



Flood Mitigation Measures Assessment and 2016 Flood Resiliency Update

Presentation to Standing Policy Committee on Utilities and Corporate Services
March 22, 2017

UCS2017-0266
The City of Calgary
Water Resources

ISC: Unrestricted

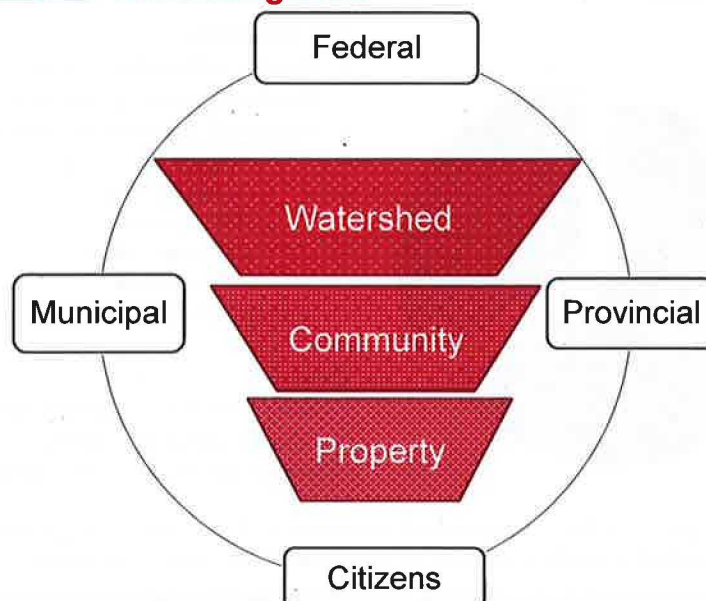
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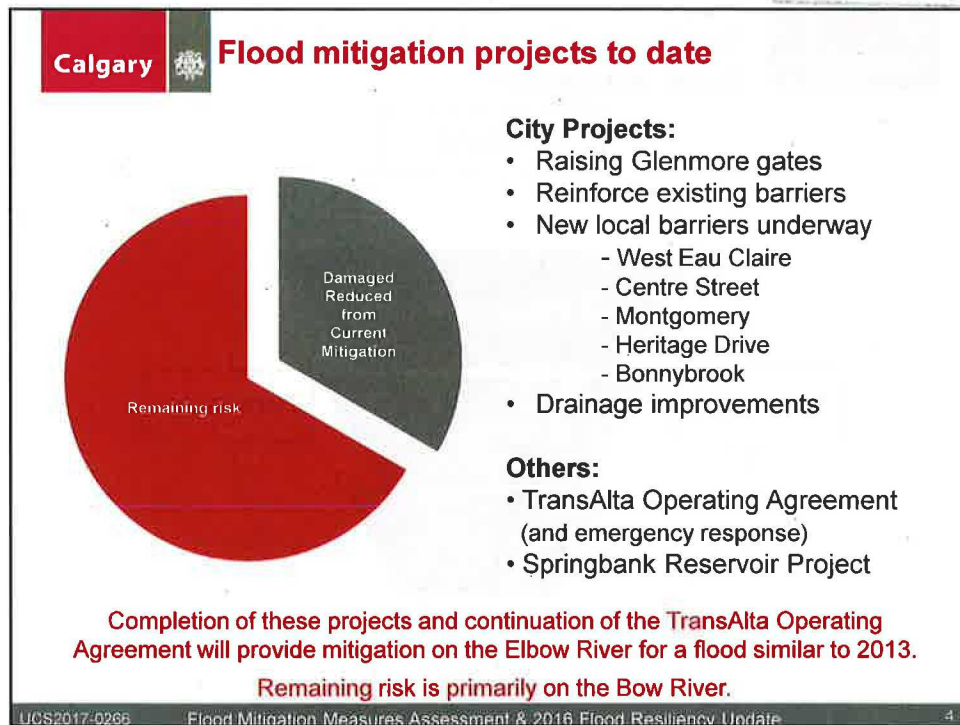
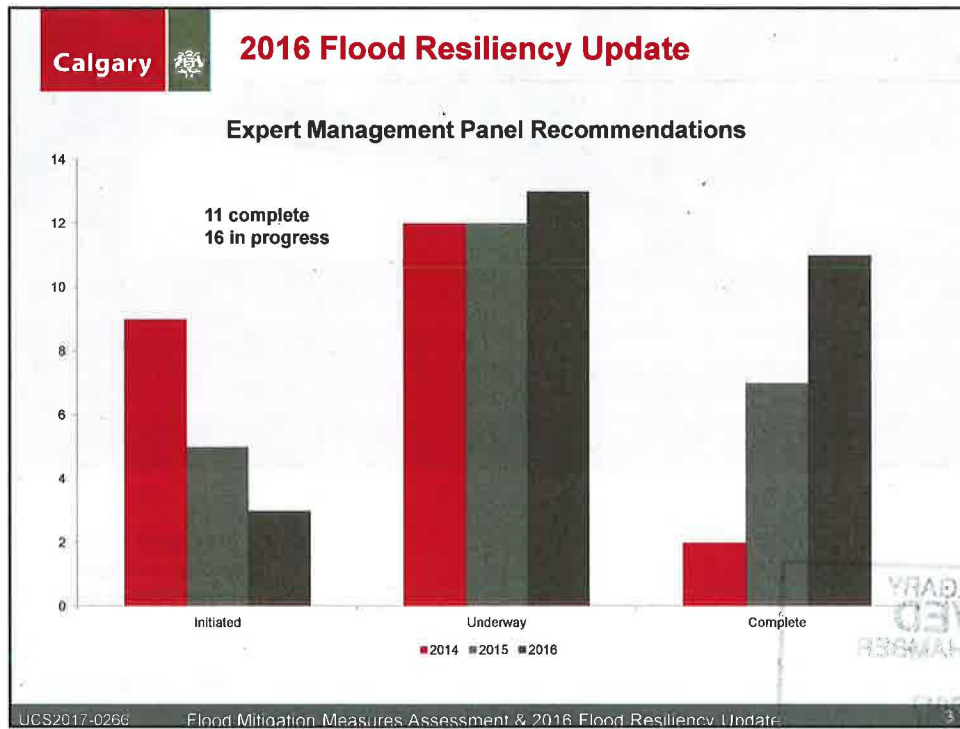
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ITEM: UCS2017-0266
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Resiliency through integrated levels of flood mitigation





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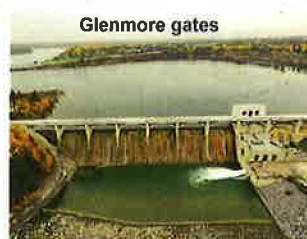
Flood mitigation underway

Elbow River

Springbank Reservoir + Increasing size of Glenmore gates

= manage flood similar to 2013 on the Elbow River

Underway



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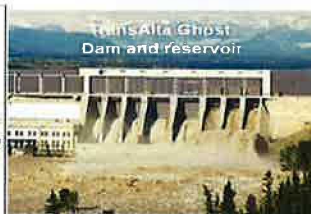
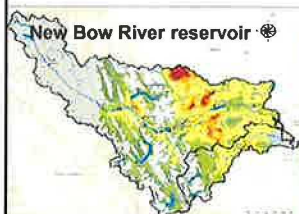
Recommended flood mitigation

Bow River

**New upstream reservoir + TransAlta agreement
+ Complementary barriers**

= manage flood similar to 2013 on the Bow River, and other potential benefits: water supply and drought protection, climate resilience and energy generation



Commitment required



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Mitigation scenarios – Bow River

Fortification of the Bow River by barriers alone	New Bow reservoir & complementary barriers
<p>✗ All barriers within 30 years</p> <p>✗ Intrusive barrier height (1.1m – 2.2m)</p> <p>✗ Low sustainability ranking (significant community disruption, only provides benefits during flood)</p> <p>✗ Barriers along entire river</p> <p style="text-align: center;">\$350M - \$650M</p>	<p>✓ Complementary barriers within 15 years, Bow Reservoir within 30 years</p> <p>✓ Moderate barrier height (0.6m – 1.1m)</p> <p>✓ High sustainability ranking (minimal community disruption, potential water supply, climate resilience benefits, etc.)</p> <p>✓ Barriers at four specific locations</p> <p style="text-align: center;">\$730M - \$775M</p>



Maximum barrier heights scaled to average one-storey home

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Potential barrier concepts



South Bowness
1:20 year
barrier concept



West Eau Claire
1:200 year
barrier concept

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Property level flood mitigation

- Explore the development of a property level mitigation program.
 - Explore feasibility of an incentive program.
 - Include an education/resource component.
- Assess additional policy measures for flood-affected areas.
 - Future policy changes must align with structural investments and future Provincial policy and Federal floodplain guidelines.



ADMINISTRATION RECOMMENDATION

That the SPC on Utilities and Corporate Services direct Council to direct Administration to:

1. Work with Council to advocate for an upstream reservoir and continuation of the Provincial-TransAlta operational agreement for the Bow River;
2. Continue supporting the development of the Springbank Off-stream Reservoir on the Elbow River by the Province;
3. Develop an implementation and funding plan for community level flood mitigation;
4. Explore the development of a property level mitigation program; and
5. In alignment with Provincial mapping and policy updates, conduct further investigation on land use policy and building regulations for areas prone to flooding.