REGIONAL MUNICIPALITY OF OTTAWA CARLETON | REPORT

MUNICIPALITÉ RÉGIONALE D'OTTAWA CARLETON | RAPPORT

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DATE 10 May 1996

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

FROM/EXP. Environment and Transportation Commissioner

SUBJECT/OBJET **WATER ENVIRONMENT PROTECTION DIVISION BIOSOLIDS MANAGEMENT PLAN**

DEPARTMENTAL RECOMMENDATIONS

That the Planning and Environment Committee recommend Council endorse the recommendations of the Biosolids Management Plan, May 1996 and, specifically, that the Regional Municipality of Ottawa-Carleton, (RMOC):

1. **Optimize resource recovery and the cost of biosolids management by applying dewatered biosolids on agricultural land from April 15 to October 31 and as landfill cover for the remainder of the year;**

2. **Establish a multi year contract starting in 1997 for use of biosolids as a soil conditioner;**

3. **Develop a plan to establish on-site or off-site storage to facilitate the use of more biosolids production on agricultural land;**

4. **Continue to supply biosolids at no fee to the farming community;**

5. **Continue to review and monitor other beneficial reuse alternatives such as composting and thermal drying as biosolids management alternatives, and continue to monitor technical development and change in cost efficiencies;**

6. **Investigate the feasibility of developing a soil testing project at one biosolids application site to monitor the soil characteristics following land application of biosolids.**

BACKGROUND

Following the expansion of the Robert O. Pickard Environmental Centre (ROPEC) in 1992, the quantity of biosolids produced increased from approximately 18 dry tonnes to 30 dry tonnes of solids per day. This increase is due to a number of factors including the design changes to the plant to meet more stringent effluent limits, the increase in population connected to the sewer system and the addition of wastewater previously treated by the Watts Creek wastewater treatment plant.

Since 1992, the biosolids produced at the Pickard Centre have either been used as cover material at the Laidlaw landfill site in Carp or applied on agricultural land as part of a pilot project. The total cost for biosolids disposal including the Laidlaw processing fee and land application have amounted to $1.50, $1.25 and $1.10 million for 1993, 1994 and 1995 respectively.

The initiation of the land application pilot project followed the adoption of the beneficial use approach to biosolids disposal by Council in June 1992. In addition to the pilot project, the development of a long term biosolids management plan was undertaken to assess other potential beneficial uses of biosolids.

The proposed Biosolids Management Plan, providing recommendations on alternatives to beneficially reusing the biosolids produced at ROPEC, was first tabled to the Planning and Environment Committee in February 1996 for a period of two months to allow for public input. This final version addresses the additional comments received from the public. This report is supported by the attached Information Background Report dated May 1996.

DISCUSSION

The Biosolids Management Plan has been developed in consultation with the Biosolids Technical Advisory Committee (BTAC), set up in January 1993 to participate in the development of this plan. The Committee includes representatives from regulatory agencies, academia, local municipalities, the RMOC Health Department, the agricultural community and special interest groups. The BTAC provides a high level of technical expertise to address all issues relevant to the development of a comprehensive Biosolids Management Plan and a means to distribute information to their respective organizations.

The plan has been developed in accordance with the recommendations of a preliminary study conducted in 1990 by Gore and Storrie Limited. It also uses current information from an extensive public consultation program, a pre-design study assessing the technical, environmental and economical feasibility of various options, and a market study. In addition, expertise gained with the land application program since 1993 has been considered in the assessment of this alternative.

Biosolids management alternatives reviewed in developing the recommendations included land application of dewatered biosolids, composting, thermal drying (or pelletization), alkaline stabilization, irradiation and to a lesser extent incineration and pyrolysis (oil-from-sludge).

The alternatives were screened based on an analysis including the following criteria:

- costs expressed in net present value
- environmental impact
- public acceptance
- marketability
- technology performance based on reliability, flexibility, operability and safety.

Over the past three years, land application has proven to be a cost effective and environmentally acceptable alternative for biosolids management. The private sector has played an important role in the operation of the pilot projects by being responsible for hauling biosolids to farms and applying and incorporating the biosolids on farm land. This year, the role of the private sector is increased to include the coordination of all aspects of the program, the interaction with farmers and the public, and certification of new land. To enhance the cost effectiveness of the program, a multi-year contract should be established. With respect to biosolids storage, creative solutions will be sought in partnership with the private sector.

The Department also considered the possibility of recovering some of the costs of land applying biosolids by implementing an acceptable fee for the biosolids. The alternatives investigated included complete cost recovery, a fee based on fertilizer value and a fee based on their market value. The cost of the biosolids to the farmers would then vary from $0 to $780 per hectare depending on the alternative considered. In addition, farmers would still have to incur costs to meet the fertilization requirements of their crops.

In evaluating the potential for cost recovery, some of the considerations would be additional costs associated with administration of the fees, the setting up of contractual agreements with land owners, marketing of the product and the increased liability of the RMOC. In addition, consideration should be given to the requirements of the Fertilizers Act that would apply to biosolids sold as a supplement.

It is recommended that biosolids be applied at no fee to the land owner since the RMOC would incur additional costs to charge a fee. In addition, biosolids currently have no market value and land owners often have to adapt their seeding schedule to accommodate the application of biosolids. This recommendation will be re-evaluated when and if market conditions change. Creative cost recovery opportunities would also be sought in partnership with the private sector during the establishment of a multi-year contract.

CONSULTATION

Public consultation was an integral part of the development of the biosolids management plan. To obtain a high level of interaction, different public consultation methods were adopted in consideration of different stakeholders' interests and concerns. These included small meetings for farmers, kiosks in public areas, open houses and workshops.

The workshops, held on November 25, 1995, were the last major events wrapping up the consultation program. The objectives of the workshops were to verify support of the draft recommendations and to discuss any outstanding issues regarding the use of biosolids as a soil conditioner. A panel of experts was present to address issues such as pathogens, metals and organic contaminants in biosolids.

The Biosolids Management Plan was also tabled with the Planning and Environment Committee on February 13, 1996 to allow for public consultation for a period of two months.

In general, the results of the consultation indicated that the most important selection criteria are environmental impact, cost and odour. With respect to preferences for certain technologies, land application of dewatered biosolids and composting were the most appealing options, followed by thermal drying and chemical stabilization.

Disadvantages identified by the public with using biosolids as a soil conditioner were the presence of odour, farmer's liability and the element of risk associated with the addition of pathogens, metals and organic contaminants to the soil.

With respect to the concerns related to contaminants in biosolids, regulatory agencies such as the MOEE are responsible for setting monitoring and reporting requirements. The RMOC is committed to comply with all regulatory requirements and is monitoring the quality of biosolids as per the existing requirements. Currently, the concentration of contaminants in biosolids produced at ROPEC are well below the guidelines for maximum acceptable concentration in biosolids for land application in Ontario.

The regulating agencies are also responsible for doing research on issues associated with biosolids application. However, the RMOC recognizes the importance of research in this field and will participate in all relevant research projects as it has done in the past through its participation with the University of Ottawa, the Wastewater Technology Centre and the National Research Council.

To address some of the concerns raised during the public consultation, the RMOC will investigate the feasibility of developing a project to monitor the contaminants in soil following the application of biosolids. The project would be developed in association with academia and would involve one biosolids application site.

Specific concerns were also raised with respect to the disposal of biosolids in Carlsbad Spring, Gloucester. Accordingly, the RMOC will respect the resolution of Gloucester Council to limit biosolids application in the Carlsbad Spring area.

FINANCIAL IMPLICATIONS

The Biosolids Management Plan ensures cost effective disposal of biosolids on a long term basis by minimizing capital investment and maintaining low operating costs.

Approved by
N. Schepers, P.Eng.

LM:lef

Attach. (1)