

## IMPLEMENTATION PLAN FOR RIVER FLOOD MITIGATION AND ESTABLISHING CORPORATE RESILIENCY

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### EXECUTIVE SUMMARY

This report outlines an implementation plan in response to the 27 recommendations developed by the Expert Management Panel on River Flood Mitigation (the Panel). While the focus is on making Calgary more resilient to flooding, it needs to be linked to a broader comprehensive resiliency plan that identifies risks and vulnerabilities across the city, including flooding. Administration recommends a group be established to work across The Corporation and community to develop and implement a comprehensive resiliency plan. This report also requests a deferral of a status update of Corporate activities underway in response to the Panel's recommendations, to be included as part of the first annual report on flood resiliency to be presented to Utilities and Corporate Services Committee no later than 2015 Q2.

### ADMINISTRATION RECOMMENDATIONS:

That the Priorities and Finance Committee:

1. Forward this report to the November Council budget deliberations of the 2015-2018 Action Plan;
2. Recommend that Council approve the program funding and FTE requests based on the information in Attachment 2 related to flood mitigation and Corporate resiliency at the November Council budget deliberations of the 2015-2018 Action Plan;
3. Recommend that Council approve Administration's request to defer the status update for Corporate activities underway in response to the Expert Management Panel on River Flood Mitigation's recommendations to report back no later than 2015 Q2 to Utilities and Corporate Services Committee as part of the first annual report on flood resilience.

### RECOMMENDATION OF THE PRIORITIES AND FINANCE COMMITTEE, DATED 2014 OCTOBER 28:

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That Council:

1. Approve the program funding and FTE requests based on the information in Attachment 2 related to flood mitigation and Corporate resiliency at the November Council budget deliberations of the 2015-2018 Action Plan; and
2. Approve Administration's request to defer the status update for Corporate activities underway in response to the Expert Management Panel on River Flood Mitigation's recommendations to report back no later than 2015 Q2 to Utilities and Corporate Services Committee as part of the first annual report on flood resilience.

### Opposition to Recommendations:

Opposed: A. Chabot

### PREVIOUS COUNCIL DIRECTION / POLICY

On 2014 June 23, Council received the River Flood Mitigation Final Report. The report directed Administration to return to Priorities and Finance Committee no later than 2014 October 28 with resource requirements for Corporate activities to be initiated in 2015-2018 (PFC 2014-0512). It also directed Administration to bring a report with the status update for Corporate activities

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underway to Priorities and Finance Committee no later than 2014 December 9.

On 2014 October 6, Council approved Administration's request to defer the scoping report on Stage Two: the Flood Hazard Area and Land Use Bylaw Review Project (PFC2014-0666) to no later than the 2014 October 28 meeting of Priorities and Finance Committee in conjunction with the Implementation Plan for the Expert Management Panel Recommendations on River Flood Mitigation.

### BACKGROUND

The City of Calgary created an Expert Management Panel to steer The City's River Flood Mitigation Program in 2013 July. The Panel developed a final report that included 27 recommendations aimed at achieving a safer, more flood resilient city. By using these recommendations to help guide flood mitigation and resiliency, Administration developed an implementation plan for 2015-2018 that includes the scope of activities, deliverables, timeframes and resource requirements, to deliver on each recommendation (see Attachment 1). The recommendations have been grouped into a framework that includes six theme areas and reflects how The City will be implementing them and reporting on their progress:

- Exploring Mitigation Options
- Strengthening Partnerships
- Mapping, Forecasting and Modeling
- Citizen Awareness and Outreach
- Investing in Resiliency
- Governance and Accountability.

The framework also reflects the commonalities and interconnectedness of the recommendations and in several cases, the dependency of some on others. While most of the recommendations are directed toward The City of Calgary, several are dependent upon decisions made by the Province. The City continues to work collaboratively with the Province on decisions that have an impact to the city of Calgary and the implementation of the Panel's recommendations. The implementation plan is based on the best picture of future infrastructure, policy, regulatory, fiscal and risk details available at this time.

### INVESTIGATION: ALTERNATIVES AND ANALYSIS

Between 2014 July and September, Administration developed the implementation plan by:

- Evaluating each recommendation and identifying the business units best positioned to lead or support the implementation.
- Working with 17 business units and groups from across The Corporation to determine desired outcomes, timelines and resource needs within 2015-2018.
- Establishing a directors' steering committee to help guide the development and provide leadership for this implementation plan.

Administration investigated the alternative of investing in some recommendations during 2015-2018 and leaving others until after this timeframe, but the interdependencies necessitate undertaking most of them together. Administration did not find any significant cost savings by investing in some recommendations and delaying others. Since implementing several recommendations in the *Investing in Resiliency* theme either benefit or depend on the decisions that come out of *Exploring Mitigation Options*, the timing of these has been planned accordingly.

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Since approval of the first stage of the Land Use Bylaw and Flood Hazard Area Review Project (PFC2014-0171) on 2014 June 09, the Expert Panel on River Flood Mitigation made recommendations that align and overlap with the work currently underway for Stage Two of the project. The activities in Stage Two and their alignment with the Panel recommendations are outlined in Attachment 1 in the *Exploring Mitigation Options* section.

On 2014 September 26, the Province announced that it will proceed with the completion of one of the three Elbow River mitigation options effective immediately. The Province gave the green-light to the Springbank mitigation option with a dry reservoir that will only retain water during a flood event. Review by the Province of the other two mitigation options – the Glenmore Reservoir diversion tunnel and McLean Creek dry dam – continues with the Province's decision expected by the end of 2014.

The decisions made by the Province have implications for the recommendations identified in *Investing in Resiliency*, such as flood protection standards for City infrastructure, flood barriers, erosion protection, gravel bars in select locations, and the removal of buildings or modification of structures in high risk flood areas where and if appropriate. Because of the impact of these decisions, Administration continues to work with the Province in the design and development of the Springbank dry reservoir and in the further analysis of the other two mitigation options to ensure the best decisions are made in partnership with The City.

*Strengthening Partnerships* also will be critical to the success of activities within the *Mapping, Forecasting and Modeling* theme areas. Understanding and communicating flood risk depends upon accurate flood maps, forecasts, and models. In partnership with other organizations, activities in this theme area will improve The City's capacity to forecast floods, communicate flood risk to citizens, anticipate future flood risk, and incorporate this information into resiliency projects.

User-friendly flood maps and accurate and timely forecasting will also serve as key inputs to the activities identified in the *Citizen Awareness and Outreach* theme area. Activities will focus on supporting Calgarians to understand and manage personal and business flood risk and work together with citizens to create a vision for flood resiliency.

Resiliency is an area of critical interest within The City. A group was established in Water Resources to oversee the flood resiliency and mitigation work and implement the Panel's recommendations. This work needs to be considered within the context of a broader framework that looks at all vulnerabilities and risks to the city, including flooding. Building on the cross-corporate approach of the Recovery Operations Centre (ROC), Administration proposes that ROC's mandate be expanded to undertake Corporate resiliency, and that this group develop and implement a Corporate resiliency plan providing strategic alignment for the on-going work around flood resiliency.

On 2014 June 23, Council directed Administration to bring a report to Priorities and Finance Committee no later than 2014 December 9 with a status update for activities underway. Administration requests to defer the status update and report back no later than 2015 Q2 to Utilities and Corporate Services Committee as part of the first annual report on flood resilience. The information reported in December would form a significant part of the first annual report only a few months later so a deferral would eliminate the redundancy in reporting.

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Administration is proposing the reporting cycle occur annually in Q2 on progress of the implementation plan.

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

Community input was sought in developing the Expert Management's Panel's report. Moving forward, Administration will continue to work with the community and citizens to explore opportunities to create a vision for flood resiliency and the future of river valley lands. Community input on how to accommodate flooding, gathered through best engagement practices, will contribute to the decision-making and implementation processes. Administration will develop a communications strategy to expand public awareness and knowledge of the high-river flow season and the potential for flood events. A strategic approach will ensure citizen awareness is a priority and broad outreach programs will encourage personal preparedness, public safety and business continuity. Enhanced tools and resources will help property and business owners to understand their personal risks and actions needed to build civic resiliency for future flood events.

Administration continues to seek opportunities to work with the Province by participating in ongoing discussions around mitigation options and its agreement with TransAlta Utilities on operational decisions. City staff are participating in a Provincially-hosted technical session in November to consider how 'Room for the River' measures, a Dutch program for flood protection, have been or could be further applied to the Bow and Elbow Rivers. WaterSMART has been engaged by the Province to facilitate this effort, with a report presenting options due mid-December.

### **Strategic Alignment**

Moving forward on flood mitigation and resilience strongly supports and contributes 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).

The implementation plan includes performing a comprehensive triple bottom line analysis, which is supported by The Corporation's Triple Bottom Line Policy. As well, the Municipal Development Plan and Land Use Bylaw contain policies that guide development in the Flood Hazard Area. Further refinement of these policies, as part of the implementation plan, will contribute to the resiliency of Calgary.

### **Social, Environmental, Economic (External)**

The social, environmental, and economic impacts of flooding are complex and interrelated. To implement the Panel's recommendations an integrated, adaptive approach to holistically assess flood mitigation options will be taken.

Citizen input will be gathered to better understand community needs and potential social impacts. To ensure continued economic well being, financial costs, business impacts and business continuity will be analyzed. Synergies created by combining infrastructure investments

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With effective land use policy will be explored to maximize the triple bottom line benefits of flood mitigation options. Criteria to evaluate other important watershed and environmental issues, such as drought, will be applied when assessing flood resiliency implementation. Improving Calgary's resiliency to flooding also includes ensuring Calgarians have the tools they need to manage personal risk, which will be addressed through improvements to outreach and awareness programs.

### Financial Capacity

#### Current and Future Operating Budget:

Where possible, Administration identified resources that were in place to implement recommendations. However, due to the timing of the release of the Panel report, some resource requests were not included in Action Plan 2015-2018, and are summarized in Attachment 2.

Table 1 in Attachment 2 details new one-time operating requests for 2015-2016 for tax-supported business units. Any additional resources that may be needed in 2017 and 2018 will be requested through the budget adjustment process in 2016. The previously approved \$100 million for flood recovery from the Fiscal Stability Reserve (FSR) is the recommended source of funding for these one-time requests.

Table 2 in Attachment 2 summarizes base operating requests to support the Panel recommendations and Recovery Operations Centre-Corporate Resiliency. These base adjustments are as follows:

- Customer Service & Communications is requesting 1.0 FTE (Salary & Wage \$89,000; Other \$30,000) for 2015. This position will support the development and management of The Corporate flood resilience communications strategy – supporting the year-round work related to on-going community outreach, awareness, engagement and communications around flood resiliency.
- City Manager's Office is requesting 6.0 FTEs in 2015 (Salary & Wage \$963,000) to establish a permanent group to oversee ongoing Recovery Operations transitioning to a Corporate resiliency team. These positions would support the development of a Corporate resiliency framework and recommend implementation strategies throughout The Corporation.

These operating budget requests will be base adjustments and are recommended for Council's consideration at the November Council budget deliberations of the 2015-2018 Action Plan.

Water Resources requires an additional 2.0 FTEs, in addition to the 4.0 FTEs requested through the Action Plan 2015-2018. These positions will support Water Resources in leading 16 of the 27 recommendations and supporting the remaining 11 recommendations and will be funded through efficiencies found in its 2015-2018 budget.

#### Current and Future Capital Budget:

The City's portion of a cost share with the Province and TransAlta Utilities to expand the network of river and weather monitoring stations and protect stations from damage during flooding is \$667,000. This will be funded within Water Resources 2015-2018 capital program. This does not include any capital projects related to resiliency that have been identified within the Alberta Community Resiliency Program or any other funding programs. Other capital

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investments may be identified while implementing recommendations within the *Investing in Resiliency* theme.

### Risk Assessment

While most of the recommendations are predominantly directed toward The City of Calgary, implementation of several recommendations is dependent upon decisions made by the Province. Some decisions could have significant impacts on the scope, deliverables, timeframe and resource requirements of the recommendations, for example:

- Whether the Glenmore Reservoir diversion tunnel will proceed.
- If the provincial flood hazard mapping will be revised.
- How TransAlta Utilities' facilities will be operated.

Recommendations that could be affected include those related to land use planning policies, minimum flood protection level, constructing flood barriers, and modifying or removing structures that constrain river flow. This risk is being mitigated through regular meetings and ongoing communication with the Province and TransAlta Utilities. The City will continue to participate in the decision-making process while being aware that the Province may not include Administration in its decision.

The 2013 flood resulted in increased workloads for many business units responsible for flood-related activities. This work continues to be essential for moving Calgary toward improved flood resiliency. To ensure Administration is equipped to handle the additional work and maintain a high quality of service, additional resources required for some activities have been identified within this report (see Attachment 2).

The cost of The City's property insurance increased substantially from 2013 to 2014. The increase in premium was a direct result of the flood claim being presented to The City's insurers. In order for The City to be able to purchase flood insurance coverage in the future at a reasonable cost, it will be important to demonstrate that steps have been taken to reduce the likelihood of a flood loss or the amount of damage from a flood. If The City shows the insurance industry that it is taking positive steps by implementing mitigation and resiliency projects, The City should be able to receive more competitive insurance pricing.

### REASONS FOR RECOMMENDATIONS:

The implementation plan of the Panel's recommendations was developed in collaboration with many business units and forms the basis of a multi-faceted approach to continue making Calgary more resilient to future river floods. Where possible business units incorporated activities within the 2015-2018 Action Plan, however, in some cases, additional resources were identified to address the recommendations. It is recommended that Council consider the detailed funding and FTE requests related to flood mitigation and Corporate resiliency at the November Council budget deliberations of the 2015-2018 Action Plan. It is also recommended that Council approve a deferral on the status update in response to the Expert Panel's recommendations and report back no later than 2015 Q2 to Utilities and Corporate Services Committee as part of the first annual report on flood resilience, reducing redundancy in reporting.

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**ATTACHMENTS**

1. Detailed Implementation Plan for Flood Mitigation Recommendations
2. Resource Requirements for Flood Mitigation and Resiliency Recommendations