

Disaster Mitigation and Adaptation Fund Round 2 Applications

ISSUE

Infrastructure Canada is accepting applications for round 2 of the Disaster Mitigation and Adaptation Fund (DMAF) program. The Administration is requesting City Council approval to submit applications for City of Saskatoon Park and Green Space Network Adaptation to Extreme Heat project and Flood Control Strategy Expansion.

RECOMMENDATION

- 1) That City Council approve and direct the Administration to submit the following two applications to round 2 of the Disaster Mitigation and Adaptation Fund program:
 - a) City of Saskatoon Park and Green Space Network Adaptation to Extreme Heat project; and
 - b) Flood Control Strategy Expansion.
- 2) That if applications are successful, the Mayor and City Clerk be authorized to execute the agreement(s) from the Disaster Mitigation and Adaptation Fund program under the Corporate Seal.

BACKGROUND

In 2018, the Government of Canada launched the DMAF, committing \$2 billion over 10 years to the program. In 2021, an additional \$1.375 billion over 12 years was announced to renew the DMAF. In November 2022, the DMAF received an additional \$489.1 million over 10 years. In total the funding the DMAF has received is \$3.864 billion.

The City of Saskatoon (City) has experience with the program, entering into an agreement in 2020 for the Flood Control Strategy project (\$21,600,000 funding). The Flood Control Strategy project consists of the construction of storm water infrastructure including dry ponds, underground storage, and additional storm water pipes in established neighborhoods to increase the resiliency to climate change by reducing existing frequent flood risks of streets, residential, commercial, and institutional properties. Nine main assets will be constructed by March 2028 with two assets complete to date.

The Federal Government's National Adaptation Strategy responds to the impacts of climate change and extreme weather affecting our lives in Canada. It outlines a shared path and sets common direction for a more climate resilient Canada through:

- Resilient roads, bridges, sewers, and other infrastructure
- Healthier communities
- Enhanced biodiversity and nature conservation
- A more climate resilient economy and workers

DISCUSSION/ANALYSIS

DMAF 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, such as floods, wildland fires, droughts and seismic events. Eligible projects include new construction of public infrastructure and/or modification or reinforcement of existing public infrastructure including natural infrastructure that prevent, mitigate, or protect against the impacts of climate change, disasters triggered by natural hazards, and extreme weather. The overall objective of the DMAF is to strengthen the resilience of Canadian communities at risk of infrastructure failure that could result in:

- Threats to health and safety;
- Threats to critical infrastructure, including interruptions in essential services;
- Significant disruptions in economic activity; and
- Increasingly high costs for recovery and replacement.

The DMAF program will pay up to 40% of eligible expenditures with no formal maximum outlined in the guide. Projects must have at least \$1 million in eligible costs to be considered eligible. The application deadline for this intake is July 19, 2023 and requires a resolution from City Council as part of the application process. All projects must be completed no later than December 31, 2032.

Merit Criteria

The DMAF program will score applications on 8 criteria. They are:

- Natural Hazard Risk Assessment – Strong proposals consider the likelihood of the hazard risk and the socio-economic impacts of the hazard risk using the following four key indicators. Loss of lives/missing people, percent of people directly affected, percent of local economic loss, and percent of population without essential services.
- Community Resilience – Strong proposals demonstrate substantial improvement to the asset resilience and decreased socio-economic impacts on the population(s) exposed to the natural hazard risk.
- Return on Investment (ROI) - Strong proposals demonstrate the capacity of the asset to reduce or avoid losses due to future natural disaster(s).
- Project Rationale - Strong proposals demonstrate that the proposed project is the most effective infrastructure solution to reduce the socio-economic impacts of the main natural hazard risk.
- Innovation - Strong proposals consider innovative solutions that are proven to be effective in reducing the socio-economic impacts of the main natural hazard risk.
- Natural Hazard Risk Transfer - Strong proposals consider infrastructure solutions that address comprehensively and effectively the upstream and downstream impacts of the natural hazard risk.

- Strategic Alignment - Strong proposals align approved national and provincial/territorial/municipal adaptation and mitigation plans, strategies, frameworks, policies, related asset management plans and land-use plans.
- Project Co-Benefits - Strong proposals offer infrastructure solutions that provide additional benefits to the community such as addressing multiple hazards, providing environmental value or GHG reduction, protecting valuable cultural assets, offering sports or recreational value, and/or offering employment opportunities.

City of Saskatoon Park and Green Space Network Adaptation to Extreme Heat Project

Over the next 80 years, global climate models project that Saskatoon can expect warmer overall temperatures; more hot days; increased precipitation; changes in precipitation timing; increasingly variable seasons and more intense storms. The impacts of climate change are largely experienced at the community level and include public health implications, water supply and storm water issues, and stress on natural infrastructure.

To improve resiliency to these impacts the City is working to adapt its parks and green spaces. This work includes:

- Planting more trees to increase shade and biodiversity;
- Optimizing irrigation to minimize the amount of drinking water needed to maintain healthy natural infrastructure and ensure natural infrastructure is properly maintained so it can survive and withstand droughts and heat waves;
- Increasing biodiverse naturalized landscapes by reducing irrigated area;
- Improving water efficiency at spray pads; and
- Provide cooling and outdoor drinking water facilities at Summer Play Program sites (paddling pools and spray pads) to reduce heat-related health impacts on the community.

Park and Green Space Upgrade	Eligible Cost Estimate	Total Cost Estimate
Parks – Tree planting	\$ 2.7M	\$ 2.7M
Parks – Park enhancements	\$20.3M	\$23.3M
Civic water conservation – Irrigation optimization	\$ 2.7M	\$ 3.6M
Civic water conservation – Increase naturalized area	\$ 3.3M	\$ 4.4M
Civic water conservation – Spray pad improvements and outdoor drinking water facilities	\$ 0.4M	\$ 0.6M
Civic water conservation – Switching to non-potable (e.g., raw) water for irrigation	\$ 1.1M	\$ 1.5M
Total	\$30.5M	\$36.1M

This project responds to the impacts of extreme heat in Saskatoon, a hazard that is increasing in frequency and severity with climate change. It aligns with the National Adaptation Strategy's goals by:

- Increasing the resilience of natural infrastructure to extreme heat, drought, and pests;
- Supporting healthier communities by mitigating the impacts of extreme heat in the City and improving green spaces that residents can access for recreation; and
- Enhancing biodiversity through park naturalization and tree planting.

Each component listed above has unique selection and priority criteria, specific locations and detailed scopes of work will be determined after funding approval.

Flood Control Strategy Expansion

The project would expand on the active DMAF funded Flood Control Strategy project to add five locations. At its December 17, 2018 regular meeting of City Council, the [Flood Control Strategy](#) was approved. The Flood Control Strategy project consists of the construction of storm water infrastructure including dry ponds, underground storage, and additional storm water pipes in established neighborhoods to increase the resiliency to climate change by reducing existing frequent flood risks of streets, residential, commercial, and institutional properties.

The expanded locations and cost estimates are as follows:

Flood Control Strategy Expansion	Eligible Cost Estimate	Total Cost Estimate
Cairns Ave-7th St	\$ 6.9M	\$ 7.4M
John A MacDonald Rd-McCully Cres ¹	\$ 8.8M	\$ 9.3M
Louise Ave-Taylor St	\$10.0M	\$10.5M
Grosvenor Cres-Taylor St	\$ 9.5M	\$10.0M
Centennial Dr-Dickey Cres	\$10.0M	\$10.5M
Total:	\$45.2M	\$47.7M

¹This location may be removed from the current Flood Control Strategy for the intersection of East PI-Louise St. If this does occur, we would include this location in this application. If this location remains in the current Flood Control Strategy, East PI-Louise St will be included in the application.

The same methodology would be utilized for the above five projects that is being used for the existing Flood Control Strategy. The above projects are conceptual plans and will require further analysis. Pending approval of the funding application, the City would do a further assessment of the five projects to be completed as part of this program to ensure the most at-risk locations are addressed. Other at-risk locations may be considered in this assessment and compared to the projects listed in the table. The updated project list would be presented to City Council for approval when applicable. The most cost-effective flood mitigation methodology is to construct underground storm

sewer connecting to a dry pond. However, other storage methodologies may be required once the feasibility assessment is completed for each location.

FINANCIAL IMPLICATIONS

The DMAF program will provide up to 40% of eligible costs for selected projects.

City of Saskatoon Park and Green Space Network Adaptation to Extreme Heat project would be funded through annual capital allocations to the P.00901 Park Upgrades, Enhancements & Repairs and the operating cost centre 100350 Parks Urban Forestry. The Civic Water Conservation portion of the work may apply for a green loan to fund the City's portion of the project costs.

Flood Control Strategy Expansion would be funded in P.01619.06 Storm Sewer Trunk and Collection through annual capital allocations from the Storm Water Capital Reserve.

TRIPLE BOTTOM LINE IMPLICATIONS

The Green Space Network Adaptation to Extreme Heat project provides Triple Bottom Line (TBL) benefits, including:

- Improved community resilience to climate change hazards of extreme heat, drought, and flooding;
- Improved health outcomes during extreme heat events by providing shade, cooling, and outdoor water sources;
- Improved air quality;
- Water and energy conservation;
- Reduced greenhouse gas emissions;
- Improved biodiversity and resilience of natural infrastructure; and
- Improved recreational spaces and increased access to nature.

The project team will complete a full TBL assessment using the City's TBL Decision Making Tool to identify opportunities to achieve higher TBL outcomes in the project.

OTHER IMPLICATIONS

There are no privacy implications identified.

NEXT STEPS

If City Council approves the recommendations, Administration will complete the two applications prior to the submission deadline. If application for the Park and Green Space Adaptation to Extreme Heat is approved, the Administration will report back to City Council for post budget adjustments as well as a green loan application to fund the City's portion of the civic water conservation scope.

REPORT APPROVAL

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