effluent of extremely high quality. Staff are however concerned that there is insufficient land to absorb the meltwater from the snow due to the shallowness of the overburden and the low to moderate permeability of the soils. Insufficient land will lead to ponding on the Region's property and a possible breakout of the meltwater onto adjoining lands and surface discharges.

A similar concern arises with respect to the intermittent sand infiltration with a sub-surface discharge. Attached to this report is a letter from CRA. This letter indicates serious concerns as to the inability of the land to absorb all the effluent discharged. Further, a concern is expressed as to the level of nitrates in the discharged effluent which would be in the range of 6-10 mg/l. This is in excess of the reasonable use guideline of 3.3 mg/l and would not be approved by the Ministry of the Environment.

In the case of the site in question, any technology utilised must also comply with the Ministry of the Environment reasonable use guidelines with respect to phosphorous. Unique to the Jock River/Rideau River watershed is the requirement that the surface discharges do not exceed 0.03 mg/l of phosphorous, which is an extremely stringent criterion. As staff understand the proposal by Delta, the effluent from the intermittent sand infiltration would not meet this criterion.

On the basis of the information provided to date, it is the professional opinion of staff that the appropriate course of action is to continue with the present Council approved capital project of rehabilitated lagoons and an enlarged spray irrigation field.

ALTERNATIVE COURSE OF ACTION

If Council nonetheless wishes to proceed with further analysis of the Delta proposal, the adoption of the following recommendations would be appropriate.

1. That the advertisement of the tender call be delayed until further direction by Council.
2. That Regional staff meet with staff from the Ministry of the Environment to attempt to obtain a revised voluntary compliance program.
3. That the Region retain a qualified independent consultant to prepare an addendum to the Environment Study Report for Munster and that Corporate Services and Economic Development Committee be delegated the authority to approve the selection of such consultant.

DISCUSSION

The purpose of the first recommendation is, in light of the present Council position approving the rehabilitated lagoons and enlarged spray irrigation field, to provide staff with the direction not to proceed to the advertisement of the call for tenders.

With respect to the second recommendation, the Region presently has a voluntary compliance arrangement with the Ministry of the Environment. The essence of this arrangement is that, provided no discharges from the lagoons occur, the Ministry will not prosecute the Region for any possible non-compliance with its certificate of approval provided the Region works to bring the lagoons in compliance in a timely manner.

If the Region proceeds with the preparation of an addendum to the Environmental Study Report, it is possible that the approval to proceed with the recommended alternative may occur at such a late date in 1998 that it is not possible to rehabilitate the lagoons within the construction season. It would be prudent for the Region to know at the earliest possible date that the Ministry's forbearance in prosecuting will continue. This is especially important given that the Region does

have an approved technology (rehabilitated lagoons and spray irrigation) that it could proceed with at this time if the Region chose to do so. In the event that a revised voluntary compliance program cannot be agreed to between the Region and the Ministry of the Environment, because of the attendant legal liability, staff will have to report back to Committee and Council immediately.

As to the third recommendation, any significant change from the course of action recommended by an Environmental Study Report requires that an addendum be prepared. There is no doubt that the possibility of a change from spray irrigation to Snowfluent® and intermittent sand infiltration is a significant change.

In the course of analysing the environmental impacts of the technologies proposed by Delta, the consultant conducting the addendum will have to include a process of public consultation. It is very likely that through this process of consultation other proposals for dealing with the sewage from Munster will arise. If these proposals on their face can meet the concerns of cost effectiveness, the timelines of the Region and the requirement of environmental protection, they will have to be addressed in the addendum. A brief by CMS Wastewater Systems was received by the Region on 26 February 1998 proposing their rotodisk technology with tertiary treatment to deal with phosphorous. This is the same technology that was accepted by the Region for use at Village Court in Manotick where CMS is now under contract to the Region.

Because of the likely need to address other proposals, an independent consultant will need to be retained by the Region. Staff estimate the cost of conducting the addendum to be approximately \$100,000. If Council is to consider an option other than spray irrigation, it is recommended that Corporate Services and Economic Development Committee be delegated the authority to select the consultant in order to expedite the process.

FINANCIAL CONSIDERATION OF ALTERNATIVE COURSE OF ACTION

The present approved capital authority for the Munster project is 5.5 million dollars of which approximately 1 million dollars has been spent to date. Staff will be seeking an increase in the capital authority to 6.05 million dollars in the 1998 capital budget.

Delta states that the cost of their proposal, inclusive of the preparation of the addendum is 3.97 million dollars. With the addendum being conducted by a third party, this would presumably decline to 3.87 million dollars. Staff believe that there are costs not included in Delta's proposal such as emptying the lagoons, prior to construction, and possible other costs that could be significant.

CMS have stated in their proposal that their technology can be implemented for a cost of 2.94 million dollars although they have stated a number of exclusions such as the addendum, the cost of the influent pumping chamber, and the possible upgrading of the power supply to the site. Staff have not received a detailed proposal for analysis.

Approved by
M.J.E. Sheflin, P. Eng.

Approved by
J. Douglas Cameron