

NO: R158

COUNCIL DATE: July 22, 2019

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## REGULAR COUNCIL

**TO: Mayor & Council** **DATE: July 17, 2019**

**FROM: Acting General Manager, Engineering** **FILE: 4819-051**  
**General Manager, Parks, Recreation & Culture** **XC: 5225-23**  
**General Manager, Finance**

**SUBJECT: Surrey Disaster Mitigation and Adaptation Federal Government Contribution Grant**

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## RECOMMENDATION

The Engineering Department, Finance Department and Parks, Recreation & Culture Department recommend that Council:

1. Authorize the Mayor and City Clerk to execute a Contribution Agreement in the amount of \$76,603,850 with the Government of Canada to support the construction or improvement of the 13 assets listed in Appendix "I" attached to this report (the "DMAF Project");
2. Authorize staff to incorporate the City's funding requirements for the DMAF Project components in future 5-Year Financial Plans and in future 10-Year Engineering Servicing Strategies, as applicable, with intended completion of the DMAF Projects to align with the Federal funding end date of March 31, 2028;
3. Authorize staff to prepare remaining Ultimate Recipient Agreements to satisfy the Government of Canada's requirements with the entities listed in Appendix "II" attached to this report and authorize the Mayor and City Clerk to execute the Ultimate Recipient Agreements;
4. Authorize the Mayor to request that the Ministry of Transportation and Infrastructure commit to funding in full the 'like-for-like' replacement of the existing King George Boulevard Bridges over the Nicomekl River to current engineering standards, and consider additional funding to the project; if the funding is committed, authorize the Mayor and City Clerk to execute a Funding Agreement; and
5. Endorse the Terms of Reference outlined in Appendix "III" of this report for a Sustainable Procurement Advisory Committee to develop Sustainable Procurement Guidelines for future consideration by Council to support satisfying the Federal requirement to provide annual Community Employment Benefits.

## **INTENT**

The purpose of this report is to update Council on the approval of the City's Disaster Mitigation and Adaptation Fund ("DMAF") Project and to seek authorization to proceed with the necessary next steps to execute the Contribution Agreement to initiate the DMAF Project and facilitate the City to receive funding from the Federal government.

## **BACKGROUND**

At its Regular Meeting on February 11, 2019, Council received Corporate Report No. R021; 2019, attached as Appendix "IV". The purpose of that report was to update Council on the progress made in 2018 in developing the Surrey Coastal Flood Adaptation Strategy ("CFAS") and to describe the assets applied for under the Federal DMAF. The title of the City's application was "Reducing Coastal Flood Vulnerability in the Coastal Lowlands of City of Surrey, City of Delta and Semiahmoo First Nation in British Columbia, through structure and nature-based infrastructure works".

A total of 13 assets that met the Federal government's criteria under the DMAF were approved, as listed in the attached Appendix "I" and shown on the map attached as Appendix "V". The list of assets was provided in the City's initial Expression of Interest in July 2018 and was conditionally accepted on October 12, 2018. Eligible costs include direct expenses that lead to a tangible capital asset that reduces coastal flood risk and excludes overhead and land acquisition costs.

## **DISCUSSION**

Approval-in-principle dated May 21, 2019, as included as Appendix "VI", marks the official start date of the DMAF Project from which eligible expenses can be incurred. On May 24, 2019, the Minister of Public Services and Procurement and Accessibility publicly announced Federal funding during a media event held at the Nicomekl Sea Dam that Surrey was successful in receiving a grant of \$76.6 million towards Surrey's DMAF Project.

This financial contribution of \$76.6 million to the City of Surrey is the largest Federal government contribution that has ever been awarded to the City. While this grant is of historic significance to the City, it appears to be the largest contribution granted to a local government to-date through the Federal DMAF Program. This achievement speaks volumes to the proactive work that the City has led in planning for climate change. Other significant Federal funding contributions under DMAF include:

- \$73 million Toronto, ON
- \$54 million Montreal, QC
- \$49 million Markham, ON
- \$45 million Skwah First Nation, Shxwhá:y Village and the City of Chilliwack. BC
- \$29 million Yellowknife, YT
- \$22 million Kelowna, BC
- \$15 million Victoria, BC
- \$14 million Richmond, BC
- \$13 million Hamilton, ON

The foundational work that positioned the City to apply for DMAF was supported in part by the Federation of Canadian Municipalities, of which Surrey has been awarded the largest contribution for planning and studies under their Municipalities for Climate Innovation Program, with approximately \$450,000 in approved grant funding to the City of Surrey, related to coastal flood adaptation.

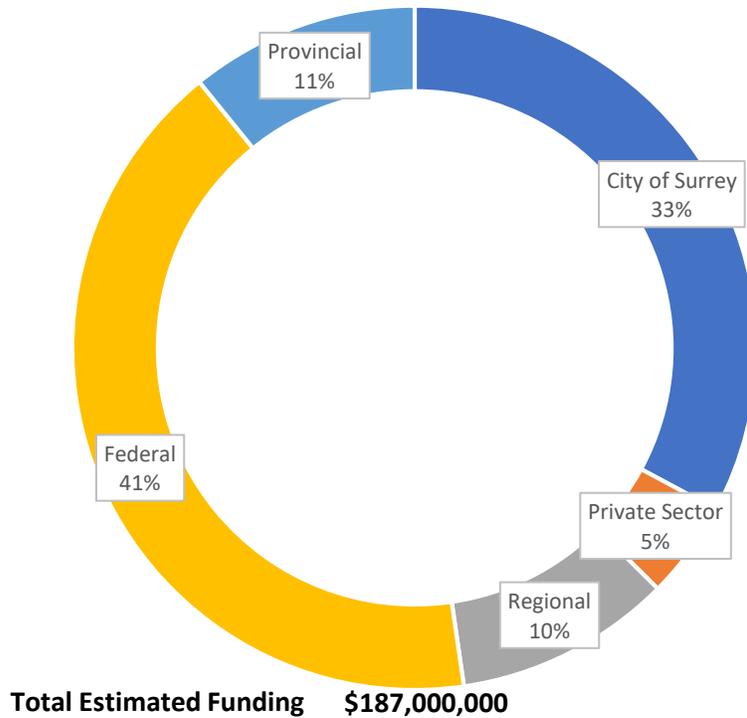
### Cost Sharing and Partnerships

Natural hazards, including coastal flooding, earthquakes and drought, have the potential to impact the residents and businesses of Surrey, as well as many other organizations and agencies that own infrastructure in Surrey. The total estimated cost of constructing and improving the assets listed in Appendix “I” is \$187 million. Through a collaborative approach, many of the assets proposed have a variety of funding sources. The Contribution Agreement from the Federal government outlines the maximum Federal funding percentage for each category, summarized in Table 1 below for each asset. Figure 1 shows the approximate proportion of funding sources to deliver the Surrey DMAF Project.

**Table 1. Maximum Federal Funding**

Asset Name	Federal Cost Share
1. Colebrook Dyke	40% (municipal asset)
2. Colebrook Drainage Pump Station	40% (municipal asset)
3. Sea Dam Serpentine River	40% (municipal asset)
4. 152 Street Road and Raising	40% (municipal asset)
5. Nicomekl Riverfront Park	40% (municipal asset)
6. King George Boulevard Bridge and Nicomekl River Sea Dam	40% (municipal asset)
7. Crescent Beach Storm Sewer System	40% (municipal asset)
8. Dyking Lower Reaches of Nicomekl and Serpentine	40% (municipal asset)
9. Serpentine SRY Rail Link Bridge and Surrey Dyke Crossing	25% (private asset)
10. Burrows Drainage Pump Station	40% (municipal asset)
11. Stewart Farm Sanitary Pump Station	40% (municipal asset)
12. Campbell River Pedestrian and Emergency Access Bridge	Up to 100% (First Nation asset)
13. i. Foreshore Enhancements and Dyke in Delta ii. Foreshore Enhancements in Surrey	50% (provincial asset)

**Figure 1: Estimated Surrey DMAF Funding Sources.**



The City is a recognized leader in proactively planning for the impacts of climate change, and through this leadership, has advanced discussions with a number of partners to help implement aspects of the DMAF Project.

#### Ultimate Recipient Agreements

The Federal government requires that an Ultimate Recipient Agreement be entered into with each organization that will incur costs that are to be eligible for reimbursement by City of Surrey, using Federal funds. On May 27, 2019, the City received the terms and conditions that must be included in each Ultimate Recipient Agreement from Infrastructure Canada, and staff, if authorized by Council, will prepare final agreements with each of the three organizations listed below. Letters of support have been received from all organizations and all organizations remain interested in developing agreements with City of Surrey. Each Ultimate Recipient contributes funding, and these contributions are included in Figure 1.

#### Third-Party Financial Contributions

In addition to the Ultimate Recipient Agreements, the City's DMAF Project leverages additional third-party financial contributions listed in Table 2 below for each applicable asset. The City will remain open to additional third-party financial contributions to support implementation of specific assets and the current ones are identified in Table 2 below.

**Table 2: Third-Party Funding Partners Not Subject to an Ultimate Recipient Agreement**

Assets	Financial contribution	Contribution Status
1. Colebrook Dyke Upgrades	Government of British Columbia	Confirmed
4. 152 Street Upgrades	Fortis Energy of BC  TransLink	Subject to Surrey – Fortis Energy of BC Operating Agreement.  Within Surrey’s annual allocated Major Road Network & Bike Upgrade funding.
6. King George Boulevard Bridge and Nicomekl River Sea Dam	Government of British Columbia (Ministry of Transportation and Infrastructure)	To be confirmed
i. Foreshore Enhancements and Dyke in Delta	Government of British Columbia through City of Delta	Confirmed

The Ministry of Transportation and Infrastructure (“MoTI”) previously contacted the City about the potential download and transfer of the King George Boulevard Bridges over the Nicomekl River, and staff from both agencies have been working towards the details of a contribution agreement.

The MoTI Regional District has agreed that the Provincial funding contribution towards a bridge replacement would be based on a ‘like-for-like’ replacement that was upgraded to current standards. Unfortunately, MoTI must obtain Treasury Board approval for this, and thus have not yet been able to formally commit the funding. In order to secure their funding commitment on the bridge replacement, it is recommended that a letter from the Mayor regarding the King George Boulevard Nicomekl Bridges be sent to the Minister of Transportation and Infrastructure. The letter should include details on the overall DMAF program and request formal commitment to the agreed to funding, as well as potentially increasing the Provincial funding contribution beyond 11%.

Partnership Opportunities

In support of the City’s application submission, over 20 letters of support were received. Approximately half of them referenced innovative nature-based solutions. As the project moves into implementation, ongoing in-kind support is required from third parties. Where appropriate, staff will develop partnerships to assist with aspects of the DMAF Project. Table 3 below lists the organizations that have provided letters of support and have, or are actively securing, funding to be involved in specific assets. These organizations can provide support through scientific input, involvement in the environmental assessment process, or First Nations consultation. These organizations have access to separate soft cost funding that can assist the City in delivering specific assets.

**Table 3: Partnership Opportunities**

Assets	In-kind Support
5. Nicomekl Riverfront Park	National Research Council of Canada
12. Campbell River Pedestrian and Emergency Access Bridge	City of White Rock
13. i. Foreshore Enhancements and Dyke in Delta	BC Stewardship Centre Ducks Unlimited Canada Department of Fisheries and Oceans
13. ii. Foreshore Enhancements in Surrey	Lower Fraser Fisheries Alliance Municipal Natural Assets Initiative National Research Council of Canada Natural Resources Canada South Coast Conservation Land Management Program West Coast Environmental Law

## Timeline

The size and scope of many of the assets are considerable within the DMAF Project. Many of the works are shovel ready and have completed or are in the final stages of property and permit acquisition, while others are contingent on acceptance of a project description under the Provincial Environmental Assessment Act before detailed design will commence. As the Federal DMAF program ends on March 28, 2028 and all final reporting must be completed before this date, construction timelines have been established to complete all works in 2027 to ensure the City is able to receive reimbursement for all eligible expenses. The anticipated construction timeline for the components of the DMAF Project are listed in Table 4 below.

**Table 4: Anticipated Construction Timeline**

Assets (as depicted in Appendix “V”)	Construction Timeline
1. Colebrook Dyke	2020-2024
2. Colebrook Drainage Pump Station	2025-2026
3. Sea Dam Serpentine River	2025-2027
4. 152 Street Road and Raising	2022-2028
5. Nicomekl Riverfront Park	2021-2027
6. King George Boulevard Bridge and Nicomekl River Sea Dam	2021-2025
7. Crescent Beach Storm Sewer System	2021-2027
8. Dyking Lower Reaches of Nicomekl and Serpentine	2023-2027
9. Serpentine SRY Rail Link Bridge and Surrey Dyking Crossing	T.B.D.
10. Burrows Drainage Pump Station	2020-2020
11. Stewart Farm Sanitary Pump Station	2021-2022
12. Campbell River Pedestrian and Emergency Access Bridge	T.B.D.
13. i. Foreshore Enhancements and Dyke in Delta – Upgrade existing Boundary Bay Dyke and pilot Living Dyke	2019-2023
ii. Foreshore Enhancements in Surrey – Construct foreshore enhancements in front of Colebrook Dyke	2021-2027

A variety of consulting services and construction contracts will be required to deliver the above assets. Procurement of the various contracts will be conducted in phases. The first consulting contract to initiate the Provincial Environmental Assessment required for several of the assets is anticipated to be brought for Council consideration through a Corporate Report in Fall 2019.

## Coastal Flood Adaptation Strategy Linkage

During development of CFAS Phase 4, *How will we do it?* the Federal government announced the DMAF Program, which aligned well with the objectives of CFAS and other City priorities for infrastructure upgrades. Securing the Federal investment through the DMAF Project has been a critical part of Phase 4. The CFAS is preparing to commence Phase 5, *Reporting Back*, the final phase. The details of the CFAS are outlined in a separate Corporate Report to also be presented to Council at the July 22, 2019 Regular Council Meeting.

The DMAF Project establishes foundational works that are required no matter what long-term direction is taken to adapt to sea level rise beyond 2030. While the construction of and improvement to the 13 assets in the DMAF Project represent a small portion of the total list of actions being considered under CFAS, it addresses many of the actions identified for implementation between 2020 and 2030 and ensures that all 13 assets are in a state of good repair.

### **Next Steps**

The successful delivery of the DMAF Project will require considerable staff resources, and several of the assets will be contingent on either securing statutory rights-of-way or land acquisition. Appropriate staff resources are under review and will be monitored throughout the DMAF Project, along with the progress made in securing statutory rights-of-way or land acquisition, and will be reported to Mayor and Council periodically and at least on an annual basis along with any recommendations necessary to successfully deliver the DMAF Project. It may be necessary to explore land expropriations in isolated cases to deliver specific assets within the anticipated timelines outlined in Table 4. The anticipated timelines set out in Table 4 will be updated annually.

### **Review by Legal Services**

Legal Services has reviewed the general form of the Contribution Agreement and has no concerns.

## **SUSTAINABILITY CONSIDERATIONS**

Implementation of the DMAF Project supports the objectives of the City's Sustainability Charter 2.0. In particular, the DMAF works relate to the Sustainability Charter themes of Infrastructure, Built Environment and Neighbourhoods, Ecosystems, and Public Safety. Specifically, the DMAF Project supports the following Desired Outcomes ("DOs"):

- Energy and Climate 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; and,
- Neighbourhoods and Urban Design DO9: All aspects of planning, design and construction include climate change impacts, greenhouse gas mitigation, adaptation and resiliency strategies;
- Green Infrastructure DO12: Surrey protects ecosystem services and manages natural assets in order to create resiliency to adapt and thrive in a changing climate.
- Emergency Preparedness and Prevention 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.

## **FUNDING**

The work will be conducted in phases, and necessary funding for the phases of work between 2019 and 2023 is available for the City's portion of the DMAF Project within the Approved 5-Year Financial Plan. City funds for the remaining phases of the DMAF Project between 2024 and 2028 will be requested from Council and, once approved, will be included in future 5-Year Financial Plans.

## CONCLUSION

Based on the above discussion, the Engineering Department, the Finance Department and the Parks, Recreation & Culture Department recommend that Council authorize the necessary next steps to execute the Contribution Agreement to initiate the DMAF Project and facilitate the City to receive funding from the Federal government.

Scott Neuman, P.Eng.  
Acting General Manager,  
Engineering

Laurie Cavan  
General Manager,  
Parks, Recreation & Culture

Kam Grewal, CPA, CMA  
General Manager, Finance

YY/MO/cc

Appendix "I" – Assets Eligible for Federal Funding Contribution  
Appendix "II" - Ultimate Recipient Agreements  
Appendix "III" – Sustainable Procurement Advisory Committee Terms of Reference  
Appendix "IV" – Corporate Report No. R021; 2019  
Appendix "V" - Map of Surrey DMAF Project Assets  
Appendix "VI" - Minister Champagne Approval-in-Principle Letter

## APPENDIX “I”

### Assets Eligible for Federal Funding Contribution

Assets (as depicted in Appendix “V”)	
1.	Colebrook Dyke – Upgrade the earth dike along Mud Bay and the mouth of the Serpentine River, including drainage floodboxes
2.	Colebrook Drainage Pump Station – Remove and replace the drainage pump station on the Colebrook Dyke
3.	Sea Dam Serpentine River – Remove and replace the flood and irrigation control structure and instrumentation
4.	152 Street Road and Raising – Increase the vehicle and multi-modal capacity and resilience of this critical emergency access road and provide secondary flood defense
5.	Nicomekl Riverfront Park – Develop a new park that provides increased flood storage, recreation and habitat
6.	King George Boulevard Bridge and Nicomekl River Sea Dam – Remove and replace existing structures with an integrated structure
7.	Crescent Beach Storm Sewer System – Expand the existing storm sewer network to reduce flooding
8.	Dyking Lower Reaches of Nicomekl and Serpentine – Raise and widen the existing flood control works
9.	Serpentine SRY Rail Link Bridge and Surrey Dyke Crossing– Upgrade crossing to improve flood resilience
10.	Burrows Drainage Pump Station – Increase capacity of existing pump station and upgrade irrigation infrastructure and drainage floodboxes
11.	Stewart Farm Sanitary Pump Station – Raise the existing pump station
12.	Campbell River Pedestrian and Emergency Access Bridge – Remove and replace the existing bridge
13.	<ul style="list-style-type: none"> <li>i. Foreshore Enhancements and Dyke in Delta – Upgrade existing Boundary Bay Dyke and pilot Living Dyke</li> <li>ii. Foreshore Enhancements in Surrey – Construct foreshore enhancements in front of Colebrook Dyke and instrumentation</li> </ul>

## APPENDIX “II”

### Ultimate Recipient Agreements

Asset	Applicable Ultimate Recipient Agreement	Summary of Arrangement
6. King George Boulevard Bridge and Nicomekl River Sea Dam	Greater Vancouver Regional Water District (Metro Vancouver)	An existing Metro Vancouver water transmission line is required to be relocated. Metro Vancouver will contribute 60% of water main relocation costs. Remainder of costs covered by the Federal DMAF contribution.
9. Serpentine SRY Rail Link Bridge and Surrey Dyke Crossing	Southern Railway of British Columbia (SRY Rail Link)	As previously described in Corporate Report No. R138-2019 presented at the July 8, 2019 Regular Council Meeting.
12. Campbell River Pedestrian and Emergency Access Bridge	Semiahmoo First Nation	Semiahmoo First Nation will provide 25% of project costs, with financial support requested from Indigenous Services Canada. Remainder of costs covered by the Federal DMAF.
13. i. Foreshore Enhancements and Dyke in Delta	City of Delta	The existing dyke upgrades will be constructed by City of Delta using confirmed funds from the Province. The matching Federal portion of the work will be utilized to design and construct a pilot Living Dyke that will inform the City of Surrey’s portion of the Living Dyke over a larger distance (Asset 13.ii).

## TERMS OF REFERENCE

### Sustainable Procurement (SP) Advisory Committee

#### 1. Mandate

- (a) The purpose of the SP Advisory Committee (AC) is to bring together City staff representatives to support City of Surrey in fulfilling the requirements of Infrastructure Canada’s Community Employment Benefits (CEB) program.

#### 2. Role

- (a) The AC will act as an advisory and steering body to collaborate and provide clarity, input and guidance in the procurement of goods and services and construction that align with Federal Government requirements for federally funded projects subject to the CEB program (more details on requirements found under *Background IC Community Employment Benefits*) by developing draft sustainable procurement guidelines.

- (b) These guidelines will build upon the City of Surrey Purchase and Payment: Process Manual Sustainability Considerations and draw from research on social procurement completed in 2018 that includes consideration of employment opportunities for disadvantaged communities in Surrey.

- (c) The AC members agree to:

- Use a lens of upholding the City’s commitment to providing Best Value through procurement while also considering the opportunities to generate Social and/or Community Value;
- Assist in identifying additional stakeholders to involve in this discussion;
- Provide input to all aspects of the sustainable procurement guidelines content development;
- Provide input into the development of monitoring and evaluation processes including overseeing compliance with federal Disaster Mitigation and Adaptation Fund community employment benefit requirements;
- Identify the relevant sustainability aspects for consideration within procurement processes;
- Identify roles and responsibilities in the implementation of sustainable procurement guidelines;
- Provide training and/or support to managers/supervisors, as needed;

- Identify opportunities for collaborative work with community organizations, within legal boundaries;
- Engage in risk and opportunity analysis of sustainable procurement options;
- Coordinate and/or support implementation of sustainable procurement activities.

### 3. Membership

(a) The AC will be comprised of approximately eight (8) staff members, representing the various departments involved in infrastructure projects impacted by/involved in this requirement, purchasing decisions, economic development and social services. Advisory Committee members may include representatives from:

- Engineering - Utilities
- Engineering – Design & Construction
- Engineering – Drainage
- Engineering - Transportation
- Finance - Purchasing
- Parks, Recreation & Culture - Sustainability
- Planning & Development – Facilities
- Planning & Development - Social Planning
- Economic Development
- Parks, Recreation & Culture – Parks Planning and/or Park Development Services

(b) The Project Team will convene the AC and assume responsibility for meeting scheduling, facilitation and developing agendas, as well as leading the development of the sustainable procurement guidelines. Project Team members include:

- Matt Osler – Senior Project Engineer and Surrey Disaster Mitigation and Adaptation Fund (DMAF) project lead
- Victor Jhingan – Design and Construction Program Manager
- Erin Desautels – Sustainability Planner

### 4. General Terms and Code of Conduct

(a) The AC will oversee a consultant to prepare a draft sustainable procurement guideline document for application on federally funded projects that are required to include Community Employment Guidelines for Surrey Council consideration.

- (b) The AC will oversee progress made in achieving required community employment benefits and will make recommendations on adjustments necessary to achieve targets.
- (c) The AC will review opportunities to incorporate community employment benefits and/or social value in City procurement decisions where applicable beyond federally funded projects.

## 5. Meetings

- (a) Additional time outside of meetings may be required to prepare for meetings
- (b) The AC meetings will be organized and facilitated by the Project Team.
- (c) The AC will meet up to seven (7) times in 2019 in developing the draft social procurement guidelines. In addition, the AC as a committee may call for an additional meeting if they deem it necessary
- (d) The AC will meet at least annually to review progress made in providing community employment benefits and make recommendations for amendments and improvements to the guidelines.
- (e) The AC will work towards consensus in decision making.
- (f) The project team will provide at least 14 days of notice of the meetings.
- (g) AC members should endeavour to attend all AC meetings. If a member cannot attend a meeting, it is requested that s/he provide her/his input to the project team using an alternative method as needed.
- (h) Confidentiality: To ensure a safe environment for dialogue, AC members should convey the ideas and experiences of the meeting to others outside the group only in a very general manner and without attributing specific ideas or statements to any identifiable individual.

## 6. Final approval of the sustainable procurement guidelines is the responsibility of Surrey City Council.

## BACKGROUND – IC COMMUNITY EMPLOYMENT BENEFITS

(from <https://www.infrastructure.gc.ca/pub/other-autre/ceb-ace-eng.html>)

### Target Groups (Section 1.1):

*Implicated projects are to provide employment and/or procurement opportunities for at least three of the groups targeted by the initiative:*

*apprentices;*

*Indigenous peoples;*

*women;*

*persons with disabilities;*

*veterans;*

*youth;*

*recent immigrants;*

*small-sized, medium-sized enterprise;*

*and social enterprises.*

*Provinces and territories will establish specific targets for each project, allowing for flexibility to consider various factors such as complementarity with existing local and regional employment initiatives or local labour market dynamics. The employment and procurement opportunities achieved against the project targets will be reported on an **annual basis** over the course of the project.*

### Reporting Requirements (Section 2.2):

*Data points requested are the **number of hours worked by a target population** and/or the value of contracts provided to small-sized, medium-sized or social enterprises as applicable to the targets set for that project.*

*A **qualitative narrative** around the progress to date by the project in meeting its targets is also requested. This narrative could identify both key successes as well as any challenges encountered by the project in attempting to meet the project targets. This qualitative information will help to identify both best practices as well as the practical challenges faced by industry in seeking to offer more diversified employment and procurement opportunities.*

Infrastructure Canada – Disaster Mitigation and Adaptation Fund contact:

Guillaume Cote [guillaume.cote2@canada.ca](mailto:guillaume.cote2@canada.ca)

NO: R021

COUNCIL DATE: February 11, 2019

**REGULAR COUNCIL**

TO: Mayor & Council

DATE: February 6, 2019

FROM: General Manager, Engineering

FILE: 4816-706

XC: 5225-23

SUBJECT: Development of a Surrey Coastal Flood Adaptation Strategy  
2018 Year End Update and Disaster Mitigation Adaptation Fund Status

**RECOMMENDATION**

The Engineering Department recommends that Council receive this report for information.

**INTENT**

The purpose of this report is to update Council on the development of the Surrey Coastal Flood Adaptation Strategy ("CFAS") and the status of the City's application to the Federal Government's Disaster Mitigation Adaptation Fund ("DMAF").

**BACKGROUND**

At its Regular Meeting on December 19, 2017, Council received Corporate Report No. R246; 2017 Development of a Surrey Coastal Flood Adaptation Strategy 2017 Year End Update. The purpose of that report was to update Council on the progress made in 2017 in developing CFAS. A five-phase approach to developing a strategy to address current flood hazards and proactively plan for long-term flood protection needs is underway and is currently in Phase 4 shown in Figure 1.

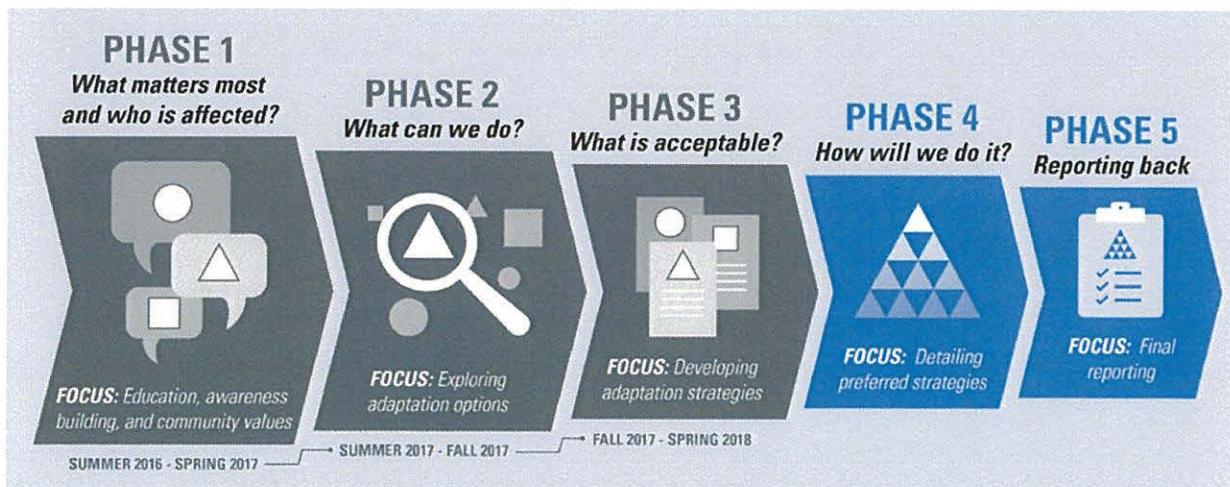


Figure 1. Phases of CFAS

The report also outlined the extensive consultation and engagement conducted to short-list preferred options for long-term flood management. Since that time, additional technical input and review has been completed, and the project team has received extensive public and stakeholder input on the short-listed options as part of CFAS Phase 3 to understand “What is acceptable?”

## DISCUSSION

The actions required to adapt to coastal flooding may impact a range of sectors, stakeholders and partners throughout Surrey, and as such, staff have undertaken significant consultation. The information and feedback obtained from this consultation has been linked and integrated into the project’s overarching, participatory decision-making process. A high level of engagement in the project and decision-making process has been achieved to date. An iterative process of two-way information exchange has been established to guide development of the CFAS with stakeholders.

### Phases 2 and 3: What Can We Do and What is Acceptable?

Having completed Phase 1 in 2017, the focus in 2018 was to understand “what can we do and what is acceptable?” Over 5,000 face-to-face participation hours took place through CFAS workshops as well as thousands of online engagement hours through online videos and interactive online surveys. A Phase 1 to 3 Engagement Summary Report has been prepared and attached as Appendix “I”, which summarizes the input received and details the project approach to incorporate public participation in developing long-term solutions.

A summary of Phase 2 and 3 activities, including key engagement events and activities that have taken place in 2018, are listed in Table 1.

Engagement Event/Activity	Dates	Overall Participants
Queen Elizabeth Secondary In-class Exercises	January 10, 2018	25
BC Hydro Meeting on CFAS	January 18, 2018	10+
University of Fraser Valley GEOG 304 In-class Exercises	January 15, 2018	20+
Water Talks organized by Canadian Water Resources Association	January 25, 2018	40+
Getting Climate Ready organized by Fraser Basin Council	January 25, 2018	50+
Public Survey on Crescent Beach with University of Fraser Valley	February 3, 2018	100+
CFAS Steering Committee	February 9 and March 26, 2018	12+
Panorama Ridge Secondary In-class Exercise	February 14, 2018	25
CitySpeaks Panel Survey and Open Community Survey on Mud Bay	February 14 to March 30, 2018	482
Crescent Beach Options Prioritization Workshop	February 21, 2018	35+
Semiahmoo Secondary In-Class Exercises	February 28, 2018	25

Engagement Event/Activity	Dates	Overall Participants
CFAS Advisory Group	March 9, 2018	20+
CitySpeaks Panel Survey and Open Community Survey on Crescent Beach	March 13 to April 6, 2018	609
CFAS Public Open House	April 9, 2018	40+
Surrey Council Committee presentations to ESAC, TIC, DAC, SHAC, AFSAC	April through July, 2018	50+
Classrooms to Communities Blackie Spit Park	May 4, 2018	50+
Earth Day Event (Blackie Spit)	June 3, 2018	30+
Envisioning a Resilient Delta hosted by Consulate General of the Netherlands	June 25, 2018	50+
Clayton Heights Secondary In-Class Exercises	June 5, 2018	25
Living Dike Roundtable meeting convened by Lower Fraser Fisheries Alliance	June 6, July 5 and July 18, 2018	15+
Semiahmoo First Nation Meetings	June 11 and July 23, 2018	5
Crescent Beach Property Owners Association Meetings	June 30 and July 4, 2018	120+
Planning Institute of BC	August 1, 2018	35+
BC Stewardship Roundtable	August 24, 2018	50+
Ministry of Transportation and Infrastructure Meeting	November 19, 2018	5
Ecosystem Vulnerability Workshop	November 27, 2018	25

Table 1: 2018 CFAS Engagement Events and Activities

A shortlisting process was developed to understand what types of approaches stakeholders and partners are in support of for year 2100, should one metre of sea level rise occur. No decision on long-range approaches is anticipated through the CFAS process. A spectrum of long-range options developed through the participatory planning process is helping to guide shorter term recommendations as part of Phase 4. Three study areas were established for CFAS, and an update is provided below on the long-range options for each of the areas.

### Crescent Beach Feedback

Previous updates to Council identified that consultation involving the Crescent Beach area had identified the following options:

- Expanded Edge;
- Barrier Island;
- Mud Bay Barrier; and
- Managed Retreat.

Since that time, additional consultation has taken place, and with the agreement of the Crescent Beach Property Owners' Association, Managed Retreat has been taken off the table. No further analysis will be conducted on this option under CFAS.

The City will continue to evaluate the Crescent Beach community's preferred option of an Expanded Edge, and its second preferred option of a Barrier Island/Spit. Additional monitoring will be collected to inform future coastal flood management and adaptation plans, such as sea level changes, ground subsidence, long-term beach erosion, storm surge and wave damage, and seasonal water pooling.

For the foreseeable future, implementation of storm sewer upgrades, as set out in the Crescent Beach Climate Adaptation Study completed in 2009, will continue to be constructed in phases to better manage groundwater in the community.

### **Mud Bay Feedback**

Previous updates to Council identified that consultation involving the Mud Bay area had identified the following options:

- Mud Bay Barrier;
- Current Conventions;
- Highway 99 Realignment; and
- Managed Retreat.

Since that time, additional consultation has taken place with directly impacted stakeholders on an as-requested basis. Based on discussion with the Ministry of Transportation and Infrastructure, Highway 99 Realignment will be renamed in the next phase.

For the foreseeable future, implementation of dyke upgrades, as set out in Corporate Report Ro47; 2016 on the Colebrook Dyking District, will be constructed in phases to reduce the likelihood of dyke overtopping. An adaptive approach that preserves a range of long-term options will be considered in CFAS.

### **Semiahmoo Bay Feedback**

Previous updates to Council identified that consultation involving the Semiahmoo Bay area had identified the following options:

- Expanded Edge;
- Road & Land Raising; and
- No Adaptation.

Since that time, additional consultation has taken place with Semiahmoo First Nation. Semiahmoo First Nation's preferences of the options for Semiahmoo Bay are as follows: Expanded Edge, Road & Land Raising, and then No Adaptation. Since the Expanded Edge is not within the authority of Semiahmoo First Nation nor the City of Surrey, and would require relocation of the BNSF Railway, this option is beyond the scope of CFAS at this time.

### **CFAS Phase 4, How will we do it?**

CFAS is focusing on the investments needed to improve infrastructure and increase flood safety over the next 10 years.

During development of CFAS Phase 4, the Federal Government announced the DMAF which aligned well with the objectives of CFAS and other City priorities for infrastructure upgrades.

At its Regular Council Meeting on July 23, 2018, Council endorsed Corporate Report No. R168; 2018 Expression of Interest and Application to Infrastructure Canada's Disaster Mitigation and Adaptation Fund that identified the core projects included in an expression of interest to Infrastructure Canada's DMAF in an effort to secure an average of 40% Federal funding.

Staff have worked closely with Infrastructure Canada to develop a suite of eligible projects that advance CFAS priority actions while meeting the DMAF program requirements. The City's expression of interest to DMAF titled Reducing Coastal Flood Vulnerability in the Coastal Lowlands of City of Surrey, City of Delta and Semiahmoo First Nation in British Columbia, through structural and nature based infrastructure works was short listed on October 12, 2018.

The suite of 13 eligible projects is summarized in the project map and table included as Appendix "II" and will improve community safety, address infrastructure deficiencies, and support long-term resilience to coastal flooding. Updated information on several aspects are provided below, based on the additional analysis and consultation completed during development of the DMAF Proposal.

- 1) 152 Street Increased Flood Control (\$19.7M)  
As part of the 152 Street widening project, this scope is necessary to establish a flood resilient connection between North and South Surrey.
- 2) 152 Street FortisBC Gas Relocation (\$15M)  
As part of the 152 Street widening project, it is anticipated that the relocation of two gas mains along the length of the City's road improvements will be required for safety. The City's estimated contribution is 10%.
- 3) 152 Street Local Water Main Relocation (\$1M)  
As part of the 152 Street widening project, a provision to replace the City's local water main over the length of the road upgrades has been included in the Federal funding application. The scope will be reduced, if feasible, during detailed design.
- 4) Nicomekl Sea Dam Metro Vancouver Water Main Relocation (\$12M)  
As part of the replacement of the Nicomekl Sea Dam, a large diameter water main connecting reservoirs in South Surrey with those in North Surrey needs to be relocated. The water main relocation is necessary for improved resilience and will accommodate future growth. No City of Surrey funding is required.

In addition to the City identified priority projects for Federal funding, the following four projects address either specific City infrastructure vulnerabilities or are entirely externally funded and submitted by the City on behalf of another organization. In discussion with Infrastructure Canada, it was established that projects involving partnerships with multiple organizations aligned best with the merit criteria of the funding program.

- 1) Campbell River Pedestrian/Emergency Access Bridge at 160 Street (\$3.8M)  
The replacement of this structure is a priority for Semiahmoo First Nation. 75% of the cost is eligible under the DMAF program, and negotiations with Indigenous Services Canada and Semiahmoo First Nation are underway to secure a commitment to cover the remaining 25% of the investment.
- 2) City of Delta Dyke Upgrades (\$1.5M)  
This project provides economies of scale and is complementary to the City's Colebrook Dyke project that abuts to the City of Delta's dyking system. The City of Delta have confirmed the non-federal portion of the budget required for the project, and no additional funding is anticipated from the City of Surrey.
- 3) Burrows Pump Station (\$1.4M)  
This project is currently in the City's 10-year capital budget and provides structural upgrades to extend the service life of the existing drainage station and improve agricultural drainage for food security.
- 4) Stewart Farm Sanitary Pump Station (\$0.6M)  
This project is currently in the City's 10-year capital budget and provides structural upgrades to reduce the vulnerability of the City's sanitary sewer system to coastal flooding.

As part of the DMAF funding application, several non-project specific cost allocations have been provided for. Once the funding agreement is established, the City cannot exceed the value provided and provision of the following general cost allowances that have been made:

- 1) Provincial environmental assessment and Federal reporting requirements (\$1.1M); and
- 2) Inflationary allowance for construction cost escalation over nine years (\$9M).

The total application value, including contingency, is \$187M, of which the Federal component is \$76.6M. The total third party funding is estimated at \$49.1M. This leaves the remaining contribution as \$61.3M to be covered by the City. Not all of these projects are included in the City's Five-Year Financial Plan.

At its Regular Council Meeting on December 15, 2018, Council endorsed Corporate Report No. R256; 2018 Infrastructure Projects – Federal and Provincial Funding Update that finalized the priority projects, as summarized above, for submission interest to Infrastructure Canada's DMAF. As part of the application, staff have worked to secure support to demonstrate the importance of the Federal Government's funding commitment to differentiate the City's application from other jurisdictions that are competing for limited funds. Where possible, credible outside groups have assisted in substantiating merit criteria applied by the Federal Government to evaluate submissions. The letters of support received to date include:

- Gordie Hogg, MP;
- Carla Qualtrough, MP;
- Stephanie Cadieux, MLA;
- Tracy Redies, MLA;
- Semiahmoo First Nation;
- City of Delta;

- City of White Rock;
- Metro Vancouver – Water Services Department;
- Ministry of Forests, Lands, Natural Resource Operations and Rural Development;
- Bird Studies Canada;
- Canadian Wildlife Service of Environment and Climate Change Canada;
- Consulate General of the Netherlands;
- Lower Fraser Fisheries Alliance;
- Municipal Natural Assets Initiative;
- Pacific Birds Habitat Joint Venture;
- South Coast Conservation Lands Management Program;
- Southern Railway of British Columbia Limited;
- University of British Columbia – Department of Geography; and
- West Coast Environmental Law.

A copy of each letter of support is included in Appendix “III”.

Infrastructure Canada has indicated that funding decisions will be made this Spring, 2019.

### **Lower Mainland Flood Management Strategy**

In parallel to the City’s CFAS process and DMAF application, development of a Lower Mainland Flood Management Strategy (“LMFMS”) for the Fraser River floodplain is underway, facilitated by the Fraser Basin Council. Phase 1 of the LMFMS took place between 2014 and 2016 and has concluded. The risks, vulnerabilities and consequences of a large flood event, including the effects of sea level rise, have been published to [www.FloodStrategy.ca](http://www.FloodStrategy.ca) for the region. Phase 2 of the LMFMS is underway, with a view towards completion in 2020. The process and results of developing the Surrey CFAS continues to influence the LMFMS and be complementary. The goal for the LMFMS is to secure consensus among partners about regional priorities, cost-sharing and funding commitments for flood management.

### **Next Steps**

The CFAS Engagement Summary Report included as Appendix “I” will be published on the City website shortly and circulated to CFAS stakeholders. A final Project Advisory Committee meeting is anticipated for Spring 2019. The intent is to prepare a draft CFAS in time to roughly coincide with the Federal funding decision.

Developing financial partnerships to support implementation of CFAS is underway through the DMAF and through the LMFMS. Staff are active in the development of the LMFMS, facilitated by the Fraser Basin Council, which seeks to develop regional level funding commitments for Flood Management. There is considerable interest among various conference organizations in the work being done under CFAS. City staff continue to present CFAS work to assist in building support for future funding opportunities and support for implementation.

The CFAS consulting team is now undertaking analysis of medium-term options for a suite of coastal flood adaptation approaches that build on the works set out in the City’s DMAF application and that are consistent with stakeholder values for long term approaches.

## SUSTAINABILITY CONSIDERATIONS

The process of developing the CFAS supports the objectives of the City's Sustainability Charter 2.0. In particular, the CFAS and DMAF works relate to the Sustainability Charter 2.0 themes of Infrastructure, Built Environment and Neighbourhoods, Ecosystems, and Public Safety. Specifically, the CFAS development and DMAF works support the following Desired Outcomes ("DO") and Strategic Directions ("SD"):

- Energy and Climate 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;
- Neighbourhoods and Urban Design SD8: Strengthen and promote community engagement and programming in public spaces;
- Green Infrastructure DO12: Surrey protects ecosystem services and manages natural assets in order to create resiliency to adapt and thrive in a changing climate; and
- Emergency Preparedness and Prevention SD6: Promote development types and locations that will be minimally impacted by natural disasters.

## CONCLUSION

Based on the above discussion, it is recommended that Council receive this report as information and have staff report back to Council with a draft Coastal Flood Adaptation Strategy and the Infrastructure Canada decision on the City's Disaster Mitigation Adaptation Fund application.



Fraser Smith, P.Eng., MBA  
General Manager, Engineering

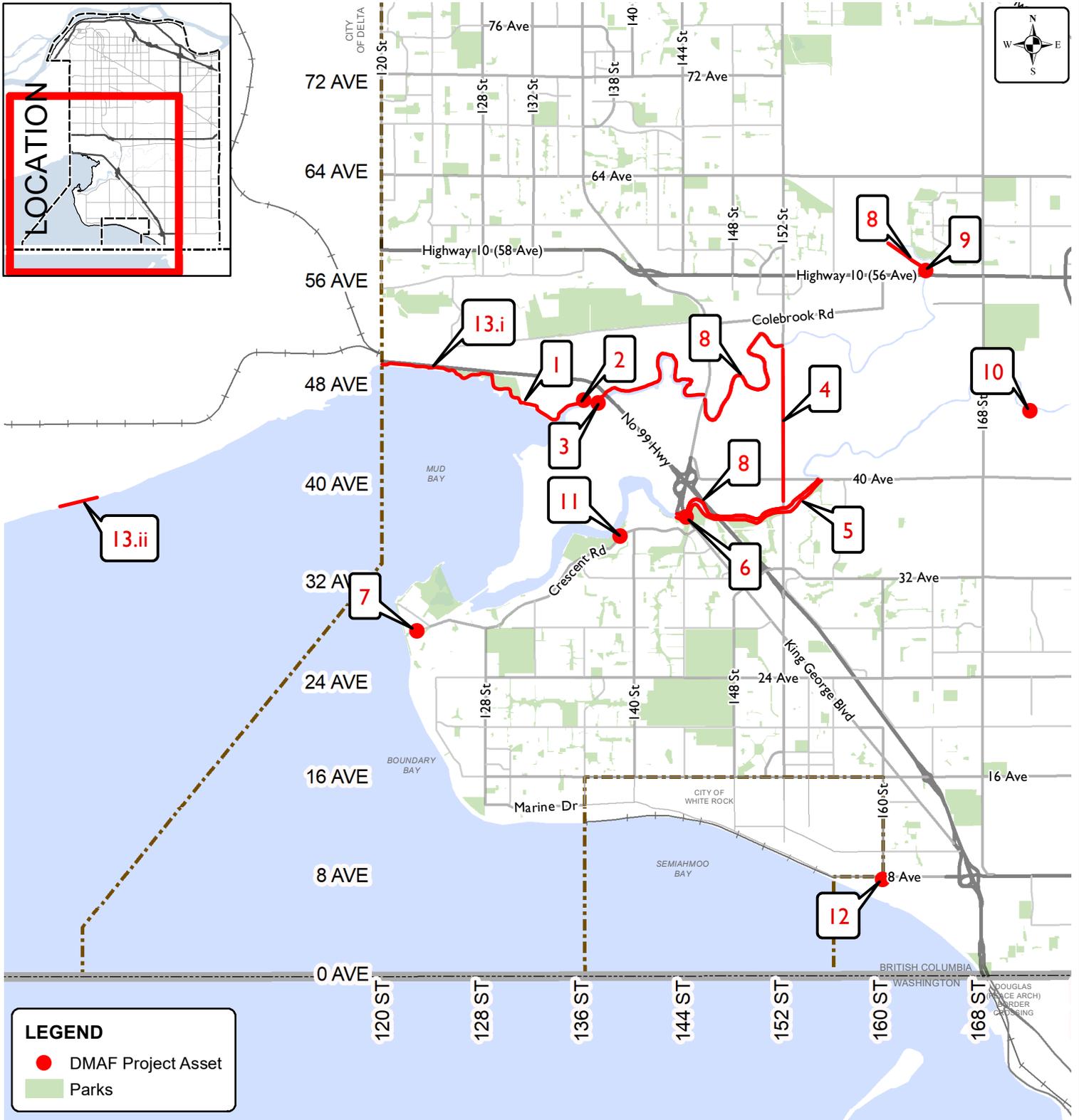
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Appendix "I" – Surrey CFAS Engagement Summary Phase 1-3

Appendix "II" - Project Map

Appendix "III" - DMAF Letters of Support

**Note: Appendices available upon request**



Produced by GIS Section: 24-Jun-2019, P205934

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## Map of Surrey DMAF Project Assets

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.

Minister of Infrastructure  
and Communities



Ministre de l'Infrastructure  
et des Collectivités

Ottawa, Canada K1P 0B6

His Worship Doug McCallum  
Mayor  
City of Surrey  
13450 104 Ave  
Surrey, British Columbia V3T 1V8

MAY 21 2019

Dear Mr. Mayor,

I am pleased to inform you of the approval in principle of the Reducing Coastal Flood Vulnerability in the Coastal Lowlands of City of Surrey, City of Delta and Semiahmoo First Nation Project (the Project). This approval is given following the successful review of your Project under the terms and conditions of the Disaster Mitigation and Adaptation Fund (DMAF).

Federal funding of the Project from the DMAF will be up to 41 percent of the total eligible project costs, to a maximum federal contribution of \$76,602,850 under this program. Federal funding from all sources cannot exceed 50 percent of total eligible costs for provincial assets, 40 percent of total eligible costs for municipal assets, 100 percent of total eligible costs for Indigenous assets and 25 percent of total eligible costs for for-profit assets.

With this approval in principle, eligible costs as determined under the terms and conditions of the DMAF and incurred as of the date of this letter will be eligible for federal reimbursement subject to the timely execution of a contribution agreement. If a contribution agreement is not signed, the Government of Canada will not reimburse any costs incurred. Once signed, the contribution agreement represents the final federal approval of the Project.

As we move to the contribution agreement stage, the following conditions will also apply:

- Expenditures incurred prior to the date of this letter, as well as any and all expenditures related to contracts signed prior to the date of this letter, are ineligible for reimbursement with the exception of costs incurred to complete the greenhouse gas assessment which are eligible for a period of up to twelve months prior to the project approval in principle date;

...2

- The City of Surrey must complete the land acquisition process for the Project before any funding related to the construction of the specific project component requiring land acquisition can be provided by the Government of Canada;
- The City of Surrey will satisfy the Government of Canada with respect to the competitive and transparent tendering process to be established;
- Regardless of the outcome of any of the project tendering processes, all ineligible costs, cost increases or overruns, and any costs related to the ongoing operation and maintenance of the Project, will be the responsibility of the City of Surrey;
- The City of Surrey agrees to work with Infrastructure Canada (INFC) to jointly communicate Canada's funding commitment as soon as possible and to invite Canada to participate in future media announcements or events related to the project's progress and, where appropriate, to produce and erect temporary signage at each of the project sites acknowledging the federal government's contribution to the Project in accordance with the signage guidelines to be provided by the Government of Canada;
- Prior to signing a contribution agreement, the City of Surrey will provide the Government of Canada with evidence that all project funding, other than the federal contribution under DMAF, has been secured;
- The City of Surrey and the Government of Canada will work to complete the negotiation of a contribution agreement in a timely manner and to this end the City of Surrey will provide cash flows by fiscal year for all project components, a clear indication of how the Project will contribute to one or more of the program outcomes and benefits as well as the indicators that will be used to report on the outcomes and benefits at the Project's substantial completion;
- Canada has determined that there are requirements under Section 67 of the *Canadian Environmental Assessment Act, 2012* for this Project. As new federal environmental assessment and/or impact assessment legislation is anticipated to come into force in 2019, requirements may arise for your project under the new legislation. No site preparation, vegetation removal or construction can occur and Canada will not pay eligible capital costs until federal environmental assessment and/or impact assessment requirements are met and continue to be met, when applicable as determined by Canada. A letter specifying requirements will follow;
- Canada has determined that there is a legal obligation to consult with Aboriginal groups under section 35 of the *Constitution Act, 1982* for this Project. No site preparation, vegetation removal or construction can occur and Canada will not pay eligible capital costs until Aboriginal consultation and accommodation requirements are met and continue to be met, when applicable as determined by Canada. A letter specifying requirements will follow;

- A greenhouse gas emissions assessment must be completed to Canada's satisfaction in accordance with the *Climate Lens General Guidance* and submitted to Canada, prior to Canada paying any claims for the project;
- The City of Surrey will report on community employment benefits provided to at least three of the federal target groups (apprentices, Indigenous peoples, women, persons with disabilities, veterans, youth, new Canadians, or small- medium-sized enterprises and social enterprises);
- The City of Surrey is also encouraged to consider the economic development and employment opportunities of the local and affected first nations in the construction of the project.

Due to the competitive nature of DMAF, changes to the scope of the Project require careful review and approval by Canada. In addition, I note that the project application you have submitted specifies that project construction is planned to get underway in June 2019 and be completed in March 2028. As your Project is being approved in principle on the basis of this information, please notify my officials, in writing, should you expect delays of more than six months in either the start or completion date. The Project must be completed prior to the end of the program (March 31, 2028), including submission of claims for eligible expenditures.

My officials will contact you shortly to move forward with the negotiation of the Contribution Agreement.

Thank you for your collaboration to date and I look forward to continuing to work together to conclude a contribution agreement for this project in a timely fashion.

Yours sincerely,



The Honourable François-Philippe Champagne, P.C., M.P.  
Minister of Infrastructure and Communities