



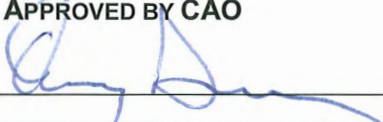


To: Public Works and Transportation Committee **Date:** September 21, 2021
From: Milton Chan, P.Eng.
Director, Engineering **File:** 10-6060-01/2021-Vol
01
Re: **Grant Funded Flood Protection Program Update and 2021 Submissions to the
Disaster Mitigation and Adaptation Fund**

Staff Recommendation

1. That the submissions of the dike improvement and drainage pump station upgrade projects and the commitment to the funding over the project term to the Disaster Mitigation and Adaptation Fund (DMAF), as outlined in the staff report titled "Grant Funded Flood Protection Program Update and 2021 Submissions to the Disaster Mitigation and Adaptation Fund," dated September 21, 2021 from the Director, Engineering be endorsed;
2. That the Chief Administrative Officer and General Manager, Engineering and Public Works be authorized to negotiate, modify and execute the funding agreements with the Government of Canada for the above-mentioned projects should they be approved for funding.
3. That, should the above mentioned projects be approved for funding by the Government of Canada, the Consolidated 5 Year Financial Plan (2022-2026) be updated accordingly; and
4. That the construction of the No. 2 Road South Drainage Pump Station project be removed from the work scope of the 2016 Flood Protection Program capital project.

Milton Chan, P.Eng.
Director, Engineering
(604-276-4377)

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Finance Department Sewerage & Drainage Intergovernmental Relations Roads & Construction	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS: 	APPROVED BY CAO 

Staff Report

Origin

In 2018, the Government of Canada launched the Disaster Mitigation and Adaptation Fund (DMAF), committing \$2 billion over 10 years to invest in structural and natural infrastructure projects to increase the resilience of communities that are impacted by natural disasters triggered by climate change. In 2021, an additional \$1.375 billion in federal funding over 12 years was announced to renew the DMAF program.

This report responds to this announcement and provides an update on the construction projects included in the Emergency Management BC Flood Protection Grant Program and the National Disaster Mitigation Program.

This report supports the following strategies within Council's Strategic Plan 2018-2022:

Strategy #1 A Safe and Resilient City:

Environmentally conscious decision-making that demonstrates leadership in implementing innovative sustainable practices and supports the City's unique biodiversity and island ecology.

1.2 Future-proof and maintain City infrastructure to keep the community safe.

Strategy #2 A Sustainable and Environmentally Conscious City:

Environmentally conscious decision-making that demonstrates leadership in implementing innovative, sustainable practices and supports the City's unique biodiversity and island ecology.

2.1 Continued leadership in addressing climate change and promoting circular economy principles.

Strategy #5 Sound Financial Management:

Accountable, transparent, and responsible financial management that supports the needs of the community into the future.

5.1 Maintain a strong and robust financial position.

5.4 Work cooperatively and respectfully with all levels of government and stakeholders while advocating for the best interests of Richmond.

Analysis

As detailed in the City's Flood Protection Management Strategy, Richmond is situated approximately 1.0 meter above sea level and flood protection is integral to protecting the health, safety and economic viability of the City. Richmond is protected from flooding by 49 kilometres

of dikes, 585 kilometres of drainage pipes, 61 kilometres of culverts, 165 kilometres of watercourses and 39 drainage pump stations.

The City's Flood Protection Management Strategy and Dike Master Plans are the guiding framework for continual upgrades and improvements to address climate change induced sea level rise. In addition, the Flood Protection Management Strategy identifies senior government funding partnerships as a top priority.

Emergency Management BC Flood Protection Program (2016) Update

In 2016, the City received a funding commitment from the Province for \$16.63 million to upgrade sections of the City's perimeter dike and rebuild four drainage pump stations, including Shell Road North, Horseshoe Slough, No. 7 Road South, and No. 2 Road South. The provincial funding was based on a 2/3 to 1/3 provincial to municipal share of eligible costs. These projects are part of the amended Consolidated 5 Year Financial Plan. Table 1 outlines the status of these projects.

Table 1 - Current Status of Emergency Management BC Flood Protection Program Projects

Project	Current Status
Shell Road North Drainage Pump Station	Construction complete
Horseshoe Slough Drainage Pump Station	Construction complete
South Dike Upgrade – Gilbert Road to No. 3 Road	Construction complete
No. 7 Road South Drainage Pump Station	Construction substantially complete
No. 2 Road South Drainage Pump Station	Recommend deferring construction

Council endorsed the initial design concept for the No. 2 Road South Drainage Pump Station in June 2017 and an updated design concept in January 2018. Following Council's endorsement, the detailed design and permitting process was completed.

Subsequently, it became evident that the construction costs for this pump station would exceed the original budget due to escalating construction costs and physical site conditions that were not anticipated at the time the initial estimates were prepared. The City issued a Request for Proposals for the procurement of construction services for the No. 2 Road South Drainage Pump Station in March 2021. The bids received were approximately \$4 million over the available project budget.

Staff recommend that the No. 2 Road South Drainage Pump Station project be deferred as the escalated project cost does not represent good value for the City.

The existing No. 2 Road South Drainage Pump Station is in fair condition and is able to meet the anticipated stormwater pumping demands of the near future. Deferring the project also provides the City an opportunity to revisit this project in conjunction with the Steveston Island Dike and Sea Gate project and associated work plan, as the station drains into the area protected by the

proposed sea gate. An updated capital submission will be brought forward for Council's consideration as part of the annual budget process.

Staff were able to pre-purchase some equipment under the existing terms of the provincial grant with Emergency Management BC. The pre-purchased equipment is common and will be utilized in future pump station upgrades throughout the City. Should the construction of the No. 2 Road South Drainage Pump Station be removed from the work scope of the 2016 Flood Protection Program capital project, any remaining funding from the 2016 Flood Protection Program capital project will be returned to the original funding sources upon project completion.

The City will receive the full provincial grant funding amount of \$16.63 million as the scope of work in the agreement with the Province has been amended to only include the design and pre-purchased equipment for the No. 2 Road South Drainage Pump Station.

Disaster Mitigation and Adaptation Fund (2018) Update

In May 2018, Infrastructure Canada announced the DMAF, which is a national, competitive, and merit-based contribution program intended to support infrastructure projects designed to mitigate current and future climate-related risks and disasters triggered by natural hazards.

A funding commitment from Infrastructure Canada for \$13,780,000 (40% of the total project cost) was received in January 2020 for approximately 2.6 kilometers of dike improvements and five drainage pump station upgrades, to be completed by December 2028. Table 2 outlines the status of these projects.

Table 2 - Current Status of 2018 DMAF Program Projects

Project	Current Status
Steveston Highway at Gilbert Road Drainage Pump Station	Construction underway
South dike upgrade between No. 3 Road and 400 metres west of No. 4 Road	Construction underway
South dike upgrade between 200 metres west of No. 9 Road and the Ewen Road Pump Station	Award process underway
No. 6 Road South Drainage Pump Station	Preliminary investigation
No. 9 Road at Westminster Highway (Dog Kennels) Drainage Pump Station	Preliminary investigation
Ewen Road Drainage Pump Station	Preliminary investigation
McCallan Road Drainage Pump Station	Preliminary investigation

National Disaster Mitigation Program (2019) Update

In 2019, the City received \$1 million in funding commitment from the Province to build the Steveston Highway and No. 3 Road Drainage Pump Station, which was approved by Council as a part of the 2019 Capital Program. The construction of the project is currently underway and is expected to be complete in spring 2022.

Disaster Mitigation and Adaptation Fund (2021) Submission

As part of the 2021 Federal Budget, an additional \$1.375 billion in federal funding over a 12-year period was committed to renew the DMAF.

In July 2021, Infrastructure Canada launched a call for applications for the renewed DMAF, with the funding being split between large-scale projects and small-scale projects. Large-scale projects, defined as projects with over \$20 million in eligible costs, have an application deadline of October 15, 2021. Small-scale projects, defined as projects between \$1 million and \$20 million in eligible costs, have an application deadline of November 15, 2021. Each project is eligible to receive up to 40% of eligible project costs and must be completed by December 2032.

Staff have identified a number of flood protection projects that would be ideal for submission to the renewed DMAF. These projects are listed in Table 3 below.

Table 3 – Proposed Projects for 2021 DMAF Application

Project	Proposed Project Stream
South dike upgrade between Queens Road and 285 metres east of Graybar Road	Large-scale
South dike upgrade between 6080 Dyke Road and Gilbert Road Drainage Pump Station	Small-scale
West dike upgrade between west property line of 2411 River Road and east property line of 3011 River Road	Small-scale
South dike upgrade at 14831 Steveston Highway (Riverport Way Park)	Small-scale
No. 3 Road South Drainage Pump Station	Small-scale
Queens Road North Drainage Pump Station	Small-scale
Nelson Road South Drainage Pump Station	Small-scale

No. 3 Road South Drainage Pump Station and Queens Road North Drainage Pump Station were part of the Consolidated 5 Year Financial Plan (2021-2025). The remaining projects will be presented for Council's consideration as part of the annual budget process should Council endorse their submission to DMAF. Additionally, the project list may be optimized as guided by DMAF in order to maximize the grant funding. Any updates to the project list will be captured in future annual budget processes for Council's consideration.

Staff are requesting Council's endorsement of the submissions of the above proposed projects and the commitment to the funding over the project term for up to 40% of the total estimated cost of approximately \$38,720,000. The total cost of the City's share is estimated to be \$58,080,000 (60% of the project cost), which will be presented for Council's consideration through the annual budget process. The recommended projects represent key priorities identified for the capital program over the next 10 years. The total amount of expenditure is consistent with the Council endorsed objective of reaching \$30 million annual capital expenditure from the Drainage and Diking Utility by 2031. Should Council choose not to endorse these submissions to DMAF, staff will withdraw any proposals already submitted by the October 15, 2021 deadline for the large-scale project stream.

Each year, staff review drainage and diking projects and recommend improvement strategies due to ageing infrastructure, growth, and climate change. To accommodate the projects submitted to the DMAF as well as other drainage and diking upgrades, staff will optimize future capital submissions to manage drawdowns of the Drainage Improvement Reserve and to maintain an adequate reserve balance to address any emergencies or take advantage of future grant funding opportunities. If necessary, funding from the Water Utility and Sewer Utility Reserves may be borrowed with interest to fund drainage and diking projects, and this would be brought forward for Council's consideration.

Should the grant applications be successful, the funding sources of the existing approved projects and future years' capital submissions will be adjusted in order to utilize the grant funding and reduce contributions from the Drainage Improvement Reserve.

As discussed in the report titled "Accelerated Flood Protection Program Concept and Flood Protection Rate Structure Review," which was endorsed by Council at the April 12, 2021 Regular Council Meeting, in order to execute Council's direction to accelerate the implementation of dike improvements, an estimated five additional regular full-time and five temporary full-time staff from Engineering, Public Works, Sustainability, Real Estate Services and Law would be required. These resources will be brought forward for Council's consideration as part of the 2022 and future budget processes.

Financial Impact

Should the City be successful with the DMAF grant application, the proposed projects will be presented for Council's consideration as part of the annual budget process. The City's share of funding for these projects will be from the Drainage and Diking Utility.

Removal of the construction of the No. 2 Road South Drainage Pump Station from the work scope of the 2016 Flood Protection Program capital project will prompt the return of any

remaining funds from the 2016 Flood Protection Program capital project to the original funding sources upon project completion.

Conclusion

Staff are seeking Council's endorsement on the submission to the DMAF for various dike improvement and drainage pump station upgrade projects, which total \$38,720,000 in grant contribution (40% of the total estimated project costs).

Staff are also recommending that the construction of the No. 2 Road South Drainage Pump Station be removed from the work scope of the 2016 Flood Protection Program capital project.



Jason Ho, P.Eng.
Manager, Engineering Planning
(604-244-1281)



Eric Sparolin, P.Eng.
Manager, Engineering Design and Construction
(604-276-4349)