

NO: R182

COUNCIL DATE: October 3, 2022

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## REGULAR COUNCIL

**TO: Mayor & Council** **DATE: September 29, 2022**

**FROM: General Manager, Engineering** **FILE: 1855-03**  
**General Manager, Finance** **XC: 4816-706**

**SUBJECT: Application to BC's Green Infrastructure – Adaptation, Resilience & Disaster Mitigation Funding Program**

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## RECOMMENDATION

The Engineering Department and Finance Department recommend that Council:

1. Receive this report for information;
2. Endorse the application for grant funding for the Nicomekl River Dyke Upgrade Project, from 168 Street to 188 Street for a total of \$10.0 million under the Investing in Canada Infrastructure Program;
3. Authorize the Mayor and City Clerk to execute the related funding agreement with the Provincial Government for the aforementioned project, should it be approved for funding.

## INTENT

The purpose of this report is to obtain Council's support for the grant funding application for the Nicomekl River Dyke Upgrade Project from 168 Street to 188 Street under British Columbia's Green Adaptation, Resilience & Disaster Mitigation Program ("Green ARDM") as part of the Investing in Canada Infrastructure Program.

## BACKGROUND

### Green ARDM

On October 7, 2022, the Province of British Columbia will begin accepting applications for the current intake of the Green ARDM Program through a signed Integrated Bilateral Agreement for the Investing in Canada Infrastructure Program ("ICIP"). This program cost-shares infrastructure investments between the governments of Canada, British Columbia, First Nations, and local governments; culminating in an investment of \$3.917 billion in BC infrastructure over the next ten years. The current intake for Green ARDM has a maximum of approximately \$81.8 million federal and provincial dollars aimed to fund up to a maximum 73% portion of flood mitigation infrastructure projects' eligible costs for a value of up to \$10 million for individual communities.

Successful project scopes must address one of the eligible hazards: riverine/fluviial flooding, urban/pluvial flooding, coastal flooding or debris flows. The program will target public infrastructure asset work including natural infrastructure with projects aimed at building, modifying and reinforcing to prevent, mitigate or protect against floods.

## **DISCUSSION**

### **Provincial Flood Management Responsibility**

The Colebrook and Surrey Dyking District will no longer be regulated by the Province under the *Drainage, Ditch and Dyke Act [RSBC 1996]* - as illustrated in Appendix "II" - beginning January 1, 2026, when the legislation is set to be repealed and both dyking districts dissolved as a result. The flood control works within the Colebrook Dyking District have been transferred to the City of Surrey through a Transfer Agreement that provided \$10.5 million for the City to upgrade the dykes prior to December 31, 2025. Work continues under that Agreement and is expected to be complete prior to December 31, 2025.

A similar Transfer Agreement with the Province has yet to be negotiated for the Surrey Dyking District. Since the November 2021 atmospheric river flood events, the Province has signaled that they have a renewed commitment to supporting local governments investing in flood management, including allocating approximately \$600 million in the 2022/23 Fiscal Year. Without significant dyke upgrades to achieve the Provincial 200-year level standard of flood protection, increases in rainfall intensity driven by climate change will increase the frequency of dyke overtopping, and dyke breaches will become more common and costly to repair. With Surrey's growing population base, dyke breaches will impact critical infrastructure, resulting in increased economic damage and service disruption.

There is significant maintenance of the dykes that needs to be addressed, including statutory right-of-ways to maintain the dykes in a cost-effective manner, and complete annual raising of the dykes to accommodate ongoing ground settlement.

Discussions between the City and the Province are underway, including ongoing technical input on the cost and phasing of the necessary upgrades. However, given the large cost involved and the competing priorities of other jurisdictions in the Province impacted in the November 2021 atmospheric river flood events, these discussions have temporarily been deferred to late 2022.

Provincial staff have advised the City of Surrey to apply for existing flood investment programs. Although this requested grant for \$10 million is considerably less than the total funding required, it is the largest funding program available and will allow the City to proceed with an important first step in commencing the necessary works to bring the dykes to updated standards

### **Project Scope**

The Coastal Flood Adaptation Strategy ("CFAS") has been used as a starting point for identifying projects for inclusion in the City's Green ARDM application.

Previous work within the CFAS projects identified the section of dyke segment on the north side of the Nicomekl between 168 Street and 186 Street to be of high consequence based on its current physical state, and its ability to withstand major storm events. The proposed work section is illustrated on the map attached to this report as Appendix "I".

The proposed project will raise roughly 4.8 km of the dyke section by up to 0.5 m to meet the 1 in 200-year storm event requirements. The estimated project cost is \$16.3 million, of which \$10.0 million will be eligible for federal/provincial contribution under Green ARDM funding.

The proposed project will renew an important section of key infrastructure assets that are below the current safety standards, and will provide scope to incorporate additional natural hazard and climate resilience elements to increase their service life. The proposed project will be included in the next edition of the Engineering Department's 10-Year Servicing Plan. If the City's Green ARDM application is successful, the Provincial funding contribution will replace existing financial commitments and enable the City to allocate funding to support other projects.

## FUNDING

Funding sources are outlined in Appendix "III" attached to this report. The Drainage utility has sufficient funding in their capital project reserve for the city's financial portion (27%) of the project's eligible costs.

In light of recent inflation and the multi-year nature of the Project, the Applicant Funding Guide indicates that applicants should consider inflation in the forecasted budget amount. For the purpose of the application, an inflationary provision has been included.

## SUSTAINABILITY CONSIDERATIONS

Implementing the upgrades to the Nicomekl Dyke through the Green ARDM fund supports the objectives of the City's Sustainability Charter 2.0. The project relates to the Sustainability Charter 2.0 themes of Infrastructure, Built Environment and Neighbourhoods, Ecosystems, and Public Safety. Specifically, funding commitments will support the following Desired Outcomes ("DOs") and Strategic Directions ("SDs"):

- Infrastructure DO6: The City anticipates changing weather patterns and sea level rise as a result of climate change, and implements appropriate infrastructure, land use planning and emergency response solutions that will be resilient over the long term;
- Ecosystems DO12: Surrey protects ecosystem services and manages natural assets in order to create resiliency to adapt and thrive in a changing climate;
- Public Safety DO8: The community's critical infrastructure and systems are designed to withstand climate change impacts and natural events and disasters, and include emergency response and reconstruction plans;
- Inclusion SD7: Increase access to education, training and inclusive employment opportunities for people who face barriers within the community;
- Economic Prosperity and Livelihoods DO1: Diverse and meaningful employment and business opportunities are available close to where people live, and provide incomes that can support a high quality of life; and
- Economic Prosperity and Livelihoods SD2: Understand the needs of specific demographics such as newcomers, youth, seniors and people with disabilities, and encourage actions to support their integration into the workforce.

## CONCLUSION

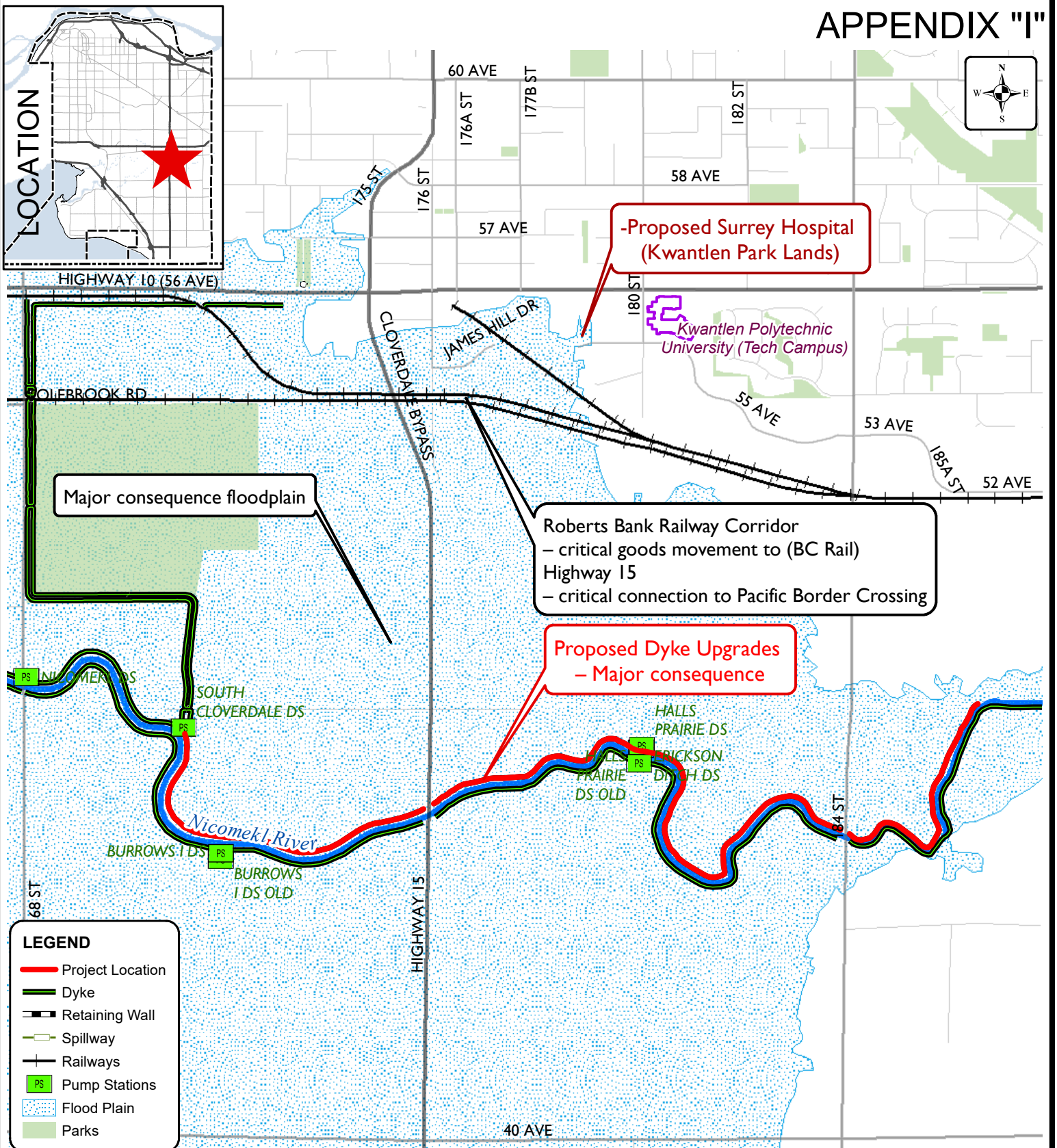
The Green ARDM provides a unique opportunity to improve riverine flood resilience over the next 10 years with significant Provincial funding. Based on the foregoing discussion, staff are seeking Council's endorsement of an application through the Investing in Canada Infrastructure Program for \$10 million in grant funding for the Project as described above.

Scott Neuman, P.Eng.  
General Manager, Engineering

Kam Grewal, CPA, CMA  
General Manager, Finance

Appendix "I": Map of Surrey Proposed Green ARDM Project  
Appendix "II": One Page Project Sheets for Surrey Proposed Green ARDM project  
Appendix "III": Confirmation of Project Funding Summary Sheet

[https://surreybc.sharepoint.com/sites/eng.administration/gm administration/corporate reports/2022/oct 3/green adaptation grant funding application/green ardm funding \(09292022\) final.docx](https://surreybc.sharepoint.com/sites/eng.administration/gm%20administration/corporate%20reports/2022/oct%203/green%20adaptation%20grant%20funding%20application/green%20ardm%20funding%20(09292022)%20final.docx)



Produced by GIS Section: 08-Sep-2022

Scale: 1:20,000 0 180 M



# Green Adaptation, Resilience and Disaster Mitigation Program – Grant Funding Application

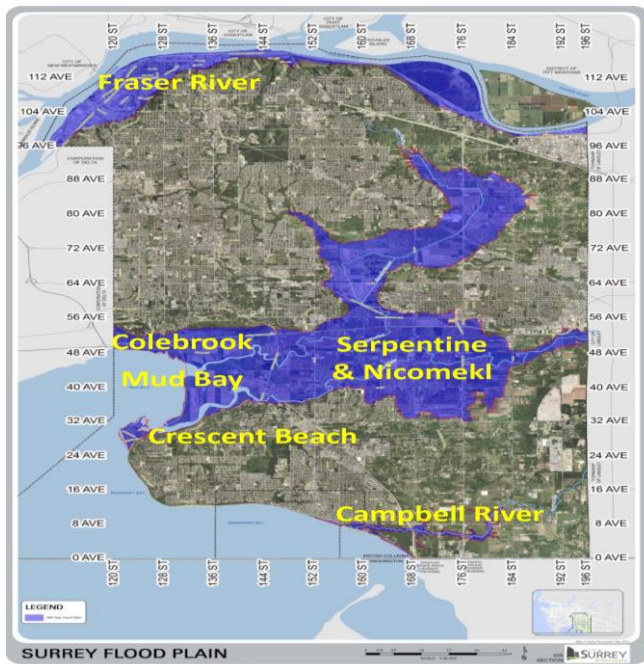
ENGINEERING DEPARTMENT

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.

# APPENDIX "II"

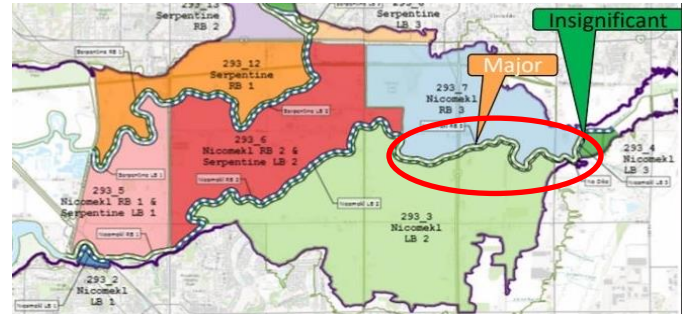
## City of Surrey – Nicomekl Diking upgrades between 168 St. and 188 St.

One third of City of Surrey is within a floodplain and is bordered by the Fraser River to the north and the Salish Sea to the southwest (see map below). Surrey has completed two years of stakeholder engagement in a process to develop the Surrey Coastal Flood Adaptation Strategy (CFAS), part of the Municipalities for Climate Innovation Program. It addresses 20% of the City's land and critical infrastructure of national, regional, and local significance that is at risk from sea level rise within Surrey.



Impacts cover the areas depicted as: Colebrook, Mud Bay, Serpentine & Nicomekl, Crescent Beach and Campbell River including Semiahmoo First Nation.

A large portion of the dyking system in the floodplain is already vulnerable to flooding, as depicted in the NCH consequence study outlining the sections of highest consequence. Section 293\_7 is ranked as a segment of major consequence in the face of increased flooding frequencies and intensities.



This dyke segment is located on the north section of the dike, between 168 street and 188 street (image below) and in dire need of structural improvements.

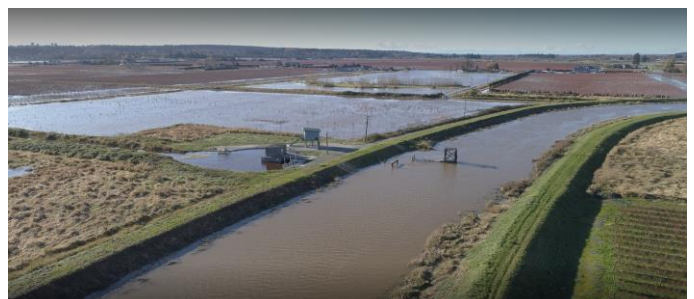


293\_7 dyke segment in the Nicomekl River

The proposed project will raise roughly 4.8 km of the dike segment by 0.5 m to meet the 1 in 200-year storm event requirements plus a 0.6 m of freeboard to increase resilience of sea level rise and protect Surrey lowlands from coastal flooding.

The Nicomekl Dyke project will protect:

- Hwy 15 regional link to Pacific Highway Border
- Agricultural lands
- 184<sup>th</sup> Street and other transportation links



Borrows Pump Station on the Nicomekl river west of Hwy 15 during the November 2021 storm events

**APPENDIX "III"**

Investing in Canada Infrastructure Program



ARDM - Accelerated Flood Infrastructure Intake - Confirmation of Funds Summary Sheet



Please enter mandatory fields shaded in blue, please put N/A where it does not apply to your application.

Please include all funding sources. Demonstrating how project costs outside of a potential ICIP grant will be met is an important consideration in project viability.  
 \* If no other outside funds are being utilized for this project then this form is not required\*

Applicant Name:	City of Surrey	Project Title:	Major Consequence Segment - Nicomekl Dyke Upgrade
Applicant Type (dropdown):	Local government >5,000	Project Number:	td
PROJECT COSTS		Total Cost	
Estimated Total Project Costs*	Please enter		\$15,747,310
Total Ineligible Costs*	Please enter		\$2,110,946
Total Eligible Costs*	Calculated		\$13,636,364
ICIP Grant Amount (unverified estimate - based on applicant type and % of project's total eligible cost)	Calculated		\$10,000,000
Applicant Portion of Eligible Costs	Calculated		\$3,636,364
Total Applicant Funds to be Confirmed [Applicant portion and all ineligible project costs]	Calculated		\$5,747,310

\* Numbers should match those in the online application and the Detailed Cost Estimate form.

BORROWING	Confirmed Source (include name of lender and type of borrowing)	Date confirmed	Amount
Funds should reflect amount to be borrowed, e.g. loan including source, line of credit, pre approval letter, bylaw at third reading			
Borrowing total:			\$0

OTHER FUNDING SOURCES (Other than ICIP Grant) Please see Program Guide for stacking rules	Confirmed Source (include name of funder, program name, and project reference)	Date confirmed	Amount
Any other Federal Grant Sources			
Any other Provincial Grant Sources			
Any Other sources that are not from a Federal or Provincial Grant			
Grants/other sources total:			\$0

RESERVES	Confirmed Source (list type of reserve)	Date confirmed	Amount
Funds should be reserves only, e.g. Bank Accounts or designated Local Government sources	Drainage Capital Reserve.	Sept 7, 2022	\$6,322,041
Reserves total:			\$6,322,041

SUMMARY [Calculated]	Total Confirmed Funds:	\$6,322,041
	Applicant Share and Ineligible Costs (Total Applicant Funds to be Confirmed):	\$5,747,310
	Variance: Green (funds confirmed); Red (funds not confirmed)	-\$574,731

UNEXPECTED COSTS & OVERRUNS	Confirmed Source	Date confirmed	Amount
Any other confirmed funding sources providing access for immediate use to address costs beyond total estimated project costs above (including budgeted contingency amounts), e.g. loan, line of credit, pre-approval letter, other reserve fund	Project contingency included in Project cost estimate and stated reserve funding beyond what is stated above if required.		
Unexpected Costs & Overruns sources total:			\$0

UNCONFIRMED FUNDS	Unconfirmed Source	Date expected	Amount
Any future, potential sources to cover applicant portion, but does not count towards the proponent share or funds for overages (e.g. grant applications that have not been confirmed)			
Future/Potential funding total:			\$0

Applicant Comments (Optional):