

TO: CHAIR AND MEMBERS FINANCIAL MANAGEMENT COMMITTEE **DATE:** 2021 January 12

FROM: DIRECTOR ENGINEERING **FILE:** 32000-05

SUBJECT: **2021 JANUARY ENGINEERING CAPITAL INFRASTRUCTURE BYLAW FUNDING REQUEST**

PURPOSE: To request the use of Waterworks Utility and Sanitary Sewer Fund Reserves and to request a Capital Reserve Fund Bylaw to finance 2021 - 2022 Engineering capital infrastructure projects.

RECOMMENDATION:

1. **THAT** the Financial Management Committee recommend Council authorize the City Solicitor to bring forward a Capital Reserves Fund Bylaw in the amount of \$21,149,000, the use of Sanitary Sewer Fund Capital Reserves in the amount of \$5,690,000 and the use of Waterworks Utility Capital Reserves in the amount of \$1,275,000 to finance Engineering capital infrastructure improvement projects, as outlined in this report.

REPORT**INTRODUCTION**

The 2021 – 2025 Provisional Financial Plan will provide funding for various multi-year capital improvement projects. Upon approval of this funding request by Council, these expenditures will be included in the 2021 – 2025 Financial Plan (Engineering Section). In order to proceed with the award of contracts for design, contract administration and construction, funding approval is requested for the projects listed below. This report is to seek Council approval of fund allocation for Engineering projects in advance of council adoption of the 2021 - 2025 financial plan.

POLICY SECTION

The following project is aligned with the City of Burnaby's Corporate Strategic Plan by supporting the following goals and sub-goals of the Plan.

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Goal

- A Safe Community
 - Transportation safety –
 Make City streets, pathways, trails and sidewalks safer.

- A Dynamic Community
 - City Facilities and infrastructure –
 Build and maintain infrastructure that meets the needs of our growing community.

- A Thriving Organization
 - Reliable services, technology and information –
 Protect the integrity and security of City information, services and assets.

1.0 Infrastructure

1.1 Water and Sewer Pump Station Upgrades *Estimated \$100,000*

This project is to upgrade and standardize the City’s Supervisory Control and Data Acquisition (SCADA) system for water, sanitary, and drainage assets that require SCADA. This project also includes a licensed radio channel which requires coordination effort between Engineering and IT. In 2020, the SCADA network was upgraded in North Burnaby. In 2021, the SCADA network will be upgraded in South Burnaby, completing installation for the entire City.

Project Mask(s)	2021
EKA.3010 - Sewer	\$100,000

1.2 Byrne Creek Dike Upgrades *Estimated \$360,000*

Portions of the existing Byrne Creek dike have settled and need to be raised to ensure a consistent level of flood protection. Detailed designs have been prepared and are under review by the Inspector of Dikes. This project will be tendered for construction in 2021 by the Infrastructure Planning team.

Project Mask	2021
ELA.8016 – Drainage	\$360,000

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1.3 Kensington Overpass Resurfacing

Estimated \$3,301,000

The Kensington Overpass was constructed in 1985 and has a replacement value of \$41 million. The City has a regular inspection and maintenance program for this bridge to protect the City’s investment. Inspections since 2013 have indicated that the concrete deck has begun to deteriorate. In 2018, the City’s Consultant recommended resurfacing of the bridge deck to proactively extend the life of this structure while the deck is still in good condition and before other components of the bridge are affected by deterioration of the deck. Three alternatives were compared based on lifecycle costs, durability, constructability. It was determined that a Polyester Polymer Concrete (PPC) overlay was the best option.

This project involves design and construction of the PPC overlay for the main span, west ramp and east ramp of the Kensington Overpass. The resulting product should extend the life of the deck by at least 30 years. Ride quality on the bridge will also be improved. There will also be minor traffic improvements with new pavement markings and reflective road markers.

Upon completion, this project is eligible for a Translink grant in the amount of \$1,650,000.

Project Mask	2021	2022	Total
EMA.8002	\$301,000	\$3,000,000	\$3,301,000

1.4 Relining

Estimated \$500,000

Pipes eligible for relining are first cleaned and then a new liner is inserted into the pipe to renew the asset and extend its useful life. The City inspects storm and sanitary pipes on a 20 year cycle. Pipes that are discovered to be in poor condition are evaluated for relining, a cost-effective, environmentally sensitive, and less disruptive methodology of rehabilitating a pipe. This work is released through BC Bid for qualified contractors to provide tenders to complete the work, with inspection completed by City staff and specialized consultants.

Project Mask(s)	2021
ELA.8021 – Drainage	\$250,000
EKA.8021 – Sewer	\$250,000
Total	\$500,000

1.5 Sidewalk Expansion – Future

Estimated \$800,000

The sidewalk expansion program allocates funding for priority sidewalk construction in areas near schools, community centres, parks, and transit facilities. The draft list of projects has been prepared and will undergo additional consultation to build support and momentum for these locations. Once the consultation is complete, an assignment will be prepared to complete detailed design and construction.

Project Mask	2021	2022	Total
EMC.8022 – Roads	\$400,000	\$400,000	\$800,000

1.6 Storm Extensions – Future

Estimated \$2,175,000

In coordination and funded partially through development, storm extensions are completed to properties that do not currently have a storm service to a storm main. This new storm service improves drainage reliability and level of service. Historically, two 'packages' are completed each year, with applications received for 6 months, designs completed over the following 6 months, and construction completed over the final 6 months. However, the City is moving toward design and construction by City staff, and this should significantly speed up completion of the work.

Included in Appendix A is a detailed list of proposed locations and scope of work.

Project Mask(s)	2021
ELA.8010 – Drainage	\$1,775,000
EKA.8010 – Sewer	\$100,000
EMC.8010 – Roads	\$300,000
Total	\$2,175,000

1.7 Developer Coordinated Works

Estimated \$1,225,000

As a condition of development approval, developers are required to upgrade infrastructure. Sometimes, while the developer is already mobilized to complete work, it can be cost-effective and less disruptive to the neighbourhood to include additional works paid for by Burnaby. Developer-coordinated works provide funding as necessary to complete these additional works and associated overhead costs.

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The City identifies possible coordinated works opportunities, requests a quote from developers, and if the quote is cost-effective, creates a purchase order and pays the developer upon acceptable completion of the works. A potential key 2021 project would be coordinated upgrades at Marine Way & North Fraser Way.

Project Mask(s)	2021
ELA.8003 – Drainage	\$100,000
EKA.8003 – Sewer	\$200,000
EMC.8003 – Roads	\$700,000
EJA.8003 – Water	\$225,000
Total	\$1,225,000

1.8 Integrated Stormwater Management Plan Implementation

Estimated \$100,000

Integrated stormwater management plans have been developed for all of Burnaby. These plans review opportunities to improve the environment through drainage-related projects and policies. This assignment will identify the highest-value projects and start the preliminary design phase.

Project Mask(s)	2021
ELA.8014 – Drainage	\$100,000

1.9 Burnaby Heights Combined Sewer Separation

Estimated \$7,030,000

This project is part of the City’s ongoing infrastructure renewal program involving separation of combined sewers as required under the local Liquid Waste Management Plan (ILWRMP). Sewer separation minimizes volumes of combined sewer over-flow to the environment and the amount of wastewater that needs to be treated resulting in better allocation of resources, lower energy use and reduced environmental impact. As a fully integrated project, the scope includes separation of combined sewers, watermain and service replacements and street upgrades in the Burnaby Heights area.

Included in Appendix A is a detailed list of proposed locations and scope of work.

Project Mask	2021	2022	Total
EMC.3193 – Roads	-	\$980,000	\$980,000
EJA.3193 – Water	\$550,000	\$500,000	\$1,050,000
EKA.3193 – Sewer	\$1,800,000	\$3,200,000	\$5,000,000
Total	\$2,350,000	\$4,680,000	\$7,030,000

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1.10 Eastbrook Pump Station Upgrade

Estimated \$40,000

This project consists of upgrades to the existing Eastbrook pump station to accommodate changes in the existing common forcemain (shared by Eastbrook, Beta, Delta and Douglas pump stations) resulting from increased system demands from growth and re-development in the Central Valley area. Upgrades to the existing lift station are anticipated to include pump impellers, motors, check valves, and control kiosk so that the existing Eastbrook station can continue to meet anticipated total dynamic head conditions in the common forcemain.

Project Mask(s)	2021
EKA.3165 – Drainage	\$40,000

1.11 North Burnaby Watermains and Road Rehabilitation

Estimated \$3,101,000

This watermain replacement and roads rehabilitation package involves replacement of existing watermain and services, complete with pavement rehabilitation on local/collector streets in various locations of north Burnaby. This project will be designed by an engineering consultant and constructed through a tendered contract.

Included in Appendix A is a detailed list of proposed locations and scope of work.

Project Mask	2021	2022	Total
AEC.3147 - Conduit	\$101,000	-	\$101,000
EMC.3147 - Roads	\$2,000,000	\$1,000,000	\$3,000,000
Total	\$2,101,000	\$1,000,000	\$3,101,000

1.12 Environmental Rehabilitation Creeks and Culverts

Estimated \$2,102,000

This is an environmental rehabilitation project related to culverts, creeks and slopes at various locations throughout the City. Projects include rehabilitation of culverts, improvement of a storm sewer outfall, erosion control, slope remediation, and replacement of a safety fence.

Due to the large number of sites and dependency on Department of Fisheries and Oceans permit approvals, the project construction work has been divided into 3 packages over the course of 3 years as permits are approved. Package A is culvert relining at Crab Creek and at McKee which has been completed in 2019. Package B is to upgrade a culvert at the headwaters of Byrne Creek at Stride Avenue and 17th Avenue due to flood issues. Package C includes a culvert upgrade at Eagle Creek.

Project Mask	2021	2022	Total
ELA.3093 – Drainage	\$1,000,000	\$1,102,000	\$2,102,000

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1.13 Culvert Rehabilitation Program

Estimated \$2,580,000

This project includes a review of existing culverts considered to be in poor condition by City Operations. Design and construction work will then be determined to rehabilitate these culverts. Risk factors such as Department of Fisheries and Oceans (DFO) permit approval requirements will drive the City's capacity to complete the works.

The first list of critical culverts contained 17 across the City in various conditions. After review, the construction effort will take place in stages as work is dependent on DFO approvals or notifications.

Included in Appendix A is a detailed list of proposed locations and scope of work.

Project Mask	2021	2022	Total
ELA.3183 – Drainage	\$1,580,000	\$1,000,000	\$2,580,000

1.14 Central Burnaby Watermain and Road Rehabilitation

Estimated \$4,000,000

Watermain replacement was completed by City Forces in 2020. The funding requested here is for road repair and rehabilitation of the project area for various sites in Central Burnaby. The project involved replacement of existing aged asbestos cement or cast iron water mains and services, hydrants for enhanced fire-fighting and capacity upgrades, and is then completed with pavement rehabilitation and/or upgrades on local and collector streets to be tendered out to retain a contractor over multiple years and contracts. Interim strip roads and traffic safety improvements will be upgraded to current urban street standards (curb, gutter & sidewalk) as part of an integrated project approach. The total program value is approximately \$13 Million over multiple years.

Included in Appendix A is a detailed list of proposed locations and scope of work.

Project Mask	2021	2022	Total
EMC.3189 – Roads	\$1,500,000	\$2,500,000	\$4,000,000

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1.15 Holdom Overpass – Coordinated Works

Estimated \$200,000

The Holdom Overpass is a third party project that will complete the City's long-term goal to have a major north south connector in the Brentwood Town Centre area. With this significant project, the City identifies associated City upgrades to be completed as part of this opportunity. It will be the Vancouver Fraser Port Authority's responsibility to build the overpass to connect Holdom Avenue and Douglas Road. The City is anticipating to perform coordinated works with this project and will cost share portions of work to ensure optimal restorations and infrastructure are captured.

Project Mask	2021
EMC.3187 – Roads	\$200,000

1.16 Barnet Culvert Rehabilitation

Estimated \$500,000

The City has completed detailed condition assessments of culverts along the Barnet Highway. While some critical culverts have been prioritized and rehabilitated in earlier projects, this project will replace or reline the remaining culverts that are in poor condition. This work will be completed before the final phase of paving on Barnet Highway. Early funding is being requested to award design for this project.

Project Mask	2021	2022	Total
ELA.3216 – Drainage	\$100,000	\$400,000	\$500,000

These expenditures will be included in the 2021 – 2025 Provisional Financial Plan and sufficient Capital Reserves and Reserve Funds are available to finance the capital projects outlined in this report.

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RECOMMENDATION

It is recommended that the Financial Management Committee recommend Council authorize the City Solicitor to bring forward a Capital Reserves Fund Bylaw in the amount of \$21,149,000, the use of Sanitary Sewer Fund Capital Reserves in the amount of \$5,690,000 and the use of Waterworks Utility Capital Reserves in the amount of \$1,275,000 to finance Engineering capital infrastructure improvement projects, as outlined in this report.



Leon A. Gous, P.Eng., MBA
DIRECTOR ENGINEERING

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Copied to: City Manager
Director Finance
Director Corporate Services
City Solicitor
Deputy Director Engineering
Assistant Director Infrastructure & Development
Manager, Engineering Projects

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Appendix A

Project: Storm Extensions- Future (Section 1.6)

Construction is being planned at the following locations:

Location #	Property Address
1	4762 Neville Street
2	5242 Eglinton Street
3	5904 Sumas Street
4	5634 Gilpin Street
5	4544 Venables Street
6	5656 Carson Street
7	4975 Chesham Avenue
8	3750 Kalyk Avenue
9	7853 Elwell Street
10	428 Springer Avenue North
11	6450 Clinton Street
12	132 Holdom Avenue

Project: Burnaby Heights Combined Sewer Separation (Section 1.9)

Construction is being planned at the following locations:

Item	Locations
1	Albert Street
2	Cambridge Street
3	Trinity Street
4	Ingleton Avenue North
5	McGill Street
6	Eton Street

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Project: North Burnaby Watermains and Road Rehabilitation (Section 1.11)

Construction is being planned at the following locations:

Item	Locations
1	Buchanan Avenue, Halifax Street, Parkcrest Drive, Warwick Avenue, Fell Avenue (Holdom Avenue to Kensington Avenue)
2	Aubrey Street, Charles Street, Dunlop Avenue, Stratford Drive, Fell Avenue (Stratford Avenue to Sperling Avenue)

Project: Culvert Rehabilitation Program (Section 1.13)

Construction is being planned at the following locations:

Stream	Intersection
Simon Tributary 1	Barnet Highway, East of Takeda Drive
Silver Tributary 1-1-1	Gagardi Way, East of University Drive
Eagle Tributary 6-1-1	Burnaby Mountain Parkway, West of Centennial Way
Kaymar Tributary 1	Marine Drive / Greenall Avenue
Guichon Creek	Willingdon Avenue, South of Deer Lake Parkway
Deer Lake Brook Tributary 1	Sperling Avenue, North of Glencarin Drive
Still Creek Tributary	Still Creek Avenue / Myrtle Street
Eagle Tributary 5	Burnaby Mountain Parkway, East of Centennial Way
Ramsey Creek	19th Avenue, East of 4th Street
Guichon Creek Tributary	Cedarwood Crescent, West of Willingdon Avenue
Guichon Creek Tributary	Barker Crescent / Parkway Crescent
Guichon Creek Tributary	Barker Crescent, West of Parkway Crescent
Guichon Creek Tributary	Barker Crescent, South of Gilpin Crescent
Guichon Creek	Price Crescent, West of Gilpin Crescent
Stoney Tributary	Noel Drive, North of Beaverbrook Drive
Silver Tributary 1-1-1	Forest Grove Drive, East of Underhill Avenue

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Project: Central Burnaby Watermain and Road Rehabilitation (Section 1.14)

Construction is being planned at the following locations:

Item	Locations
1	Manor Street, from Gilmore Avenue to Gilmore Drive; Dominion Street, from Gilmore Avenue to Gilmore Drive; Gilmore Avenue from Manor Street to the Lane South of Dominion.
2	Portland Street, from Boundary to Joffre; Carson Street, from Boundary to Joffre; ROW at Boundary Road from Portland to Carson.
3	Blaine Drive, Cliff Avenue to Cliff Avenue.
4	Ridley Drive, from Duthie Avenue to cul-de-sac.
5	Irving Street, from Royal Oak to Elgin; Pearl Avenue, from Irving to Oakland; Denbigh Avenue, from Irving to Oakland; Selma Avenue, from Irving to cul-de-sac.
6	Randolph Avenue, from Beresford to Kingsway.
7	Gilley Avenue, from Beresford to Kingsway; Arbroath Street, from Gilley to cul-de-sac.
8	Balmoral Street from Colborne Avenue to Sperling Avenue; Elwell Street from Colborne Avenue to Griffiths Avenue; Sperling Street from Arcola Street to Imperial Street.
9	Manor Street, from Gilmore Avenue to Gilmore Drive; Dominion Street, from Gilmore Avenue to Gilmore Drive; Gilmore Avenue from Manor Street to the Lane South of Dominion.
10	Portland Street, from Boundary to Joffre; Carson Street, from Boundary to Joffre; ROW at Boundary Road from Portland to Carson.
11	Blaine Drive, Cliff Avenue to Cliff Avenue.
12	Ridley Drive, from Duthie Avenue to cul-de-sac.
13	Irving Street, from Royal Oak to Elgin; Pearl Avenue, from Irving to Oakland; Denbigh Avenue, from Irving to Oakland; Selma Avenue, from Irving to cul-de-sac.
14	Randolph Avenue, from Beresford to Kingsway.
15	Gilley Avenue, from Beresford to Kingsway; Arbroath Street, from Gilley to cul-de-sac.
16	Balmoral Street from Colborne Avenue to Sperling Avenue; Elwell Street from Colborne Avenue to Griffiths Avenue; Sperling Street from Arcola Street to Imperial Street.