


Calgary 


2018 Flood Resiliency and Mitigation Annual Update


Presentation to Standing Policy Committee on Utilities and Corporate Services
May 15, 2019

UCS2019-0653
The City of Calgary
Water Resources

ISC: Unrestricted

May 15, 2019 UCS2019-0653 1



Calgary 

Previous Council Direction

2014 June 23 Meeting of Council:

"That City Administration:

1. Receive this report for information (including Expert Management Panel Recommendation to report to Council annually)...

2017 April 10 Meeting of Council:

"That City Administration:



- ...3. Develop an implementation and funding plan for community level flood mitigation and report back to Council through the SPC on Utilities and Corporate Services or the Priorities and Finance Committee by Q2 2017..."

2018 February 26 Meeting of Council:

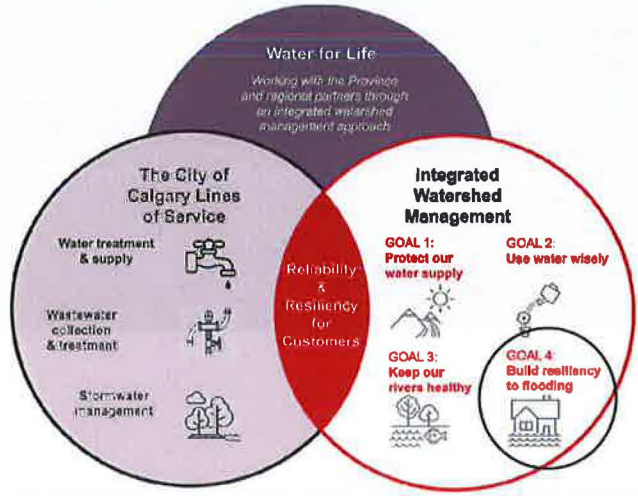
"That Council:

- ...3. Direct Administration to conduct robust public engagement with impacted communities prior to finalizing the height and design details of the four community barriers identified in the flood mitigation measures assessment."



May 15, 2019 UCS2019-0653 2

Integrated Watershed Management

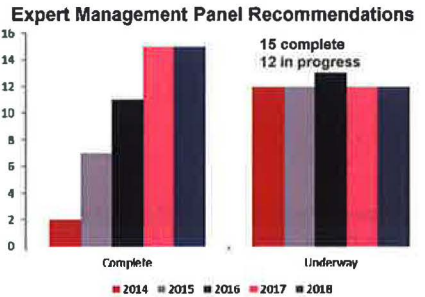


May 15, 2019
UCS2019-0653
3


Expert Management Panel on River Flood Mitigation


Expert Management Panel Recommendations




Year	Complete	Underway
2014	2	12
2015	7	12
2016	11	12
2017	15	12
2018	15	12

15 complete
12 in progress







FLOOD MITIGATION MEASURES ASSESSMENT

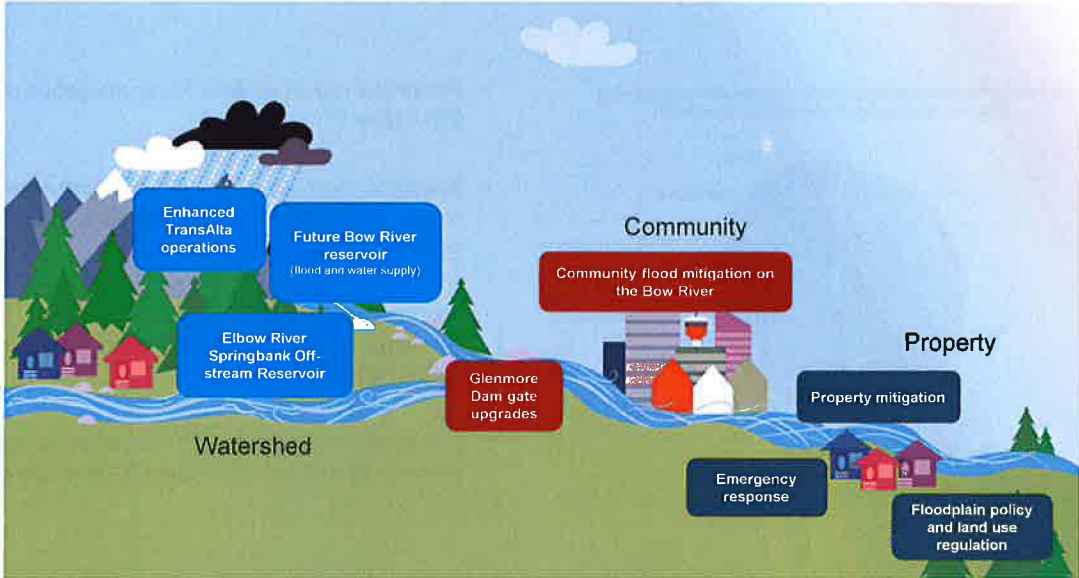


Flood Resilience Plan



May 15, 2019
UCS2019-0653
4

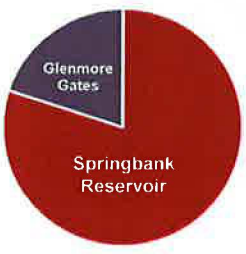
The City's Flood Resilience Plan



May 15, 2019
UCS2019-0653
5

Elbow River mitigation




Springbank Reservoir (SR1):



- Will mitigate approximately 80% of flood risk on Elbow River once completed
- Environmental Impact Assessment requirement ongoing
- 2019 January 30: 465 acres of land acquired by the Province (20 per cent)
- 2019 March 13: \$168M announced by Infrastructure Canada

Glenmore dam upgrades:

- Estimated completion: spring 2020
- With SR1, will mitigate to at least a 2013-level flood event
- Supported with ACRP funding

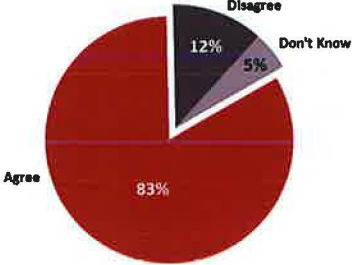


May 15, 2019
UCS2019-0653
6

Bow River mitigation

The Province Should Fund Upstream Flood Infrastructure on the Bow River in Order to Protect Calgary's Downtown from Future Floods



Source: YYCMatters Survey 2019 April 3


- Provincial report on Bow River mitigation released 2017 May 17
- Identifies three possible sites for upstream reservoir. Feasibility study expected to be completed 2019 November
- Recommends continuation of operating agreement between Province and TransAlta (expiring 2021)
- Upstream plus community mitigation necessary to mitigate to at least 2013-level flood on Bow River

May 15, 2019
UCS2019-0653
7






Community-level mitigation

- Includes combination of infrastructure (ex. barriers), land use policy, property level mitigation, and emergency response
- Community mitigation alone cannot mitigate 2013-level flood
- Diverging views on community mitigation
 - Different community situations and risks
 - Unique situations within overall flood resilience plan
- Outcomes must align with The City's flood resilience plan
 - City-wide implications and trade-offs for individual project changes
 - Ex. Barrier enhance TransAlta mitigation benefits





May 15, 2019
UCS2019-0653
8

Sunnyside



- Multiple projects ongoing – two pump stations, upper plateau separation
- Proposed flood barrier
 - Publicly owned lands
 - Citizen concern about height/level of service



Option study considerations

Community flood risks	City-wide flood risks
Social/environmental impacts	Need for investments in other communities
Budget/external funding	Upstream mitigation
Public value for money	Flood policy/land use changes
Emergency response/evacuation	Recovery costs


May 15, 2019
UCS2019-0653
9


Sunnyside

- Activities to date:
 - 2018 December – project open house
 - Meetings with community association


 - Activities planned:
 - Q3 2019 – present study results to community members, including potential options




We are here (2018-2020)




2018
Project initiated




Spring 2018
Team formed




Summer 2018
Engineering team hired.
Early engagement



Fall 2018
Engagement





Summer 2019
Engagement on preliminary design options




Winter (Q1) 2020
Barrier option confirmed

May 15, 2019
UCS2019-0653
10



Bowness

- Proposed flood barrier
 - Requires construction on river front owners' properties
 - Riverfront owners have concerns regarding barrier
 - Flood mitigation for 350 properties
 - Includes non-riverfront properties
 - Options will be discussed as part of community engagement



Option study considerations	
Community flood risks	City-wide flood risks
Social/environmental impacts	Need for investments in other communities
Budget/external funding	Upstream mitigation
Public value for money	Flood policy/land use changes
Emergency response/evacuation	Recovery costs

May 15, 2019
UCS2019-0653
11

Bowness

- Activities to date:
 - 2018 September – riverfront owners town hall
 - 2018 October – community open house
 - One-on-one meetings with riverfront owners
 - Five community meetings attended

- Activities planned:
 - Continue one-on-one meetings with riverfront owners
 - 2019 May – additional community research
 - Q3 2019 – present study results to community members

Community engagement on Flood Mitigation Measures Assessment


2016

Council approval – Calgary's Flood Mitigation Strategy

2017

We are here

2018 - 2020



2018
Project initiated

Spring 2018
Team formed

Summer 2018
Engineering team hired
Early engagement

Fall 2018 – Summer 2019
One-on-one meetings with riverfront property owners
Community engagement
Technical studies

Fall 2019
Engagement on preliminary design options and study results

(Q1) 2020
Report back to the community and next steps determined

May 15, 2019
UCS2019-0653
12



Policy and Mapping

- Provincial flood mapping
 - City in contact with Province on release of updated maps
 - No date set for release
 - Implications on City land use policy and planning
 - Uncertainty regarding provincial floodplain development regulations

- MDP and LUB Review – starting in 2019
 - Assessing flood policy within existing land use and development policies
 - Identifying flood policy gaps within overall MDP and LUB review
 - Identifying opportunities integrate policy on flood resilient development/design



Flood Readiness

- **2018 Campaign - Fifth Year Anniversary highlights:**
 - 1,800 media articles reaching 2M individual reads (\$1.9M equivalent ad revenue/return on investment)
 - Social media reaching 200,000 Calgarians

- **2019 Campaign:**
 - Launches May 14
 - New – 3 walking tours (Eau Claire flood mitigation)
 - Launch of new Calgary River Flood Story map
 - Includes regular activities:
 - Disaster Alley (May 4)
 - Media events and social media posts
 - Information on calgary.ca/floodinfo
 - e-newsletters and ENMAX bill inserts
 - Presentations at targeted community events



**Understand your flood risk.
Be prepared. Stay informed.**
Calgary is most at risk of river flooding
from May 15 to July 15.




2019 Flood Response Preparedness

Permanent Flood Mitigation Implemented

New Flood Barriers



New Equipment for Flood Emergency Response Measures

Citadel Barriers



Improved Operational Readiness

Standard Operating Procedures



New Outfall Gates





Deployable Pumps



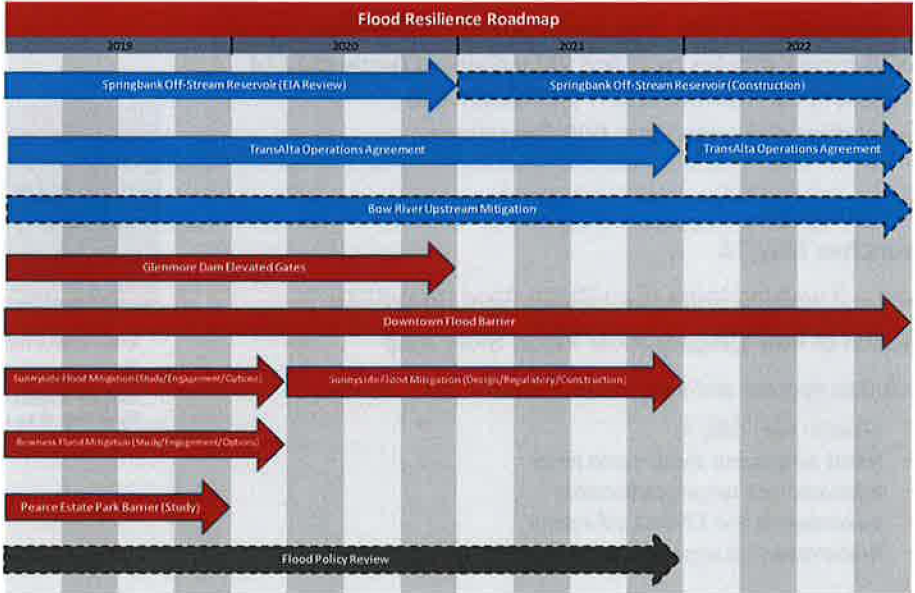
Resourcing Plans



May 15, 2019
UCS2019-0653
15






Flood Resilience Plan Roadmap





The roadmap shows various projects from 2019 to 2022. Projects in blue (Springbank Off-Stream Reservoir, TransAlta Operations Agreement, Bow River Upstream Mitigation) have confirmed timelines. Projects in red (Glenmore Dam Elevated Gates, Downtown Flood Barrier, Gullery Lake Flood Mitigation, Bow River Flood Mitigation, Pearce Estate Park Barrier) have uncertain timelines. A Flood Policy Review is shown in black with a dashed arrow.

May 15, 2019
UCS2019-0653
16






Stormwater flooding





- Higher than usual concerns during spring melt in 2018, no reported concerns in 2019
- 2018 CDI Progress:
 - Construction completion of Christie Park, Braeside Dry Pond Underground storage, 24 St. SW stormwater diversion trunk
 - Design of Upper Plateau Separation, Sunnyside Pumpstation #1 and #2
 - Construction started on Braeside Dry Pond, Bebo Grove Wet Pond, additional community improvements within Woodlands-Woodbine CDI
- Strategies currently underway to continue design innovations, seek external funding opportunities, and identify project synergies as part of the program's delivery

May 15, 2019
UCS2019-0653
17

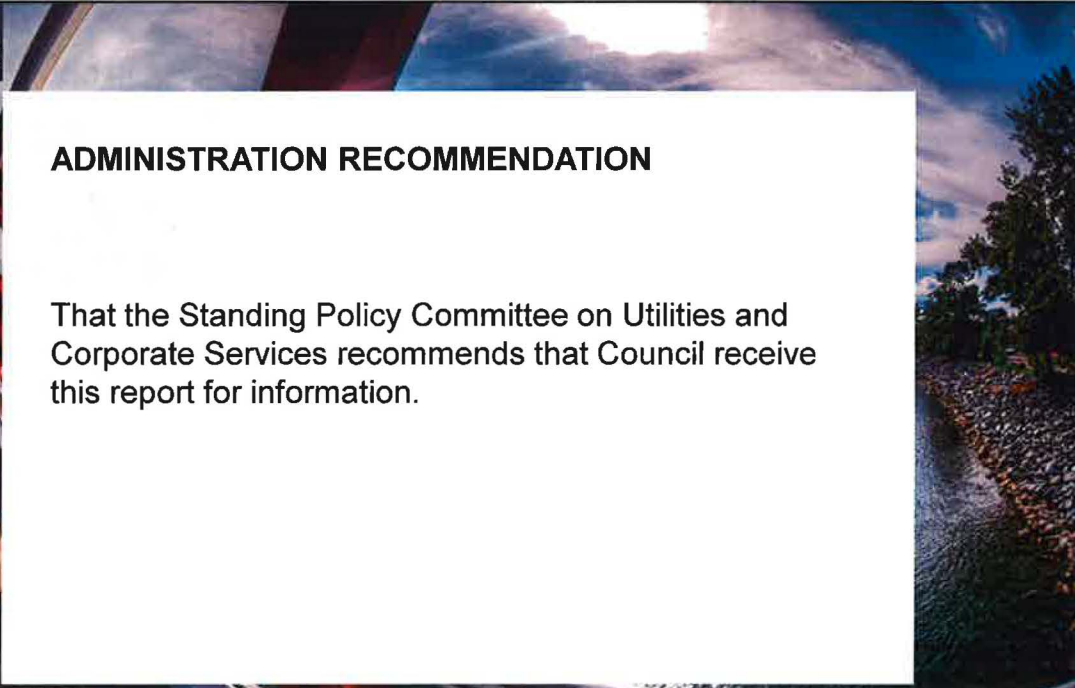



ADMINISTRATION RECOMMENDATION

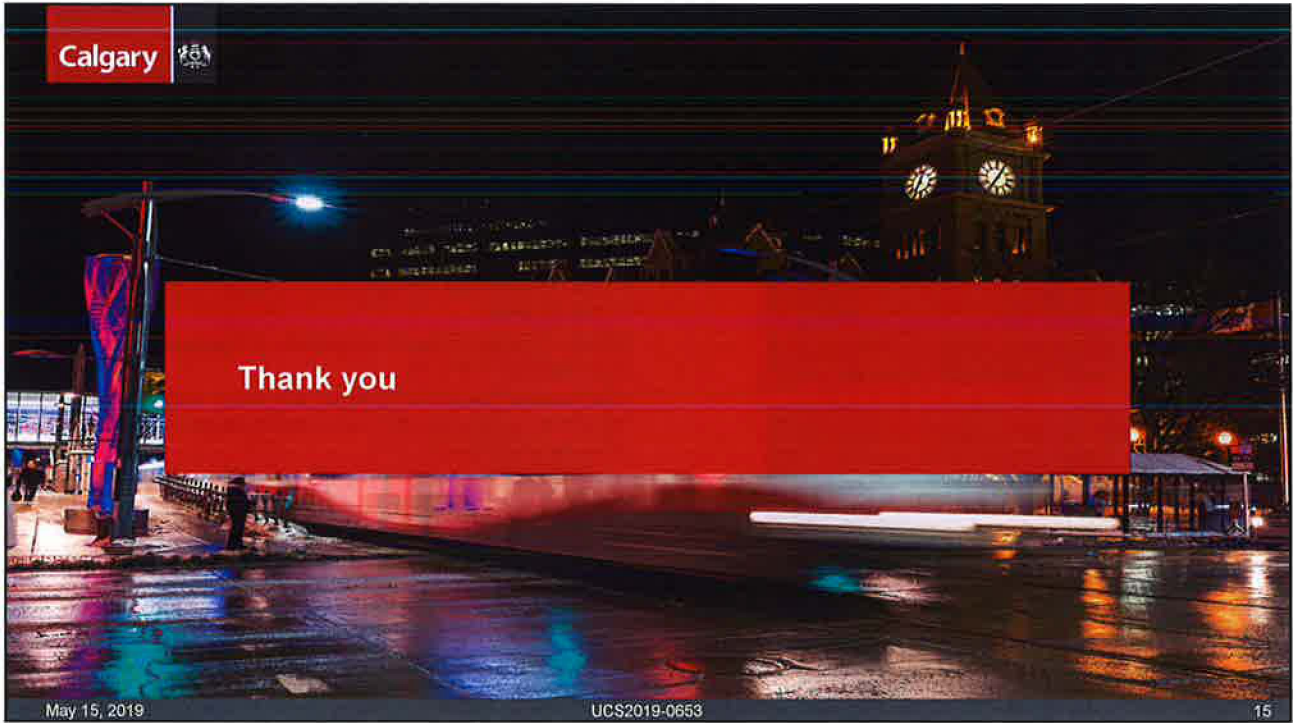


ADMINISTRATION RECOMMENDATION

That the Standing Policy Committee on Utilities and Corporate Services recommends that Council receive this report for information.



May 15, 2019
UCS2019-0653
18



CITY OF CALGARY
RECEIVED
IN COUNCIL CHAMBER

MAY 15 2019
ITEM: 7.4 UCS2019-0653
Public
CITY CLERK'S DEPARTMENT