

Annual Flood Resilience Update

RECOMMENDATION:

The Community Development Committee recommend that Council:

1. Advocate for advancing the evaluation of a new upstream Bow River Reservoir and the timely release of updated Flood Hazard Area maps by:
 - a. Requesting the Mayor send a follow up letter to the Government of Alberta;
 - b. Directing Administration to pursue joint advocacy efforts with neighbouring municipalities and Alberta Municipalities; and
2. Receive this report as the final annual flood resilience update.

RECOMMENDATION OF THE COMMUNITY DEVELOPMENT COMMITTEE, 2023 APRIL 27:

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HIGHLIGHTS

- The City of Calgary's Flood Resilience Plan (Plan) set out the actions needed following the 2013 flood. This work in part fulfills Council's strategic direction of a climate resilient Calgary. The Flood Resilience Program (Program) has been reporting annually to Council since 2013. Previous Council Direction is included as Attachment 1, including initial Direction (PFC2014-0512).
- **What does this mean to Calgarians?** Developed with citizen and expert engagement, the Program employs a multi-layered and multi-partner approach, combining upstream-, community-, and property-level measures to reduce the impacts of flooding to Calgarians and businesses, now and in the future.
- **Why does this matter?** Much has occurred and been invested as 2023 marks 10 years since the 2013 flood, the largest disaster in Canadian history at the time. With these significant investments and achievements over the past 10 years, Calgary is more resilient to flooding today. The Government of Alberta's work on upstream reservoirs and updated Flood Hazard Area maps remains critical to managing remaining flood risk.
- 2022 milestones include completion of the Downtown Flood barrier, progress on additional infrastructure projects, and key learnings from June's emergency response.
- Since 2013, Calgary's flood damage exposure has been reduced by approximately 55 per cent. By 2025, damage exposure will be reduced by 70 per cent. The remaining 30 per cent is complex, costly to solve, and primarily along the Bow River.
- Background and Previous Council Direction is included as Attachment 1.

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DISCUSSION

Established in 2014, the Program advances actions in Calgary and by other orders of government to drive flood resilience. As the 10-year anniversary approaches, Administration will mark this important milestone through respectful and relevant acknowledgements woven into public campaigns centred on Emergency Preparedness Week in May and Neighbour Day in June (see Attachment 3). Since Program inception, Calgary's river flood damage exposure has been reduced by 55 per cent and this will reach 70 per cent by 2025 when the Springbank Reservoir is fully operational.

Details on 2022 progress and milestones are provided in Attachment 2, including:

- Completion of the Downtown Flood Barrier, further protecting critical assets vital to Calgary's economic wellbeing;
- Continued construction of the Upper Plateau Separation project;
- Progress on design of Sunnyside Flood Barrier Project, as part of the Memorial Parkway Program; Construction is expected to occur from late 2023 to 2025;
- Participation in operational and land use steering committees for the Government of Alberta's Springbank Reservoir project (Phase 1 dam completion in 2024);
- Support to other Government of Alberta measures (e.g. TransAlta agreement);
- Ongoing engagement in federal and provincial reviews of disaster recovery support and federal insurance options; and
- Expansion of the public flood awareness outreach program to ensure messaging reaches Calgarians in the flood zone, including vulnerable populations.

During the high rainfall event in June 2022, working with multiple partners, The City took actions to address risk and protect Calgarians. As the event progressed, emergency plans were adjusted based on changing real-time information. While the severity was less than initially anticipated, the event underscored the importance of reliable flood mitigation infrastructure. Lessons learned were incorporated into response plans. Administration continues to engage river communities to remain prepared to respond or evacuate as per communications leading up to an event, and remains mindful of the anxiety flood risk can cause.

The Government of Alberta is progressing two key initiatives important to The City's ongoing and remaining flood mitigation efforts:

The Bow River Reservoir Options study: Currently in Phase 2 Feasibility Study

Phase 2 is comparing the feasibility and benefits of three potential reservoir sites upstream of Calgary to mitigate flood and drought. Each option has complex, multi-party considerations. If constructed, a reservoir will reduce Bow River communities' flood risk and work with local mitigation measures toward higher resilience, for Calgary.

Completion of the Phase 2 summary report is expected in late 2023 but could be delayed. In parallel, the Province is expected to start the Bow River Alternative Mitigations Initiative, assessing potential alternatives to a new reservoir. Both reports are expected to inform a provincial decision in 2024 on whether to advance a selected site to detailed design and regulatory approval. Administration continues to support Phase 2 progress, monitor its public engagement, and provide technical, economic, environmental, water management and citizen

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perspectives to Provincial teams.

Updates to the Government of Alberta's regulatory Flood Hazard Area maps

The City is working closely with the Province on the new Flood Hazard Area (FHA) maps for Calgary. The new mapping will reflect the latest understanding of how a 1:100 flood would impact Calgary and will introduce changes to flood hazard zones or classifications. In 2022, Administration reviewed the draft mapping and understands the implications of the update which reflects increased resilience provided by mitigation measures now in place.

Administration is undertaking the Calgary River Valleys Project, which will direct how we develop and regulate in the floodplain. The project will encompass new FHA mapping and zones, consolidate floodplain policy and guide updates to the Land Use Bylaw, Municipal Development Plan, and related plans and regulations. Engagement on city-wide floodplain policy and regulatory options, especially with residents and businesses in flood risk communities, will be a key component. In the meantime, FHA content within the Land Use Bylaw remains in force, though land use applicants in FHA zones are being informed of the up to date characterizations of risk and inundation mapping, as they have been since 2013.

The Bow Reservoir Options assessment and the FHA mapping and policy updates are focal resilience elements to ensure advancement of in 2023. Attachment 4(B) provides prior correspondence in 2022 between the Mayor and the Government of Alberta. Attachment 4(A) provides a draft follow up correspondence proposed for Mayor to the Government of Alberta.

Going forward, updates to Committee / Council will be prompted by developments in these two initiatives, items arising from the completion of the Springbank Reservoir, or any emerging critical flood resilience items, and seek direction as required.

EXTERNAL ENGAGEMENT AND COMMUNICATION

Public engagement was undertaken Public/interested parties were informed

The City undertook comprehensive city-wide engagement and used citizen feedback to inform the development of the Plan. Engagement for individual projects and programs occurs integrally as developed. The City maintains ongoing relationships with citizens and partner organizations such as the Calgary River Communities Action Group and FloodFreeYYC. An annual Flood Awareness campaign offers multiple means for Calgarians to stay informed. Information on flood resilience and preparedness is available to the public on the [flood info portal](#).

IMPLICATIONS

Social

Communities with flood risk include those with diverse and at-risk populations. Sustaining these communities and making them more resilient supports equity. Program communications strive to reach Calgarians with varying needs and continues to grow the use of inclusive language. Recognizing that Calgary resides on the ancestral homes of Indigenous communities, decisions about relevant Program elements are not made without their meaningful participation.

Environmental

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River flooding is one of eight climate hazards of the greatest concern in Calgary's 2022 Climate Strategy and falls under the adaptation theme of Water. The Program continues to significantly reduce the exposure to this changing hazard while optimizing environmental outcomes.

Economic

The Program continues to reduce potential economic losses caused by disruptions from flooding. A prime example is protecting Calgary's downtown core to enable business continuity.

Service and Financial Implications

No anticipated financial impact

Other – Also see info below

The Program is funded through City of Calgary utility rates and provincial & federal grants. Through this shared investment, approximately \$1B has been invested in flood resilience - a Council priority, in Calgary since 2013, including the new Springbank Reservoir.

RISK

1. Lack of progress on a new upstream Bow River reservoir
Administration is actively supporting the Government of Alberta in progressing this project through feasibility and into the next phase of project design and regulatory approval. It is not known whether the upcoming provincial election will impact this progress.
2. Further delays for the release of the Government of Alberta's Flood Hazard Area maps. Continued delay impedes Calgary's progress including engaging with Calgarians and businesses to update floodplain development regulation. Administration continues to be timely and comprehensive in providing support to the Provincial technical team.
3. Reduction in federal and/or provincial support for flooding disaster recovery assistance
Further reductions would impact disaster recovery for private and public property owners. Administration is monitoring related federal and provincial studies and programs.

ATTACHMENT(S)

1. Previous Council Direction
2. Flood Resilience and Mitigation Update, 2022 Update Report
3. Acknowledging 10 years since the 2013 flood
4. (A) DRAFT Follow-up to 2022 Correspondence - Mayor and GOA
(B) 2022 Correspondence – Mayor and GOA
5. Attachment 5 – Annual Flood Resilience Presentation to Committee

Department Circulation

General Manager/Director	Department	Approve/Consult/Inform
Carolyn Bowen	PDS – Climate and Environment	Approve
Stuart Dalglish	PDS – GMO	Approve
Nancy MacKay	Water Services	Inform
Chief Sue Henry	EMO	Inform