REGION OF OTTAWA CARLETON
RÉGION D'OTTAWA CARLETON

MEMORANDUM
NOTE DE SERVICE

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DATE 24 July 1998

TO/DEST. The Chair and Members of Council

FROM/EXP. Director Water Environment Protection Division
Environment and Transportation Department

SUBJECT/OBJET **1997 BIOSOLIDS LAND APPLICATION PROGRAMME AND MANAGEMENT PLAN UPDATE**

INTRODUCTION

This report, prepared for information purposes, will provide Regional Council with an update on the 1997 Biosolids Land Application Programme and the Biosolids Management Plan endorsed by Council in June 1996.

BACKGROUND

The recommendations, as modified and endorsed by Regional Council on 12 June 1996, are as follows:

1. Optimize resource recovery and the cost of biosolids management by applying dewatered biosolids on agricultural land from 15 April to 31 October 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;

    a) Recognise the private sector's capability and potential role to increase the beneficial use of biosolids

3. That Recommendation 3, "Develop a plan to establish on-site or off-site storage to facilitate the use of more biosolids production on agricultural land" be referred back to staff;

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

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Committee Agenda of 11 August 1998

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; and

7. Work towards the ultimate goal of selling this product as a commodity.

DISCUSSION

The following will first provide an update on the 1997 land application season and will then address each of the recommendations.

1997 Land Application Program

From 07 May to 25 November 1997, a total of 12,969 wet tonnes of biosolids were land applied on 519 hectares of land. This was over the 11,500 wet tonnes targeted for the season and represented a 14% increase in biosolids applied from the 1996 season. The remaining 22,879 wet tonnes were used as land cover material at the Canadian Waste System (CWS) landfill facility (previously Laidlaw Waste Systems) in Carp.

Thirteen farmers participated in the program in 1997 from Cumberland, West Carleton, Goulbourn, Osgoode and Nepean, and 2 townships from outside the Region: Mountain and Finch.

A total of 9,082 wet tonnes of biosolids were stockpiled on farm sites before application for a period ranging between one and ninety days. Stockpiles were on average 432 wet tonnes, which were initially covered with a tarpaulin and later with top soil. The top soil served to reduce odour while allowing a natural crust to form over the stockpile. The crusted stockpiles remained stable during heavy rainfalls. This environmentally beneficial, low cost method of odour control was effective, as odour complaints for biosolids that were covered with top soil were reduced to one only. Stockpile sizes ranged from 240 wet tonnes to 2,100 wet tonnes.

Public inquiries were handled by Terratec Environmental Limited (Terratec), the biosolids hauling and land application contractor. During the 1997 season there were 34 public inquiries made to Terratec; 20 calls requesting more information, 13 calls expressing concern over stockpiles, its effect on soil, plants and humans, and one complaint call. Except for one, Terratec was able to address all public inquiries to the satisfaction of all involved. Terratec also received 19 calls from farmers requesting their land to be licensed.

In January 1998, staff surveyed farmers who used biosolids and neighbours adjacent to actual application sites during 1997. All farmers were very pleased with the quality of the work conducted by Terratec. The public survey indicated that the majority of the public had their inquiries clarified to their satisfaction, samples were taken as necessary, and Terratec's course of action was courteous.

Recommendations 1 and 2

The Region continued to implement resource and cost recovery optimization by contracting Terratec to undertake the Biosolids Hauling and Beneficial Use Program. The three-year contract with Terratec was established in March, 1997. Under their contract, Terratec became responsible for hauling the biosolids produced at the Pickard Centre to beneficial use, landfill and temporary storage sites. In addition, Terratec assumed responsibility for certifying new land with the Ministry of the Environment (the MOE), scheduling and planning with farmers, managing land inventory, public relations, and well water sampling and monitoring. Under their contract, Terratec hauls biosolids at a cost of $3.15 (excluding GST) per wet tonne, and land applies biosolids at a cost of $21.60 (excluding GST) per wet tonne.

A three year contract with CWS to divert and reuse biosolids as landfill cover material was established in January 1997. The minimum tonnage per year received by CWS was agreed to be 14,000 wet tonnes. Landfilling costs of biosolids were set at $19.62 (excluding GST) per wet tonne.

Recommendation 3

Currently, the only method for stockpiling biosolids is on farm sites prior to land application. Covering stockpiled biosolids with top soil was received well by most of the neighbours that were concerned by odour, as well as all the farming community.

This method of stockpiling for a maximum period of 90 days is approved by the MOE. In early 1998, the MOE also approved the stockpiling of biosolids on frozen ground on farm sites for a maximum period of 90 days. This will allow Terratec to stockpile in late winter to allow for larger volume of biosolids to be applied in the spring. In early 1998, a total of 853 wet tonnes of biosolids were stockpiled for application in early May.

Although this practice is approved by the MOE, concerns were raised by the public regarding movement of pathogens in soil. Accordingly, staff, in conjunction with Ottawa University, is conducting a study of this issue. The study involves test pits and field monitoring of sites that have received biosolids applications in the past to determine if there is any negative impacts.

It is recommended that the off-site storage of biosolids be maintained since it offers an environmentally acceptable and cost-effective solution.

Recommendations 4 and 7

Biosolids continue to be provided at no fee to the farming community. Currently, dewatered biosolids provided to the farmers have no market value and land owners often have to adapt their seeding schedule to accommodate the application of biosolids. It is therefore recommended that this be maintained and reassessed at the end of the multi-year contract.

Since 1993, the total cost for biosolids disposal including CWS processing fees, land application and hauling have decreased from $1,995,591 to $908,248 in 1997. This decrease in cost was achievable through competition, the implementation of a multi-year contract, and creative solutions such as temporary storage using top soil to control odour. Our efforts in the past few

years at implementing a viable land application program have been instrumental in reducing the overall cost. At this time, risking the viability of the program, by introducing fees is not recommended.

Recommendation 5

Staff continues to monitor other biosolids recycling options.

Recommendation 6

Staff investigated the possibility of developing a soil testing project by inviting proposals to conduct a study to monitor soil characteristics following land application. The study's objectives focused on:

- monitoring the accumulation of organic and inorganic contaminants at land applied sites over a long term period (approximately 6 years),
- compare the results with sites where no biosolids application has taken place,
- compare the results with other similar studies,
- draw conclusions, if possible, regarding the impact of biosolids applications on soil conditions.

The proposals submitted in response to this study were in the range of $300,000. The high cost of this study is related to the expenses of conducting the organic analysis. Staff solicited partial funding from the Federal Government's National Soil and Water Conservation Program. The application for cost sharing in the study was denied. Due to the high cost of the study, it is recommended that the work should not proceed.

Staff recognizes the importance of research in this field and will continue to participate in research projects as initiated by government agencies.

CONSULTATION

Public consultation was an integral part of the development of the biosolids management plan.

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
Nancy B. Schepers, P. Eng.

LO/mlb