

**BOWNESS FLOOD BARRIER  
COMMUNITY WORKING GROUP MEETING 20  
October 19, 2020 – 7 to 9 p.m.  
Online Meeting – Microsoft Teams**

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<b>Working Group Attendees</b>	<b>Apologies</b>	<b>Guests</b>
David Burton	Anne Campbell	Dave Pascut
Sydney Empson	Sheila Clayden	Sandra Davis
Jane Kahler	Jacqui Esler	<b>Working Group Resources</b>
Jolene Moran	Rae McKenzie	
Patti Peck	Jeff Riedl	Mariel Higuerey
Josie Stiles	Ralph Smith	Judy Hoad
Hank Vrielink		Amy Stansky
Jean Woeller		Frances Welsh

**Meeting Notes**

**1. The City of Calgary engage! policy and spectrum - overview and discussion**

Argyle, the engagement consultant working with The City, presented the Engage Policy, spectrum and how the engagement elements have been incorporated into the project. The group also provided suggestions for the upcoming community engagement in late 2020. Discussion comments and questions included:

- Consider offering different levels of information to the public – a level 101 and a level 201. Let the community decide what level of information they would like to attend.
- How will The City target the resident population to encourage them to attend the community event?
  - We will be mailing a hard copy booklet to residents in the flood zone. We are also considering door knocking like last year, this will depend on safety factors at that time.
- The Community Association representative suggested sending a save the date so that community members can plan for the event day. As soon as possible would be best.
- Make sure opportunities are available for riverfront property owners and those located in the flood fringe.
  - The online event will be open to all. The riverfront property owners will have separate one-on-ones with the project team.
- Make sure there are a couple of opportunities for each topic offered. The City might want to provide a different date for the riverfront, but the same information.

- Send info to Community Association to share through their channels. They are still not open to the public but are always connecting and communicating with the community regularly.
- “We want The City to show the other side of the story is told for balance, not only in the booklet but also in the event. In the presentations you should try to ensure a balanced perspective and respect opposing views”
- How will the team measure and report back to Committee who directed Administration to conduct "robust engagement"? Will the Working Group review the What We Heard report (engagement report) before it goes public to make sure qualitative analysis (themes) shows different perspectives? Does Committee review the 'What We Heard' report?
  - The City can show the Working Group the report draft. The Working Group can provide comments for clarity, see the verbatim (after it's been scrubbed for identifying comments), but cannot alter or insert the themes. Committee and Council receive the What We Heard report as part of the presentation package from Administration.
- The engagement themes could be included in the presentation to the Committee as part of the recommendation. Is it possible to add more information about engagement in the presentation to Committee?
  - The City intends that the Council report itself include an engagement section and how it informed the recommendation.
- A member expressed they felt the TBL was not ready to go into the community booklet and should be provided/delivered later.
  - The Social criteria and ranking will not be included in the community booklet. It will be shared in the online engage portal, and further explained in the online public event.
- Do we have a backup plan if we go into COVID lockdown again? Will The City be able to continue with the booklets and virtual meetings for the community?
  - Yes, we are taking into consideration COVID restrictions in our planning
- In one of the slides you speak of public acceptability. As this project is expected to be built on private property through negotiated easement, how does this factor into this drawing? I would think this is a unique aspect of this project. Where is this intersection, and how important is this to sustainability?
  - *Post meeting note:* That is correct, because of the private property aspect of the project, public acceptability is a very important piece. Assessing public acceptability will be through feedback gathered in the online surveys and through the 1-1 meetings with riverfront homeowners to inform the recommendation to Committee/Council.
- “People in the flood fringe area have a level of knowledge based upon whether there was water in their home or not in 2005 and 2013, the nature of this flooding, and the location and extent of their resulting financial losses. Therefore, it is essential that these residents understand, based upon the technical study results, whether they will have water in their homes again during the next flood event should the Bow's flow rate be allowed to exceed the known damage threshold of approximately 800 m<sup>3</sup>/s”

## 2.Engagement Update

The group reviewed the updated engagement timeline. Comments and suggestions included:

- The group would like to see the content included in the online engagement event to understand the purpose and audience.
  - Argyle can prepare a presentation about the Online Public event for a Working Group meeting
- Can the Working Group see the comments and questions from Advisian? Can you send us the scope of work that has been communicated to Advisian?
  - *Post meeting note:* The Working Group will have an opportunity to see the letters produced by Advisian with a summary of their review for each phase. The Scope of Work was sent to the Working Group a couple times, with the most recent being in November 2019.

## 3.Letter to Project Manager

The group also discussed the 'Letter to Project Manager' to support the report and recommendation be moved to 2021. Comments and suggestions included:

- The letter talks about a report and a recommendation to Council. Is there a difference?
  - i. Report to Committee and Council is the same as the recommendation
- The group was in agreement with the letter. It will be finalized and sent to Management.

## 4.Damage Cost Model

The City of Calgary presented the Damage Cost Model process. Discussion comments and questions included:

- Does the flood damage model consider the source of flood - overland vs groundwater?
  - Both overland and groundwater flow are accounted for in the model
- Where do the personal damage numbers come from, from the insurance companies or others?
  - The numbers come from a variety of sources, including insurance and what has been reported since 2013. The model is research-based on the cost of replacement and construction values, calibrated against data for 2013. Damages are categorized based on building type, not customized per individual home.
- Does it make sense to generalize the main floors' elevation used in the flood damage model for the cost-benefit analysis?
  - Yes, it is a high-level City wide model and a sampling of main floor elevations were checked to validate the assumptions used.
- A Working Group member expressed concern that the community will incur damages if flows of 1200 m<sup>3</sup>/s are released from the reservoir, and that the full capacity of the reservoir won't be "utilized"
  - More information is needed on the location of the reservoir; how much is used for flood vs drought. There are currently protocols in place in Calgary to keep flows under 800 m<sup>3</sup>/s as much as possible until people are evacuated. How much gets released is based on the forecast of flows coming in/through. Reservoir operations and releases are dependent on

- many factors during a flood event, including dam safety considerations and the specific forecast and flows as the event unfolds.
- Do you breakdown private property vs public infrastructure in the model?
    - Yes. The model includes surface water, groundwater and isolated areas outside of the inundation area to see the effect of mitigation.
  - What is the next step to using this model?
    - The model is useful to evaluate different projects and their impact, including policy and stormwater projects.
  - Averaging of the damages from 1:20 to 1:1000. Is that part of a Provincial model?
    - It is a weighted average according to the probability of different sized flood occurring - integration under the curve. Over time, such as 100 years, more cumulative damage comes from the smaller events because they occur more frequently than the extremely large events (e.g., 1:1000 flood) that have a very low probability of occurring.
  - “Damage cost for the 20-year naturalized event is only a third of the 100-year event. When we talk to the BRFM membership, there is no difference in the flow rate. Once there is a metre of water in the basement the damage remains the same up to the 1 in 100-year level. Why is that not reflected in the curve? There is no benefit for property owners.”
    - That is reflected in the curves that are input to the model. Once you get flooding in the building, that is when the bulk of the damage is done, there is not as much further damage whether there is 6 inches or two feet. When we start aggregating on a city-wide basis, there is much more damage for a 1:100 flood than a 1:20 flood because a lot more area is inundated.
  - How is this different from the AE model?
    - This analysis uses more scenarios, including with and without the Bowness barrier, to understand how different mitigation pieces affect the city's peaks. This is an updated model. It is a more up to date with cost and has more level of details.
  - The model looks like flowing more water is a benefit of the Bowness barrier. Why does that save damages for the rest of the city?
    - When operating a reservoir, we can let go more flow to preserve storage or hold water to keep flows downstream low. The longer we keep flows low, the more storage is used. This could result in filling the reservoir before the peak arrives,
    - Attenuating the peak helps protect other areas through the City that would experience flooding that those peak flow rates, thereby reducing damages throughout the City.
  - What is the service level of the TransAlta agreement alone? You show a 1:35 event flood event.
    - *Post meeting note:* Flood modelling indicates Bowness experiences overland flooding around 800 m<sup>3</sup>/s. The TransAlta agreement is estimated to reduce a 1:20 event to 855 m<sup>3</sup>/s, so slightly under a 1:20 service level.
    - The 1:35 event is the damage that can be mitigated with a combination of the TransAlta agreement plus a barrier in Bowness (1230 m<sup>3</sup>/s design flow).

- “Understanding that the barrier will not be overtopped until 1,345 m<sup>3</sup>/s, The TransAlta agreement brings us to 1,403 m<sup>3</sup>/s. So, the barrier has a minimal advantage to the TransAlta agreement all by itself”
  - Under ideal flow conditions, the barrier should not overtop until 1,425 m<sup>3</sup>/s. The barrier and the TransAlta agreement in combination together can increase the level of protection
  - It is also important to note the barrier design flow is 1230 m<sup>3</sup>/s. The freeboard is what makes the difference between the design flow of 1230 m<sup>3</sup>/s and the overtopping rate of 1,425 m<sup>3</sup>/s. Freeboard is used to account for uncertainties and provides extra safety to ensure a barrier remains effective even in the face of unanticipated circumstances like waves, tree debris etc.
- Do you know how much the TransAlta agreement would reduce the 2013 peak flow rate, which was about 1,710 cms?
  - *Post meeting note:* Potentially between 250 – 300 m<sup>3</sup>/s. The amount of mitigation from the Ghost reservoir depends on the specific flood event and operational considerations such a dam safety during the event.
- “As a Bowness resident in the flood zone, I'm afraid I have to disagree with these numbers or analysis related to Bowness. With the barrier, I will see significantly increased annual damage due to increased groundwater damages resulting from proactively increased release rates more frequently. Look at Exshaw this year. Although the overland flood mitigation is addressed for the 1:100-year event, the residents are experiencing annual flooding damages from groundwater. It is the unintended consequence that is of significant concern”
  - it is important to note the Exshaw project is quite different than the proposed Bowness Barrier (Exshaw was a channel lining project). Stating Exshaw residents will experience annual damages based one year of information (with high snow melt) is a premature speculation.

#### **Other comments**

- Meeting 19 Notes - send comments in tracked changes to Judy
- Judy to check with Working Group non-attendees to ask if they are interested in continuing as a member. If not, she will ask the Community Association for suggestions.