

FLOOD RESILIENCY AND MITIGATION 2014 ANNUAL REPORT

EXECUTIVE SUMMARY

This first annual report highlights the progress made in 2014 on The City's actions related to flood resiliency and mitigation. The annual report is based on recommendations developed by the Expert Management Panel on River Flood and sets the framework for future reporting and accountability to Council and Calgarians.

ADMINISTRATION RECOMMENDATION(S)

That the SPC on Utilities and Corporate Services receive this report for information.

PREVIOUS COUNCIL DIRECTION / POLICY

On 2014 June 23, Council received the River Flood Mitigation Final Report. Administration was directed 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 underway to Priorities and Finance Committee no later than 2014 December 09.

On 2014 December 02, Council approved Administration's Implementation Plan for River Flood Mitigation and Establishing Corporate Resiliency (PFC 2014-0777), including program funding, FTE requests and Administration's deferral request to report on corporate activities underway no later than 2015 Q2 to Utilities and Corporate Services Committee as part of the first annual report on flood resilience.

BACKGROUND

In June 2014, an external Expert Management Panel on River Flood Mitigation delivered 27 recommendations to Council aimed at achieving a safer, more flood resilient Calgary. Using these recommendations to help guide flood mitigation and resiliency, Administration developed an implementation plan for 2015-2018. Council approved the four-year implementation plan and the Flood Resiliency and Mitigation 2014 Annual Report (Attachment 1) is the first annual report that summarises the actions undertaken in 2014 towards the implementation plan.

To streamline reporting and better communicate progress, the annual report has been refined to four key performance areas from the six theme areas identified in the implementation plan. The four key performance areas are:

- Understanding flood risk
- Communicating with Calgarians
- Investing in flood protection
- Strengthening flood-related policies.

Once a full reporting cycle has been undertaken, it is anticipated that future reports will include more results-based performance measures and indicators to demonstrate The City's performance in contributing to making Calgary a more flood resilient city.

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INVESTIGATION: ALTERNATIVES AND ANALYSIS

This inaugural report summarises progress on the corporate activities undertaken or completed in 2014 to improve Calgary's flood resiliency. The following are highlights for each key performance area:

Understanding flood risk

Flood risk is dynamic, and it evolves with changes to the rivers, our built environment and the climate. Calgary's rivers were altered by the 2013 flood and will continue to change, and The City is constantly striving to improve its understanding of this dynamic risk. Addressing vulnerabilities through increased understanding of flood risk helps us to be better prepared to protect public safety and infrastructure when flooding happens. In 2014, The City:

- Improved forecasting by streamlining computer modeling inputs.
- Repaired and strengthened river monitoring stations and installed two new monitoring cameras.
- Initiated studies on groundwater and how the river has changed since the 2013 flood.
- Began updating flood inundation maps using more current data from the 2013 flood.
- Scoped a climate modeling project for the region to better understand flooding.
- Initiated planning community engagement on flood risk and vulnerabilities.

Communicating with Calgarians

To build civic resiliency, The City has expanded the way it shares information and communicates with citizens. In 2014, The City approached the flood season with a view to ensuring that the public was informed, engaged and understood their flood risk. A flood information and awareness strategy was delivered. Highlights from 2014 include:

- Organised open houses and presentations on flood recovery and preparedness to 6,000 citizens.
- Streamlined permits and inspections and offered a permit subsidy for flood-affected properties.
- Worked closely with utility partners on emergency planning and flood resiliency.
- Received Canada Water and Wastewater Association 2014 Community Outreach Award for The City's flood preparedness communication and engagement strategy.

Investing in flood protection

Developing a comprehensive suite of flood mitigation measures is an investment in the safety of our citizens and community resiliency. All structural flood protection options need to be thoughtfully analysed by taking an holistic approach and a triple bottom line lens. In 2014, The City:

- Completed feasibility studies on the Diversion Tunnel and dredging the Glenmore Reservoir.
- Continued study to identify potential new flood barrier locations.
- Rebuilt damaged bridges and riverbanks to be more resilient to future floods.
- Applied for over \$41 million in provincial funding for 14 flood resiliency projects. Received \$14.89 million for four of these projects.

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Strengthening flood-related policies

A significant portion of Calgary is prone to flooding, including the downtown core and numerous residential areas and our rapidly growing city continues to densify in these areas. Ensuring that Calgary is growing into a more flood-resilient city requires examining policies for land use and infrastructure design alongside structural protection investments. In 2014, The City:

- Amended the Municipal Development Plan to highlight priorities for reducing impacts from floods.
- Amended the Land Use Bylaw to require flood mitigation measures for all buildings in high-risk areas when significant alterations are made to the property.
- Drafted the Riparian Program Implementation Plan for 2015 – 2026, outlining actions to protect and restore riparian areas.

Stakeholder Engagement, Research and Communication

Flood mitigation and resiliency will be achieved by a collaborative approach between several business units. Water Resources is responsible for leading 16 of the 27 Expert Panel Recommendations, and is involved as a stakeholder on the remaining recommendations. Water Resources is tracking the implementation and is working with other business units on the recommendations. Administration continues to work with the Province by participating in ongoing discussions around mitigation options and its agreement with TransAlta Utilities on operational decisions.

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).

Social, Environmental, Economic (External)

The social, environmental and economic impacts of flooding are complex and interrelated. Assessing the social, environmental and economic costs and benefits of flood mitigation options is a critical component of the work within this program, and will include citizen engagement. Understanding the risks that floods pose is also an integral part of the work being done within the key performance area *Understanding flood risk*.

Financial Capacity

Current and Future Operating Budget:

Budget for undertaking the Implementation Plan for River Flood Mitigation was approved by Council on 2014 December 02 (PFC 2014-0777). Where possible, Administration identified resources that were in place to implement recommendations; necessary one-time operating requests for 2015-2016 for tax-supported business units were detailed and approved in that report. The additional 2.0 FTE's required by Water Resources are being funded through

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efficiencies found in its 2015-2018 budget. 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 should there be any other one-time requests.

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 recommended capital investments may be identified while undertaking work within the *Investing in flood protection* key performance area, and appropriate funding will be sought for those at that time.

Risk Assessment

Calgary is one of Canada's economic engines and The City must protect people, critical infrastructure, property, and our economy from flood impacts. Lack of sufficient flood mitigation funding will increase the risk and costs to all Albertans. To address this risk, The City is discussing solutions with the Province to build a joint long-term funding model for investment in flood mitigation measures. The City continues to prioritize its mitigation projects where the need is most urgent.

While much of the work within the flood resiliency and mitigation program is within The City's jurisdiction, implementation of some activities depends on decisions made by the Province. Some decisions could have significant impacts on the scope, deliverables, timeframe and resource requirements of the recommendations, for example:

- Design and construction of the Springbank Off-stream Storage Reservoir.
- Elbow River Mitigation - status of the Glenmore Reservoir diversion tunnel.
- How the provincial flood hazard mapping will be revised.
- How TransAlta Utilities' facilities will be operated.

Activities that could be affected include requirements for additional mitigation solutions and those related to land use planning policies and constructing flood barriers. This risk is being mitigated through participation on the Province's technical and strategic stakeholder committees, and ongoing communication with other partners. The City will continue to collaborate with these partners to ensure that mitigation decisions consider social, economic, and environmental dependencies.

Flood mitigation is a complex issue and long-term process, and The City must be prepared in case of flooding before major investments in protection are implemented. The City has stock-piled riverbank-protection and temporary barrier materials, repaired critical erosion sites, and refined its emergency response procedures. To ensure that citizens and businesses are prepared, The City improved and expanded its flood preparedness communication tools. Through partnerships, The City has provided support to businesses and community agencies to prepare for, respond to, and recover from flooding.

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REASON(S) FOR RECOMMENDATION(S):

This is the inaugural annual report for flood resiliency and mitigation. The report was developed in collaboration with many business units and provides an overview of progress made in 2014 towards making Calgary more resilient to future river floods, and the activities planned in 2015.

ATTACHMENT(S)

Flood Resiliency and Mitigation 2014 Annual report