



City of Richmond

Report to Committee

To: Public Works and Transportation Committee

Date: August 25, 2017

From: John Irving, P.Eng. MPA
Director, Engineering

File: 10-6060-03-01/2017-
Vol 01

Re: **Metro Vancouver Capital Construction Update 2017**

Staff Recommendation

That the report titled "Metro Vancouver Capital Construction Update 2017," dated August 25, 2017 from the Director, Engineering be received for information.

John Irving, P.Eng. MPA
Director, Engineering
(604-276-4140)

| REPORT CONCURRENCE | | |
|--|---|---|
| ROUTED TO: Corporate Communications Sewerage and Drainage Water Services | CONCURRENCE <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> | CONCURRENCE OF GENERAL MANAGER |
| REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE | INITIALS: | APPROVED BY CAO |

Staff Report

Origin

Metro Vancouver is a regional authority operating under provincial legislation to deliver regional services such as drinking water and wastewater treatment on behalf of 23 member municipalities, including the City of Richmond. This report updates Council on current and upcoming capital construction projects by Metro Vancouver that supports or impacts the City of Richmond.

This report supports Council's 2014-2018 Term Goal # 6: Quality Infrastructure Networks:

6.1 *Safe and sustainable infrastructure.*

6.2 *Infrastructure is reflective of and keeping pace with community needs.*

Analysis

Capital Construction Projects

Metro Vancouver's work on the Gilbert Road Sewer Project and the Annacis Island Wastewater Treatment Plant Upgrade is underway, and a number of capital construction projects impacting the City of Richmond have been proposed by Metro Vancouver for the coming decade. Attachment 1 illustrates Metro Vancouver's current and proposed capital projects.

Gilbert Road Sewer Project

Metro Vancouver's Gilbert Road Sewer conveys the majority of Richmond's sanitary sewage to the Lulu Island Wastewater Treatment Plant. The existing sewer is showing signs of deterioration due to age and grease build-up, and is currently nearing its full capacity as demands increase due to population growth. In 2013, Metro Vancouver began construction of the Gilbert Road Sewer Project, which involves twinning of the existing pipe to provide increased capacity, improve system redundancy and better facilitate future maintenance.

The first section of the project extends from Metro Vancouver's Bridgeport pump station to the intersection of Gilbert Road and Elmbridge Way. Construction of this section began in spring 2013 and is complete. The remaining works involve the construction of approximately 6.2 kilometers of trunk sewer along Gilbert Road from Elmbridge Way to the Lulu Island Wastewater Treatment Plant. Metro Vancouver anticipates construction to be complete in 2020. Staff are working with Metro Vancouver to establish a design, construction schedule and traffic management plan that minimizes impacts to property owners and other stakeholders.

Annacis Island Wastewater Treatment Plant Upgrade Project

The Annacis Island Wastewater Treatment Plant is located on Annacis Island in Delta and provides secondary wastewater treatment for the Fraser Sewerage Area which includes East Richmond. Upgrade of the plant is currently underway to increase treatment capacity to accommodate growth, improve seismic resilience and adapt to climate change. Planned upgrade works include construction of a new outfall pipe to discharge into the Fraser River, expansion of

the existing plant, replacement and of ageing infrastructure, strengthening of the plant to improve seismic resilience and improving odour control and power source back-up.

In spring 2017, Metro Vancouver awarded a \$252 million contract for construction of the first phase of the project. Construction completion for the first phase is targeted for 2021, with the second phase to follow in 2022.

Iona Island Secondary Wastewater Treatment Plant Project

The existing Iona Island Wastewater Treatment Plant, located on Sea Island, provides primary wastewater treatment for the Vancouver Sewerage Area which includes Mitchell Island and portions of Sea Island. The plant was originally commissioned in 1963 and has since undergone a number of upgrades. Approved by the Minister of Environment in May 2011 and consistent with the Federal Wastewater Systems Effluent Regulation established in 2012, Metro Vancouver's Integrated Liquid Waste and Resource Management Plan requires that the Iona Island Wastewater Treatment Plant be upgraded to a secondary treatment facility by 2030.

The Iona Island Secondary Wastewater Treatment Plant Project will replace the existing primary treatment plant to process secondary level treatment and improve resource recovery and integration with the surrounding park and community. Metro Vancouver estimates that the project will cost approximately \$1.9 billion. The proposed schedule for delivery of the project is as follows:

- Project Definition: 2017 – 2019
- Design and Construction: 2020 – 2029
- Commissioning: 2030 – 2032

The Project Definition Phase is currently underway and will define the scope of the project, deliver a conceptual design, outline a project schedule and cost estimate, assess potential procurement methods and explore opportunities for Provincial and Federal funding. In addition to the construction of the new secondary treatment facility, Metro Vancouver will also be completing a series of upgrades at the existing plant over the next few years to maintain service levels until construction of the new plant is complete. These upgrades are estimated to total approximately \$80 million.

Lulu Island Wastewater Treatment Plant Upgrades

The Lulu Island Wastewater Treatment Plant provides secondary wastewater treatment for the majority of Richmond. A number of upgrades to the plant totalling approximately \$70 million have been proposed for the next decade. Projects include power reliability upgrade, wastewater meter upgrades, installation of a new digester and biogas clean-up.

Water Services Capital Construction Projects

A number of water services capital construction projects within Richmond have been proposed as part of Metro Vancouver's long-range capital plan:

- Cambie-Richmond Main Marine Crossing (\$370 million): This project involves the replacement of the Lulu Island-Delta Main marine under the Oak Street Bridge to improve seismic resilience of the main. Design work is scheduled to commence in 2019, with construction to follow in 2025.
- Lulu Island-Delta Main Scour Protection (\$5.25 million): This project involves improving scour protection of the Lulu Island-Delta Main at the Fraser River crossing between Richmond and Delta. Construction is scheduled to take place between 2018 and 2021.

Financial Impact

Costs associated with Metro Vancouver's water and liquid waste capital program will be transferred to municipalities through annual water rates and sewer levies. Metro Vancouver anticipates that a five-year projection of water and sewer rates will be provided to municipalities by October 2017. Staff will utilize these projections to inform future budget planning.

Conclusion

Metro Vancouver anticipates that a number of significant infrastructure upgrade projects will be required over the next decade to accommodate ageing infrastructure and growth within the region. Staff are actively engaged with Metro Vancouver in coordinating necessary upgrades to ensure that high levels of service are maintained for Richmond's residents and business owners and that construction impacts are minimized.



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Att 1: Current and Upcoming Metro Vancouver Capital Construction Projects

Attachment 1 – Current and Upcoming Metro Vancouver Capital Construction Projects

