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CORPORATE REPORT

NO: R007 COUNCIL DATE: January 17, 2022

REGULAR COUNCIL

TO:	**Mayor & Council**	DATE:	**January 12, 2022**
FROM:	**General Manager, Engineering**	FILE:	**1855-03**
SUBJECT:	**Canada-British Columbia Investing in Canada Infrastructure Program Grant Opportunity**		

RECOMMENDATION

The Engineering Department recommends that Council:

1. Receive this report for information; and

2. Endorse the grant application for sewer inflow and infiltration reduction in North Surrey for a total of $22.5 Million under the Canada-British Columbia Investing in Canada Infrastructure Program – Green Infrastructure – Environmental Quality Sub-Stream grant opportunity, as generally described in this report.

INTENT

The purpose of this report is to provide Council with an overview of the Canada-British Columbia Investing in Canada Infrastructure Program – Green Infrastructure – Environmental Quality Sub-Stream grant opportunity ("the Grant") and to obtain Council's support for the application to the Investing in Canada Infrastructure Program (the "Program") before the application deadline of January 26, 2022.

BACKGROUND

The Canadian and British Columbia governments are now accepting a third round of applications to the "Investing in Canada Infrastructure Program - Green Infrastructure – Environmental Quality Sub-Stream." The Program is directed towards supporting local governments and First Nations to increase the capacity treat and/or manage wastewater (sewer), stormwater, and potable water, as well as to manage the environmental effects of solid waste and soil and air pollution. The total funding available for this intake is $270 Million in general applications, where applications should generally not exceed 10% of the total funding. To date the Federal and Provincial governments have already contributed $399 Million to the first and second intakes.

The seven goals of the Program include:

1. Improve services to existing residents;
2. Provide clean drinking water;
3. Reduce air, soil, and water pollution;
4. Reduce resource consumption;
5. Increase adaptation and mitigation to climate change;
6. Enhance natural systems and ecological services; and
7. Support resource recovery and re-use.

Applications made to the program should support as many of the program goals as possible. Additional Program criteria include:

- Environmental protection;
- Enhancing the environment – support for natural systems and ecological services;
- Resource recovery and reuse;
- Energy generation and reuse;
- Climate change adaptation; and
- Climate change mitigation.

The Program also requires that a comprehensive greenhouse gas emissions and climate change resilience assessment be completed and that the Federal Community Employment Benefits requirements would be applied to projects with expenditures of $25 Million or more.

The Program would occur over a 3-year period following approval of funding.

DISCUSSION

Sanitary sewers are prone to the inflow of rainwater and the infiltration of groundwater during the wet months of the year (usually November to March). Excess Inflow and Infiltration ("I&I") leads to a wide range of sewer flooding, that includes:

- Controlled overflow of untreated sewage to creeks, rivers, and the ocean;
- Manhole flooding, where untreated sewage flows onto City streets; and
- Basement flooding, where sewers flow into homes through service connections.

Sewer flooding to the environment, are called sanitary sewer overflows ("SSOs") in the regional plans and provincial regulations.

Every year, sanitary sewer overflows and sewer flooding occurs in the City due to excess I&I which is further exacerbated by increased sewer flows with ongoing population growth. The responsibility for SSOs and sewer flooding in Surrey is shared between the City and Metro Vancouver where many of the sewer overflows occur in the Metro Vancouver system but are directly related to local I&I.

In particular, in November 2021, the City responded to more than 45 sewer flooding and SSO events, and Metro Vancouver also experienced a record number of SSO events in North Surrey, Cloverdale, and South Surrey.

Since the 1990's, the City of Surrey has been methodically managing I&I through an approach of monitoring, followed by a sewer rehabilitation or replacement. In Surrey, the areas that contribute the highest levels of I&I are in North Surrey, and include the Robson, City Centre, Birdland, and Bridgeview neighbourhoods as shown in Appendix "I". This is primarily due to the widespread use of asbestos cement ("AC") piping materials, where the smaller pipes are degrading a very rapid rate.

Since 2010, the City has targeted the complete replacement and upgrading of the worst AC pipes in Birdland and Robson and other North Surrey neighbourhoods, with an investment of about $22 Million for new sewers and about $6 Million for other rehabilitation and monitoring programs. Given the poor condition of the pipes, this approach was selected to give the best possible outcome, and to provide a long-term solution for the City that will accommodate future growth and climate change.

The City has focused on the replacement of public sewer mains and public sewer connections as a priority. Unfortunately, I&I is a wide-spread problem, where more than half of the I&I can come from underground sewer connections on private property and from improper cross-connections. To date, the City has not been able to address I&I from private pipes in a methodical program, where the most progress is made through redevelopment.

The City needs to develop the most efficient way to reduce I&I to best mitigate sewer flooding and SSOs and provide value to residents. The Program provides a good opportunity for the City to utilize the grant funding to conduct extensive rehabilitation of sewer connections and testing on private property to make the progress and inflow and infiltration reductions that are necessary to eliminate regular sewer flooding.

The total program budget is estimated to be $22.5 Million, with $6M (or 26.7%) contributed by the City. Over three years, the $2M contribution per year would be approximately 30% of the annual sewer capital budget allocation.

The program would utilize one of the areas in either Birdland or Robson that has been monitored and has already seen some sewer replacement work. In order to capture a larger area, it would best to leverage some of the existing sewer monitoring and replacement work

PROGRAM GOALS AND OUTCOMES

The Program has seven key goals as outlined above. The proposed sewer inflow and infiltration reduction program targets are as follows:

Improve services to existing residents: the proposed program directly benefits residents, especially where costs to rehabilitate private sewers is cost-prohibitive and further impacts home affordability.

Reduce water pollution: inflow and infiltration directly results in the release of untreated sewage to receiving waters, and elimination of regular SSOs is the most directly measurable benefit of this work.

Reduce resource consumption: in many parts of the Surrey sewer system, pumping stations are needed to convey sewer up hill at a cost of energy. In rain events, often as much or more I&I is pumped than sewage. Reducing I&I in key pumped areas will also have a benefit to energy or resource consumption.

Increase adaptation and mitigation to climate change: it is forecasted that climate change in southwest BC will bring more rain and more intense rain. As seen in November 2021, Surrey's sewers are very susceptible to flooding in large rain events, and work is needed to limit this risk as rainfall patterns change in the future.

Support resource recovery and re-use: sewage heat is a resource that is being leverage more by local governments. Inflow and infiltration reduces the overall heat in sewers and potential to reduce fossil fuel based heat. Surrey City Energy has a project underway to extract sewer heat from Metro Vancouver's North Surrey Interceptor, and this work will directly benefit sewer heat potential of this project.

SUSTAINABILITY CONSIDERATIONS

The approval of the Agreement supports the objectives of the City's Sustainability Charter 2.0. In particular, this work relates to the Sustainability Charter 2.0 theme of Infrastructure. Specifically, this agreement supports the following Desired Outcomes ("DO's"):

- All Infrastructure D01: City facilities and infrastructure systems are well managed, adaptable, long lasting, and are effectively integrated into regional systems; and
- All Infrastructure D02: Infrastructure systems provide safe, reliable, and affordable services.

FUNDING

Funding for this project will be made available in the 2023-2026 Sewer Capital Budget.

CONCLUSION

The Investing in Canada Infrastructure Program provides a very good opportunity for the City to develop a complete sewer rehabilitation program that can be implemented, measured, and proven without great impact to rate payers. It will provide a foundation and rationale for future integration of such a program into the general sewer utility plan and funding.

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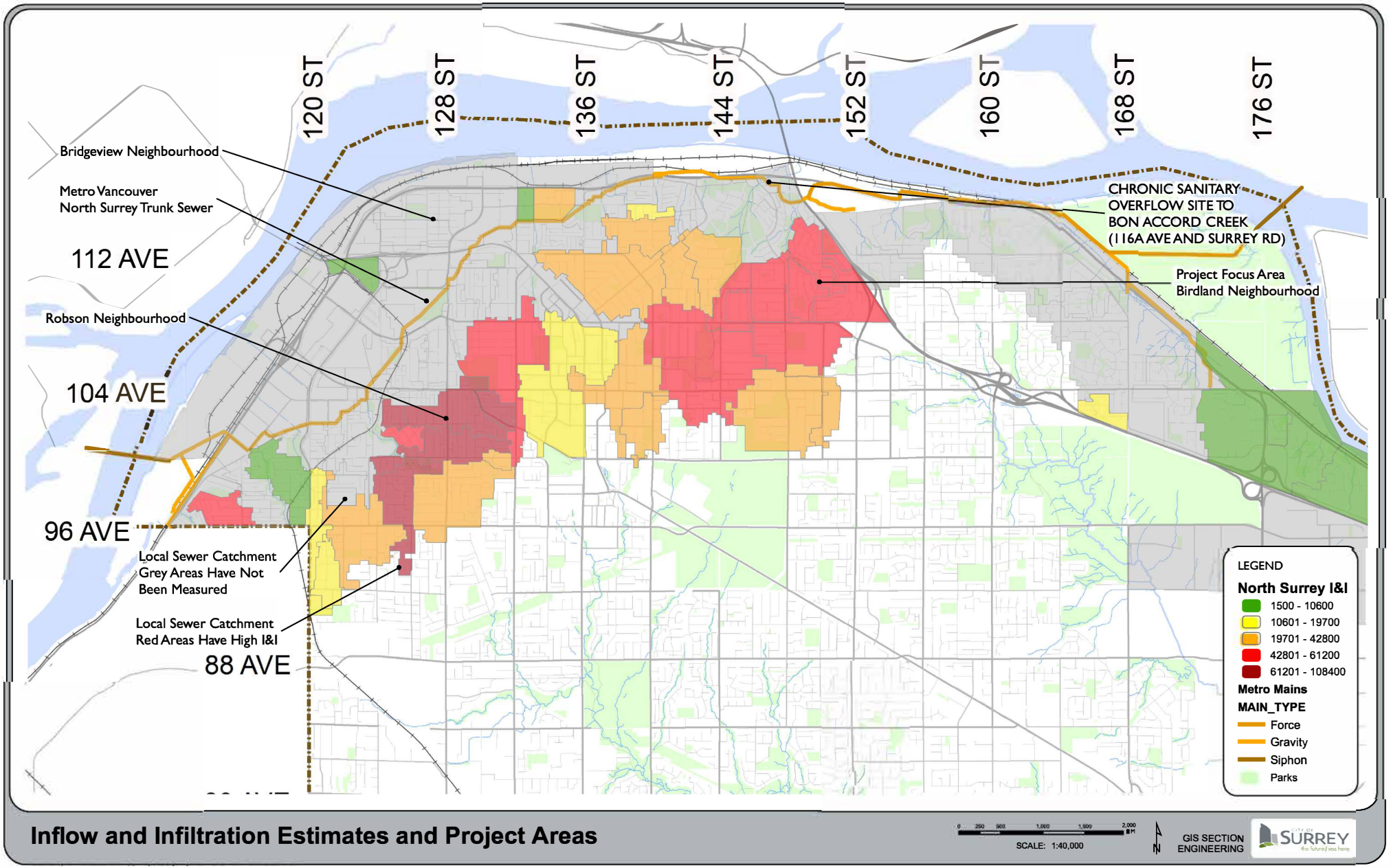
General Manager, Engineering

Appendix "I": Inflow and Infiltration Estimates and Project Areas



Inflow and Infiltration Estimates and Projects Areas

SCALE: 1:40,000

GIS SECTION
ENGINEERING

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