



**REPORT TO CORE AREA LIQUID WASTE MANAGEMENT COMMITTEE
MEETING OF WEDNESDAY, 23 APRIL 2008**

SUBJECT **CORE AREA AND WEST SHORE WASTEWATER TREATMENT PROGRAM –
INTEGRATED RESOURCE MANAGEMENT STRATEGY**

PURPOSE

To obtain committee approval for the proposed integrated resource management strategy to be used in the conceptual planning of the Core Area Wastewater Management program.

BACKGROUND

The minister of environment, in his letter dated 14 December 2007, had the following to say about optimizing the beneficial use of liquid waste and solid waste resources.

"The strategies you are proposing to optimize the beneficial use of reclaimed water, biosolids and other resources are commendable. I agree that these opportunities offer significant potential, and encourage you to study if reuse of resource recovery can be optimized through a more distributed infrastructure model. I also encourage you to explore additional benefits that may be realized by integrating solid and liquid waste resource recovery opportunities, and to seek out interested partners within the CRD to test these opportunities."

- "2. Minimize total project cost to the taxpayer by maximizing economic and financial benefits, including beneficial reuse of resources and generation of offsetting revenue.
3. Optimize the distribution of infrastructure based on number 2 above.
4. Aggressively pursue opportunities to minimize and reduce greenhouse gas emissions (e.g., reduced requirement of energy for pumping purposes, and beneficial re-use of energy).
5. Optimize 'smart growth' results (e.g., district services, density, 'Dockside Green' like innovation)."

In response to the above, the attached draft integrated resource management strategy document was developed by Rick Corbett of Associated Engineering. Mr. Corbett will attend the committee meeting to explain the proposed strategy and respond to questions.

FINANCIAL IMPLICATIONS

This work will be funded by Borrowing Bylaw No. 3461, which was adopted by the Capital Regional District Board on 09 April 2008.

SUMMARY

The attached draft integrated resource management strategy was developed in response to requirements outlined in the minister of environment's letter dated 14 December 2007.

RECOMMENDATION

That the Core Area Liquid Waste Management committee review, comment on and approve the attached draft integrated resource management strategy.

Seamus McDonnell, PEng
Senior Manager, Engineering Services

Dwayne Kalynchuk, PEng
General Manager, Environmental Services
Concurrence

COMMENTS

SBM:dv
Attachment: 1

April 10, 2008

**CAPITAL REGIONAL DISTRICT
CORE AREA WASTEWATER MANAGEMENT PROGRAM**

**PROGRAM DEVELOPMENT PHASE
CONCEPTUAL PLANNING**

INTEGRATED RESOURCE MANAGEMENT STRATEGY

The **Integrated Resource Management Strategy** (IRMS) activity is central to the eight activities that CRD staff and the consultant team have initiated to provide the Minister of Environment with a June 2008 update and December 2008 response on Program elements and delivery. Broadly speaking, the goal of the IRMS activity is to determine the strategy and the goals in both the near-term and long-term for integrating wastewater management into sustainable water, stormwater, solid waste and energy planning for the community. This activity will also examine how an IRMS can best mesh with the concept of “smart” urban growth. At a more specific level, the IRMS activity is pursuing several topic areas. These topics are identified and described below.

Flow Energy Management and Recovery – This topic area refers to managing wastewater flows within the collection system to reduce energy consumption in its conveyance. In addition, this topic area is examining the feasibility of recovering kinetic energy from wastewater/effluent, and its energy potential, as it flows through the collection system and is discharged from treatment facilities to marine outfalls.

Heat Recovery – This topic area is evaluating the heat potential of raw wastewater and final effluent, and includes consideration of changes in wastewater /effluent temperature that may be important from sewer system, treatment facility and effluent disposal/re-use perspectives. The task will also consider the practicalities and limitations in technology application. The methodology employed is mapping the wastewater/effluent heat potential around the entire CRD area and looking to align available heat energy at “nodes” with opportunities afforded by existing development, re-development, and future development as a potential means to off-set natural gas utilization. This methodology will assist in siting wastewater-related facilities.

Water Reuse – This topic area is investigating the potential to use reclaimed water for irrigation in the context of agronomic water requirements in the geographic area. It is also considering other non-potable uses, such as toilet flushing, and how these opportunities are best maximized within the CRD. As per the heat recovery topic area, a similar methodology is being used to map and align water reuse availability and opportunities around the CRD. Also, groundwater aquifer recharge and stream flow augmentation and scenarios that best maximize such approaches are being pursued.

Organic Residuals Energy and Resource Recovery – This topic area is determining the potential energy available in wastewater solids and other organic waste streams (e.g. source-separated organic solid waste) and how this energy could be captured at treatment facility sites and used at the sites proper, as well as off-site. More specifically, the assessment includes technologies or strategies such as biogas generation, co-generation of electrical power, and beneficial reuse of the residuals through land application or integration into industrial processes. A working group of CRD wastewater and solid waste staff and the consultant team has been formed and a series of workshops are underway.

Key to the IRMS activity is its linkage to the Greenhouse Gas Management Strategy (GHGMS). The GHGMS activity is being used to optimize the IRMS concepts from a GHG perspective, where energy reduction and off-sets provided by IRMS elements can provide reduction in GHG emissions.