

REGULAR COUNCIL

TO: **Mayor & Council** DATE: **December 10, 2015**

FROM: **General Manager, Engineering** FILE: **4711-904**

SUBJECT: **Local Area Service Initiative for the Phase 3 and Phase 4 Areas of the Bridgeview Vacuum Sewer System Replacement Program**

RECOMMENDATIONS

The Engineering Department recommends that Council:

1. Approve a Local Area Service (LAS) initiative as a means to finance the replacement of the existing Vacuum Sewer System (VSS) in the Phase 3 and Phase 4 Areas of the East Bridgeview Sanitary Sewer System Replacement as illustrated in Appendix "I" at an estimated recovery rate of \$900 per frontage metre, \$5,500 per service lateral and \$22,200 per pump connection for the Low Pressure Sewer (LPS) Phase 3; and \$500 per frontage metre, \$17 per square metre of benefitting lot area, and \$5,500 per service lateral for the Steep Grade Sewer (SGS) Phase 4;
2. Authorize staff to initiate the LAS as a Council initiative subject to the counter petition process as provided in the *Community Charter*;
3. Approve the compensation formula as outlined in this report for each owner of a property for which the service connection for the property is converted from the VSS system to the LPS or SGS system; and
4. Adopt as a policy the mandatory reconnection of each existing private sewer connection within the local service area from the VSS to the new replacement sewer system at the completion of the replacement system.

INTENT

The purpose of this report is to obtain Council's approval to initiate a LAS for Phase 3 and Phase 4 Areas of the Bridgeview VSS Replacement, which will result in a more reliable sanitary sewer system for the properties in that area and will allow the City to recover the LAS project costs from the owners of properties within the local service area.

BACKGROUND

In 2006, Council adopted a replacement strategy for the Bridgeview VSS based on the information contained in Corporate Report No. R251; 2006. The replacement strategy includes installing a hybrid system consisting of LPS and SGS. In general, most residential properties will be serviced by SGS in the center while a mixture of residential, commercial and industrial properties will be serviced by LPS at the peripheral of the benefiting areas.

Council approved an LAS to replace the VSS in West Bridgeview area, Phase 1, as part of Corporate Report R119; 2009 at its Regular Meeting on July 13, 2009. Subsequently, Council also approved an LAS for the replacement of the VSS system in the remainder of the West Bridgeview and some of the East Bridgeview area (Phase 2) as part of Corporate Report R101;2012 at its Regular Meeting on May 28, 2012.

The construction of Phase 1 and Phase 2 is complete and the final costs have been determined. The Phase 1 project benefited from a \$5.67 million grant under the BC Build Canada Infrastructure Program. The grant included \$4.67 million for the replacement SGS in the residential area and \$1.0 million for the replacement LPS in the business area. The LAS charges in Phase 1 SGS system were based on 33% recovery of the project cost from the benefiting property owners while in the LPS replacement area the cost recovery from the property owners was 47.38%.

The LAS system replacement in Phase 2 was constructed with a City's contribution of 52.62% of the total project cost with the balance of 47.38% being recovered through LAS charges from the benefiting properties.

DISCUSSION

The replacement of the VSS in the Phase 3 and Phase 4 areas will allow for the decommissioning of the East Bridgeview Vacuum Sewer Station and the vacuum sewer pipes, which will result in operations and maintenance savings of approximately \$210,000 per year. Additional costs will also be avoided by eliminating the need to replace major components of the system that are approaching the end of their service life. In addition to providing a better and more reliable sanitary sewer service to the area, the new system will remove one of the servicing constraints for the development community in the benefiting area.

Although originally envisioned as separate phases, Phase 3 and Phase 4 are being combined as one implementation project to realize additional savings through the implementation and management of one project.

The proposed work, the phases of the work, and the properties within the local service area are illustrated in Appendix "I".

The proposed Phase 3 replacement system is comprised of a LPS system for residential and industrial properties along 115A/B Avenues from 128 Street to 132 Street; and along King George Boulevard from 128 Street to 129 Street; and of two properties on 112B Avenue. The proposed system is similar to the system installed for a portion of Phase 1 and most of Phase 2.

The proposed Phase 4 replacement system is comprised of a SGS system including a network of gravity sewers, a sanitary sewer pump station and force-main to service the remainder of the residential East Bridgeview area, generally bounded by 126A Street in the west, 129 Street in the east, 113A Avenue in the south and 115B Avenue in the north. The proposed system is similar to the system installed for a portion of Phase 1.

The estimated cost of the project is \$15.5 million.

Cost Recovery Principles

Similar with the cost recovery in Phase 1 and Phase 2, it is recommended that payments by the owners of benefiting properties within the local service area be based on the following principles:

1. The City will continue to provide sanitary sewer service to its existing customers without sewer replacement charges being applied irrespective of whether the sanitary system has been improved or replaced, except where and when development occurs or where and when a connection is provided to a property that did not have an active connection;
2. The City will contribute its operational and maintenance savings from decommissioning the East Bridgeview VSS to help fund the project; and
3. Development will pay for all remaining costs for the infrastructure being constructed under the LAS to service the area.

Development includes subdivisions, consolidations, development permits, building permits with combined value in excess of \$100,000, development variance permits, temporary use permits, rezoning and new connections to properties where no active connection existed in advance of the LAS project.

In the Phase 3 area where a replacement LPS system is installed, the costs for the common force-main will be shared based on the frontage of the lots within the local service area. In the Phase 4 area where the replacement system is a SGS, the cost for the shallow gravity sewer of the SGS will be shared based on the frontage of the lots the sewer fronts; and the cost for the deep gravity sewer of the SGS and the pump station and force-main will be shared based on the area of all lots within the local service area. The shallow gravity sewer sections service the fronting lots directly while the deep gravity sewer sections, which run alongside with shallow sewer, does not provide service directly to the fronting lots. In both Phases 3 and 4, the costs for the sanitary sewer laterals will be shared by the properties that receive a new sewer lateral. In Phase 3, the costs for the pump connections will be shared equally by the properties that receive a new pump.

Cost Recovery Exemptions

Exemptions will be granted to any residential property where a house is demolished and a new one is constructed that is consistent with the existing zoning on the lot. This exemption does not apply to industrial and commercial properties as the replacement system will be relieving the restrictions on sewage flows that are currently stipulated under the *Surrey Sanitary Sewer Regulation and Charges By-law, 2008, No. 16611*, for industrial and commercial properties, since such a change will add value to these properties.

Most of the sanitary service connections in Bridgeview are older than 30-years. The cost for service connection replacement will fall to the owner of each property based on the *Surrey Sanitary Sewer Regulation and Charges By-law, 2008, No. 16611*, which requires the owner, when an application for a service connection accompanies a building permit with the construction value greater than \$100,000 or where a parcel is being redeveloped, to replace the service connection to their property if it is more than 30-years old. This requirement applies across the entire City.

As per City Policy No. R-6 “Local Area Services”, the frontage to be used in calculating the share of the costs to be borne by any particular property is based on the minimum frontage stipulated in the Zoning Bylaws for the Zone, which is applicable to the property. Since most of the lots are legacy lots that do not comply with their designated zonings, it is proposed that actual frontage of the property be used in calculating the LAS charges.

As the LAS charge can represent a significant portion of the development cost in some exceptional cases of a building permit, the proposed LAS Bylaw limits the amount of the LAS to be charged paid at the time of building permit application be no more than 20% of the value of the proposed work and that the balance of the LAS charge is to be paid at subsequent development.

Cost Apportionment and Recovery

The estimated cost of this project is \$15.5 million. Consistent with Phase 2, the City will be contributing 52.62% of the total project cost, estimated at about \$8 million. This financial assistance ensures that the same portion of costs falls to the benefiting area for each phase of the project.

The remaining cost for the LAS project is 47.38% of the total project cost, estimated at about \$7.5 million. This percentage will be apportioned to each property within the local service area based on the length of its frontage for the LPS service area, by a combination of lot area and frontage for the SGS service area, and based on the number of service connections servicing each particular property. LAS charges will be collected at the time of development of any particular property or when a new sewer service connection is provided to a property that did not have a sanitary sewer connection prior to the LAS project. A LAS cost component of 47.38% of the total project cost is equal to the portion of costs allocated to the benefiting areas in Phase 1 and Phase 2.

Based on preliminary calculations, the LAS charge for Phase 3 will be approximately \$900 per frontage metre, \$5,500 per service lateral and \$22,200 per pump connection. The LAS charge for Phase 4 is estimated at \$17 per square metre of benefitting property and \$500 per frontage metre, and \$5,500 per service lateral. A comparison of the estimated LAS charges for Phase 3 and Phase 4 to the estimated and actual charges from Phase 1 and Phase 2 for a typical 15m x 30m single family residential lot is summarized below.

Steep Grade Sewer

Phase	Estimated	Actual
1	\$9,210	\$9,400
4	\$21,100	-

Low Pressure Sewer

Phase	Estimated	Actual
1	\$17,400	\$17,100
2	\$35,100	\$28,800
3	\$41,500	-

The estimated cost for Phase 3 and Phase 4 are higher than the previous phases due to general construction cost inflation, material cost increases as a result of a weaker Canadian dollar and more challenging site conditions in the Phase 3 and Phase 4 project area.

Compensation for Owners Where a Private Pump System is Required

A private pump system will be installed in each fronting property with an active sewer account in the replacement Phase 3 benefitting area (serviced by the LPS) to pump sewage from the property to the new low pressure main. The City will operate and maintain the force main while the owner of such private property will be responsible for operating and maintaining the private pump system located within the property. The LPS system will be much less expensive to operate and maintain for the City than the current VSS. It is reasonable for the City to compensate the owners of those properties on which private pumps will be required a lump sum amount of \$13,100 per property to cover the on-going cost of operation, maintenance and replacement of these private pump systems. These costs are included in the \$15.5 million project cost estimate. Compensation of \$12,000 per property was provided to owners of properties in the Phase 1 area and of \$12,500 to owners of properties in the Phase 2 area.

Public Open House

An Open House will be held to explain the proposed sewer replacement work, the LAS initiative, the counter petition process, the timing for payment of charges under the LAS, the compensation provisions for transferring the private service connections from the VSS to the LPS, and the schedule for transferring the private service connections from the VSS to the replacement systems. This Open House will be held in the middle of the counter petition period related to the proposed LAS. Feedback from the Open House will be reported to Council at the end of the counter petition period along with appropriate recommendations in relation to an LAS Bylaw.

Cost Recovery from Phase 1 and Phase 2

The LAS charges in the Phase 1 SGS system were based on 33% recovery of the project cost from the benefitting property owners, while in the LPS replacement area the cost recovery from the property owners was 47.38%. To date, only 2 of the 283 benefitting properties have redeveloped and paid their LAS charges.

The LAS system replacement in Phase 2 was constructed with a City's contribution of 52.62% of the total project cost with the balance of 47.38% being recovered through LAS charges from the benefitting properties. To date, only 7 of the 145 benefitting properties have redeveloped and paid their LAS charges.

The cost recovery for the first two phases of the Bridgeview vacuum sewer replacement has been slow; however, this was anticipated. With the replacement of the old VSS, one constraint for the development community in the benefiting area has been eliminated. However, there are other challenges faced by the development community including the requirements for filling for flood protection and preload. In addition, property ownership in this area is fragmented and consolidation of the properties is required in order for development to occur.

Despite this slow recovery, the savings and benefits in decommissioning the VSS outweighs the slow recovery of the LAS in the long term, as an interest provision was included in the LAS charge to address the time value of money.

Operational Savings from Phase 1 and Phase 2

Since completion of Phase 1 and Phase 2, 12.3 km of the VSS and 384 connections have been decommissioned. The decommissioning of these works has resulted in a total savings of approximately \$300,000 over a two year period.

The expected savings was \$400,000 and was based on the assumption that all properties in the Phase 1 and Phase 2 areas would be transferred from the VSS to the replacement system. Currently there are 5 properties in Phase 1 that have not agreed to be transferred to the replacement system. There are various issues that are preventing the owners of these properties agreeing to the transfer.

The Phase 1 LAS Bylaw provided a 5-year period for properties owners to transfer to the replacement system. This transition period will end in May 2017.

Currently there are 2 properties in Phase 2 that have not agreed to be transferred to the replacement system. Similar to those in the Phase 1 area, there are various issues that are preventing the owners of these properties from agreeing to the transfer. The Phase 2 LAS Bylaw required for the immediate transfer to the replacement system. Although the Phase 2 LAS Bylaw called for the immediate transfer, staff have been working with the owners to address their concerns given that transferring them to the replacement system at this time will not be advantageous until those in the Phase 1 area have been transferred to the replacement system.

The proposed Phase 3 and 4 LAS Bylaw, similar to the Phase 2 LAS Bylaw, requires the immediate transfer to the replacement system.

Staff will continue to work with the owners of these holdout properties in an effort to transfer them to the replacement system. Should staff be unsuccessful, staff will be advising Council of what actions the City may take in order to realize its expected savings.

Vacuum Sanitary System

The completion of Phase 3 and Phase 4 will result in the completion of the replacement of the VSS in Bridgeview. This portion of the VSS will be decommissioned once all of the holdout properties from Phase 1 and 2 and all properties in Phase 3 and Phase 4 are transferred to the replacement system.

The only remaining VSS that will be operating at the completion of this project will be the system servicing South Westminster. Under the South Westminster NCP, the VSS is to be replaced by development with a LPS system. This approach has been successful along Grace Road and along Perimeter Road where vacuum lines have been decommissioned and replaced with LPS.

Unlike Bridgeview, this area is intended to support non-residential use. It is challenging to pre-service this area for the planned land uses ahead of development, as filling and preloading required on the roads and properties in the NCP area will likely negatively impact the replacement system.

Legal Services Review

The Legal Services Division has reviewed this report and has no concerns.

Finance & Technology Review

The Finance & Technology Department has reviewed this report and has no concerns.

Sustainability Considerations

The Local Area Service Initiative for the Phase 3 and Phase 4 Areas of the Bridgeview Vacuum Sewer Replacement will assist in achieving the objectives of the City's Sustainability Charter in relation to:

- Minimizing the operations and maintenance costs for the sewer system in Bridgeview;
- Reducing extraneous inflow into the sewer system, which in turn reduces the energy required to pump and treat the sewage;
- Reducing the sewage flow to Metro Vancouver's trunk system and sewage treatment plant will reduce the need for additional construction resources to build larger conveyance and treatment systems to handle the larger flow; and
- Facilitating industrial developments in the Bridgeview area leading to increased employment in Surrey that will act to support the City's objective of having a balance between local jobs and resident workers in Surrey.

Specifically, the Bridgeview Vacuum Sewer Replacement Program supports the following goals of the City's Sustainability Charter:

- EC2: Economic Development Strategy and an Employment Land Strategy;
- EC3: Sustainable Infrastructure Maintenance and Replacement;
- EN1: Energy Efficiency;
- EN8: Sustainable Engineering Standards and Practice; and
- EN16: Land, Water and Air Quality Management.

CONCLUSION

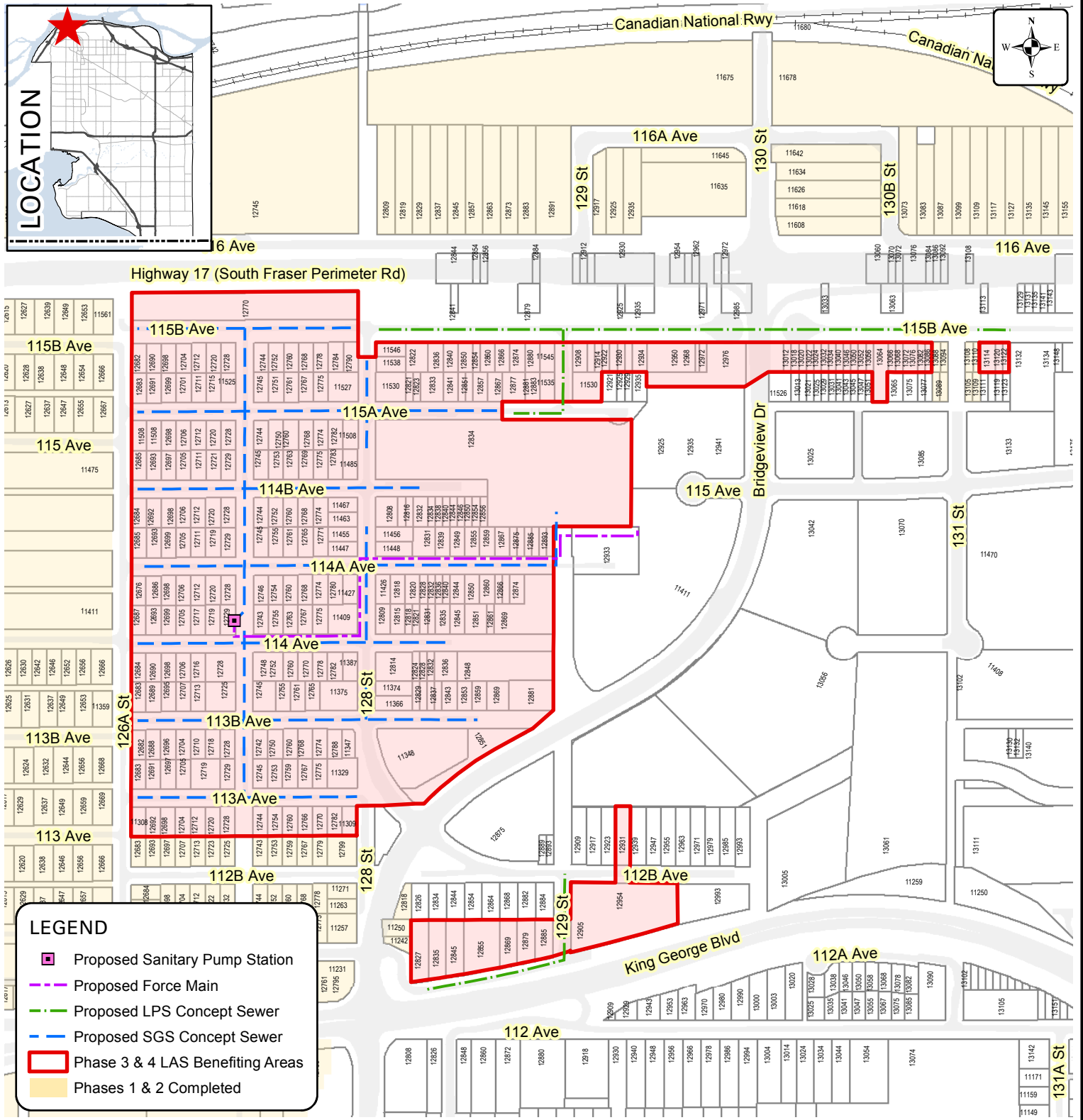
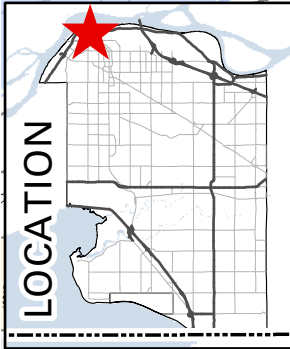
Based on the above discussion, it is recommended that Council:

- Approve a Local Area Service (LAS) initiative as a means to finance the replacement of the existing Vacuum Sewer System (VSS) in the Phase 3 and Phase 4 Areas of the East Bridgeview Sanitary Sewer System Replacement as illustrated in Appendix “I” at an estimated recovery rate of \$900 per frontage metre, \$5,500 per service lateral and \$22,200 per pump connection for the Low Pressure Sewer (LPS) Phase 3; and \$500 per frontage metre, \$17 per square metre of benefitting lot area, and \$5,500 per service lateral for the Steep Grade Sewer (SGS) Phase 4;
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- Adopt as a policy the mandatory reconnection of each existing private sewer connection within the local service area from the VSS to the new replacement sewer system at the completion of the replacement system.

Fraser Smith, P.Eng., MBA
General Manager, Engineering

JA/RL/MMP/clr

Appendix “I” - Phase 3 & Phase 4 Local Service Areas for Bridgeview Vacuum Sewer Replacement System - Local Service Area Map



LEGEND

- Proposed Sanitary Pump Station
- Proposed Force Main
- Proposed LPS Concept Sewer
- Proposed SGS Concept Sewer
- Phase 3 & 4 LAS Benefiting Areas
- Phases 1 & 2 Completed

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Scale: 1:5,500



Phase 3 & Phase 4 Local Service Areas for Bridgeview Vacuum Sewer Replacement System - Local Service Area Map

ENGINEERING DEPARTMENT

The data provided is compiled from various sources and IS NOT warranted as to its accuracy or sufficiency by the City of Surrey. This information is provided for information and convenience purposes only. Lot sizes, Legal descriptions and encumbrances must be confirmed at the Land Title Office.