



To: Utilities Committee

From: Fred Nenninger, Manager, Policy Planning Analysis and WWTP Upgrade

Date: March 31, 2014 Meeting Date: April 15, 2014

Subject: **Lions Gate Secondary Wastewater Treatment Plant – Quarterly Report**

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#### **RECOMMENDATION**

That the GVS&DD Board receive for information the report titled *Lions Gate Secondary Wastewater Treatment Plant – Quarterly Report* dated March 31, 2014.

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#### **PURPOSE**

To update the Board on the work underway for the Lions Gate Secondary Wastewater Treatment Plant (LGSWWTP) upgrade.

#### **BACKGROUND**

In accordance with the Integrated Liquid Waste and Resource Management Plan approved by the BC Minister of Environment in 2011, the Lions Gate plant requires upgrading to secondary treatment by 2020. The Board authorized funds in the 2011 budget to proceed with the initial work.

#### **DISCUSSION**

##### **Technical Work**

In November 2013 the Board endorsed the Indicative Design for the new Lions Gate Secondary Wastewater Treatment Plant. The Indicative Design forms the basis for moving forward with applications for senior government grant programs and commencement of the design and construction phase. The technical team has completed the Project Definition Report, which defines the technical scope of the Indicative Design.

The Board Subcommittee established to review the *Project Procurement Options Analysis Report* prepared by KPMG met on December 12, 2013 and reported to the Utilities Committee on February 18, 2014. The Subcommittee's report was endorsed by the Board at their February 28, 2014 meeting. Procurement for the design and construction phase will be based on a Design-Build-finance (DBf) approach, with the financial component in the form of an extended warranty and holdback. The Board identified the project as the top priority infrastructure project for Metro Vancouver for application to the new Building Canada Plan for funding.

## Financial Status

	Budget Approved to Date	Project Definition Phase Initial Budget	Expenditure to Date	Committed to Date	Projected Cost
As of Jan 31, 2014	\$20,000,000	\$8,000,000	\$7,310,685	\$599,315	\$7,910,000

### Funding

For the past 2 years, Metro Vancouver has been actively engaged in implementing an intergovernmental strategy focused on securing funding support for the Lions Gate project from other orders of government under the new Building Canada Plan, which was announced by the federal government in the fall of 2012 and recently by the Prime Minister on February 13, 2014. Metro Vancouver has been working closely with the Federation of Canadian Municipalities and with a number of senior staff representatives from Infrastructure Canada and the office of the Minister of Infrastructure, Communities and Intergovernmental Affairs in Ottawa to ensure that the Lions Gate project is well-positioned to qualify for funding under the new Building Canada Fund.

At the federal level, Metro Vancouver staff held meetings in Ottawa on January 30th to brief a number of federal officials with Infrastructure Canada and senior staff in Minister Lebel's and Minister Aglukkaq's (Minister of Environment) offices on the Lions Gate project in advance of the February 13 federal announcement. Staff also met with BC Director of Regional Affairs, Office of the Minister of Industry Canada on February 3rd to update him on the project as well.

On March 17, Metro Vancouver had the opportunity for a private meeting with Minister Lebel just prior to his keynote luncheon presentation to the Vancouver Board of Trade. With the application process yet to be announced, the meeting provided an opportunity to confirm the parameters of the Building Canada Fund and build awareness of Metro Vancouver.

Letters from the Board Chair were sent to Prime Minister Harper, former Minister of Finance Jim Flaherty, Minister of Environment Leona Aglukkaq, Minister Lebel and Parliamentary Secretary for Infrastructure and Communities Peter Braid in January to brief them on the merits of the Lions Gate project and to position it as fully meeting the funding criteria established under Building Canada. A political delegation to Ottawa to meet with these same Ministers is anticipated to take place April/May following the submission of an application to the Building Canada Fund for support of the Lions Gate project. Metro Vancouver is also working with staff in the offices of North Shore MPs John Weston and Andrew Saxton to host a joint meeting at which they will be briefed on the status of the Lions Gate project.

At the provincial level, Metro Vancouver completed high-level meetings with several BC cabinet Ministers in the fall of 2013 – including Minister of Infrastructure and Communities Todd Stone, Minister of Environment Mary Polak, and Minister of Community, Sport and Cultural Development Coralee Oakes – and briefed the four North Shore MLAs on the Lions Gate project on January 27th of this year (this group included Minister of State for Small Business and Tourism Naomi Yamamoto and MLAs Ralph Sultan, Jane Thornthwaite and Jordan Sturdy). On March 11, Metro Vancouver met for a second time with Ministers Stone and Oakes, to seek formal endorsement of the Lions Gate project as a provincial priority under the Provincial-Territorial Infrastructure Component of the new Building Canada Plan.

With the March 28 federal announcement that the Building Canada Fund was “open for business” and accepting funding applications, the key focus for Metro Vancouver through the spring will be completing a submission for the Lions Gate Secondary Wastewater Treatment Plant project under the new Building Canada Plan. Metro Vancouver staff is currently working with senior staff at Infrastructure Canada, the provincial Ministry of Transportation and Infrastructure, P3 Canada and Partnership BC in an attempt to fast track a Building Canada funding submission for the project. This will include the completion of a federal/provincial P3 screen as a program requirement for senior government funding support.

### **Engagement and Consultation Program**

This section provides an update on key engagement activities since October 30, 2013. In the first quarter of 2014 staff developed a consultation process for phase two, Design and Construction, which includes reviewing the terms of reference and membership for the Lions Gate Public Advisory Committee (LGPAC).

#### ***The Public***

The public was notified via community newsletter (attachment 1) of the Metro Vancouver Board’s endorsement of the indicative design (November 15, 2013). The newsletter was circulated to Norgate residents and local businesses by hard copy (December 20, 2013) and an electronic copy was circulated to the public project database (January 8, 2014) and to the Lions Gate Intergovernmental Advisory Committee (LGIAC). The project website was also updated with the newsletter and the Metro Vancouver Board endorsement of the indicative design, with supporting documents.

#### ***Lions Gate Public Advisory Committee***

A Lions Gate Public Advisory Committee (LGPAC) debrief meeting was held (December 3, 2013) to assist Metro Vancouver in improving the engagement process in the second phase. LGPAC members who could not attend the debrief session had the opportunity to provide feedback via email. A total of 15 out of 18 members provided feedback. A LGPAC meeting was held on March 11<sup>th</sup> to review strategies for responding to issues raised through the debrief and for Metro Vancouver to provide a project update. This was the wrap-up meeting for LGPAC for phase one, Project Definition.

The LGPAC will continue in phase two as outlined in their Terms of Reference with the membership revised to reflect the requirements of phase two, Design and Construction. Phase two LGPAC will address community integration, mitigation planning, and education and awareness. Metro Vancouver will appoint LGPAC members with alternates following discussion with North Shore municipalities. The LGPAC will be composed of representatives from the Norgate community, Norgate local businesses, North Shore representatives at large, and educational representatives. Appointments will be made by June 2014 and the Utilities Committee will be informed regarding the revised membership and required changes to their Terms of Reference.

#### ***Lions Gate Intergovernmental Advisory Committee***

Government agencies are updated on the consultation process through participation in the LGIAC. Updates on the engagement and consultation process were presented at their recent meetings (January 24 and March 21, 2014).

***First Nations***

Ongoing engagement meetings have continued with Squamish Nation to discuss shared interests within the project area and to advise them of the project milestones and engagement opportunities.

**ALTERNATIVES**

This is an information report. No alternatives are presented.

**FINANCIAL IMPLICATIONS**

The LGSWWTP project is proceeding according to budget and schedule.

**SUMMARY / CONCLUSION**

The Board endorsed the Indicative Design for the Lions Gate Secondary Treatment Plant project in November 2013. The Board Subcommittee's report regarding the procurement of the design and construction phase was endorsed by the Board at their February 28, 2014 meeting. The procurement for the design and construction phase will be based on a Design-Build-finance (DBf) approach, with the financial component in the form of an extended warranty and holdback. A community newsletter was issued outlining the Indicative Design for the new plant. Community updates will continue through the first quarter of 2014. The engagement and consultation program will continue in 2014 and regular updates will be provided to the Utilities Committee and Board. Meetings were held to brief federal and provincial officials on the Indicative Design for the new plant ahead of the anticipated announcement on the Building Canada Plan. Meetings were also held with North Shore MLAs and further meetings are being arranged with key federal and provincial ministers. A key focus will be the submittal of a funding application for the Lions Gate Secondary Wastewater Treatment Plant project under the new Building Canada Plan.

**Attachment:**

Community Newsletter, dated January 8, 2014

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# LIONS GATE SECONDARY Wastewater Treatment Plant

## Project Update

January 8, 2014

The *indicative design* (project definition) has been completed for the North Shore's new secondary wastewater treatment plant. A project team from Metro Vancouver, with input from North Shore communities, developed a design that meets the new regulatory requirements and will provide valuable resources for the community. In mid-November, the *indicative design* was endorsed by the Metro Vancouver Board, the regional services decision-making body which includes elected officials from across the lower mainland.



View of the new plant along 1<sup>st</sup> Street West and Pemberton Avenue  
 Rendering by Miller Hull Partnership

Features of the new secondary wastewater treatment plant:

- Full enclosure with a robust two-stage odour control technology
- Aesthetically integrated into the surrounding community
- Resource recovery including energy from treated wastewater and digested solids, and reclaimed water
- Design that can respond to natural disasters, rising sea levels, population growth and changing regulatory requirements
- Educational and community space for the public to learn more about wastewater treatment and water management, and community use
- Indoor and outdoor public space.

During the project definition phase, Metro Vancouver received significant input to shape the design, by engaging and consulting residents, businesses, key interest groups, member municipalities and affected First Nations. Ninety-five meetings and presentations occurred between February, 2012 and the end of October, 2013, as the *indicative design* was developed. This process helped to identify the design features most important to the community. The following is a list of key features that have been integrated into the *indicative design* and a list of elements that were considered but will not be included.

## Indicative Design Key Features

### Odour Control and Air Quality

The North Shore community identified odour control as the number one priority in the design and operation of the new plant. The new plant design reflects this priority with an odour control system that contains, collects and treats odour. In addition, Metro Vancouver will install a permanent air quality monitoring station at or near the plant site. The station will measure baseline air quality prior to the plant becoming operational, and will continue to monitor air quality throughout the operational life of the plant.

### Integrated resource recovery

The new plant will recover a variety of resources from the wastewater stream including:

- Biogas for electricity and heat for plant operations
- Heat from treated effluent for potential use by a local neighbourhood district energy system
- Reclaimed water for non-potable uses (not drinking water quality) within the plant
- Nutrient-rich biosolids for land reclamation and soil fertilization
- Potential future phosphorus recovery for fertilizer use.

### Community integration

The new plant is purposefully designed to fit into the surrounding community through:

- Design strategies for the building particularly along 1<sup>st</sup> Street West to reduce the visual scale of the building
- The design of a vegetated buffer along the north side of the plant
- An outdoor public space at the foot of Pemberton Avenue
- Community space within the building for education, outreach, and public meetings
- Acoustically insulated spaces for all mechanical equipment to ensure operations meets noise by-laws.

### Sustainability

The new plant design supports sustainable operations such as:

- Rainwater harvesting
- A construction program that maximizes reuse and recycling
- A greenroof
- Protection against climate change with all critical equipment located above the projected 100-year sea level rise.

### Design Elements Considered but Not Included

Based on technical and financial feasibility, and in response to community feedback, some elements were excluded from the design:

#### Incineration

Incineration of biosolids was considered in some initial design concepts but was not included in the *indicative design* as other treatment options scored higher against the project objectives.

#### Food waste processing

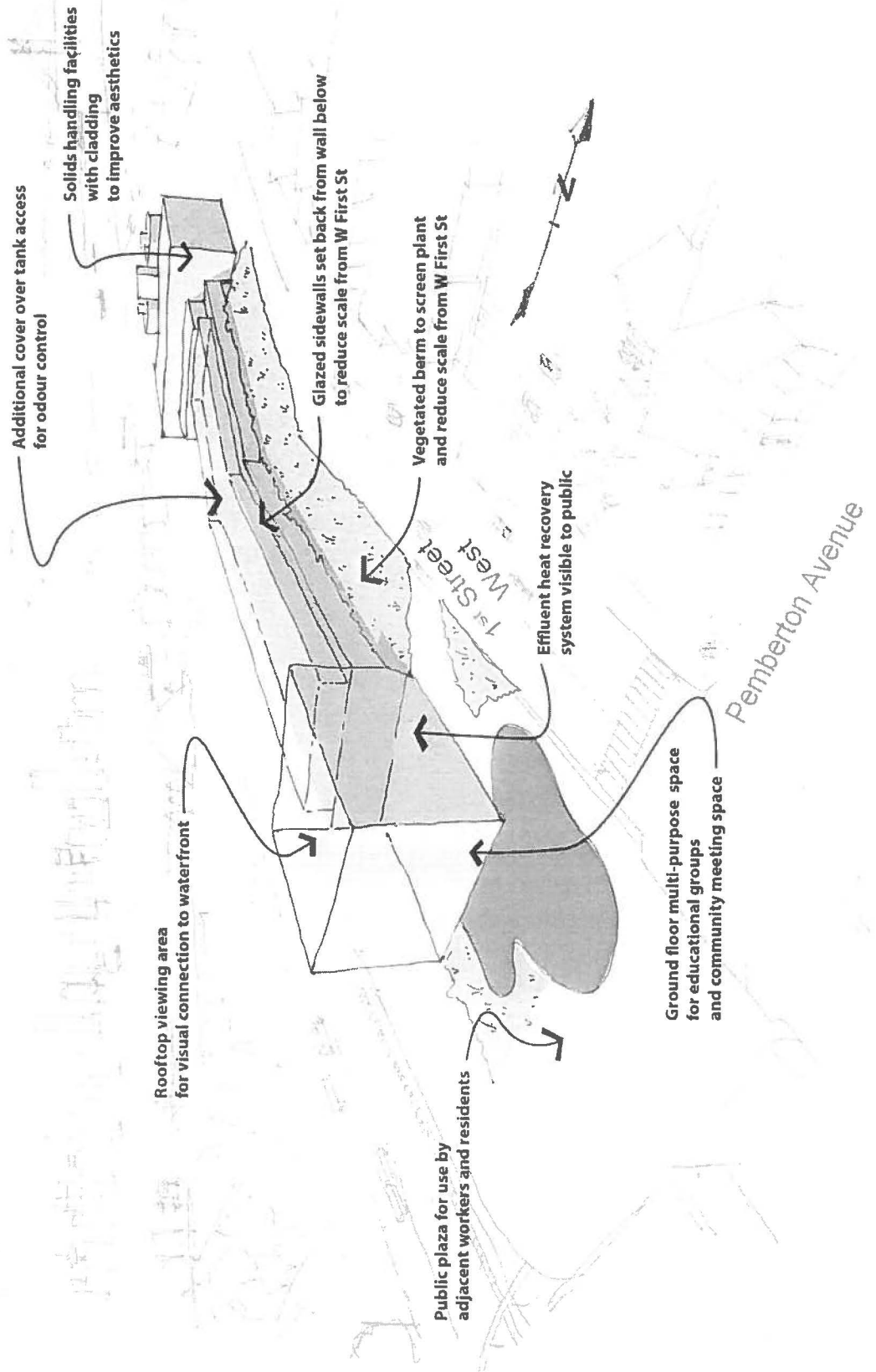
Co-digestion of food waste with wastewater solids was considered in some design concepts. The project team determined that co-digestion did not provide an advantage over handling food waste as part of a regional solid waste system. Additionally, community feedback indicated concerns about increased traffic, additional costs, and odour associated with organics processing. Food waste processing is not part of the final *indicative design*.

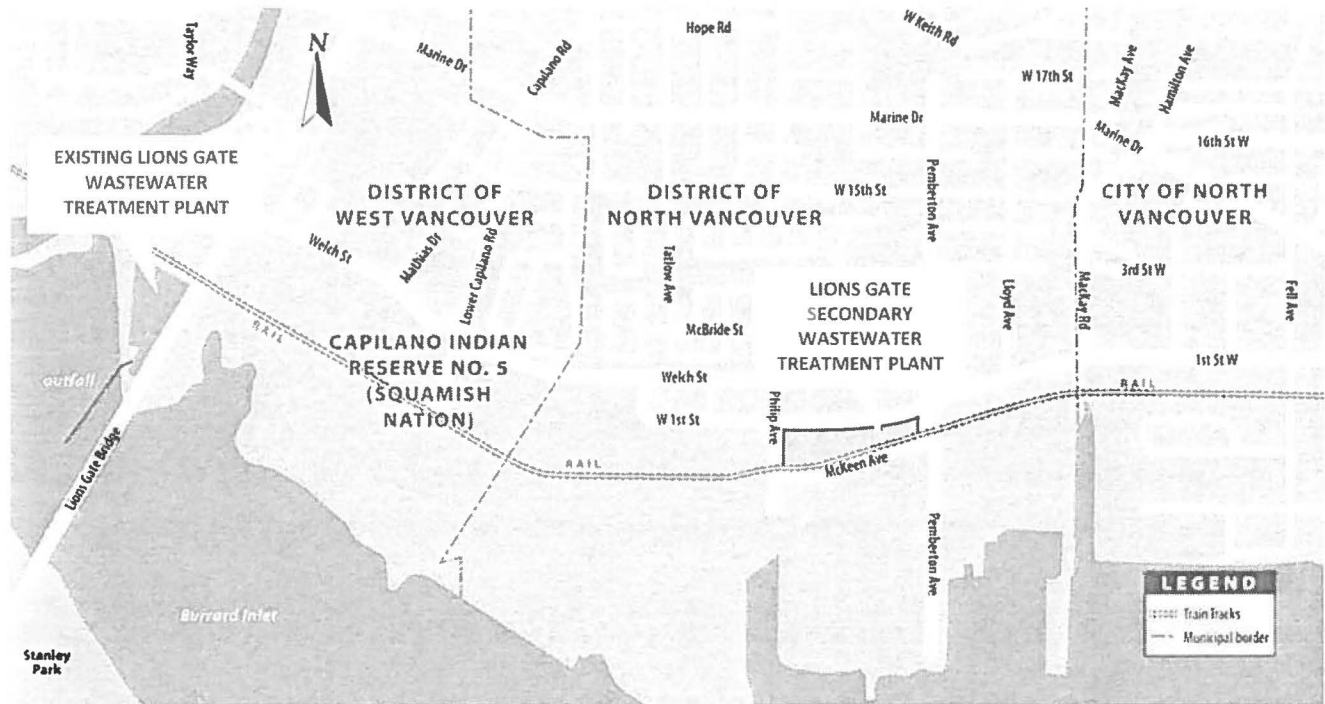
#### Chlorine gas

Chlorine gas will not be used for effluent disinfection in the new plant and was not part of any proposed design. Instead, ultraviolet light and sodium hypochlorite (similar to household bleach) will be used. All chemicals will be handled so as not to present a risk to the public.



Indicative Design, Community Values and Integration





### Project Cost

The cost of the new plant is expected to be in the range of \$700 million at the mid-year of construction in 2018. Metro Vancouver is pursuing options for the financing of the project including Federal and Provincial funding.

### Getting Involved

Metro Vancouver will continue public consultation in 2014. To receive updates on consultation opportunities please sign up for emails via the Lions Gate website (see below).



View of the plant  
Rendering by Miller Hull Partnership

Do you have other feedback or input you would like to share?

## CONTACT US

Metro Vancouver Information Centre: 604-432-6200

For questions, please send an email to [icentre@metrovancouver.org](mailto:icentre@metrovancouver.org) with the subject line 'Lions Gate'.

For past meeting summaries and presentations and further information on this project, please visit the project website [www.metrovancouver.org/lionsgate](http://www.metrovancouver.org/lionsgate)