



PUBLIC SUBMISSION FORM

Please use this form to send your comments relating to an upcoming Council or Committee matter, or to request to speak on an upcoming public hearing item.

In accordance with sections 43 through 45 of Procedure Bylaw 35M2017, the information provided may be included in the written record for Council and Council Committee meetings which are publicly available through www.calgary.ca/ph. Comments that are disrespectful or do not contain required information may not be included.

FREEDOM OF INFORMATION AND PROTECTION OF PRIVACY ACT

Personal information provided in submissions relating to matters before Council or Council Committees is collected under the authority of Bylaw 35M2017 and Section 33(c) of the Freedom of Information and Protection of Privacy (FOIP) Act of Alberta, and/or the Municipal Government Act (MGA) Section 636, for the purpose of receiving public participation in municipal decision-making and scheduling speakers for Council or Council Committee meetings. Your name and comments will be made publicly available in the Council agenda. If you have questions regarding the collection and use of your personal information, please contact City Clerk's Legislative Coordinator at 403-268-5861, or City Clerk's Office, 700 Macleod Trail S.E., P.O. Box 2100, Postal Station 'M' 8007, Calgary, Alberta, T2P 2M5.

Please note that your name and comments will be made publicly available in the Council agenda. Your e-mail address will not be included in the public record.

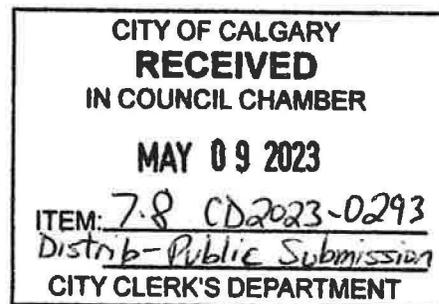
I have read and understand the above statement.

ENDORSEMENT STATEMENT ON TRUTH AND RECONCILIATION, ANTI-RACISM, EQUITY, DIVERSITY, INCLUSION AND BELONGING

The purpose of The City of Calgary is to make life better every day. To fully realize our purpose, we are committed to addressing racism and other forms of discrimination within our programs, policies, and services and eliminating barriers that impact the lives of Indigenous, Racialized, and other marginalized people. It is expected that participants will behave respectfully and treat everyone with dignity and respect to allow for conversations free from bias and prejudice.

I have read and understand the above statement.

First name (required) Jean
Last name (required) Woeller
Are you speaking on behalf of a group or Community Association? (required) Yes
What is the group that you represent? Bowness Responsible Flood Mitigation Society





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What do you wish to do?
(required)

Submit a comment

How do you wish to attend?

You may bring a support person should you require language or translator services. Do you plan on bringing a support person?

What meeting do you wish to attend or speak to? (required)

Council

Date of meeting (required)

May 9, 2023

What agenda item do you wish to comment on? (Refer to the Council or Committee agenda published [here](#).)

(required - max 75 characters)

annual flood resilience report made to Community & Development Committee on

Are you in favour or opposition of the issue? (required)

Neither

If you are submitting a comment or wish to bring a presentation or any additional materials to Council, please insert below. Maximum of 15 MB per submission (5 attachments, 3 MB per pdf document, image, video). If you have additional files to attach, email them to publicsubmissions@calgary.ca

Comments - please refrain from providing personal information in this field (maximum 2500 characters)

Councillor Sharp suggested that BRFM submit this package as part of their council meeting package.



Issues

Flow rates set by the Officials with the City of Calgary and the Government of Alberta leave hundreds of Calgarians vulnerable in the flood fringe along the Bow River. Homes, businesses and residents would be better protected with a flow rate of 800 m³/s.

An Advisory group the Bow River Working Group was established by the Government of Alberta to provide options for flood mitigation along the Bow River. In May 2020, it proposed to comprehensively assess feasibility of three options but it could not have accounted for recent advances in the science of climate change and glacier recession, the importance of the sustainable health of the Bow River and the increased interest for irrigated land. A fourth option should be included in the feasibility stage that addresses climate adaptability, irrigation and the health of the Bow River.

The proposed combination of a flood barrier and an upstream flood mitigation designed to deliver flood rates of 1200 m³/s will not protect Bowness residents from extensive flood damage and will potentially increase the flood risk to homeowners, while failing to capitalize on an opportunity to support agricultural through irrigation expansion and improve resiliency against climate change impacts to the ecological and economic health of the Bow River. The City of Calgary-commissioned Hydrogeological Characterization and GW Flow Modelling report by Klohn Crippen Berger confirms the damaging effects of the 1200 m³/s flow rate.

Background

Department officials with the Government of Alberta and the City of Calgary have led the work on options for improved flood mitigation based on a maximum flow rate of 1200 m³/s in a 100-year flood event, rather than 800 m³/s. The target flow rate of 1200 m³/s was first referenced in a 2016 document from the Bow River Working Group, but the record and rationale of this decision cannot be found through publicly available information.

The three options at the feasibility study stage continue to look at reservoir options in the Bow River basin, upstream of Calgary, that would only meet the 1200 m³/s standard, including:

- Morley: A new reservoir between Seebe and Morley, on Stoney Nakoda Nations reserve lands;
- Relocated Ghost Dam: An expansion of the existing Ghost Reservoir; and,
- Glenbow East: A new reservoir between Cochrane and the Bearspaw Dam at the western edge of Calgary.

Fourth option – Benchlands

In support of an option that can attenuate the design flood event to below the damage threshold in Calgary of 800 m³/s, necessary to protect residents in Calgary, BRFM has proposed an alternative reservoir option, the Benchlands Hydro Storage project.

This innovative option would be located off the main stem of the Bow River on the Ghost River. The Ghost River contributed significantly to peak flow in the 2005 and 2013 floods, is the largest tributary without a reservoir, and has the steepest gradient.

Irrigation opportunities for southern Alberta

The Benchlands project will help expand and improve the irrigation network within , enhancing Alberta's standing as a global leader in agri-food production. The Government of Alberta has recently made attempts to attract major agriculture projects through tax credits and irrigated land. Improving the stability of the water supply for agriculture producers will also make Alberta more attractive for investment and expansion.

Healthier Bow River and water security

The overall health of the Bow River watershed, water quality and fish health has varied from fair to poor since the 2013 floods. Currently, the water level of the Bow River is low, but this can change suddenly with snow melt or spring weather events. The Benchlands project helps provide a sustainable water level for the Bow as river health changes, by more than doubling the upstream storage capacity of the Bow River, creating much more resilience against drought than the three existing options.

The Benchlands project also offers additional campground, recreation and tourism opportunities on provincial lands, contributing to an environmentally responsible policy framework for recreation.

Hydro power

The Benchlands option offers the innovative use of pumped hydro storage by pumping water 160-190 m up from Ghost Lake to a new Benchlands Reservoir, critically supporting Alberta's electricity system while further strengthening resilience of the Bow River's flow and health. Hydro storage projects have been developed in southern Alberta for over 70 years and are critical to stabilizing power supply. They offer unique and necessary attributes for a reliable electricity system, including the only black start capacity in Alberta's electricity system. Pumped hydro, in particular, offers an essential component of Alberta's electricity system reliability as intermittent renewable sources of electricity (wind and solar) grow.

In Ontario, TC Energy is developing the Ontario Pumped Storage Project. This project is being developed at a projected cost of \$4.3B and will generate 1000 MW of power (same as Benchlands) and 8000 MWh of storage (about 1/3 proposed for Benchlands). In Alberta, TC Energy is developing a smaller hydro storage facility at Canyon Creek. This project has an expected cost of \$200MM with generating and storage capacity that is on the order of 10 percent that proposed for Benchlands. TransAlta have also proposed a 900 MW Hydro Storage facility at their Brazeau dam which in 2016 was estimated to cost approximately \$2.5M. The hydro storage concept as presented with the Benchlands project can be applied at a reduced scale: 1000 MW of reliable on demand green power generation and over 20 MWh of power storage.

Climate adaptation

The research and response to climate change and adaptation has expanded significantly over the past decade. Climate predictions had suggested annual flow on the Bow River will increase by up to 20 percent. However, recent evidence shows that flow rate variability will increase, dominated by extended rainfall and flooding in the spring and early summer, followed by drought in the late summer as glacier melt diminishes as a

result of glacial recession caused by climate change. Increased storage is essential for climate adaptation and could contribute to the provincial government made-in-Alberta climate strategy. Climate adaptation attributes, along with the climate mitigation attributes of pumped hydro electricity storage, means that the Benchlands project is a prime candidate for external funding sources.

Protection of communities along the Bow River

Construction of the Benchlands project would be almost entirely on crown land and does not involve designated provincial parkland. There is no requirement to relocate rail lines or major highways. The Minister of Transportation and Economic Corridors is mandated to lead an initiative in consultation with Municipal Affairs, Indigenous Relations, Environment and Protected Areas, Agriculture and Irrigation, and Treasury Board and Finance to develop an integrated water program that facilitates water treatment and distribution for residential, industrial, and agricultural water usage across Alberta. The Benchlands project directly contributes to this initiative for Albertans along the Bow River.

Indigenous economic opportunity

The Ministers of Environment and Protected Areas, Energy and Transportation and Economic Corridors work to ensure Indigenous businesses and communities play a central role in our provincial energy strategy and economic partnerships. The Benchlands project could create an opportunity for indigenous communities to be economic partners with the hydro storage project. The implementation of a hydro storage facility would add significant economic benefit to the project that could accrue to the First Nation. Development and construction of the hydro project on indigenous territory could be supported by the Alberta Indigenous Opportunities Corporation.

Requests:

BRFM requests that the Provincial Government:

- Set a target peak flow rate on the Bow River no greater than 800 m³/s as there should be equitable flood damage protection.
- Add the Benchlands Hydro Storage project as the fourth option with the same rigor of engineering, environmental and economic impact assessment alongside the current BRRO options.
- Implement a flood mitigation strategy for the Bow River that achieves flood protection in Calgary without reliance on surface flood barriers that have been demonstrated to be ineffective in locales of highly conductive subsurface.

Contact: Jean Woeller, President, Bowness Responsible Flood Mitigation Society

c: [REDACTED] email: [REDACTED]



May 8, 2023

City of Calgary, Mayor and Members of Council

Re: Upstream Flood Mitigation on the Bow River

Dear Mayor Gondek and Members of Council:

On behalf of the Bowness Responsible Flood Mitigation Society, I am writing to you in response to the Annual Flood Resilience report that was received by the Community & Development Committee on April 27, 2023. We understand that the recommendation to "advocate for advancing the evaluation of a new upstream Bow River Reservoir" by "requesting the Mayor send a follow up letter to the Government of Alberta" was approved.

We would like to take this opportunity to impress upon you and influence you to include in this letter the importance of finding an upstream flood protection scheme that has the ability to reduce the peak flow rate on the Bow River through Calgary to 800 meters cubed per second (m³/s).

Flow rates set by the Officials with the City of Calgary and the Government of Alberta leave hundreds of Calgarians vulnerable in the flood fringe along the Bow River. Homes, businesses and residents would be better protected with a flow rate of 800 m³/s.

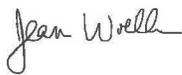
Shortly after the 2013 flood, an Advisory group, the Bow River Working Group was established by the Government of Alberta to provide options for flood mitigation along the Bow River. In May 2020, the Government of Alberta proposed to comprehensively assess feasibility of three options but it could not have accounted for recent advances in the science of climate change and glacier recession, the importance of the sustainable health of the Bow River and the increased interest for irrigated land. The proposed combination of a flood barrier and an upstream flood mitigation designed to deliver flood rates of 1200 m³/s will not protect Bowness residents from extensive flood damage and will potentially increase the flood risk to homeowners, while failing to capitalize on an opportunity to improve resiliency against climate change impacts to the ecological and economic health of the Bow River. The City of Calgary-commissioned Hydrogeological Characterization and GW Flow Modelling report by Klohn Crippen Berger confirms the damaging effects of the 1200 m³/s flow rate.

We have been tirelessly advocating with the Province for this lower flow rate and seek your support and alignment in this effort. As a demonstration of our commitment to our community and advocacy efforts, I have included with this package a briefing note and presentation that was recently presented to Minis-

ter Savage (Environment & Protected Areas), Minister Nicolaides (MLA Calgary-Bow) and officials from Alberta Environment and Protected areas.

We look forward to hearing from you.

Kind regards,

A handwritten signature in black ink that reads "Jean Woeller". The signature is written in a cursive, flowing style.

Jean Woeller
President, Bowness Responsible Flood Mitigation Society (BRFM)
www.bownessrfm.ca

Attachment:
Bow River - Minister Savage - Final.pdf
2023_03_29_BRFM_Final.pdf

SLOW THE BOW

BOWNNESS **R**ESPONSIBLE **F**LOOD **M**ITIGATION SOCIETY



**Meeting with Hon. Sonya Savage, Minister of
Environment & Protected Areas**

March 29, 2023

Request #1 Reduction of the design flow rate for the Bow River Reservoir Option Study (BRRO)

Ask: Please direct your officials to consider options, as part of the BRRO, based on a design peak flow rate of 800 m³/s.

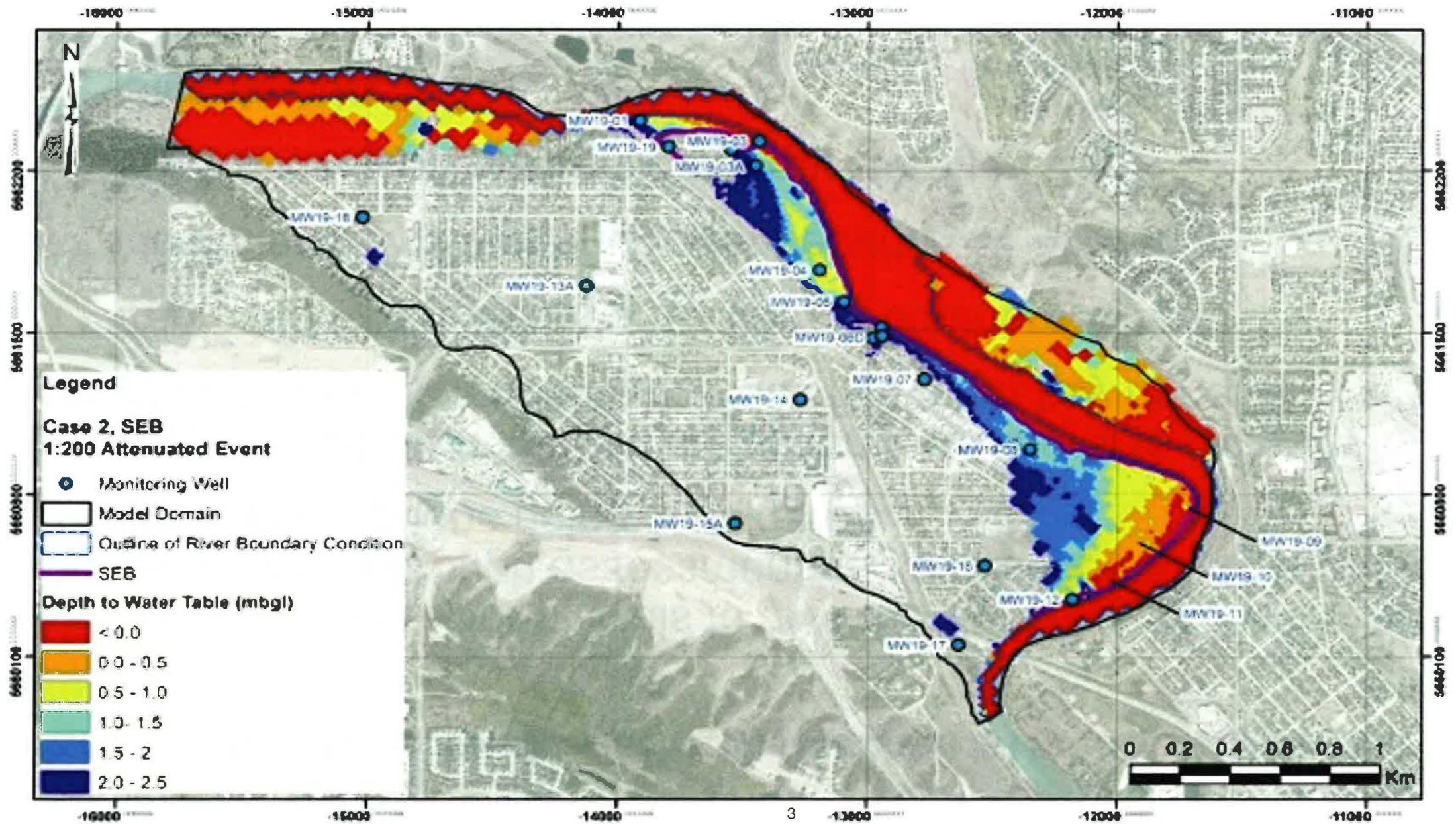
Rationale: City of Calgary commissioned groundwater report concluded the community will experience significant property damages from groundwater at the peak flow rate of 1,230 m³/s that is being used to assess upstream mitigation options.

- Groundwater impacts will occur with or without the proposed barriers in Bowness
- Groundwater flooding presents risks and dangers to Bowness and other Calgary communities



Photo taken June 7, 2020 when flow rate was approx. 250 m³/s at Bearspaw

Extent of Groundwater Flooding



Request #2 Give further consideration to the Benchlands Hydro Storage Options

Ask: Please direct your officials to give the Benchlands Hydro Storage Option a more thorough assessment and evaluation along with the current BRRO options being considered.

Rationale: In addition to flood mitigation for vulnerable Calgary neighbourhoods, this option provides five other key benefits:

- Improved irrigation opportunities for southern Alberta
- Healthier Bow River and water security
- Hydro power and valuable energy storage
- Climate adaptation
- Indigenous economic opportunity

Thank you and discussion