



Project overview

The Bow River is an integral part of Calgary and the Sunnyside community. As a community located so close to the river, there will always be a risk of flooding in Sunnyside. During the 2013 flood, the community of Sunnyside was inundated with water. Almost half of the community was evacuated for more than a week, and approximately 400 residences in the area were damaged.

In 2016, The City hired external consultants to update the Provincial Flood Damage Assessment study for Calgary and to assess and recommend future resiliency and mitigation measures. The resulting document, the Flood Mitigation Measures Assessment (FMMA) report, was approved by Council in the spring of 2017. Recommendations include the following combination of mitigation solutions to create a flexible and adaptable flood risk management program.

- Watershed-level mitigation (The Province):
 - Modified operations at Ghost Reservoir as part of the current five-year agreement with TransAlta.
 - A new upstream reservoir on the Bow River.
- Community-level mitigation (The City)
 - Permanent flood barriers in select communities.
 - The height of the barriers will vary depending on the location. The City's Flood Mitigation Strategy is aimed at achieving – at a very minimum – protection against a 2013-level flood event.
- Property-level mitigation and policy implementation (Citizens and The City)
 - Policies, bylaws, land use regulations, building codes, possible incentive programs for flood proofing and public education.

A combination of measures that work together is required. A multi-measure approach that includes a new upstream reservoir, as well as changes to operations of TransAlta's Ghost Reservoir and the construction of community flood barriers will deliver 2013-level flood protection for Sunnyside.

Work completed on the community flood barriers project prior to fall 2018 was part of the conceptual design phase. In that phase, it was determined that flood barriers were a feasible option for the community, but limited details about the barriers were determined. This was based on information available at the time. It's high-level, conceptual work that needs to be validated and refined in the preliminary design.

As the decision unfolds a more comprehensive decision-making timeline will be available to the public along with upcoming opportunities for community members to voice their concerns.

The proposed location for the barrier is on the left bank of the Bow River extending from the Peace Bridge to the east of Centre Street north. The height, length and aesthetics of the barrier will be determined after technical studies and community consultation.



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There is an existing berm along the proposed alignment which does not meet industry standards. A new seepage trench system is proposed immediately north of the barrier on Memorial Drive to manage groundwater.

The City has been working on various flood mitigation projects in the community of Sunnyside, above and beyond the community flood barriers project. Projects like the Upper Plateau separation, the Sunnyside Sanitary lift station replacement, the construction of new lift stations, along with the critical erosion repair project at Memorial Drive & 3rd Street NW are just some of the projects that support flood mitigation efforts in the community (see map below).



① Sunnyside Flood Barrier Project

Design of a permanent flood barrier along the riverbank.
Status: In progress. Estimated completion in 2021.

② Upper Plateau Separation Project

To help prevent flooding of the lower plateau of Sunnyside/Hillhurst, The City is building dedicated stormwater infrastructure for the upper plateau.
Status: In progress. Estimated completion in 2020.

③ Sunnyside Sanitary Lift Station Replacement

This lift station was upgraded for flood resiliency. It is designed to operate up to a water depth of 1.35 metres, as measured from the gutter on 3 Street N.W. At water depths above this, the sanitary sewer will be inundated but the lift station can keep pumping all the way up to a 1-in-100 flood event.
Status: Completed summer 2018.

④ Sunnyside Storm Lift Station Improvement (Pump Station #2)

The lift station is being upgraded for flood resiliency and to provide a higher pumping capacity of 2,000 L/s.
Status: In progress. Estimated completion in 2019.

⑤ New Sunnyside Storm Lift Station (Pump Station #1)

A new lift station will alleviate overland flooding on Memorial Drive, and localized flooding in the south east area of Sunnyside by Memorial Drive and 3 Street N.W. by providing 1,000 L/s of pumping capacity.

Status: In progress. Estimated completion in 2020.

⑥ Memorial Drive & 3 Street N.W. Critical Erosion Site

This project repaired erosion damage from Bow River flooding and stabilized the river bank. In addition, this project contributed to flood resiliency with the addition of a concrete wall near the Centre Street Bridge.

Status: Completed in 2013.



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This report summarizes the communications and engagement activities within the first phase of the engagement program.

Engagement overview

The proposed Sunnyside Flood Barrier project is currently in the preliminary design phase. This phase extends from fall 2018 to winter 2020. It consists of gathering feedback from community members, conducting site surveys, and completing engineering studies and analyses.

Engagement with residents began in early 2018 and will be ongoing through to the completion of the project. The timeline for engagement activities is shown below.



Phase I

The Phase I engagement activities were implemented over approximately seven months (June - December 2018) to reach Sunnyside and Hillhurst residents, Hillhurst Sunnyside Community Association (HSCA) representatives and HSCA Emergency Planning & Response Committee (EPARC) group members.

Objectives

The purpose of Phase I was to collect local knowledge and get input on community values, areas of sensitivity and other factors that should be considered in the preliminary design. Objectives for this phase were divided into two categories.

Communication

To provide proactive, meaningful communications to stakeholders, so they understand:



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- The need for flood barriers and the rationale behind the proposed solution.
- Project timelines.
- Areas/decisions that are ‘on the table’ for discussion and input from stakeholders.

Engagement

- Seek input from EPARC on how to best inform and interact with community members.
- Obtain input from the community on local features and sensitive areas that should be considered by the engineering consultant as they design the flood barriers.

Activities

Phase I consisted of integrated communications and engagement activities:

Communications activities

- Engagement promotion: To promote the engagement opportunities the team used a variety of tactics to reach multiple and diverse audiences including bold signs, direct mail drops, social media, and correspondence with the HSCA and EPARC.

Engagement activities

- Interest group meetings: The City attended HSCA board and EPARC committee meetings to share information about the proposed project and engagement.
- In-person engagement events: The City hosted an Open House event for community members to learn about the project and provide input.
- Online engagement: The City also hosted an online engagement platform with information and input opportunities that mirror the in-person Open House for the wider community. This online tool provided a wider reach by allowing residents to comment and submit input over a two week period.

Engagement event dates and locations are listed below:

- June 26, 2018 – EPARC Infrastructure Committee Meeting – Hillhurst-Sunnyside Community Association
- September 25, 2018 – EPARC Infrastructure Committee Meeting – Hillhurst-Sunnyside Community Association
- November 14, 2018 – EPARC Infrastructure Committee Meeting – Hillhurst-Sunnyside Community Association
- December 4, 2018 – Sunnyside Open House – Sunnyside School
- December 4 to December 18, 2018 – Public Online Engagement -
<https://engage.calgary.ca/sunnyside-flood-barrier-project>



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What we asked

Methodology

To summarize the data in the ‘What we heard’ section, the project team reviewed all comments received from the online and in-person engagement. The team categorized the comments into overarching themes. Comments often fell into more than one theme. The results of the analysis represent those members of the public who elected to participate online or in person. They are not fully representative of the community of Sunnyside.

Areas of input

Areas of input	Questions	Audience engaged	Tools used
Engagement experience	<ul style="list-style-type: none">- What was the best engagement you ever participated in?- What made it good?- What are your expectations for this engagement?	EPARC	<ul style="list-style-type: none">- Presentation and discussion during the Committee’s scheduled meetings
Community features for consideration	<ul style="list-style-type: none">- What is most important to you about your community that The City needs to understand when planning flood mitigation projects for Sunnyside?	Hillhurst and Sunnyside community members	<ul style="list-style-type: none">- Open House evaluation form- Online Engagement Map – through the Engage Portal- In-person input with area maps – Open House

What we heard

The following table shows the participation in the engagement activities, and the estimated number of people reached through some of the communications efforts.

Public online engagement
<ul style="list-style-type: none">• 157 visitors came to the online Engage portal with 33 participants providing 83 comments and input to the social map
Public in-person engagement – Open House
<ul style="list-style-type: none">• 167 individuals attended the Open House and completed 120 feedback forms at the Sunnyside School• Approximately 117 comments were provided in the printed area maps• Approximately 54 comments were provided on the scroll wall, which was designed to capture general input that did not fit within the printed maps or the feedback forms
Interest group meetings
<ul style="list-style-type: none">• Two one-on-one meetings with EPARC• One meeting with HSCA



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Themes from public engagement

The majority of stakeholders that provided feedback were interested in learning more about the barrier height, and how the Eau Claire barrier project could affect the flood levels in the community. The top three themes that emerged from the comments provided by stakeholders provided at both the in-person events and on the Project Engage Portal were:

- Request for higher berm/level of service
- Flood response & anecdotal information; and
- Drainage and back-up (sewage & stormwater)

For a detailed summary of the input that was provided, please see the [Summary of Input](#) section.

For a verbatim listing of all the input that was provided, please see the [Verbatim Responses](#) section.

Next steps

Further engagement is planned for the Sunnyside Flood Barrier Project. Following public engagement and technical studies and analyses, the project team will begin designing options for the flood barrier. During Phase II, these options will be shared with Sunnyside residents for feedback in late summer 2019. This feedback will feed into the finalized preliminary design which will be presented to the community and residents in winter 2020 as part of Phase III of the engagement program.



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Summary of Input

Open House and Online engagement

This section provides a summary of the external engagement input received during Phase I of the Sunnyside Flood Barrier project.

Themes	Description of overarching themes
Berm height/Level of service	<ul style="list-style-type: none">• Increase in the height of the proposed berm• Potential to increase height with temporary measures once the service level is determined• Berm height importance to address overland flooding• Berm height importance in relation to other mitigation measures for flood protection
Flood response & anecdotal information	<ul style="list-style-type: none">• Personal accounts and details from 2013 flood• Concern over the lack of notice and response mechanisms during flooding events• Comments on the potential for greater damage in the event of a large flood than 2013• Reflections on trauma and distress from 2013 flood event• Specific locations in the community that frequently flood, have high water levels, where water entered the community from and areas of improvement
Drainage and back-up (sewage & stormwater)	<ul style="list-style-type: none">• Comments on drainage in Sunnyside during heavy rain and snow clearing• Need for valves in storm sewers• Upgrade needed for the existing 100-year old sewer system to accommodate higher density plan• Concerns about the stormwater lift station completion date – needed before 2019 flood season• Comments on Upper Plateau project
Engagement/Transparency	<ul style="list-style-type: none">• Comments on the opportunity to participate• Concern over whether City employees were genuinely listening to feedback• Desire to see other flood barriers examples• Concern over lack of transparency - Sunnyside sacrificed for downtown• Importance of community engagement at all stages of the process• Using community members expertise for the project



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Bylaw changes & future construction	<ul style="list-style-type: none">• Basement rules for new builds• Comments on property level bylaw changes not working for Sunnyside• Concern over big developments ability to pump water with deep foundations and parkades
Climate change	<ul style="list-style-type: none">• Consideration of climate change effects in predicting more floods• Concern about more flooding due to climate change• Influence of climate change in the level of service selection
Upstream mitigation	<ul style="list-style-type: none">• TransAlta agreement concerns• Comments on not being able to guarantee upstream protection• Upstream mitigation or off-stream reservoir as potential solutions
Equivalent protection/South side berm impacts	<ul style="list-style-type: none">• Concern over future flooding due to the south bank having higher protection than Sunnyside• Comments that both sides of the river should have equivalent protection• Feelings that The City is not protecting Sunnyside at the same level as it is downtown, the Calgary Zoo and Stampede grounds
Environment	<ul style="list-style-type: none">• The desire for the berm to be natural with vegetation and greenery• Importance of river access for community residents• 2013 debris remains in the area• Replanting of the trees in areas after construction
Design/Experience	<ul style="list-style-type: none">• The desire for pathway system for biking and walking to be included in barrier design• Green areas included in the barrier with amenities like picnic tables• Importance of pedestrian experience, viewscape and accessibility from Sunnyside homes• Use of natural berms or small walls with murals as suggestions for barrier design
Values	<ul style="list-style-type: none">• Concern over future flooding impacting the neighbourhood and future residents• Anxiety over flood events breaking down community cohesion• Safety of homes stated as just as important as the river views• Dislike of the Container Park in the community
Considerations/Suggestions	<ul style="list-style-type: none">• Other ideas for flood mitigation and pumping flood water in the future• Request to look at other barriers from other cities to compare• General statements of protecting Sunnyside• Other comments on areas of the community for improvement



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Economic Factors	<ul style="list-style-type: none">More information wanted on cost sharing from the provincial and the federal governmentUse of resources on an appropriate level berm – addressing the community needsConcern over costs from damage due to flood eventsInclusion of the community in the cost benefit analysisComments about property tax in Sunnyside in comparison to the cost of preventing flooding
Timeliness	<ul style="list-style-type: none">Concerns over construction timelines and the flooding potential in the meantimeDelayed action from The City following the 2013 floodFlood protection completed in other areas of the city while Sunnyside is still waitingComments on cutting through red tape to get the berm built in a more timely and efficient manner
Groundwater	<ul style="list-style-type: none">Accounts of groundwater impacts on Sunnyside during the 2013 floodAddressing groundwater impacts in Sunnyside (not just stormwater)Hydrostatic pressure concerns

Verbatim Comments

Verbatim comments include all written input that was received through both the online and in-person engagement event (public open house).

The verbatim comments have not been edited for spelling, grammar or punctuation. Language deemed offensive or personally identifying information has been removed and replaced with either (offensive language removed) or (personal information removed).

- drainage pipe from plateau - separate drainage for Sunnyside
- Take climate change effects into account in predicting floods
- I had 6' of water in my basement in 2013. I'm concerned that without at least a 1:50 year flood barrier it could be worse in a future flood because the south bank of the river has much higher protection now
- Berm height needs to be 1:100 & freeboard
- Thank you for asking for our input! :)
- Need a very big berm
- Basement/alley flooded once power went out
- Protect Sunnyside to a 50 year or 100 year flood -- same as other assets



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- Concerns about clearing ice every year from storm drain
- Concerned about the impact (overtime) + the gravel bars
- Hoping for better protection > 1 in 20 year
- I support the upper plateau separation project
- Concern that TransAlta is NOT sufficient (history is suspect) what is new agreement
- Concerned about more floods due to climate change
- Suggestions for personal residential protection in case of flood while we wait for dev
- Can you get creative with support/skills/expertise from the community?
- Don't forget to engage community during process vs after conf. of design option
- Please take into account groundwater flooding on 900 block of 5 Street our basements were filled from underneath. The ground is porous, the sewer pipes backed up as well.
- Do we need a tax to achieve flood protection?
- 2013 was a > 1 100 year flood (without upstream protection). Build for 1:100. We can't guarantee upstream protection
- Higher berm
- We remember the flood, it was really bad we had to move out of our homes until the flood was over. (personal information removed)
- Climate change
- Minimum 1:50
- Sunnyside must be one of the highest tax generating neighbourhoods (per sq. ft.) in the city. Protect the City's tax revenue
- 1:20-1:200 is insulting min 1:50
- Higher Berm!
- Get the spring bank dam built
- 100 year old sewage systems need to be upgraded to protect the higher density plan
- Advance notice in 2013 was a major fail! Not nearly enough notice was given for the information (i.e. extent of Canmore flooding, etc.)
- Build a higher berm
- If we build a 1:50 barrier & the flood turns out to be a 1:100 event, how can we prepare to raise it faster at short notice.
- There are lots of kids in this community. They were scared. It was a traumatic event.
- Climate change will affect numbers in future
- 1:100 should be the minimum
- With all the high density housing, sewage drainage systems need to be upgraded



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- Higher berm!
- Why was Discovery Ridge -- on a hill -- evacuated 8h before Sunnyside, known to be the lowest point in city?
- There is only 0.5m to 1m difference in berm height between 1/50 and 1/100
- Berms should be 1:200 height. Suggest diesel powered high capacity, low head pumps mounted on trailers that can be hooked up at key locations to pump flood water over the berm into River
- Higher berm 200 year flood
- Berm 1/200 across the river. If we are 1/60 we are in trouble we need interim until up stream established
- I understand the berm is only 1 aspect of flood mitigation. But each part should do its job well. A plan will succeed if **all** the links are strong. A weak link can lead to failure! Meaning, the berm on **both** sides of the river should have equal protection in that 1 side is not protected at the cost of the community on the other side! Eau Claire Berm = Sunnyside Berm
- Upstream Bow River mitigation is proper solution
- We need a higher berm 1:20 is stupid
- Sunnyside berm height equivalent to downtown and zoo! Required.
- The City should protect the residential areas to the same extent they're protecting zoo + stampede grounds.
- Evacuation issue - because most exits out of Sunnyside were to Memorial, they were blocked off - so there were only 2 exits out west (2nd Ave, 4th Ave) - difficult to exit onto 10th Street North b/c Hillhurstians were also using it!
- Advance notice in 2013 was FAIL!
- In 1st Avenue + 9th Street cul de sac - south side - 4 houses had flooded basements on north side, garages flooded from stormwater - will this sort of flooding on "West sunnyside" be addressed?
- Offstream reservoir? No onstream reservoir is proposed as far as I know
- Property level Bylaw changes are NOT acceptable for Sunnyside
- ^Option for new areas not existing communities like sunnyside
- ^This means tearing all old buildings
- To whom it may concern: I appreciate that flooding in Sunnyside occurs infrequently, and the costs of [illegible] on mitigation to a 100+ year drainage system seems daunting. Never the less, when the job is done, it has to be done well. Please consider all of the problems when making your plans. That is, you have to include drainage from Crescent Heights, berm height, and especially hydrostatic pressure when sewer water percolates through the sewer bed into basements. Lastly, I would ask that the City provide the same degree of mitigation to Sunnyside as it does to the downtown side of the river. Thank you.
- The plateau separation project is extremely important to me. The continuous flooding into July 2013 after the main event was very stressful. Having Sunnyside act as a "storm water pond" for the upper plateau is poor design. A berm loses its function when rain events during drain closure still result in flooding



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- Is Calgary checking with other cities to see what kind of barriers received good feedback & work well? No point re-inventing the wheel. Have the barrier blend into the community - eg greenery - a people useable space that doubles as a barrier. Encourage new construction to consider rooftop gardens (flat roof) and yard space that will absorb water instead of creating runoff.
- Find a better way to remove water faster if there is another flood!
- it's very important to maintain the wild area south of the berm between 4a & 7st - I'm worried this will be scrapped clean to build up berm
- During the 2013 flood, ALL the water that entered our basement leave from the bottom (Sump pump, sewer backup). Both the berm and the ground water & sewage systems need to be addressed.
- Also. Thank you for organizing this meeting & opportunity to contribute
- one on one conversations only benefited 1 or 2 residents I tried to listen in but was unable to hear city staff, unless I was right beside them
- Overland flooding over berms which are way too low!!
- The City has addressed everything but the Berm height Unfortunately, if that is not addressed (Raised) none of the other improvements will matter in a flood
- Berm height needs to be equal to downtown berm height
- We would like to see a higher berm around Sunnyside
- Project seems to be taking forever. What if we get flooded again this Spring? WE DON'T WANT TO BE FLOODED AGAIN should have more of this dialogue WE LOVE SUNNYSIDE - protect our community
- We NEED a berm the same height as downtown.
- Just that I hope city employees were listening and not thinking that they were just passing on information
- I have lived 13 years in Sunnyside so far, 5 since the 2013 flood. I fully expect to see a 1-20yr flood in Sunnyside while I am living there. This is not good enough. Such floods due huge damage and are very expensive to insure against, if it is possible at all
- Thanks for your time
- Flood protection is important but so is pedestrian experience along the river and the viewscape along Memorial. A good solution should balance all three.
- Frequent community engagement + progress plans and updates. Timing for barrier concerning (so long between today & 2020).
- The berm really needs to be equal to Eau Claire. 1:200
- If other areas have greater protection, will Sunnyside be the "weak link" and get flooded?
- Have a formal presentation with people who aren't afraid of presenting the truth about why it has taken this long to get where they are with the projects.
- Getting the storm water from Rosedale through to the Bow River. Building a higher berm, and why wasn't this done when the river bank was being repaired.



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- There are some very knowledgeable community HSCA members here tonight!
- This community deserves the same degree of flood protection as other communities along the Bow. A 1 in 20 yr barrier seems inadequate considering Eau Claire & the zoo has 1 in 100yr & 1 in 200yr protection.
- We'd love to see a higher berm that airs on the side of higher flood estimates. Only ~150 years of data suggests risk of underestimate of high floods.
- Concerned 1:20 berm is not high enough especially with future climate change. Would like bike path to be part of design.
- 1:20 berm seems insufficient, would like to review various designs.
- It would have been useful to see other Flood barriers, as for example, the only flood barrier I'm familiar with is the one @ Eau Claire. Is this something we should have looked up in advance?
- This was very well laid out! Thanks!
- I am thankful to the city for all that it is doing for flood mitigation! Each aspect/part needs to be strong for the plan to succeed. A weak link can cause failure of all the planning. The unequal berm protection of Eau Claire & Sunnyside could lead to protection of 1 community at the expense of the other community!
- Feels like we are getting a minimal effort, PR-fueled solution. Our 1:2- to the City's 1:200 and Zoo's 1:100 is incredibly insulting. Feels as though we are the "Sacrificed Lamb"!
- Cost sharing information - if province - federal
- Thanks for doing this - please continue to do your best for Sunnyside
- consider walls & lower walkways where space from Memorial Drive is limited ie 10th St. Bridge to Peace Bridge (Paris riverside as example walkways can take the flooding)
- that Sunnyside not be considered as a sacrificial area
- I need to learn more. YYC needs to learn more.
- NO community's values involved what went on in Sunnyside during the last flood. Please provide safety and knowledge.
- This open house was chaired mainly by "waterworks" Please involve other depts - "recreation" on barrier design "assessment" on development & design details not just "planning & development"
- design of access to Prince's Island bridge - the current design from 1996 was a missed opportunity to integrate the bike ramp with a berm (flood protection)
- I'm concerned no berm has been built for Sunnyside where I live. The berm in Eau Claire West in a flood situation likely to push water into Sunnyside. The solution shared never have been created. Sunnyside needs to be protected with a matching in height berm. How can we make this happen. It should not be about the money
- Sunnyside needs to be protected with an adequate berm equal in height to Eau Claire West. Further flood will devastate the community. No one would want to live there anymore. Sunnyside is a community where vibrance S/B a model for other communities + for human relations not abandoned



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- I don't think this community can psychologically take another flood. Th City needs to plan for a 200 yr flood. This recommendation has also been made by geologists + others. Building the berm up more later (we can add they said), Do it now!
- We would like the City to provide 1:200 level of services so that Sunnyside isn't sacrificed again.
- Level of service of flood protection; Berm 1:200; Upper plateau separation project; Adequate Pump stations; Continued + improved H2O management by TransAlta at Ghost Reservoir; New Upstream Dam
- Will the barrier be installed?
- PLEASE continue keeping residents informed as the process progresses over the next few years.
- On 5 Street we've got flooded because of the mal-function of the storm water drain (It was no flood on 5A Street). This kind of technical issues could be prevented. It's good to build but do it right.
- It was difficult to find info about the open house online after I recycled the flyer that was left in my mailbox
- Keep up the good work.
- When is the City going to start working on the berm. Citizens of Sunnyside have 1/50 flood protection, the zoo has 1/200 who pays city taxes? - the citizens or the zoo animals :)
- The barrier on the Sunnyside side of the river needs to match the one protecting down town.
- No conceptual info go-forward - the history is already known
- Get it done. Enough talking already. Please!
- Finish storm water lift station prior to 2019 flood season. - Build 1:100 barriers - animals in zoo have better protection than we do. Completed (if not done) automation of river storm water gates to respond to rapidly changeable situations. Put check valves in storm sewers.
- Please provide another opportunity for community engagement with additional written details so that residents can provide meaningful feedback
- Take the SS flood committee seriously!! They have been organized since 2013 & since then zoo + Eau Claire have taken priority. Our taxes need to be put to use to fix the infrastructure of this again community.
- Good level of communication, please continue to do so.
- Raise the berm!
- We would like the same amount of mitigation security as on the S. side of the river as well as the Zoo. Humans as important as animals (personal information removed)
- I don't think we are ready for another flood there needs to be better communications between sub contractors & the City
- 1 Fix the holes in the dike first! Protect home owners as well as you protect the animals in the zoo - fix the water problems outside the city first. If you could stop the waste the burden of money would not fall on the home owner.
- Continued naturalization of the riverbank. Do not want a wall like the zoo. Upgrade the berm to a 1:100 standard (at minimum). Communication with residents on means to flood mitigate their homes. Consider new builds to not have basements.



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- Would have liked an overview. What's already happened & what's going to happen in addition to studies.
- No flooding!
- At 1:20 is an unacceptable risk. I would seriously consider leaving the community. 1:50 seems like a good compromise, at the very least. We seem to be placated to accept less than what we deserve
- I had a good discussion regarding a "catch basin" behind 631B 2nd Avenue in "the alley." I hope to receive a response as to whether 'mitigation' will control the water coming out this storm drain. (personal information removed)
- Height of the berm along the NORTH side of the Bow vs the height of the berm along the southside of the Bow. We want the same protection.
- As I live immediately upstream of Sunnyside, my concern is that storm water mitigation west of 14 st to 19 st be addressed
- We need a higher berm!
- Protect Sunnyside!
- I'm concerned that Sunnyside receive equivalent protection from floods & consideration to other at risk communities. I would like to see climate change taken into account when predicting future floods. I'm concerned that priority may be given to downtown & that floodwaters might therefore be pushed into Sunnyside to "save" the downtown core
- Keep sharing design updates
- I don't want my house to flud again
- City staff were very helpful and understanding of residents
- Several ideas were put forward but it is obvious that my suggestions were not considered.
- Has flash flood runoff west of the city been considered? E.g. Las Vegas, Nevada.
- Get this fixed now, 5 years passed & nothing done, what a disgrace
- We have no fairness - what a joke! Frank - needs to answer - "not enough money"
- Let's aim for 1:100 I understand that this will impact the bike path
- Concern about river flooding in Parkdale and endng up in Sunnyside
- Protection of the neighbourhood
- Thank you having it in Sunnyside & not the HSCA
- There are many active, involved people in Sunnyside who might be leveraged to enhance, say, any solutions that developed, or even to assist with implementation
- The 1:20 berm is completely inadequate. Shame on the city for even proposing it!
- Why has it taken so long to take action
- The City has identified there is a drainage problem in S.S. Why do we continue to develop more + more projects - multi family in S.S. without addressing the key contribution to the 2013 flood?



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- Easy to get to well laid out. Will have to look if this is also online for people who could not make it to tonight.
- Berm in Sunnyside should be up to 1:50 standards at minimum
- Spoke with (City staff name removed) about the varying depths of groundwater saturation (and therefore flooding) per street
- With all of the high density housing (condos) going up in Sunnyside, the sewage system needs an immediate upgrade too. Also, protect Sunnyside and other communities to the same extent city is protecting zoo, stampede for future floods.
- Please raise our berm by 1 metre. We want the same coverage as Eau Claire!
- We do not want to be flooded again. Do what is needed to prevent flooding again in Sunnyside. Raise our berm 1 metre.
- Stating no ability to provide notification of actual flooding by Bow River is a poor statement. I believe advance notice 3-5 days should be paramount.
- Please remember that we bought out house to enjoy the river. Don't make it unassessible with the berms.
- Please, for all the families and residents of Sunnyside, provide the same level of protection as Eau Claire
- All I'd hope to see is the same degree of flood protection as the other assets along the river banks (i.e. the zoo, stampede, downtown) This community is well established, paying tones for many years with high pop density. This is the time to protect & reinvest in the community
- Our community and homes should be protected with the same degree of flood mitigation as the other valuable assets in he flood way. (i.e. 100 year flood scenario mitigation). ' We need a Higher Berm' Thank you for reading!
- Raise our berm by 1 meter minimum! No excuses! Buy enough temporary flood barrier to give another 5' of protection on top of the berm, and down 10 st from the river to Riley Park
- Remember: if it had rained even 12 hours more in the mountains in 2013, the Bow River would have been a foot higher and all of Sunnyside would have been flooded to a height even with the level of the river. All houses in Sunnyside would be condemned from damages & black mold.
- With all the new LARGE development happening/about to happen in Sunnyside - and area- this will affect the water table/flooding. Are studies being done BEFORE allowing Development Permits to 4/5/6 stories? What are the ramifications? Will they be able to pump water 24/7 into drains?
- 1 I was flooded in 2013 - 2nd Ave and 9th/8th/7th Street from Storm Sewer Backup. I am greatly concerned this will be WORSE with new developments etc. and 2 without a bigger berm. 3 Keep up the great work & Do the BEST up & Downstream For the WHOLE while remembering us. Thank you!!!
- Much appreciated the time & effort to explain what is happening, flood history, and what is being done to alleviate future problems.
- Costs are obviously a concern. Our home was 2 dwellings away from flooding in 2013. This open house shows how steps are being taken to help our community. Thanks for presenting this. (personal information removed)
- Keep up the good work!



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- Want to make sure the community is directly and in a timely way included in the cost benefit analysis of the different "Flood barrier" project options
- Sunnyside has extremely strong community engagement and love of community. Anxiety about future flood events can/will undermine community cohesiveness and desire to live here. The value of Sunnysides social fabric should not be underestimated for the city. need good solutions.
- Could we have a malleable option as well? Can we make the City's flood plans - specifically the berm area - action areas if needed? i.e. an ability to make the berm higher or lower is needed through appropriate sandbag/temporary berm options? An ability to quickly go higher or lower at all areas of the river? A team people can trust
- Looking forward to hearing an update on the studies that will be (continue to be) conducted.
- It would be good to have actual facts about what protection the current berm provides
- when will the 1:100 map be updated - do we even know what level this represents given projected increased storm/floods because of climate change?
- Safety over aesthetics
- Looking forward to next one great location & venue tonight (Sunnyside school)
- stop the floods in Crescent Heights
- (personal information removed) raise the berm - very important
- "West Sunnyside" did not get as much attention as East Sunnyside (east of 7th Street) but we did experience some flooding (some basements, garages) in the 1st Avenue cul de sac (1st Ave + 9th St)
- Thanks to City Staff - Nicely done!
- I'm concerned that 1:20 + freeboard may not be sufficient. Would like a robust discussion about enhancement options. Thanks - (personal information removed).
- A 20 year berm is an embarrassing decision for anyone who considers themselves an engineer.
- This is a densely populated, high property tax area that would die if it flooded regularly. What would that cost against the cost of preventative measures.
- Unused natural space that could become an urban oasis with a dog park and all-inclusive public beach.
- Limited river access, too narrow pathway and rocky riverbank.
- Unused natural space which could be better utilized for public use.
- Dog beach potential.
- Needs to be more accessible for foot traffic and pathway should be widened.
- Flood mitigation measures in Sunnyside are urgently needed. This is a high density area that was heavily impacted by the 2013 flood. A 1:20 flood barrier is insufficient as studies have shown that with climate change, we can expect more frequent and more severe weather events.
- The river views along Memorial are a cherished community feature. We should protect ourselves from flooding but not at the cost of making the river less accessible and less beautiful.



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- We need to tie the natural areas along the river into the community, else they will continue to encourage homeless encampments.
- 1:20 flood berm not acceptable. 1:100 minimum but also making sure that the multi-use pathway can remain. Continue to "reclaim" the riverbank with natural vegetation and characteristics that help with flood mitigation.
- Sunnyhill Lane has a serious drainage issue. Thunderstorms and large rainfalls cause flooding in the lane that then encroach into garages and even into below grade basements.
- Photo's show that even after the peak flow during the flood river water was still entering the community in this area.
- Photo's show that even after the peak flow during the flood river water was still entering the community in this area. This area was photographically documented to show that a 1:40 year is not sufficient for a flood barrier.
- Photo's show that even after the peak flow during the flood river water was still entering the community in this area. This was the area just before the West ramp to the bridge, a 1:20 year barrier just won't do.
- River overflow occurred here during the peak flow and entered the community.
- A 1:200 year barrier vs a 1:20 year barrier on the opposite river bank make absolutely no sense.
- The pathway to Prince's Island should be constructed to "blow out" during a flood, the channel between the island and the Eau Claire barrier, should be designed in a manner to be utilized as a "Flood causeway", build a flood causeway please.
- All bushes, debris from the 2013 flood should be cleaned up, the debris and fallen trees are being burnt and used as shelters for vagrants.
- The city should consider sealing all of the manway access for the storm drain from the upper plateau and letting the storm water free flow into the river instead of closing the gate, B48B
- 1:20 is not acceptable. This is clearly the city making a risk decision to sacrifice Sunnyside over the south side of the river where they have already been accommodated with a 1:200 barrier. The data shown at the open house showed the water level beside Sunnyside during the flood to be a 1:75. Deciding we are OK with a 1:20 based on a dam (that may never get built), a 5 year deal with Trans Alta (what happens after the 5 years) and an unproven reservoir is at minimum foolish and naïve. If Sunnyside is going to be left vulnerable, be prepared to provide compensation in the event of another flood or provide the option now for us to accept a buyout so we can spend our property tax dollars where action gets taken. Sunnyside is one of the best communities in the city for walkability, downtown access and it is amazingly quiet for an inner city community. The precedent has been set across the river so please do not base the engineering decision for the north side on fuzzy math, politics and
- Access to the river and pathway system is crucial to the community. The berm should be designed to maintain these amenities and not be built so high as to diminish the value of the river to the community.
- The design of the pathway railings here creates challenging sight lines and introduces conflicts for pathway users.
- Pathway in this area is too narrow for heavy multi-use traffic. Should be widened and ideally made into separate walk - bike pathways.



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- A new level crossing should be installed here to improve walk/bike access to the pathway system. Memorial Drive is supposed to be a Parkway classification street, which supports frequent intersections and prioritizes walk/bike travel over automobiles.
- Love the Peace Bridge.
- The flood barrier needs to be done 1:200 like it was done in Eau Claire. There is an elementary school 2 blocks off 7th street with children under 10 years old in the basement 50% of their school day. If this flood impacted their school, children could not receive before and after care or certain programming. The barrier needs to impact roads that were flooded. It is also an open roadway with no houses to hold back the river flow. 7th Street is/was a major water inflow to Sunnyside.
- 9 Ave NW has a serious drainage and pothole problem. The winter melt freezes on the unpaved portions of the road causing difficulty driving. These can be dangerous conditions for smaller vehicles in adverse weather.
- The proposed 1:20 flood berm isn't sufficient. A 1:100 minimum should be standard, while ensuring we have use of the pathways for walkers, runners and bikes.
- The number of trees promised to be re-planted after ripping out so many beautiful mature trees did not happen. This area in particular is sooo hot walking home in the summer as there is no shade, no grass all cement
- There is no clear bike path off the Peace bridge so bikes are riding all over the place amongst pedestrians. This area needs to be re-designed for safety reasons.
- Improve 9th avenue-shouldn't be unpaved roads in the inner city like this that provides access to the bluff and associated pathways.
- The flood altered the configuration of the river and deposited a lot of stone. Clear and deepen the channel to provide more water storage capacity.
- A 1:100 barrier is urgently needed. Why waste money on a 1:20 barrier that will be useless as climate change continues and flood risks increase. A view of the river is lovely but our homes are more important.
- This area was still taking water into the community even after the surge. Higher barriers need to be in place all along the riverbank to protect homes, businesses and a school full of youngsters.
- 9th Avenue needs to be paved and maintained properly. The old adage of there are no houses here is no longer valid. The potholes are dangerous and there is no drainage for spring runoff from the hill which adds to localized flooding along the bottom of the bluff.
- Back in the day the river would never have been allowed to silt up like this. I know fish habitats are important but the fish will return even if the river is dredged. Accumulating sand bars and debris only add to the flood risks and mean barriers have to be higher, instead of the water level being lower.
- Couldn't something be done about the depth of the riverbed here? Homes or fish?
- Appreciate that the City is taking flood mitigation seriously. So much personal trauma & property damage in 2013. Need at least 1:100 Level of Service berm & ground water barrier; Upper Plateau Separation project will help; extended TransAlta mgmt of Ghost Reservoir agreement will help; new Upstream Dam with highest capability for storage will help; Pump Stations will help; until all of this is complete, Sunnyside needs to see City have temporary flood barriers (1:100 L.O.S.) ready to be



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installed during high river events. Sunnyside should have same level of protection as Eau Claire, Downtown, and Zoo.

- Parks built a solid causeway out to Princes Island, but should have built a causeway out of iron girders, leaving the space under it empty for flood water to flow through. Replace the solid causeway with steel girders to allow flood water under it.
- The berm needs to be raised a minimum of 1 meter or Sunnyside will cease to exist after a flood that is deeper than the 2013 flood. So raise the berm, but then make mini park areas built out over, and down the side of, the rocky berm. Install picnic table platforms jutting out over the river, some about a meter lower than the top of the berm to cut off the traffic noise, some two or three meters lower than the top of the berm. Imagine picnic tables and benches placed down over the berm on platforms built on steel beams cantilevered from the top of the pathway, with steps down to them, every 100 feet between 10 St and 7 St. Some platforms can have the Adirondack chairs that are on the SE side of the Peace Bridge. Name each location after a Victoria Cross winner from WW1 since this is Memorial Drive.
- This unused scrubby space between the river and Memorial Drive could be a picnic destination for Calgarians. The entire area should be filled and raised to the same height as a newly raised berm. When raised to the same height as the top of the new berm, or even a bit higher so it has a view down into the river, the area can be filled with benches, tables and Adirondack chairs. Make the entire area between 10 St and 6 St NW a large flat park. Get rid of the scrubby bushes! Plant grass and flowering shrubs, including tall pampas grass that stays tall all winter. Put a restaurant along the water's edge now that the entire area has been raised to be level with the berm. Visitors come by the thousands to see the Peace Bridge and then have nowhere to go! Welcome them to the north side of the river with a nice lower price restaurant right on the riverbank (raised on stilts). Why doesn't Calgary have any restaurants right on the Bow River? San Antonio has a river walk. Why not us?
- Remove the "bump" or rise in Memorial Drive here to let flood water that comes over the berm in the area of the Peace Bridge and flows east down Memorial Drive to escape Sunnyside and go back into the river. This bump in the road is a plug that forces flood water to fill all of East Sunnyside instead of flowing harmlessly eastward. The city is going to spend millions of dollars on a tiny pump station near the curling club to pump water off Memorial after heavy rains when it could just let gravity move flood water eastwards where it could flow back into the Bow at a lower elevation.
- We insist that the Sunnyside berm be the same height as the 1:200 year berm that the city gave to Eau Claire. City management can save its downtown tax revenue from flood damage by giving Eau Claire and downtown a high berm, but city politicians should realize that the voters of Sunnyside have something even more valuable - we have thousands of votes for councillors and a mayor! If we are not protected the same as Eau Claire, the councillor and mayor will soon find out just how valuable our votes are! Do city politicians want us to mount a campaign for them, or against them? Mr. Spackman, take note.
- The height of the berm from 10th to Centre needs to be increased to compensate for the added height on the south side of the river.
- The berm should be of a height at a minimum to prevent a 100 year flood. Building a berm to prevent a 20 or 50 year flood is just brainless.



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- My extended family and I have lived in Sunnyside since the 90s. I understand the need to first protect downtown. Now that the south side of the river has been protected, we need to protect the north side to the same standard. If we adopt a lesser standard on the north side, then we sacrifice all the home and businesses on the north side the next time there is a flood event and this is unacceptable.
The look and feel of the improvements on the south side is good. It would be good if the city applies a similar standard on the north side. I think there is room to preserve the natural beauty of the riverside / riverside park and to allow for the continued pedestrian / bike use of the area while protecting the community from 100 year floods. The managed loss of use or aesthetics is justified to protect the community. Please try to keep as many of the older trees as possible (they came down on the south side), given their significance to the Memorial they represent.
- When doing construction on this flood mitigation project, please offer a better alternative than the detours offered for cyclists and pedestrians during the Crowchild Tr. closure.
- The Upper Plateau Separation Project must proceed ASAP.
- I am glad to hear that the city is committed to resolving flood related groundwater issues.
- A higher barrier and groundwater protection is needed in the area between the Peace Bridge and 10 ST.
- The existing berm height (approx 1:20 or 1230 cms) is inadequate to protect Sunnyside between now and when the upstream mitigation is built. It needs to be higher, at least 1:50 or maybe higher.
- Here are six of nine reasons why the Sunnyside berm must be higher than 1:20:
 - (1) The proposed 1:20 barrier for Sunnyside means a ~30% chance of a damaging flood before the completion of the Bow River Upstream Mitigation project.
 - (2) The city's own Triple Bottom Line (TBL) economics supports a Sunnyside barrier of 1:50 or better.
 - (3) The majority of Calgary communities with barriers have much better protection than Sunnyside. The animals in the Zoo are protected to 1:100 (five times better protection than the people of Sunnyside).
 - (4) The provincial standard for flood protection is 1:100.
 - (5) Mayor Nenshi has said Calgary needs a standard higher than 1:100.
 - (6) Without a higher flood barrier Sunnyside could face onerous and property value destroying building/renovating requirements. Almost all other Calgary communities have protection that would permit relaxation or elimination of potential building requirements.
- Here are three of nine reasons why the Sunnyside berm must be higher than 1:20:
 - (7) There are reasons that the TransAlta agreement for upstream flood mitigation may not deliver the expected benefits.
 - (8) The city has just completed a new flood barrier park across the river in Eau Claire which will provide that community with 1:200 protection (ten times that planned for Sunnyside). Any water that exceeds the Sunnyside protection will not flow into Eau Claire but will be directed to Sunnyside.
 - (9) Climate Change is expected to mean more frequent severe climate events and so over time Sunnyside won't even have 1:20 flood protection.
- Glad to see the storm water pump station improvements under way.
- Looking forward to seeing the new storm water pump station built on this site.
- I am glad to see that the Sanitary Lift Station has been upgraded for better flood resiliency.



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- Please have your engineers re-visit the berm in this area, a lot of the berm has moved into the river from the flooding
- Berm has sloughed into the river will need shoring up.
- Why would you build a berm on one side of the river, supposedly to protect downtown, and leave the other side exposed?
- When the new access to the ped bridge was built, it sacrificed berm height in front of the curling club. Has anything been done to remediate this?
- If we are expecting a higher frequency of "events" as a result of climate change, should we not be building this berm up? The insurance, DRP and municipal cost of post flood remediation has to be significantly more costly than mitigating the higher probability of flooding to a depth that will breach the current berm.
- Every year the low spots on 5th street flood as a result of storm drains mid-street not being cleared and ice building up. The street and cars are typically underwater with threat to homes every year and it's getting worse with the increased snow pack and longer winters.
- The evacuation helipad installed after 2013 (now called the container park) should not be needed after berm improvements. This community eyesore, attracting problems (see new yellow needle drop box there) needs to be expertly developed - low-cost housing, micro-homes, bright lights, good sight lines, inflatable sports or concert tent, police patrols, or even a parking lot (encouraging Lime biking into work). Many options beyond a teenager drop-in hang-out.
Let's see the Ward Seven Auxiliary Emergency Evacuation Helipad and Needle Zone improved as well.
- This so-called Container park is a dreadful eyesore. Someone tried way to hard to be "trendy". We think "Yuck!" every time we walk by. (That is not all we think, but you get the idea). We avert our gaze when we walk by.
Replace it with a park, and do it next summer. Hurry!
- Severe flooding often occurs at this intersection in the spring. We and many others were flooded March 2009 at the intersection of 6 St and 1 Avenue NW because the extremely shallow storm sewers at this intersection were frozen solid and then it rained.
Firemen broke in through the dining room window in our house to pump out the basement while we were at work. We were left with a \$20,000 repair bill. The city did not even offer to pay for a new window even though it was Water Services screw up yet again.
Flooding happens many years at this intersection because the catch basins are from 1920 and way too shallow, being only 3' deep, so they freeze. Even though Water Services knows they freeze and must be steamed out by the end of February, they ignore the problem because there is no cost to a Water Services manager for flooding 20 homes. There should be a cost to the manager - loss of pay, firing. Solution: buy more steam trucks - the city only has two. And answer 311 emergency calls.
- Raising the berm to a 1:20 level, without significant improvement to the storm water piping will not address any future threat of flooding, so the storm system needs improvement.
We hope the City and Province are serious about building the upstream dam on the Bow River which will properly address flood issues. Estimated costs of the dam appear insignificant compared to the cost to the community of another "event". We are told that permits and regulatory approvals may take 20 years, which is unacceptable to the residents. Red tape should be cut and the construction be fast tracked considering how critical this project is to Sunnyside. In the interim, the



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river bed should be dredged and the proposed berm built to the same standards as on the Eau Claire side of the river.

- On the second day of the flood (Friday), water filled my concrete poured basement up to the ceiling. (The tens of thousands of gallons of water seeped in from the riverbed.) I believe that the flooding associated with hydrostatic pressure needs more attention. My question: how does the City plan to mitigate hydrostatic flooding of basements between Memorial Drive and the escarpment at Crescent Heights?
- Building the Sunnyside berm to a 1:20 level (below the provincial standard) without improving the capacity of the storm water piping (by replaing with a larger diameter piping) will not stop future flooding in this area . We hope the province and the city are serious about building the upstream dam on the Bow River to properly address future flooding "events" . The costs of this project are not significant compared to the impact of future floods on the Sunnyside community. Delays in the permits and regulatory approvals have been estimated at 20 years, which is unacceptable to local residents who are not even being offered the same berm protection as the Eau Claire side of the river. Red tape needs to be cut and the projects expedited. The river should also be dredged to improve flow.
- Storm Sewer drainage needs improvement.
- Storm Sewer drainage needs upgrading.
- The elevation of the berm top in Sunnyside has to be the same as the elevation of the recently built fortification on the opposite side of the river. Anything else would be unfair! Thanks.
- At a post 2013 flood open house City representatives said no projects which harmed other communities, would be undertaken. Maybe, just maybe, fortifying Eau Claire to a 200 year flood level isn't doing Sunnyside any favors. We won't hear any city officials speak out and admit it. I remember one official admit that The Hamptons in High River was sacrificed for the greater good. Thank you for your honesty.

Please take some of the money you spend on(too many) communications specialists / spin doctors, and raise those berms. It's not rocket science!

- Before I go on vacation I may ask a neighbor to mow the lawn, shovel the sidewalks and pick up the mail. First and foremost I lock the doors.
Don't be an idiot. It is obvious. Raise the darned berms!
- Thank you for preparing this page for everyone to review and gain information. The projects proposed and underway for improvements that affect Sunnyside are wonderful and we appreciate the expertise, planning and funding you have devoted to this initiative. It is a risk to live beside a river, but the City has engaged professionals to make informed decisions to appease (2013) and defend (future) residents who were and have the potential to be affected by flooding. Please continue with web pages such as this, to educate citizens and maintain transparent processes, to model effective, trustworthy municipal government!
- This is totally* not related to flood mitigation at all, but congratulations on such a well-done job of the landscaping and improvements made along the pathway between 10th street and Prince's Island, on the South side of the river. Six thumbs up! :)
- City engineers should inspect the drainage issues the Peace Bridge landscaping has caused. The area at the 8th Street and Memorial Drive intersection never had drainage issue prior to the Peace



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Bridge work. In 2013 it was one of the first areas to surface flood and jeopardized the adjacent heritage building.

- City engineering should review the flood elevation map used to set final grade elevations in new developments within Sunnyside. How do these increased heights affect the adjacent properties? Or the community? According to the Alberta River Engineering and Technical Services Watershed Adaptation and Resilience Department, the peak 2013 flow on the Bow River in the Sunnyside area was slightly less than the 100 year flow based on the current flood hazard study in place for the City of Calgary. They noted that a new river hazard study is underway and the hydrology is under review. If 2013 was slightly less than a 1 in 100 year flood - why are we increasing the grade elevations by over a meter in areas that didn't have any surface flooding in 2013?
- I do wish this island was not separate, by getting rid of narrow river near the pathway and keep the longer Bow river
- I submitted an earlier comment that does not appear. It stated that I believe hydrostatic concerns require more attention. On the second day of the 2013 flood, I had tens of thousands of gallons of water in my concrete poured basement. The Bow--I want to note--floods through the river bed as well as overland. How do the engineers plan to remediate the problem?
- The proposed Sunnyside Barrier is laughable at best. This has become a political hot potato game between Administration who thinks they know best and the residents of this community. With the changes in barriers on the Prince's Island side to protect downtown, and the changes in Inglewood/Zoo, flow rates will be significantly different next time around, and Sunnyside is even more exposed now than in 2013. A 1:20 berm height is insufficient to meet the needs of this community. The politicking as City Hall needs to stop and a 1:100 berm needs to be installed.
- It seems, once again, City administrators have decided on a course of action (not raising Sunnyside berms) then enter into a consultation process with residents. All presentations are skewed to pretty much discount the urgency for raising the berms.
Please tell us why you are so against raising the berms!
- The berm in Sunnyside needs to be higher. By raising the berm on the south side - downtown side - of the river, you have increased the risk of flooding in Sunnyside. Please don't sacrifice our wonderful neighbourhood.
- This is a golden opportunity to add more recreation to the river! There is a fast growing number of surfers on the bow river and this project could add a huge piece to this community. Please contact these guys and girls, they have experience building world class waves around the world!
<https://albertariversurfing.com/>
- mechanical room (personal information removed) - needs pump upgrade - poor drainage in lane drains into room (personal information removed)
- Concerned about river flooding from Parkdale could end up flooding east
- Needs same protection as Eau Claire
- We need + want same protection as Eau Claire
- We need 1:200 level of service. Same as Eau Claire!
- Where should we pump water to when flooded?
- Not overland in 2013 | storm



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- Raise the berm!
- Big sale project to make it work. (stop flood)
- Flood wall w promenade
- Build the berm very high. Same as downtown. It is worth taking away path way
- Major flow over bank
- Water came through gaps/low spots - Wasn't filled - backed up/plugged Catch basins
- After the flood the bike ramp is now called a "waterslide"
- Need hole fixed
- Berm height as high as possible pathway not a priority.
- if berm is too high here, rafts won't be able to exit the river (i.e. on't raise it too)
- 100 year flood berm height minimum
- Water higher than a car
- ground water seepage (house is on hill- no water in backyard) water drained quickly
- sewer backup + some overland has anti-backup valve but useless w/ overland
- one block north of Memorial Drive: overland flood during 2013
- [arrows] Old Creek Marsh [arrows]
- 9' water in basement
- stormwater, sewage, + overland entire basement was full
- *[arrow] would have liked to be notifie dof evacuation much earlier*
- silt washed up onto street
- Garage floods everytime it rains from the alley
- v. little overland all clean water seepage
- Overland flooding on street up to front sidewalk
- 9' sewage backup
- 5' of water in basement from sanitary sewer backup
- groundwater seepage is the main concern - hydrostatic pressure against basement walls corner of 5th st + 7 owner
- just moisture in basement, just 3' puddles - clean water (4) 2" deep - rest was dry
- small walls okay (murals) - large wall graffiti magnet
- Better than 1:20 - pathway is important
- Natural trees vegetation
- likes the gabions @ the zoo



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- deeper river, rock spurs for outside bend protection - small reservoirs
- greenery/revegetation - maintaining access to river (dog owners)
- Flooded over bank (highest flow)
- Natural berm - natural planting ideal
- remove trees to prevent debris blockage - area would be more secure, used by community
- sewer backup - water in basement
- keep natural Berm + up to 1:100 standard
- Keep natural River Bank and Pathway
- Natural Plantings - River access - Wilderness within city - small town feel
- Leave this wild area intact preserve this
- Please could the City share with residents the details of temporary barriers that you can deploy. This information would provide reassurance for residents. Thank you.
- groundwater seepage [arrow] overland stopped @sidewalk, no sewer backup
- Clean up vegetation on these land berms and give access to them at "low water" times
- Concern that naturalized area is a "deflector" towards the berm. Remove natural areas < security benefit
- "urban campers" debris and rotting vegetation from 2013 flood causing a safety hazard (on "wild" spaces along river)
- Do the right thing you know what it is!
- like now, higher - earthen - still walkable
- Flooding from CB where is this water coming from? - How does it connect to storm system - Why back up?
- (personal information removed) - CB flooded again in July after the flood
- sewer + groundwater in basement
- storm sewer backup - all clean water, no overland - slow @ first, more water when others were pumping out
- stormwater drain in alley backed up, flooded yard + basement - mainly seepage
- sewer backup and groundwater into basement
- larger berm more pressure on soil pushes water out of Crescent height hills (Golder + Assoc study)
- area was a swamp before it was developed
- no flooding
- Concerned about flooding from bluff - no basement
- DP wall was to allow water through. - Why when failed did City fix it? - overflow [illegible] is soil porous enough to absorb?



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- More people dogs + bikes than cars [left to right arrows]
- storm lines [left to right arrow] Don't connect +Don't connect them
- spring flow in bank
- underground garage, no water - had power the whole time [line] flood line
- swampy area, always wet
- cleanouts for groundwater to storm
- Pipes and manholes on hillside? How are they connect?
- groundwater & seepage No overland
- Concern that bank protection changed flood behaviour
- Some flooding from ground water in "West Sunnyside" in 2013 - concern about overland flooding - will this berm (9A St) be raised?
- Basements flooded
- Alley flooded - garages flooded ~ 18 inches
- covering [illegible] storm sewers
- City should be concerned both about impacts of flooding and impacts on neighbourhood viewscape and pedestrian experience. It is important to provide flood protection but not by cordoning off the neighbourhood with a moat. And the focus needs to also not be lost on upstream mitigation, which is the fundamental solution we need to implement.
- flooded over bank
- wall is just fine - combination of raised berm + walls.
- - can combine pathways for more room
- - walls in Europe raise when flooded - rubber barrier floats
- clean + green
- open (not blocked in) - vegetated
- Need a berm the same level as Eau Claire
- flooded over bank
- no flooding in 2013
- no flooding in 2013
- WAS Flooded here in 2013. Thanks for all you are doing to prevent it from happening again!
- storm backup
- storm sewer backup in alley - manhole [arrow left] shooting out like geyser [arrow right] no overland flooding
- Was there a project to install check valves into the laterals to separate from the upper plateau?



Sunnyside Flood Barrier Project

Stakeholder Report Back: What we Heard – Phase I

January 2019

- Please ensure BIG Developments can pump water safely so other are not affected by deep foundations & parkades
- AGREED [arrow right] *
- My 6' hole in garage didn't flood - no sump pump -
- stormwater working - no water on street
- 4' groundwater backup from sump hole
- sewer backup in basement
- water in backyard, not in alley
- ground water seepage first
- stormwater backup - street flooded
- clean water [arrow right] GW seepage
- dry when evacuated, ~2' when came back in morning [arrow right] up to 6' deep
- building new house [arrow right] digging foundation + hole was flooded the entire time 9' evacuation, 7' of water
- street flooded from overland, stopped @ N sidewalk
- - Backflow valve not withstand pressure of floods - current code requirements doesn't require
- 5.5' in basement no overland all sewer & GW
- 5' of water in basement
- no overland, just sewer + GW
- sewer backup - pretty clear water - flooded basement
- 5st & 9ave - No drainage or pumping capacity created raising water all the way to 9ave/5st/ most basements were flooded - especially full basements in newer homes
- mostly overland, some clean water seeping from sump pit
- Sunnyhill Lane Drainage needs to be addressed Floods from heavy rains.
- Lane acts as a functional roadway for Co-op but has substandard drainage and surfacing [illegible]
- Doesn't drain/grading problem