



**ENVIRONMENT COMMITTEE**

*HIS WORSHIP, THE MAYOR  
AND COUNCILLORS*

**SUBJECT: REGIONAL DRAFT LIQUID WASTE MANAGEMENT PLAN**

**RECOMMENDATIONS:**

1. THAT Council support in principle the goals contained in the draft LWMP as discussed in this report contingent upon:
  - i) the three levels of government equally funding the upgrading of the waste water treatment plants for Vancouver and North Shore sewerage areas; and
  - ii) Metro Vancouver addressing concerns of financial implication of adoption of the remaining LWMP elements in the context of regional affordability prior to the adoption of the final LWMP by the Metro Vancouver Board.
2. THAT Council instruct staff to bring a report back to Council upon completion of the LWMP consultation program to apprise Council of the final Plan.
3. THAT a copy of this report be sent to Metro Vancouver, Attention: Johnny Carline, Chief Administrative Officer.

**REPORT**

The Environment Committee, at its meeting held on 2009 May 19, received the above noted report regarding the Regional Draft Liquid Waste Management Plan (LWMP).

The regional draft LWMP establishes goals, strategies and actions which align with other regional and provincial plans to further protect public health and the environment. The overarching goals and objectives of the draft LWMP are sound; however, there are certain elements contained in the plan that would require further discussion and evaluation. Some of the specific issues are related to inflow and infiltration standards, financial implications and affordability as outlined in this report.

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

To: His Worship, the Mayor and Councillors  
From: Environment Committee  
Re: Regional Draft Liquid Waste Management Plan  
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The Committee adopted the report after amending the recommendations to support the goals contained in the draft LWMP contingent upon the three levels of government equally funding the upgrading of the waste water treatment plants for Vancouver and North Shore sewerage areas. In addition the Committee requests Metro Vancouver address concerns of the financial implications of adoption of the remaining LWMP elements in the context of regional affordability prior to the adoption of the final LWMP by the Metro Vancouver Board.

The recommendations as amended are presented for Council's consideration.

Respectfully submitted,

Councillor D. Johnston  
Chair

Councillor S. Dhaliwal  
Vice Chair

Councillor A. Kang  
Member

**TO:** CHAIR AND MEMBERS  
ENVIRONMENT COMMITTEE **DATE:** 2009 May 14

**FROM:** DIRECTOR ENGINEERING  
DIRECTOR FINANCE **FILE:** 36000 08

**SUBJECT: REGIONAL DRAFT LIQUID WASTE MANAGEMENT PLAN**

**PURPOSE:** To provide the Committee and Council with staff comments on the Regional Draft Liquid Waste Management Plan (LWMP).

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**RECOMMENDATIONS:**

1. **THAT** the Committee recommend Council to:
  - a) Support in principle the goals contained in the draft LWMP as discussed in this report;
  - b) Request Metro Vancouver to address the concern of the financial implication of the LWMP plan elements in the context of regional affordability prior to the adoption of the final LWMP by the Metro Vancouver Board;
  - c) Instruct staff to bring a report back to Council upon completion of the LWMP consultation program to apprise Council of the final Plan; and,
  - d) Send a copy of this report to Metro Vancouver, Attention: Johnny Carline, Chief Administrative Officer.

**REPORT****1.0 INTRODUCTION**

Municipal and regional liquid waste management is regulated by the Ministry of Environment through *Liquid Waste Management Plans* (LWMPs) under the *Environmental Management Act*. The LWMP for Metro Vancouver and member municipalities was approved by the Minister of Environment in 2002, with the requirement that it be reviewed and updated after five years. The LWMP identifies strategies and actions for both Metro Vancouver and municipalities to manage and provide liquid waste services that are critical to protecting public health and maintaining a healthy environment. These services include wastewater collection and treatment, source control programs, rainwater (storm water) management, and supporting environmental monitoring programs.

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In 2008, Metro Vancouver initiated a process to update the LWMP. The updated regional draft LWMP (see Attachment #1) considers the municipal and public input received in the 2008 consultation process on strategic content and direction for the LWMP and was developed in collaboration with member municipalities. The regional draft LWMP has been endorsed by the Regional Engineers Advisory Committee and the Regional Administrative Advisory Committee. The draft LWMP was approved by the Metro Vancouver Board on 2009 March 27 for consultation. A Consultation Program to seek input from a wide variety of stakeholders has been initiated by Metro Vancouver. Upon completion of the consultation process, Metro Vancouver staff will collate comments and submit them to their Board for consideration as a part of its final adoption of the LWMP. Municipalities within the region were requested by Metro Vancouver to provide written comments on the draft LWMP.

The purpose of this report is to outline staff comments on the draft LWMP and the potential financial implication of the proposed plan elements to Burnaby for Council consideration. This report will also serve as the City's submission to Metro Vancouver as part of the municipal government consultation on the draft LWMP.

## 2.0 DRAFT LIQUID WASTE MANAGEMENT PLAN

The draft LWMP incorporates goals and strategies that were included in the 2002 plan. In addition, new goals and strategies are introduced to complement and strengthen the original goals. These updated goals include: 1) Protection of Public Health and the Environment, and 2) Management of Liquid Wastes Affordably and Effectively. These goals are supported by eight strategies and thirty five key actions which align the LWMP with current Provincial, Metro Vancouver and municipal policies and directions introduced since 2002 including: *BC Climate Action Plan*, the *BC Energy Plan*, *Living Water Smart*, *A Guide to Green Choices*, and the Ministry of Community Development's objectives on *Integrated Resource Management*.

### Staff Comments on the draft Plan:

The City supports the principle that new investment and ongoing reinvestment in aging infrastructure are essential to maintain service reliability. However, the regional draft LWMP contains significant financial commitments (see Attachment #2). From staff perspective, four key issues with the regional draft LWMP are:

#### i) Inflow and Infiltration into Sanitary Sewer

As a component of developing and implementing Municipal Asset Management Plans, the regional draft LWMP requires establishment of an Inflow and Infiltration Program to comply with Metro Vancouver's wet weather inflow and infiltration allowances. This program is required as excessive groundwater inflowing and/or infiltrating into the

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Re: *Metro Vancouver Draft Liquid Waste Management Plan*

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sanitary sewer takes away the sewer capacity for managing sanitary waste and burdens unnecessary treatment at the wastewater treatment plant.

The City has an established program to manage inflow and infiltration programs from public laterals and recognized the need for reducing inflow and infiltration into the sanitary sewer. However, staff are of the view that the allowances set by Metro Vancouver for discharge rates from municipal sewers to regional trunk sewers and waste water treatment plants warrant further detailed evaluation. The evaluation should take into account infrastructure age, land use density, and local conditions in order to develop a more equitable and practical approach. The inflow and infiltration standards proposed by MV may be appropriate for new system design but provisions must be made to reflect local conditions and different land use densities. In the current regional draft LWMP, Metro Vancouver has agreed to review and revise the inflow and infiltration allowances. If Metro Vancouver, upon review, does not revise the allowances into their trunk sewers and wastewater treatment plants, it will create significant financial and infrastructure implications to the City.

In order to effectively reduce inflow and infiltration into the sanitary sewer, the City's existing inflow and infiltration program would also have to be expanded to include inspection of private laterals (service connections) and to require corrective actions by property owners. In Burnaby, private sewer laterals account for nearly 50% of the overall sewer system. Unlike the municipal and regional systems, homeowners are responsible for the maintenance of private sewer laterals. Under the regional draft LWMP, municipalities would be required to inspect private laterals and homeowners to take corrective actions if the private laterals are found to have infiltration and inflow rates higher than the rate prescribed under the plan.

There are approximately 350 kilometers of sanitary sewer private laterals in the City. Expansion of the City's inflow and infiltration inspection and monitoring program to include private laterals will require an additional \$350,000 annually. This cost estimate does not include any corrective work required of homeowners to correct infiltration problems that may be identified through the inspection program.

ii) Infrastructure Management Plan

The regional draft LWMP requires asset management (100 year life cycle) and infrastructure renewal based on 1% renewal rates for both sanitary and storm sewer systems including the municipal systems. Burnaby initiated the combined sewer separation program for the North Burnaby area over a decade ago. The sewer separation program also provides an opportunity for the City to replace aging sewer pipes. It is expected that the current sewer separation program will continue and expand to include other aging sewer pipes when the existing combined sewer pipes have all been replaced.

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Staff concur with the principles of the asset management component of the draft LWMP. The proposed approach aligns with Burnaby's infrastructure management plans. While replacement of the aging sanitary sewer pipes in the City will be addressed through existing funding provisions, the long term replacement of the storm sewer (drainage) system will require additional City funding in the future. Based on our best projection at this time, it is estimated that the City will need to increase its annual storm sewer replacement fund by approximately \$4 to \$5 Million by 2019.

iii) Upgrading Vancouver and North Shore Sewerage Areas to Secondary Treatment

Two main actions in the draft Plan are the upgrading of the Vancouver and North Shore Sewerage Areas to secondary treatment, and the ongoing commitment to reinvest in aging infrastructure. The timelines for secondary treatment upgrades include 2020 for Vancouver and 2030 for the North Shore. Other timeline scenarios for upgrading the waste water treatment plants (WWTP) for the Vancouver and the North Shore sewerage areas were also considered.

Given the significant cost of this work, regional, provincial, and federal cost sharing will be sought by Metro Vancouver and municipalities from both senior levels of government. The cost implications of the upgrades depend on anticipated cost sharing provided by Provincial and Federal governments. In the worst case, without cost sharing, the area sewer residential charges, currently about \$150/year, could increase by approximately 25%, or to about \$190/year.

iv) Cumulative Costs

As stated elsewhere, the regional draft LWMP comprises of thirty five actions. Attachment #2 describes the action items identified under the draft LWMP that would require municipal commitment. The potential cost implication of these items to Burnaby's future capital and operating budgets is also provided in the attachment.

v) Summary of Financial Implications in Implementing the Regional Draft LWMP

While staff are supportive of the goals as outlined in the draft LWMP, the financial implications of the commitments identified in the Plan would be significant at both the regional and municipal levels. The affordability issue is a concern to staff as there are also many other competing regional initiatives such as the solid waste management plan, funding of public transportation, drinking water management plan, etc. Therefore, staff are recommending that MV must address the affordability of the LWMP taking into account other regional initiatives prior to advancing the plan to final adoption by the Board.

In order to meet the regional and municipal initiatives identified in the regional draft LWMP, the current single family dwelling sewer rate of \$390 over the next ten years

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could increase at a rate of approximately 10% annually to a range of \$924 to \$1,008 by 2019. In addition to the projected sewer rate increases, an annual capital replacement fund of \$4 to \$5 Million would also need to be raised by 2019 to meet the drainage infrastructure management objective.

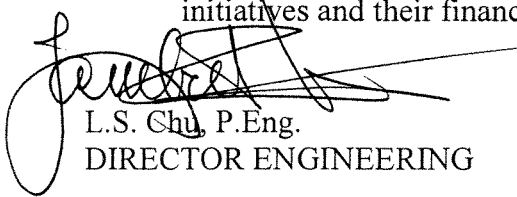
### 3.0 CONSULTATION PROCESS

Metro Vancouver has set a number of consultation meetings in the region to seek public input to the draft LWMP. Staff attended a meeting held on 2009 April 22 at Executive Plaza Inn in Coquitlam and noted that the attendance was limited. In response to the presentations, attendees indicated that the wastewater treatment plants should be upgraded as soon as possible. However, questions were also raised on how the regional draft Plan with its proposed goals, strategies, actions and related costs compare to other regions in Canada and across the world.

As Metro Vancouver continues with the consultation process, comments and feedback from public and stakeholders are being received until the end of 2009 May. Subject to the approval of the Committee and Council, this report will serve as the City's submission of comments to MV on the draft plan. Following receipt of the public input, MV staff will present the results of the public consultation program and the revised plan to the Metro Vancouver Board in 2009 July. The final LWMP will be submitted to the Minister of Environment for approval. Each municipality will also consider the final plan for approval and submittal to the Minister of Environment relative to the municipal commitments.

### 4.0 CONCLUSION

The regional draft LWMP establishes goals, strategies and actions which align with other regional and provincial plans to further protect public health and the environment. The overarching goals and objectives of the draft LWMP are sound. However, there are certain elements contained in the plan that would require further discussion and evaluation. Some of the specific issues are related to inflow and infiltration standards, financial implications and affordability as outlined in this report. Staff recommend that Council support in principle of the goals and strategies contained in the draft LWMP subject to further evaluation of the affordability issue in the context of other regional initiatives and their financial implications.

  
L.S. Chu, P.Eng.  
DIRECTOR ENGINEERING

  
for Rick Earle  
DIRECTOR FINANCE

RE/DD:  
Attachments  
Copied to: Director Finance  
Director Planning & Building

**Liquid Waste Manage Plan (LWMP) Update  
Financial Implications of Municipal Initiatives**

Action Item	LWMP Implementation Steps	Timeline	Cost Implications: <i>(comments on current funding levels)</i>	
			Existing Program	New Funding Required (Capital or Operating Funds)
<b>Strategy S1 - Minimize liquid waste at source</b>				
1.2	Sanitary sewer bylaw update	2012	Yes	
1.5ii	Public outreach program for by-law updates	Annual		\$20,000/yr (Operating Funds)
3.2 i	Develop Inflow & Infiltration (I&I) management plans	2014		\$200,000 (Operating Funds)
3.2 ii	Inspection of sewer connections (both public and private side portions of the lateral).	2014		\$7 M total or \$350,000/yr over 20 yrs until completion. Inspection to include both public & private sides. (Operating Funds)
3.2 iii	Repair or replace private sewer connections	As required		Estimated at \$5,000 each. (Responsibility of private property owners)
4.1	Storm water bylaw update	2012	Yes	
4.2	Municipal stormwater design standards update	2012		\$50,000 (Operating funds from Storm).
<b>Strategy S2 - Reduce wet weather overflows</b>				
6.3	Develop Combined Sewer Overflow (CSO) reduction plans	2012		\$150,000 (Capital Funding).
6.4	Replace Combined Sewers with separated sanitary and storm sewers at an annual rate of 1% in the Vancouver Sewer Area (VSA) and 1.5% in the Fraser Sewer Area (FSA).	2050 & 2075		<i>(Current annual Capital Funding levels of \$6M are adequate to meet target dates)</i>
7.1	Develop Sanitary Sewer Overflow (SSO) management plans	2012		\$150,000 (Capital Funding).
7.2	Implement SSO management plans	2019		TBD – included in item 16.2



Action Item	LWMP Implementation Steps	Timeline	Cost Implications: <i>(comments on current funding levels)</i>	
			Existing Program	New Funding Required (Capital or Operating Funds)
<b>Strategy S3 – Minimize environmental impacts</b>				
9.1	Wastewater Treatment Plants (North Shore and Vancouver sewer areas) – Secondary level upgrade.	2020/2030		TBD by Metro Vancouver: 1. \$400M – North Shore 2. \$1B – Vancouver
12.3	Odour and air emission management at facilities	2012		\$200,000 (Capital Funding)
13.1	Greenhouse gas (GHG) emission management	2020		\$50,000 (Capital Funding)
<b>Strategy S4 - Manage Assets and optimize operations</b>				
14.1	Sanitary sewer condition assessment	Annual	Yes	
15.2	Review inflow & infiltration (I&I) allowances	2014	Yes	
16.2	<b>Asset Management</b> (100 yr life cycle) <ul style="list-style-type: none"> <li>- based on 1% renewal rate per year; replacement value on a 601km <b>sanitary sewer system</b> is approx \$600 M or \$6 M annually.</li> <li>- based on 1% renewal rate per year; replacement value on a 597km <b>storm sewer system</b> is approx \$600 M or \$6 M annually.</li> <li>- Includes all related components such as manholes and public side service renewals</li> </ul>	Annual		<ul style="list-style-type: none"> <li>- \$6 M for Sanitary</li> <li>- \$6 M for Storm</li> </ul> <i>(current expenditures include \$3.5M for renewal of Sanitary, excluding the annual contribution of \$6M for sewer separation, and \$1.2M for Storm. This represents an estimated shortfall of \$4.8M Capital Funding for Storm).</i>
<b>Strategy S5 - Innovative approaches and technologies</b>				
17.4	Develop "Best Practices" and new technologies	Annual		\$25,000/yr (Operating Funds)
<b>Strategy S6 - Recover resources from liquid wastes</b>				
20.2	Recover energy from liquid waste	2016		\$75,000 (Operating Funds)
<b>Strategy S7 - Monitor performance</b>				

Action Item	LWMP Implementation Steps	Timeline	Cost Implications: <i>(comments on current funding levels)</i>	
			Existing Program	New Funding Required (Capital or Operating Funds)
26.2	Monitor green house gases (GHG)	2010		\$100,000 (Operating Funds)
26.3	Monitor sewage flows in Combined and Sanitary sewer overflows	Annually		\$50,000/yr (Operating Funds)
28.4	Monitor and assess impacts of storm water to receiving environment	Annually		\$50,000/yr (Operating Funds)
29.3	Maintain existing system flow monitoring	Annually	Yes	
<b>Strategy S8 - Provide resilient infrastructure</b>				
31.1	Complete Integrated Stormwater Management Plans (ISMP's) city wide.	2014		\$750,000 over five years (Operating Funds)
32.1	Link Integrated Stormwater Management Plans (ISMP's) with land use plans.	2014		\$100,000 (Operating Funds)
32.3	Implement ISMP provisions through development	Annually		TBD – policy decision required to identify funding sources
33.1	Review and update municipal standards, including green infrastructure	2014		\$50,000 (Operating Funds for Storm)
34	Report on onsite sewage disposal systems	2010	Yes	
35	Coordinate liquid water activities with Regional Growth Strategy	2012	Yes	