

## COMMUNITY FLOOD MITIGATION MEASURES IMPLEMENTATION PLAN, BUDGET APPROVAL REQUEST AND PROPOSED 2017 ALBERTA COMMUNITY RESILIENCE PROGRAM SUBMISSION

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### EXECUTIVE SUMMARY

Building resiliency to flooding is a top priority for The City of Calgary. The 2013 flood caused approximately \$5B in total damages throughout Alberta and an expected \$400M in damages to The City's infrastructure alone. The purpose of this report is to:

- Detail the community flood mitigation measures implementation plan and funding sources, as directed by Council.
- Request budget approval for specific projects outlined within the flood mitigation measures implementation plan.
- Propose a list of six projects for the 2017 Alberta Community Resilience Program (ACRP) to be submitted to the Province by 2017 September 29.

These investments will improve Calgary's resilience to flood events, reduce damages to communities and protect critical City infrastructure. As identified by Infrastructure Calgary, there is \$30M available in corporate capacity to fund The City's cost share of above projects. The budget request for approval includes \$2.4M to fund The City's cost-share for design of the flood barriers and the Upper Plateau Separation (\$1.4M) and reshaping of the Centre Street Bridge gravel bar (\$1M). The remaining \$27.6M of available corporate capacity will be requested to fund The City's cost share of the flood barrier and Upper Plateau Separation projects at subsequent implementation stages.

Total budget approval requested for the design of the flood barriers and Upper Plateau Separation and reshaping of the Centre Street Bridge gravel bar is \$18.1M (\$15.7M in ACRP funds and \$2.4M from available corporate capacity). The budget approval for the projects will have no net impact on the tax rate.

### ADMINISTRATION RECOMMENDATIONS

That the Priorities and Finance Committee recommends that Council:

1. Receive for information the summary of Community Flood Mitigation Measures in Attachment 1 and the Implementation Plan in Attachment 2;
2. Approve capital budget as per Attachment 3 (confidential);
3. Approve the flood mitigation project list for the 2017 September 29 submission to the Alberta Community Resilience Program (Attachment 4); and
4. Direct that Attachment 3 be heard in-camera and remain confidential pursuant to sections 23(1)(b), 24(1)(a) and 24(1)(g) of the *Freedom of Information and Protection of Privacy Act* until all implementation plans are approved by Council and the contract(s) for the project(s) considered in this report are awarded, unless it is determined by the Directors of Supply and the responsible business unit to be appropriate to release budget information in advance of the contract(s) being awarded.

### PREVIOUS COUNCIL DIRECTION / POLICY

As part of the Action Plan Mid Cycle Adjustments report to Council on 2016 November 21, Council approved the Capital Investment Plan and authorized the Deputy City Manager to continue to identify capital funding sources, including allocations and efficiencies from existing

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capital budgets and to transfer funds to the Budget Savings Account. The Deputy City Manager was directed to return to Council no later than Q2 2017 with recommendations for new, or currently unfunded investment projects.

At its 2017 March 06 Strategic meeting, Council adopted report C2017-0214 which included the following direction to Infrastructure Calgary:

“Direct Administration to return with implementation plans, including refined capital estimates, public consultation plans and financing strategies, to the Priorities and Finance Committee or the appropriate Standing Policy Committee as soon as possible for final approval by Council.”

On 2017 April 10, Council approved the Flood Mitigation Measures Assessment Report and 2016 Resiliency Update (UCS2017-0266), which outlined The City’s strategic approach to watershed and community level flood mitigation measures for Calgary. Council approved the recommendations, which included returning to Council no later than Q2 2017 with a funding and implementation plan for the community level mitigation projects.

Over the past three years, Council approved The City’s ACRP submissions, including prioritized flood mitigation projects and The City’s cost share requirements for submission to ACRP on 2014 September 22 (PFC2014-0604), 2015 September 14 (PFC2015-0692), and 2016 September 26 (PFC2016-0616).

### **BACKGROUND**

#### ***Flood mitigation projects***

Since 2014, The City has initiated a number of flood mitigation projects with co-funding from both the Provincial and Federal governments. The total cost of flood mitigation projects currently underway or completed is \$169.4M with an estimated \$182.6M required for flood mitigation projects not yet implemented. A more detailed project list is included in Attachment 1.

The City’s Flood Mitigation Measures Assessment report (UCS2017-0266) prioritized further community level flood projects that in combination with upstream and property level flood mitigation will protect to a flood similar to that experienced by Calgary in 2013. These projects include:

- Four high priority barriers on the Bow River that will reduce flood damage risk for more frequent, smaller flood events, and enhance the effectiveness and operational flexibility of TransAlta flood operations and a proposed new reservoir on the Bow River.
- The Upper Plateau Separation project, which will separate part of the Hillhurst-Sunnyside stormwater system from communities at a higher elevation and provide additional flood mitigation during high river levels.
- Gravel bar reshaping projects to further enhance flood resilience through Calgary.

These measures will complement construction of the Springbank Off-stream Reservoir on the Elbow River, a proposed new upstream reservoir on the Bow River, continuation of the

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Provincial-TransAlta operational agreement beyond 2021, and the work already completed by The City.

### ***Flood Mitigation Funding Sources***

#### ***Alberta Community Resilience Fund***

In 2015 October, the Province committed \$150M over ten years, at a rate of \$15M per year, for flood resilience projects to The City of Calgary as part of the ACRP. The City has received \$40.6M through this program to date for ten priority flood mitigation projects, leaving approximately \$109.4M to fund additional flood mitigation work. This number does not include The City's cost-share requirements under the program. Project submissions to ACRP are due by 2017 September 29.

Although gravel bar projects have not been considered permanent works and are not eligible for ACRP funding, Administration will continue to advocate with the Province that gravel bar reshaping results in a positive return on investment for flood mitigation and should be eligible.

#### ***New Building Canada Fund***

The City has received \$10.5M from the federal New Building Canada Fund for flood resilience projects that are underway. Administration will continue to monitor funding opportunities and eligibility requirements for community level flood mitigation projects.

#### ***Infrastructure Calgary***

Infrastructure Calgary is a corporate program created to align and optimize capital investments and strengthen investment decision making and the processes involved in capital planning management. As a result of this work, Infrastructure Calgary recommended 21 initiatives, including flood resiliency (flood mitigation) projects, to Council and received approval in principle for capital investments. The City's total cost-share for the flood mitigation projects is estimated to be \$30M is available in existing corporate capacity, as identified by Infrastructure Calgary.

In alignment with The City's Flood Mitigation Measures Assessment report (UCS2017-0266), the flood mitigation projects recommended by Infrastructure Calgary include the four complementary barriers on the Elbow River, the Upper Plateau Separation and the highest priority gravel bar reshaping project (Centre Street bridge location). Council approval is required for the detailed, individual implementation plans for these projects outlined in Attachment 2.

## **INVESTIGATION: ALTERNATIVES AND ANALYSIS**

### ***Capital Budget Request for Approval***

As outlined in Attachment 3, Administration is requesting capital budget approval of \$18.1M for flood mitigation projects that are:

- Underway (\$8.5M to access ACRP funding for the next phase of work).

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- New projects recommended by Infrastructure Calgary (\$9.6M) with funding provided by ACRP (\$7.2M) and available corporate capacity, as identified by Infrastructure Calgary (\$2.4M).

All of these projects have received or are eligible for ACRP funding with the exception of the high priority gravel bar reshaping at the Centre Street Bridge location.

Although the City's cost share of \$30M is available, only \$2.4M is being requested for the design costs of the flood barriers and the Upper Plateau Separation (\$1.4M) and reshaping of the Centre Street Bridge gravel bar (\$1M). The remaining \$27.6M will be requested to fund The City's cost share of the flood barrier and Upper Plateau Separation projects at subsequent implementation stages.

### ***Alberta Community Resilience Program – 2017 Submission***

The Province has agreed that The City's 2017 ACRP submission will include projects that can be initiated in 2017 and completed using the \$15M annual allotment over subsequent years. This will provide flexibility in cash flow projections in future years and allow design to proceed for multiple projects concurrently. The submission includes the eligible Infrastructure Calgary projects (four flood barriers and the Upper Plateau Separation) and the 9<sup>th</sup> Ave SE Bridge Replacement project being lead by Transportation Infrastructure.

The City's 2017 ACRP submission is for project costs totalling \$111.5M (Attachment 4) and requests \$81.3M of the remaining \$109.4M in ACRP funds. Applications will be submitted in future years for the remaining \$28.1M of ACRP funding.

The City of Calgary's cost-share for implementation of the 2017 ACRP submission is \$30.2M. The cost-share for the 9<sup>th</sup> Ave SE bridge (\$1.2M) is through an existing Council approved, Transportation Infrastructure source. The City's cost-share of \$1.4M for design costs for the four barriers and the Upper Plateau Separation will be funded from the available corporate capacity, as identified by Infrastructure Calgary. Budget requests for approval of the remaining contribution from The City will occur for subsequent phases of implementation.

### **Stakeholder Engagement, Research and Communication**

Stakeholder engagement, research and communication was undertaken, as outlined in the Council approved Flood Mitigation Measures Assessment Report (UCS2017-0266). Conversations with citizens, flood-affected community leaders, businesses, TransAlta and the Province remain ongoing to ensure stakeholders are aware of developments related to The City's flood resilience work. Extensive engagement with communities affected by the implementation plan will occur on a project-specific basis.

The Water Utility continues to communicate closely with Provincial counterparts, co-chairing the Bow River Advisory Group process with the Province and contributing technical input for the development of the Springbank Off-Stream Reservoir. With support from Council, continued strategic advocacy for Provincial projects is also underway.

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### Strategic Alignment

Flood mitigation and resiliency projects strongly support and contribute to a number of Strategic Action areas in Council's Priorities for 2015-2018:

- A city of inspiring neighbourhoods (N2 - Build resiliency to flooding, N3 - Enhance The City's capacity and resiliency to prepare for and respond to pandemics, natural disasters and emergency situations).
- A healthy and green city (H3 - Manage the interrelationships between flood protection, water quality and quantity, and land use, H4 - Work with our regional partners and the Government of Alberta on an integrated approach to the watershed).

### Social, Environmental, Economic (External)

A comprehensive sustainability analysis was completed for scenarios identified as part of the Flood Mitigation Measures Assessment (UCS2017-0266). The proposed projects identified here reflect the outcomes of that sustainability analysis and citizen feedback. The implementation plan prioritizes projects that will leverage external funding to minimize economic impacts to The City and citizens.

### Financial Capacity

#### ***Current and Future Operating Budget:***

There are some operating budget impacts for these projects individually that are captured within the Water Utility's existing operating budget; however, implementation of these projects will reduce future operating costs associated with emergency response during flooding.

#### ***Current and Future Capital Budget:***

Capital budget approval is requested for the new budget requests for the flood mitigation projects outlined in Attachment 3. The City portion of the budget request is to be funded by existing corporate capacity, as identified by Infrastructure Calgary (C2017-0214), which includes the capital budget savings account, corporate reserves, off-site levies, self-supported debt and grant funding, and will have no net impact on the tax rate.

The requested budget and funding is consistent with the information provided by Infrastructure Calgary in report C2017-0214. Once the implementation plans for all projects are complete, funding allocations will be confirmed to optimize the use of the most restricted sources of funding.

### Risk Assessment

Another major flood in Calgary is likely to occur, potentially causing significant disruption to The City's operations, Calgarians, businesses, and causing widespread damage to public and private property. A future, 2013 level flood at current flood mitigation levels would impact economic conditions and create significant social disruption, posing significant public safety, business continuity, environmental, and health risks.

Climate change predictions for the region show increased likelihood of flooding frequency and intensity in the future. Timely and adaptive implementation of flood mitigation locally to

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complement upstream mitigation on the Bow and Elbow Rivers is required. Failure to complete the proposed work will leave Calgary exposed to significant flood risk and may negatively affect citizen perceptions of The City.

External funding opportunities will be leveraged to support available corporate capacity to deliver these projects, minimizing both financial and time-related risks. Regulatory uncertainty with regards to Provincial and the Federal government policy, and upstream mitigation on the Bow River continues to pose a risk. Changes to policies or regulations must be reflected in The City's flood mitigation work and planning. Should commitments to upstream mitigation on either the Bow or Elbow Rivers change, The City will continue to be exposed to significant risk that will be difficult to address through local mitigation alone. The insurance industry also views flood mitigation efforts as key in order for them to be able to provide flood coverage to the public, as well as The City, for reasonable terms and realistic rates.

**REASON FOR RECOMMENDATION:**

The Community Flood Mitigation Measures Implementation Plan reflects previous Council direction for The City's approach to flood resilience and mitigation. The list identifies cost-beneficial projects that reflect citizen and stakeholder input while providing sufficient flood mitigation in combination with upstream mitigation on the Bow and Elbow Rivers. The implementation plan leverages available external funding from the provincial and federal governments, and outlines the proposed projects for submission to the ACRP for 2017.

**ATTACHMENTS**

1. Community Flood Mitigation Measures Program Projects and Timelines
2. Community Flood Mitigation Measures Implementation Plan
3. Financing Strategies - Community Flood Mitigation Measures Implementation Plan  
(Confidential)
4. The City of Calgary's 2017 Alberta Community Resilience Program Proposed Projects List