



Corporate Report

NO: R008

COUNCIL DATE: February 9, 2009

REGULAR COUNCIL

TO: Mayor & Council DATE: February 4, 2009
FROM: General Manager, Engineering FILE: 1855-03
SUBJECT: British Columbia - Building Canada Fund – Application for Funding

RECOMMENDATION

The Engineering Department recommends that Council:

1. receive this report as information; and
2. endorse the following projects in the priority they are listed as the basis for an application to the Provincial Government for funding under the large cities component of the British Columbia - Building Canada Fund:
 - a) Bridgeview Sewer Replacement – Phase I (Appendix I);
 - b) Community Sidewalk Program (Appendix II);
 - c) Kennedy Area Water System Improvement (Appendix III);
 - d) King George Highway/Bear Creek Bridge Replacement (Appendix IV);
 - e) 160 Street Widening from 96 Avenue to 103 Avenue (Appendix V); and
 - f) 32 Avenue Widening from 160 Street to 168 Street (Appendix VI).

INTENT

The purpose of this report is to advise Council of the potential availability of funding under the large cities (populations greater than 100,000) component of the British Columbia – Building Canada Fund and to obtain Council approval to prioritize and make application to the Province for funding for six (6) specific projects under the Fund.

BACKGROUND

The British Columbia - Building Canada Fund is a Federal Government funding initiative announced in 2006 with a focus on the construction of new or replacement public infrastructure. Various components within the umbrella funding program have been directed to Major Infrastructure in national priority areas such as the National Highway

System, public transit, water and wastewater treatment and green energy as well as to fostering public-private partnership (P3) projects and to smaller scale projects in communities with populations less than 100,000.

In the round of applications under the Gas Tax Fund component of the Program, in 2008, Surrey was not successful in obtaining funding that was requested for two projects; these being the Bridgeview vacuum sewer system replacement and environmental works associated with 96 Avenue widening from 168 Street to 176 Street.

The B.C. Ministry of Community Development has recently advised Surrey that another round of applications is now being invited under this program with \$78 million being available Province-wide for large municipalities, being those with a population over 100,000. This round will be focused on road, water, sewer and drainage projects with a value in the range of \$5 million. They have advised that Surrey should submit approximately 5 projects for consideration of funding.

DISCUSSION

The following projects meet the criteria of the British Columbia - Building Canada Fund:

1. Bridgeview Sewer Replacement – Phase 1	\$ 8.5 million
2. Community Sidewalk Program (various locations)	\$ 5 million
3. Kennedy Area Water System Improvements	\$ 6.5 million
4. King George Highway/Bear Creek Bridge Replacement	\$ 4 million
5. 160 Street Widening from 96 Avenue to 103 Avenue	\$11.5 million
6. 32 Avenue Widening from 160 Street to 168 Street	\$ 9.5 million
7. Robson Park Storm Water Management Facilities	\$ 5.5 million
8. 168 Street/Hwy. 1 and 109 Avenue Pedestrian Overpasses	\$ 4.8 million
9. 24 Avenue/Hwy. 99 Interchange Ramps	\$ 5 million
10. Pedestrian/Cyclist Multi-Use Pathway Program (10 km)	\$ 6 million
11. Pedestrian Bridges over Price and Hunt Creeks (two branches of Bear Creek)	\$ 4 million

Given the available funding, Surrey may qualify for funding for more than one project. The Engineering Department has prioritized the list of potential projects and recommends that applications be submitted to the Province for the first six projects on the list. Detailed descriptions of these projects are contained in Appendices I through VI. All of these projects are important to the City from the perspective of our Master Plans and they also meet the objectives of the Building Canada Fund.

CONCLUSION

Based on the above discussion, it is recommended that Council endorse the following projects in the priority they are listed as the basis for an application to the Provincial government for funding under the large cities component of the British Columbia - Building Canada Fund:

- Bridgeview Sewer Replacement – Phase I (Appendix I);
- Community Sidewalk Program (Appendix II);
- Kennedy Area Water System Improvement (Appendix III);
- King George Highway/Bear Creek Bridge Replacement (Appendix IV);
- 160 Street Widening from 96 Avenue to 103 Avenue (Appendix V); and
- 32 Avenue Widening from 160 Street to 168 Street (Appendix VI).

Vincent Lalonde, P.Eng.
General Manager, Engineering

KZ/kdz/brb

Appendix I: Bridgeview Sewer Replacement – Phase I

Appendix II: Community Sidewalk Program

Appendix III: Kennedy Area Water System Improvement

Appendix IV: King George Highway/Bear Creek Bridge Replacement

Appendix V: 160 Street Widening from 96 Avenue to 103 Avenue

Appendix VI: 32 Avenue Widening from 160 Street to 168 Street

Bridgeview Vacuum Sewer Replacement – West Cell

OUTLINE OF PROJECT

Project Description:

The City of Surrey originally (in the 1970's) constructed a vacuum sewer system in the Bridgeview area due to the area having very soft soils and flat terrain. If conventional gravity sewer pipes would have been installed, they quickly would have settled out of alignment and would not have provided reliable service. Since the mid-1980's, the vacuum system has been ineffective in providing reliable sanitary sewer service to the area properties. Operating and maintenance costs of this system have significantly increased over the years. On a per-connection basis, the operations cost of the vacuum sewer system is 10 to 20 times more than that of a conventional gravity sewer system. This system is further challenged by inflow and infiltration (I&I) during storm events due to pipe line leakages.

Because of very high cost and technical complexity of the replacement system for the Bridgeview area, it is being phased in terms of its construction. The City carried out an extensive and detailed study to determine the most cost effective approach for a replacement system. The recommended replacement system, which involves the construction of steep grade gravity sewer (SGS) pipes flowing to a pump station and a force main, can be phased in by cells, being the North, West, and East cells. Currently the provincial Gateway Program is in the process of building the South Fraser Perimeter Road (SFPR). This construction, especially the pre-load on the road allowance, will impact the already stressed vacuum sewer system in the adjacent development. The first phase of the project involves installing the proposed replacement sewer system in the West Cell area, which has high inflow and infiltration during storm events and which has been the most expensive area to maintain the existing vacuum sewer system in recent years. The recommended solution is a green solution as it eliminates the need for vacuum pumps, resulting in energy saving and a reduction in the amount of greenhouse gases produced by the system.

Project Benefits:

The benefits of this project are:

- a) The replacement of the vacuum sewer will ensure a robust sewer system that provides reliable service to the West cell area of Bridgeview and will eliminate health concerns that are emanating from the operation of the current system.
- b) The replacement system will significantly reduce the City operating costs resulting in a reduced utility costs to the area residents.
- c) The elimination of vacuum pumps will result in energy savings and a reduction of greenhouse gases, which supports the BC Climate Action Charter to which the City is signatory.
- d) The new system will considerably reduce inflow and infiltration during storm events relieving the pressure on Regional conveyance and treatment capacities, which will minimize the costs to the Region in relation to expanding and operating Regional infrastructure. This is consistent with the Liquid Waste Management Plan.

Estimated Project Cost:

Estimated Budget Cost (Phase I)

\$ 8.5 Million

[02040800kz App 1.pdf](#)

Community Sidewalk Program

OUTLINE OF PROJECT

Project Background & Description

Creating an environment where people can safely walk to schools, neighbourhood stores, parks and other facilities as well as socialize with their neighbours, significantly improves their quality of life. The ability to walk to a bus stop is fundamental to providing travel choice and the ability for all residents to access jobs, education and healthcare. These principles are cornerstones adopted by Surrey Council in 2008 through the Sustainability Charter and the Transportation Strategic Plan.

There are significant areas of Surrey that were developed prior to the understanding of the importance of sidewalks in creating walkable, inviting communities. As a consequence, the sidewalk network has developed in a piece-meal fashion with many critical missing sidewalk gaps throughout the City. This incomplete network limits residents' mobility and travel choice.

As a result of the suburban nature of some areas in Surrey, many roads have ditching along both sides, forcing any pedestrian activity to occur within vehicular travel lanes. This creates a barrier to walking, as the residents feel unsafe and uncomfortable in this environment.

This project is intended to address these community needs and support the City's Strategic Objectives by adding 8 to 10 km of sidewalk equitably distributed to the six Surrey Communities. It will support other initiatives that the City is embarking on, such as the Safer School Zones and transit improvements in conjunction with TransLink.

Estimated Schedule & Cost

The City of Surrey has an established system for sidewalk priorities. Subject to funding approval, construction could begin in Fall of 2009 and be complete by the end of 2010.

The project budget of \$5 Million has been established based on the key sidewalk priorities throughout the City.

Kennedy Area Water System Improvement

OUTLINE OF PROJECT

Project Description:

The Kennedy area is located in the northwest part of City of Surrey bounded approximately by 140 Street to the east, 80 Avenue to the south, the Corporation of Delta to the west and the Fraser River to the north. The area includes most of the City Centre high density residential and commercial area. The water supply to this area is serviced by Kennedy pump station and its transmission main network. Due to the rapid development and population growth over the last 20 years, the water network has reached its capacity. Several areas, including City Centre, are experiencing low pressure during periods of high water demand. The City has planned and completed the design for the upgrading of the transmission mains.

The proposed system improvements include the construction of 2,500m of large diameter water transmission mains to increase the capacity of the system, and the replacement of 2,700m of aging water main. The total cost is estimated to be \$6.5 million. These improvements will increase the water pressure to meet the City's criteria and, therefore, enhance the quality of life of the residents. The new water main will be of ductile iron pipe replacing the aging reinforced concrete pipe. This will reduce the potential occurrence of water main breakage, thus minimizing the disruption to traffic and public inconvenience. The proposed improvement will also increase the capacity of the water network to service the future re-development of City Centre.

The improvement will provide an opportunity for the City to reduce the pumping energy needs of the Kennedy pump station during low demand periods. The proposed large diameter transmission water mains will significantly decrease the friction loss in the system, and in periods of low demand, the pressure setting of the pumps can be reduced to reflect the decreased pressure loss. This will reduce the energy requirement as well as reduce potential water loss through pipe leakage and, therefore, enhance sustainability and reduce greenhouse gas production.

Estimated Cost

Estimated Budget Cost: \$6.5 million

King George Highway/ Bear Creek Bridge Replacement

OUTLINE OF PROJECT

Project Description:

King George Highway is one of three continuous north-south major arterial roadways in Surrey. This former provincial highway historically provided the link from Vancouver via New Westminister to the Pacific Border Crossing. It was devolved to the City of Surrey in 1999. Since that time the City, with cost-sharing from TransLink, has invested considerable funds in widening two-lane sections of King George Highway, in pavement rehabilitation, and in the rehabilitation and seismic upgrading, or replacement of major structures. King George Highway in the vicinity of the bridge carries in excess of 45,000 vehicles per day, is a major transit route, and is planned for implementation of exclusive bus lanes and RapidBus operation.

The King George Highway Bear Creek Bridge is an 18.5-meter three-span timber bridge constructed in 1939. Surrey's life-cycle cost based bridges maintenance management program has identified the need to replace this aging structure; the present value of the projected annual rehabilitation and repair costs exceeds the cost of replacement and the bridge has effectively reached the end of its useful life.

The replacement bridge will be a 28-meter span concrete and steel structure estimated to cost \$3 million with the associated modifications to the roadway approaches estimated to cost \$1 million.

Estimated Cost:

Estimated Budget Cost: \$ 4 Million

160 Street Widening from 96 Avenue to 103 Avenue

OUTLINE OF PROJECT

Project Description:

This project is primarily intended to support the growing commuter traffic demand from Surrey to the rest of Metro Vancouver north of the Fraser River via Highway 1. Upgrading and widening 160 Street between 96 Avenue and 103 Avenue, see attached location plan, is a critical section of a multi-year strategy to increase capacity and improve safety along this important route linking Fraser Highway to Highway 1.

160 Street is an arterial truck route that provides a direct connection to Highway 1. Between 96 Avenue and 103 Avenue, a distance of approximately 1.5 kilometers, this arterial is currently a two-lane undivided roadway carrying approximately 20,000 vehicles per day. During peak periods, traffic on 160 Street at the approach to Highway 1 experiences major delays and queuing. Along with the critical linkage between Fraser Highway and Highway 1, this route provides a direct link between the Fleetwood Town Centre and the Fraser Heights community. Throughout the project limits the roadway has very narrow shoulders, limited sections of sidewalk and left turn lanes only at major intersections. At the northern end of the project, the upper end of the Serpentine River runs along the east side of the road.

Project Background

By 2013 the Provincial Gateway Program will have delivered a widened Highway 1 and Port Mann bridge. The additional general-purpose traffic and HOV travel lanes will increase the capacity of this corridor and allow the introduction of express bus service along Highway 1. The current congestion on 160 Street at Highway 1 has a significant impact on residents trying to access Fraser Heights north of Highway 1, as well as bus service, which operates between Fleetwood and Surrey City Centre via 160 Street and 104 Avenue.

This project will facilitate improved mobility for all modes to reach Highway 1 and travel between communities in Surrey. By adding bicycle lanes, sidewalks, improving transit operations and addressing environmental constraints, this project will achieve the sustainability objectives that the City has adopted for transportation projects.

The reduction in delays for trucks supports the Provincial and Federal goals for improved goods movement to help keep our region competitive.

Project Scope, Schedule & Cost

From a mobility and safety perspective, it is essential that the two-lane segment of 160 Street, between 96 Avenue and 103 Avenue, be widened to a 4-lane cross-section with left turn lanes/median and that sidewalks, bicycle lanes and bus bays be added on both sides of the road.

Designs are complete and, subject to funding, tender for construction could commence within 120 days of the funding commitment. With this schedule, construction could be completed by Fall 2010.

This arterial widening project is estimated to cost \$11,500,000.

32 Avenue Widening from 160 Street to 168 Street

OUTLINE OF PROJECT

Project Description:

This project is intended to support growing inter-municipal goods movement and commuter traffic demand resulting from the rapid growth in Surrey, Langley and the Fraser Valley. Widening of 32 Avenue, between 160 Street and 168 Street, see attached location plan, is an important stage of a multi-year strategy to increase capacity and improve safety along this important regional corridor.

32 Avenue is an arterial truck route that provides a direct connection to Highway 99. Between 160 Street and 168 Street, a distance of 1.6 kilometers, this arterial is currently a two-lane undivided rural standard roadway carrying over 11,000 vehicles per day. It provides a direct link between Campbell Heights, a growing industrial area, new residential development and Highway 99. Throughout the project limits the roadway has very narrow shoulders, no left turn lanes and open ditch drainage along both sides. Several locations along this length have substandard vertical geometry and sight distance.

Project Background

The areas west of 164 Street are experiencing rapid residential densification and some industrial and commercial development. Residential densification is planned to continue to the east in the coming years. The area bounded by 32 Avenue, 20 Avenue, 188 Street and 196 Street is a large industrial centre that is rapidly developing. As a result, there has been a significant increase in truck traffic and commuter traffic along 32 Avenue, which requires the roadway be upgraded to improve safety for drivers, cyclists and pedestrians. By 2031 traffic demand for 32 Avenue is projected to be 32,000 vehicles per day. The City of Surrey has plans to continue with improvements along the remainder of the corridor over the coming years.

This project is also important from a sustainability perspective. The alternative route to 32 Avenue is 40 Avenue, which passes through extensive farmland. By making improvements to 32 Avenue, the City is lessening the 40 Avenue traffic volume and its associated impacts on valuable farmland.

Project Scope, Schedule & Cost

From a capacity and safety perspective, it is essential that the two-lane segment of 32 Avenue, between 160 Street and 168 Street, be widened and improved to provide a separated sidewalk, bicycle lanes on both sides of the road and left turn lane/painted median.

Designs are complete and, subject to funding, tender for construction could commence within 120 days of the funding commitment. With this schedule, construction could be completed by Summer 2010.

This arterial widening project is estimated to cost \$9,500,000.

[02040800kz App 6.pdf](#)