City of Burnaby

Meeting 2012 November 19

COUNCIL REPORT

FINANCE AND CIVIC DEVELOPMENT COMMITTEE

HIS WORSHIP, THE MAYOR
AND COUNCILLORS

SUBJECT: ECONOMIC ANALYSIS OF A MUNICIPALLY OWNED AND OPERATED COMPOSTING FACILITY

RECOMMENDATION:

1. THAT Council receive this report for information.

REPORT

The Finance and Civic Development Committee, at its meeting held on 2012 October 25, received and adopted the *attached* report providing information on the findings of the economic analysis of a municipally owned composting facility.

Respectfully submitted,

Councillor D. Johnston
Chair

Councillor C. Jordan
Vice Chair

Councillor P. McDonell
Member

Copied to:	City Manager Acting Director Engineering Director Planning & Building

City of Burnaby

Meeting 2012 October 25

COMMITTEE REPORT

TO:	CHAIR AND MEMBERS FINANCE AND CIVIC DEVELOPMENT COMMITTEE	**DATE:**	2012 October 17
FROM:	ACTING DIRECTOR ENGINEERING	**FILE:** *Reference:*	36600 01 *Solid Waste Collection and Disposal- Recycling*

SUBJECT: ECONOMIC ANALYSIS OF A MUNICIPALLY OWNED AND OPERATED COMPOSTING FACILITY

PURPOSE: To inform the Committee of the findings of the economic analysis of a municipally owned composting facility

RECOMMENDATION:

1. **THAT** this report be received for information purposes.

REPORT

1.0 INTRODUCTION

Council received the Processing and Marketing of Residential Green Waste Compostable Material report at its meeting on 2012 March 05. The report sought approval to increase the value of the contract for processing and marketing of compostable materials. Council, upon providing consideration, referred the report to the Finance and Civic Development Committee for further review. Arising from the discussion of the referred report at the Finance and Civic Development Committee meeting on 2012 March 29, the Committee directed staff to investigate the feasibility of an in-house composting facility.

This report provides information on the findings of the economic analysis of a municipally owned composting facility.

2.0 ECONOMIC ANALYSIS OF MUNICIPALLY OWNED AND OPERATED COMPOSTING FACILITY

AECOM was retained by the City of Burnaby (City) to examine the feasibility of owning and operating an organic waste processing facility. The main elements of the assessment included:

- Forecasting of the organic waste generation rates;
- Reviewing proven technologies for organic waste processing;
- Determining facility design specifications and considerations; and
- Undertaking an economic analysis of a City owned and operated composting facility.

2.1 CURRENT APPROACH IN COLLECTION AND MARKETING OF GREEN WASTE

The City has been collecting green waste from residents since 1997. The collection program was expanded in 2010 to include food scraps for single family (SF) households. In late 2011, the program was expanded further to include multi-family (MF) and some civic facilities. The expanded organics collection program has been well received, and as a result, the amount of organic waste being collected is increasing. The cost for this program is expected to increase accordingly.

The City currently contracts with a private sector composting facility to process the organic waste collected by the City. In addition, the City also purchases products (compost and soil amendments) from this facility.

2.2 ORGANIC WASTE FORECASTING AND TECHNOLOGY REVIEW

An organic waste forecast analysis was conducted based on population growth, housing stock and target participation rates. The amount of organic waste that the City collects is expected to grow from approximately 20,000 tonnes per year to approximately 32,000 tonnes per year over a 20 year period.

Based on the forecasting, suitable composting processes and composting technologies were reviewed. The review included feedstock requirements, technology comparisons and identifying vendors of specific technologies. A review of communities already using these technologies was also undertaken. Based on various factors such as proven composting technology, a fully enclosed composting process (based on zoning) and odour control as the requirements, the technology recommended by the consultant is a system provided by the Christiaens Group. This technology has been used in the Region of Peel, City of Hamilton and City of Guelph all of which were constructed within the past six years. This process is automated to control oxygen content, temperature and exhaust gases to produce a high quality compost.

2.3 FINANCIAL ANALYSIS

The cost associated with building and operating a composting facility in the City was investigated in order to determine a projected unit cost to compare to the City's current contract cost. Elements of the analysis included capital and operating costs based on the forecasted waste amount generated, the recommended technology option and the enclosed building operations requirements over a 20 year period. Table 1 below summarizes the key design, site and financial considerations for a City owned and operated composting facility.

Facility Considerations	Estimated Requirement
Processing Capacity (tonnes/year)	35,000
Land Requirement	2 Ha (5 acres)
Capital Cost (including permitting and project management)	$34,000,000
Annual Operating Cost	$980,000
Land Cost (Industrial land in Burnaby)	$7,000,000
Revenue (Annual compost sales)	$267,750
Net Annualized Cost (20 year amortization at 5% interest)	$4,206,903 per year
Unit Processing Cost	**$120.20 per tonne**

Table 1: Summary of key design, site and financial considerations.

The financial analysis indicates that it is not cost effective for the City to own and operate a composting facility. Factors that influence the overall cost are listed below:

A. Zoning on available industrial land requires that the composting activity (which includes feedstock storage, processing and finished product storage) must occur inside a building. This increases the capital cost for the facility when compared to a composting facility that is operated outdoors.

B. Property prices for industrial land in the City affect the overall capital cost.

C. Economics of scale significantly influence the cost of processing. Comparable composting facilities process much larger volumes than that contained in the City's projection. The greater economy of scale of these facilities results in a significantly lower annual operating cost.

3.0 CONCLUSION

Staff has completed the economic analysis of municipally owned and operated facility. At this time, based on the findings of the analysis the business case does not support having a municipal owned and operated composting facility.

Barry Davis, P.Eng.
ACTING DIRECTOR ENGINEERING

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Copied to: City Manager
Director Planning & Building