



To: Public Works and Transportation Committee

Date: July 6, 2011

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

File: 10-6060-03-01/2011-
Vol 01

Re: **Gilbert Trunk Sewer Upgrading**

Staff Recommendation

That the Metro Vancouver recommended Gilbert Trunk Sewer alignment and City proposed alternative Gilbert Trunk Sewer alignment as per the staff report from the Director, Engineering dated July 6, 2011 entitled *Gilbert Trunk Sewer Upgrading* be endorsed for public consultation and design.

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

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ROUTED TO:		CONCURRENCE		CONCURRENCE OF GENERAL MANAGER	
Sewerage and Drainage Transportation		Y <input checked="" type="checkbox"/> N <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/>			
REVIEWED BY TAG		YES	NO	REVIEWED BY CAO	
		<input checked="" type="checkbox"/>	<input type="checkbox"/>	YES	NO
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Staff Report

Origin

The existing Metro Vancouver Gilbert Trunk Sewer runs from the Bridgeport Sanitary Pump Station (at Garden City Road and Bridgeport Road) to the Lulu Island Wastewater Treatment Plant via Bridgeport Road, River Road and Gilbert Road, as per the attached map. This main has been in service since 1970 and is the trunk sanitary conveyance for most of the City, including the high density City Centre. There is no redundant system for this main; therefore, it is critical infrastructure for maintaining sanitary sewer service to the majority of the City's residential, commercial, institutional and industrial customers.

In 2008, Metro Vancouver cleaned and inspected a segment of the Gilbert Trunk. This operation identified fat, oil and grease (FOG) build up in the main that is reducing its capacity. Additionally, significant deterioration of the trunk main was observed and Metro Vancouver staff determined that remediation was required to keep the trunk main in service in the medium term. Subsequently, Metro Vancouver staff also determined that remediation of the trunk main in its current configuration would be prohibitively expensive, largely due to the lack of a redundant system, therefore, replacement or twinning of the main is required.

In this context, City staff advised Metro Vancouver staff that the segment of the Gilbert Trunk that is in the dike is not desirable from a dike security standpoint. It is important to the long term security of the City's dike system that this segment of pipe be removed from the dike and relocated inland when the trunk line is replaced.

Findings Of Fact

Metro Vancouver is taking steps to update the Gilbert Trunk Sewer. Metro Vancouver staff have commissioned a route study for a replacement or twinned trunk sewer and has included a \$62 M budget for design and construction over the next seven years (to be completed in 2018).

It is envisioned that the new trunk sewer will include redundancy either through constructing two new trunk sewers or constructing one new trunk sewer and remediation of the existing sewer. The exact form of the redundant trunk sewer will be determined during the preliminary design phase of the project, which staff expect to be completed later this year or early 2012.

The route study is nearing completion and the draft result recommends an alignment that largely follows the existing Gilbert Trunk route, with a deviation along the CPR rail corridor that removes the trunk main from the dike (see attached map). Metro Vancouver's consultant indicated that this alignment was superior to competing alignments from environmental, financial and operational perspectives.

City staff generally concur with this proposed alignment; however, there is a short segment near the Wall Centre (3111 Corvette Way), where the CPR rail corridor merges with the dike where City staff are suggesting an alternative route that avoids the dike (see **attachment 1**). Metro Vancouver is currently reviewing the alternative route and will report findings to City Staff.

Metro Vancouver, along with City staff, are reviewing the potential to utilize waste heat energy from Gilbert Trunk as part of new district energy utility (DEU) opportunities along the Gilbert Trunk route. Sanitary sewer systems generate tremendous amounts of heat energy through the decomposition of materials in sanitary sewage and there is potential to harvest this energy for use in DEU's within the City. This is in alignment with Metro Vancouver's newly adopted Integrated Liquid Waste and Resource Management Plan which has a primary goal of using liquid waste as a resource. Staff will report back to Council as more information becomes available with regard to the concept of energy resource recovery from the Gilbert Trunk Sewer.

Metro Vancouver staff is developing a public consultation plan for the Gilbert Trunk Sewer Upgrade project in cooperation with City staff.

Financial Impact

None at this time. The Gilbert Trunk Sewer upgrade is included in the Metro Vancouver Capital Plan and is included in long term Metro Vancouver sanitary sewer rate projections for the City.

Conclusion

The Gilbert Trunk Sewer is critical infrastructure that serves the majority of Richmond including the densely populated City Centre. Metro Vancouver is in the process of upgrading the Gilbert Trunk which is scheduled for completion in 2018. The completed upgrade will provide additional capacity to serve future populations and redundancy which will improve the reliability of this critical infrastructure and facilitate future maintenance. The project will also explore the opportunity for waste heat recovery from the Gilbert Trunk Sewer for utilization in a City DEU.

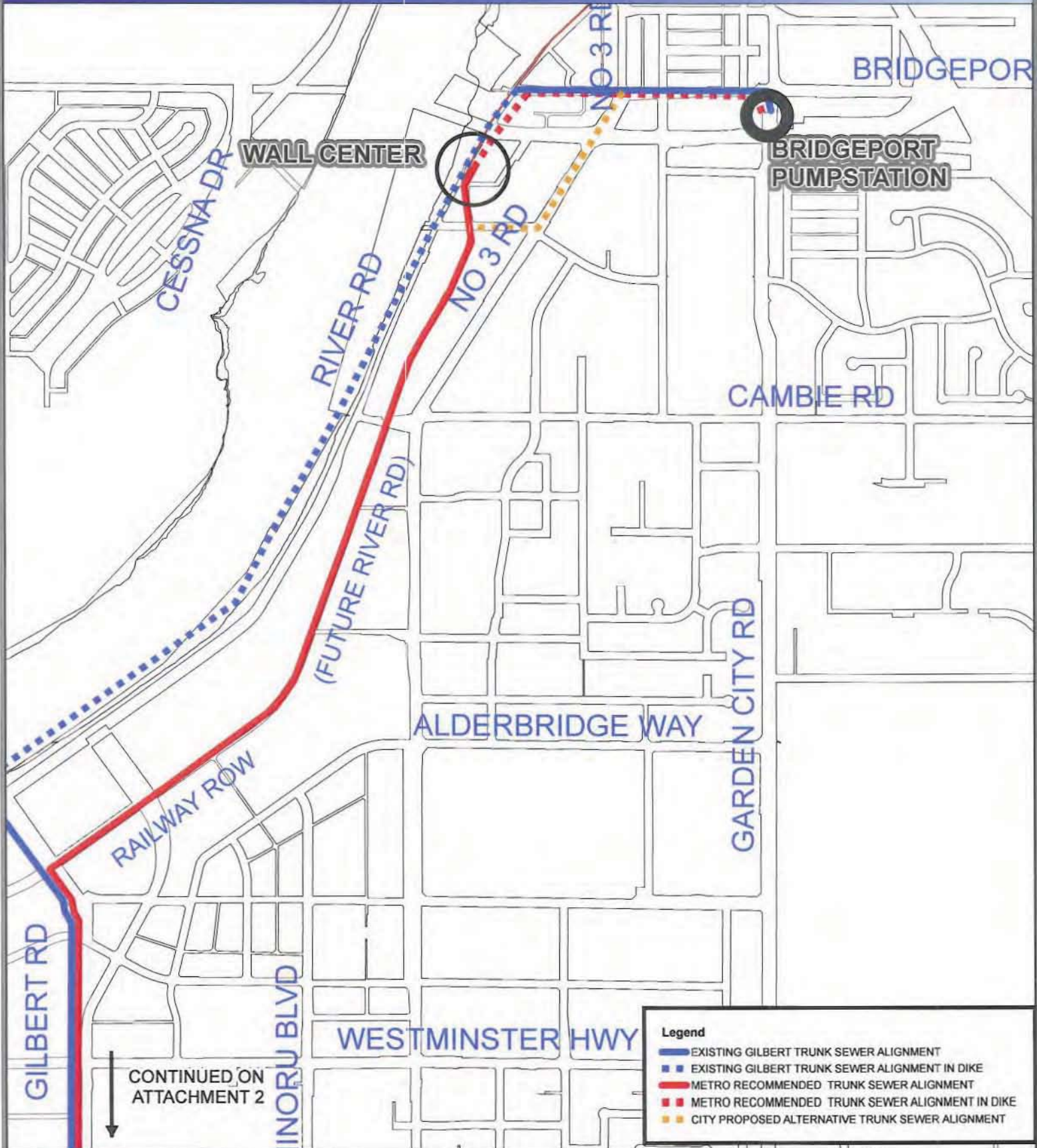
The first step of the Gilbert Trunk project is nearing completion with a recommended route for the upgraded trunk sewer as illustrated on the attached map. City staff will continue to work with Metro Vancouver staff to facilitate the successful completion of this important project.



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LLB:llb

Att:1

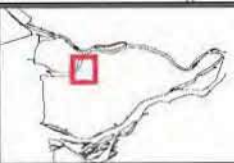


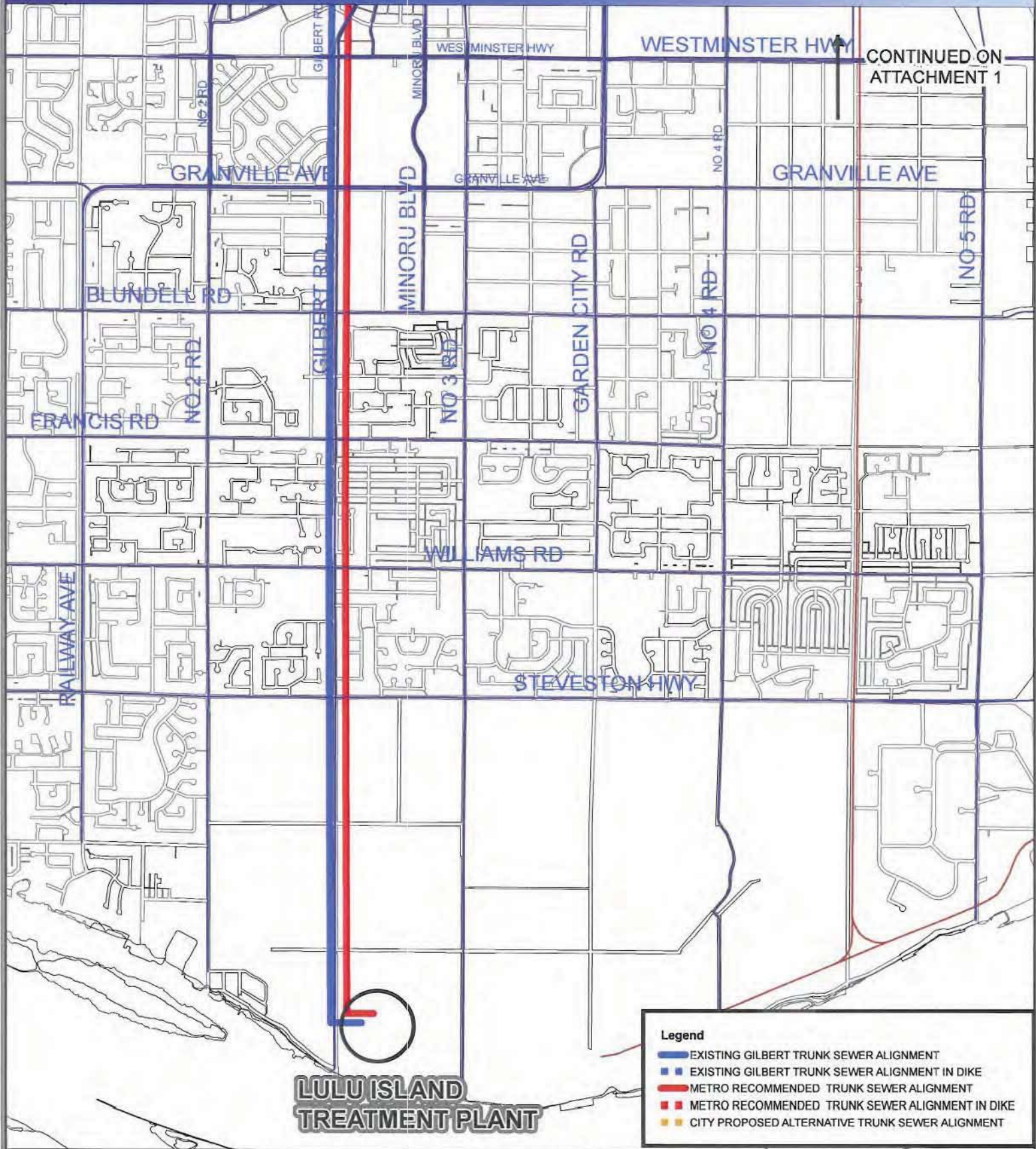
CONTINUED ON ATTACHMENT 2

Legend

- EXISTING GILBERT TRUNK SEWER ALIGNMENT
- - - EXISTING GILBERT TRUNK SEWER ALIGNMENT IN DIKE
- METRO RECOMMENDED TRUNK SEWER ALIGNMENT
- - - METRO RECOMMENDED TRUNK SEWER ALIGNMENT IN DIKE
- - - CITY PROPOSED ALTERNATIVE TRUNK SEWER ALIGNMENT

Note:
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CONTINUED ON ATTACHMENT 1

LULU ISLAND TREATMENT PLANT

Legend

- EXISTING GILBERT TRUNK SEWER ALIGNMENT
- EXISTING GILBERT TRUNK SEWER ALIGNMENT IN DIKE
- METRO RECOMMENDED TRUNK SEWER ALIGNMENT
- METRO RECOMMENDED TRUNK SEWER ALIGNMENT IN DIKE
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NORTH

0 50 100 300
Meters

Name _____
Date _____