



Finance Committee Meeting Date: January 29, 2010

To: Finance Committee

From: Jim Rusnak  
Chief Financial Officer, Finance and Administration Department

Date: January 18, 2010

Subject: **Secondary Treatment Timelines in the Liquid Waste Management Plan**

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*Recommendation:*

That the GVS&DD Board adopt the updated Liquid Waste Management Plan that includes timelines to provide secondary treatment within 10 years for the Lions Gate Wastewater Treatment Plant and within 20 years for the Iona Island Wastewater Treatment Plant.

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## 1. PURPOSE

As directed by the GVS&DD Board, to refer to the Finance Committee for its consideration the establishment of an appropriate timeline for the Iona Wastewater Treatment Plant upgrade and the funding for various timelines for the Iona Island and Lions Gate Wastewater Treatment Plant upgrades.

## 2. CONTEXT

At the November 27, 2009, GVS&DD Board Meeting, it was resolved that the Board:

- a) refer the establishment of an appropriate timeline for the Iona Wastewater Treatment Plant upgrade and the funding for various timelines for the Iona Island and Lions Gate Wastewater Treatment plant upgrades to the Finance Committee for its consideration; and
- b) direct staff to report back on the Finance Committee findings and on legal implications of establishing the timelines for the Iona Wastewater Treatment Plant for 2020.

### Background

Since 2002, Metro Vancouver has been operating under an approved Liquid Waste Management Plan; the plan requires review every five years. When approving the current Plan, the Minister of the Environment imposed conditions requiring the upgrade of the Iona Island and Lions Gate wastewater treatment plants to secondary treatment by 2020 and 2030 respectively.

A formal review of the Liquid Waste Management Plan began in 2008 with a draft plan approved in March 2009 for consultation. Following consultation with the public, industries, municipalities and senior government agencies, a new plan was developed: the *Integrated Liquid Waste and Resource Management Plan: A Liquid Waste Management Plan for the Greater Vancouver Sewerage & Drainage District and Member Municipalities* (LWMP— Attachment 1).

Approved liquid waste management plans are regulatory documents under the British Columbia *Environmental Management Act*. This LWMP was developed by Metro Vancouver and its members for approval by the Minister of Environment. An approved plan allows Metro Vancouver to operate its wastewater collection system and treatment plants subject to the criteria and conditions set out in the plan. The plan applies to Metro Vancouver and all members of the Greater Vancouver Sewerage and Drainage District.

In 2009, after more than five years of development, the Canada-wide Strategy for the Management of Municipal Wastewater Effluent was adopted by the Canadian Council for Ministers of the Environment. This new Canada-wide initiative sets secondary treatment as the base treatment level and includes a process to determine timelines for the upgrading of primary treatment facilities—10 years for high priority, 20 for medium priority and 30 years for low priority. All provinces and territories have adopted this Canada-wide strategy, and are in the process of updating and aligning their regulations with its requirements. This Canada-wide strategy is expected to become a regulatory requirement through an updated Federal *Fisheries Act*. The updated LWMP (Attachment 1) has been aligned with the Canada-wide Strategy for the Management of Municipal Wastewater Effluent.

#### Requirements and Implications

Upgrading the Iona Island and Lions Gate wastewater treatment plants to secondary treatment requires approximately \$1.4 billion dollars. Using the Canada-wide Strategy for the Management of Municipal Wastewater Effluent prioritization methodology, the maximum timelines for completing the upgrades are within 10 years for Lions Gate and within 20 years for Iona Island.

Metro Vancouver has the option to upgrade these facilities sooner, but there are several challenges in doing so:

- no guarantees of federal or provincial cost sharing
- significant levy impacts to the Vancouver and North Shore Sewerage Areas
- land tenure issues regarding the crown lease and access to a portion of the Iona Island Wastewater Treatment Plant site
- provincial assistance in resolving any potential First Nation's rights and title issues at the Iona Island site
- engineering and construction timelines that require approximately 10 years for each plant

#### Financial Implications

Cost for the two secondary treatment plants are shared by all sewerage areas using the cost allocation formula established by the Board. The region is geographically divided into four sewerage areas—the North Shore, Vancouver, Fraser and Lulu Island Sewerage Areas. Under the current formula, the sewerage area building the improvement is responsible for 100% of the primary treatment component and 30% of the secondary treatment component costs; the remaining 70% of the secondary treatment component costs are shared among all four sewerage areas.

Previous secondary treatment plant upgrades for Annacis Island and Lulu Island wastewater treatment plants received some senior government cost sharing—approximately 45% of the capital cost. While new senior government cost sharing will be sought for the Lions Gate and Iona Island upgrades, there is no guarantee it will be available. We have been advised by the Province, that they would not approve a Plan that was contingent upon cost sharing from another level of government.

The current regional average household levy for the Greater Vancouver Sewerage and Drainage District services varies from \$160 to \$180 depending on the sewerage area. Estimated future GVS&DD average household levies for each sewerage area are summarized for two scenarios in Tables 2.1 and 2.2. Sequencing secondary treatment upgrades one after the other spreads the costs over a longer period of time, making the Table 2.1 scenario annual rate increase less.

**Table 2.1 Change in GVS&DD Household Levy Sequencing Lions Gate by 2020 and Iona Island by 2030 (includes inflation and 1/3 senior government cost sharing)**

<i>Sewerage Area</i>	<i>2010</i>	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Fraser	\$160	\$180	\$270	\$300	\$380
Lulu Island	\$160	\$180	\$270	\$310	\$390
North Shore	\$180	\$310	\$600	\$760	\$920
Vancouver	\$160	\$250	\$310	\$460	\$740

**Table 2.2 Change in GVS&DD Household Levy Both Lions Gate and Iona Island by 2020 (includes inflation and 1/3 senior government cost sharing)**

<i>Sewerage Area</i>	<i>2010</i>	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Fraser	\$160	\$190	\$280	\$355	\$420
Lulu Island	\$160	\$190	\$280	\$360	\$420
North Shore	\$180	\$320	\$640	\$810	\$950
Vancouver	\$160	\$290	\$545	\$690	\$810

Scenario Assumptions

The estimates in Tables 2.1 and 2.2 are based upon a “moderate” set of assumptions with respect to operating inflation, capital inflation, level of senior government cost sharing, long-term debt interest rates etc. These estimates are also based upon 15 year amortization of capital debt, reflecting Metro Vancouver’s current policy. The tables clearly show that these major projects will have a significant impact on the cost of sewerage service to residents, particularly so in Vancouver, and on the north shore. Predictably, if Iona is accelerated to 2020 as well, the levy impact to Vancouver homeowners increases dramatically.

As noted, this moderate set of assumptions contemplates one third of the capital cost of each project being funded by other levels of government. In our “pessimistic” set of assumptions, whereby no funding support is received, our model forecasts annual levies of \$1388 for the north shore and \$1171 for Vancouver by 2030.

Levy Context

The current Metro Vancouver sewer utility levies are similar to those in other Canadian cities, and are generally lower than US cities.

By 2030, the average annual household levies in both timeline scenarios for the Vancouver and North Shore Sewerage Area will be comparable to the high range of US cities. Annual levies for the Fraser and Lulu Island Sewerage Areas will remain inline with most Canadian cities.

Financing Options

All of Metro Vancouver’s capital borrowing is through the Municipal Finance Authority (MFA) of BC. The MFA enjoys the highest possible rating from three major rating agencies, and as a result, Metro Vancouver is able to borrow at preferential low interest rates.

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Metro Vancouver's policy and practice, in recent years, has been very conservative with respect to our debt program. Specifically, as debt matures and is fully re-paid, our practice is to continue to budget for the "principal" component of that debt to continue indefinitely as a "contribution to capital" each year, thus avoiding additional borrowing.

With respect to amortization periods, our current practice is to pay off capital debt over a 15 year period. This is a conservative approach to debt management, given that the service life of most of the assets that we finance is much longer than 15 years. There are trade-offs involved—on the one hand, by paying debt more quickly one has more borrowing capacity for upcoming major projects. Alternatively, by lengthening the re-payment period, one lowers annual payments.

We believe that the current policy has served the citizens of the region well, and that it is consistent with our sustainability objectives. For accounting purposes, capital assets are written off over their useful economic life. From a financing perspective, this time period would be the absolute outer limit of what a prudent lender would consider to be reasonable. From the point of view of financial sustainability, particularly in an organization like Metro Vancouver, it makes good sense to pay down debt associated with major projects sooner, rather than later, in anticipation of the requirement to undertake the next big project. For example, the Metro Vancouver Board made a conscious decision to delay the Seymour Capilano Water Filtration project, until the debt associated with upgrades to Annacis and Lulu Island WWTP's was substantially paid down. If this practice had not been followed, and debt from successive major projects had been layered on top of previous debt, we would not have the debt service capacity that we currently enjoy. To alter this practice would, in fact, be pushing debt service obligations on to future generations, thus limiting their financial capacity to respond to future needs.

For illustration, the following is a comparison of a 15 year versus a 30 year amortization based upon a theoretical borrowing of \$1 million from the MFA at 5%:

	<u>15 Year</u>	<u>30 Year</u>
Annual Interest	\$ 50,000	\$ 50,000
Annual Principal	<u>49,941</u>	<u>17,830</u>
	<u>\$ 99,941</u>	<u>\$ 67,830</u>
Total Repayment	<u>\$ 1,499,116</u>	<u>\$ 2,034,902</u>

The annual payment using a 30 year amortization is 32% less than a 15 year amortization. On the other hand, the total amount repaid is 36% more over the life of the loan.

There is no definitive answer when it comes to these financing questions. However, reflecting on some of the causes of the recent global financial crisis, a cautious and prudent approach may be appropriate. Metro Vancouver's conservative approach has served the region well.

Private-public partnerships are not expected to offer Metro Vancouver or member municipalities any significant advantages regarding affordability or timing as the value of construction costs is likely similar to the traditional wholly public funded project. Detailed evaluation and assessment of private-public partnerships will be undertaken as requirements for application for any federal and provincial project co-funding. Depending upon the outcome of these discussions, some of the terms of financing may be dictated by resulting agreements.

### Legal Implications Arising from the Terms of the Liquid Waste Management Plan

Part 3 of the Environmental Management Act (SBC 2003) c. 53 governs the obligations of local governments with respect to waste management plans. Pursuant to section 24 of the Act the minister has required the GVS&DD to provide an updated liquid waste management plan.

The minister has the authority to approve any plan created, approve part of a plan or approve a plan or part of a plan with conditions. In addition the minister may amend or cancel a plan and the plan must comply with the regulations in order to receive ministerial approval. The power granted to the minister by the Act is broad and consequently the province may unilaterally alter timelines.

The Act sets out the consequences of the approval of a waste management plan with respect to: (a) the affect on existing permits and approvals; (b) the authority to issue permits or approvals; and, (c) the authority of districts and municipalities to adopt bylaws. By implication, once a waste management plan is approved by the minister it is in force.

The Act sets out the effects of the approval on existing permits and rights in sections 24. So, for example, if a provision in an existing permit conflicts with a requirement in an approved waste management plan, that provision in the permit no longer has any force or effect (s. 24(9)). A director may only issue an operational certificate that is not in conflict with an approved waste management plan.

The authority granted to the GVS&DD and to municipalities to make bylaws respecting the direct or indirect discharge of liquid waste (s. 30) is limited once a waste management plan is approved as all subsequent bylaws are without effect to the extent that they conflict with an approved waste management plan (s. 37(2) and s. 37(4)). To the same extent, all permits, approvals or orders issued by a district director are without effect to the extent that they conflict with an approved waste management plan (s. 37(3)).

As a result, if the GVS&DD obtains ministerial approval of a liquid waste management plan that sets a timeline for the upgrade of both the Lions Gate and the Iona WWTP by 2020, the permits and approvals that currently permit the discharge of waste water from those treatment plants will no longer be in force or effect after 2020 as they will be in conflict with the waste management plan.: any discharge from a plant that has not received the upgrade required by the waste management plan would be contrary to the Act and regulations. No permit could be issued to permit the discharge as such permits would be contrary to the waste management plan. In such a case the GVS&DD would be subject to fines and criminal sanction for discharging without a permit. Those fines and sanctions can be significant.

If the waste management plan is approved with a 2020 timeline for both facilities, any subsequent amendment of the plan to alter the timelines will be subject to the same consultation processes and approvals as the current plan. In addition, as set out above, there is no guarantee that the minister would approve an amendment that seeks to alter a timeline.

### **3. ALTERNATIVES**

Alternative 1:

That the GVS&DD Board adopt the updated LWMP that includes timelines to provide secondary treatment within 10 years for the Lions Gate Wastewater Treatment Plant and within 20 years for the Iona Island Wastewater Treatment Plant

It is a Board option to accelerate the timelines for Iona Island upgrading sooner should senior government co-funding become available. This alternative meets the requirements of the Canada-wide Strategy for the Management of Municipal Wastewater Effluent and offers maximum flexibility to Metro Vancouver with respect to timing and cost distribution.

Alternative 2:

That the GVS&DD Board adopt the updated LWMP with revised timelines to provide secondary treatment within 10 years for both the Lions Gate and Iona Island Wastewater Treatment Plants.

This alternative exceeds the requirements of the Canada-wide Strategy for the Management of Municipal Wastewater Effluent and commits Metro Vancouver to completion of the Iona Island upgrade irrespective of cost and logistical implications. Although Metro Vancouver would be able to request an amendment to the approved LWMP that postpones the Iona Island Wastewater Treatment Plant upgrading should future circumstances require it, it is expected that a significant effort and consultation process would be required for the request with the uncertainty whether an amendment would be granted. Irrespective, the maximum timeline allowed for Iona Island Wastewater Treatment Plant upgrading is 20 years as defined by the Canada-wide Strategy for the Management of Municipal Wastewater Effluent.

### **4. CONCLUSION**

An updated LWMP has been prepared for the Board. The Board has requested input from the Finance Committee on implications of timeline—financial and legal. This report has been prepared outlining cost implications and legal perspectives. Staff recommend Alternative 1.

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Attachment

*Integrated Liquid Waste and Resource Management Plan: A Liquid Waste Management Plan for the Greater Vancouver Sewerage & Drainage District and Member Municipalities (LWMP), November 2009 (3558267)*