

SFU

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ENGAGEMENT ON THE B.C. FLOOD STRATEGY INTENTIONS PAPER

What We Heard Report

March 2023



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Disclaimer

This What We Heard Report summarizes and themes discussions of two engagement sessions in November 2022. The views and opinions expressed in the report represent those of individual participants and do not necessarily reflect the views of the Government of British Columbia. The What We Heard Report is provided for information, discussion, and policy recommendation purposes.

Table of Contents

I. Context	4
II. Session Details	4
III. Participants	4
IV. Indigenous Advisory Services	5
V. Session Agenda	5
VI. Perspectives-Based Breakouts	6
VII. Support Team	7
VIII. What We Heard	8
A. Comments on engagement process	8
B. General Feedback on Intentions Paper and Vision	9
Participants' advice - General Feedback	12
<i>Format and Terminology</i>	12
<i>Collaboration, Responsibilities and Alignment</i>	12
<i>Framing and Iterative Learning</i>	12
C. Feedback on Program Area 1: Understanding Flood Risks	13
<i>Theme: Plurality of flood risks and other disaster risks</i>	13
<i>Theme: Improve data collection, aggregation</i>	13
<i>Theme: Develop accurate mapping and forecasting to use as decision-making tool</i>	13
<i>Theme: Rendering information more accessible</i>	15
<i>Theme: Updating insurance processes and expanding beneficiaries</i>	15
Participants' advice on Program Area 1: Understanding Flood Risks	16
D. Feedback on Program Area 2: Strengthening Flood Risk Governance	17
<i>Theme: Address the jurisdictional fracture</i>	17
<i>Theme: Remove barriers across provincial and federal governments that hinder First Nations' involvement in flood planning</i>	17
<i>Theme: Convene cross-stakeholder collaboration tables</i>	18
<i>Theme: Communicate with the United States</i>	18
<i>Theme: Look at other jurisdictions or countries nationally and internationally</i>	18
<i>Theme: Build relationships for inclusive collaboration</i>	18
Participants' advice on Program Area 2: Strengthening Flood Risk Governance	19
E. Feedback on Program Area 3: Enhancing Flood Preparedness, Response, and Recovery	20
<i>Theme: Recognize impacts of floods on mental health</i>	20
<i>Theme: Support an ethical approach to Indigenous ways of knowing</i>	21
<i>Theme: Expand/improve education, communication and inclusivity of evacuation strategies</i>	21
<i>Theme: Improve response and recovery-oriented strategy</i>	22
<i>Theme: Prevent floods through mitigation</i>	22
Participants' advice on Program Area 3: Enhancing Flood Preparedness, Response, and Recovery	22
F. Feedback on Program Area 4: Investing for Flood Resilience	23
<i>Theme: Adaptive flood response requires a paradigm shift beyond just reactive and infrastructure-based flood response; alternative, sustainable, and nature-based approaches are needed too.</i>	23
<i>Theme: Engage communities around planning retreat and relocation</i>	23
<i>Theme: Balance feasibility and urgency in implementation</i>	24

<i>Theme: Build back better applies beyond infrastructure to systems, including relationships, governance, industry practices, and social norms</i>	25
<i>Theme: Adopt a forward-thinking co-benefit approach</i>	25
<i>Theme: Co-ordinate and streamline funding requirements and access</i>	26
<i>Theme: Build capacity and resources</i>	26
<i>Theme: Equalize differences in capacity between small and large communities</i>	26
<i>Theme: Keep the momentum going</i>	27
Participants' advice on Program Area 4: Investing for Flood Resilience	28
IX. Next Steps	29
APPENDIX: Summary of Participants' advice on the B.C. Flood Strategy Intentions Paper	30

I. Context

The Province of British Columbia (“the Province”) contracted the SFU Morris J. Wosk Centre for Dialogue (“the Centre for Dialogue”) to design and deliver two virtual engagement sessions to gather feedback on the B.C. Flood Strategy Intentions Paper, titled *From Flood Risk to Resilience in B.C.* This engagement was initially planned for 2021 but was delayed due to the catastrophic flooding events of fall 2021. Engagement was then re-initiated in fall 2022.

The most recent round of engagement builds on a first phase completed in 2020-2021, when the Province sought to collect feedback from First Nations, local governments, and federal government agencies in summer 2021 on a draft Discussion Paper, *From Flood Risk to Resilience in B.C.* The Discussion Paper was updated to reflect the 2021 fall flooding events, then re-branded as an Intentions Paper, which was used during the fall 2022 engagements.

The Intentions Paper outlines the strategic vision, principles, and outcomes for flood management in the province. These are complemented by priority program areas and associated potential actions. A 6-page summary version of the Intentions Paper was also produced for quick and easy reference.

II. Session Details

The two virtual engagement sessions led by the Centre for Dialogue took place over Zoom on the following dates and times:

- Friday, November 18, 2022, from 9:00 a.m. to 12:00 p.m.
- Wednesday, November 23, 2022, from 1:00 p.m. to 4:00 p.m.

III. Participants

These engagement sessions were specifically targeted toward industry, business, professional associations, insurance, academia, non-profits, government and engaged members of the public; First Nations, Métis and

Indigenous organizations were also invited to participate, in addition to the specific sessions offered to them by Alderhill.

The invitation lists were provided by the provincial flood policy team. Invitations were sent out by the Centre for Dialogue, which also managed participant communications and registrations.

The following table shows the number of registrants (capped at 65), versus the number of attendees for each of the sessions. Note that these numbers were captured at peak attendance; some attendees may have joined or departed at various times.

Session	Number of registrants	Number of attendees
Friday, November 18, 2022	48	33
Wednesday, November 23, 2022	64	46

IV. Indigenous Advisory Services

Alderhill and the Centre for Dialogue worked with the Province in 2021 for the first phase of engagement. For this second phase, a different approach was taken, with Alderhill providing Indigenous advisory services. This included a “Cultivating Safe Spaces” training for the provincial flood policy team and the Centre for Dialogue team on September 13 and 15, 2022, to promote the cultivation of a safe space during the sessions, which helped to foster a collaborative and trauma-informed environment.

The training inspired the Centre for Dialogue to adapt its methods and to set up the engagement sessions in a model that complemented Alderhill’s approach and reflected some key tools shared during the “Cultivating Safe Spaces” training, such as structuring breakout groups to encourage agency—allowing participants to self-identify based on their perspectives, including relationship, action, innovation or tradition/storytelling; offering mental health and cultural support during and after each session. This approach also included working with Alderhill to review and revise content (agendas, invitations/communications with invitees and the What We Heard report) to ensure engagement materials were culturally sensitive.

V. Session Agenda

The agenda for the engagement sessions was as follows:

- Welcome and Overview
- Summary of Intentions Paper and Questions-and-Answers Period
- Breakout 1: Connections to Flood Management
- Report-back
- Break
- Breakout 2: Program Areas and Actions

- Report-back and Final Discussion
- Thank you and Next Steps

The same agenda was used for both sessions, allowing for minor adjustments between the first and second session, based on feedback.

The session agenda, the pre-readings (Intentions Paper and/or its summary) and the main discussion questions, which formulated the framework for the engagement sessions, were shared with participants ahead of time. Participants were encouraged to read the Intentions Paper ahead of the session and have it accessible for easy reference during the sessions.

VI. Perspectives-Based Breakouts

The breakout sessions were structured to adopt a “perspectives-based” approach shared by Alderhill. This use of perspectives-based discussion is inspired by, but is not a full representation of, the Enowkinwixw process, a cultural practice of the Syilx people (Okanagan). In this context, “perspectives” might be described as broad categories that encapsulate participants’ communication and participation style preferences: how they like to engage, the way they interact with information, and how they go about making decisions. Participants were encouraged to join the breakout group that resonated with them based on the way they wanted to engage in the conversation around flooding in B.C. This approach supported a safe and comfortable conversation by recognizing that people prefer to interact with information in different ways and gave participants the agency to choose how they would like to engage.

The discussion questions broken down by breakout group were:

Tradition/Storytelling Breakout: Focus on Experiences and Learnings

- Can you share any personal experiences or learnings that could inform the Program Areas and actions? Do you foresee any key challenges to their implementation?
- From your experience, do you notice any important aspects of flood management that you do not see captured in these Program Areas and actions?
- [Time permitting] The intended vision for flood resiliency is “Together, we are leaders in innovative, holistic flood risk management, enhancing B.C.’s flood resilience for the 21st century.” To what extent are these Program Areas and actions supportive of that vision?

Relationship Breakout: Focus on Inclusion of Perspectives and Relationship Development

- From your point of view, what are some important perspectives or interests to consider in the management of floods in B.C.?
- Could any perspectives or interests be strengthened or added in the Program Areas and actions?
- What relationships are necessary to support effective flood management? Could any relationships be strengthened or added in the Program Areas and actions? How can cooperation be promoted?
- [Time permitting] The intended vision for flood resiliency is “Together, we are leaders in innovative, holistic flood risk management, enhancing B.C.’s flood resilience for the 21st century.” To what extent are

these Program Areas and actions supportive of that vision?

Action Breakout: Focus on Process and Actions

- In your opinion, what is the biggest priority in B.C. flood management?
- Should any particular actions be prioritized? Do you notice any key actions that are missing from the Intentions Paper or from particular Program Areas?
- What do you envision to be key steps or potential barriers in the implementation of these actions?
- [Time permitting] The intended vision for flood resiliency is “Together, we are leaders in innovative, holistic flood risk management, enhancing B.C.’s flood resilience for the 21st century.” To what extent are these Program Areas and actions supportive of that vision?

Innovation Breakout: Emergent Themes, Big Picture Thinking

- The intended vision for flood resiliency is “Together, we are leaders in innovative, holistic flood risk management, enhancing B.C.’s flood resilience for the 21st century.” What are the most important considerations for realizing this vision through the Program Areas and actions? Do you notice any key aspects that are missing from these Program Areas?
- Do you notice any common patterns emerging? As the Province works toward developing the strategy, what themes, areas and actions would be important for them to consider including?

VII. Support Team

We would like to acknowledge the provincial flood policy team at the B.C. Ministry of Forests who attended both sessions. They presented an overview of the Intentions Paper and the B.C. Flood Strategy engagement timeline, answered questions from participants and supported recording the feedback shared by participants.

- Laura Plante, Executive Director, Flood Resilience
- Kelly Sims, Manager, Flood Policy
- Jillian Kelly, Senior Flood Resilience Planner
- Kaitlin Klimosko, Senior Flood Policy Analyst
- David Markwei, Policy Project Management Analyst

Because flooding and related governance can be a challenging and traumatic subject for many, in the spirit of cultivating a safe space for engagement, we were joined throughout the sessions by Maura Gowans, a mental health and cultural support counsellor. To ensure accessibility, closed captioning was offered during both sessions. The sessions were also supported by a team of breakout group facilitators and note takers.

VIII. What We Heard

During the sessions, note takers captured the comments expressed by participants, without attribution. This What We Heard report was compiled from the session notes which were analyzed using a theming method. During the analysis process, the four pillars of the United Nations Sendai framework, which structure the Intentions Paper, emerged as key themes, and are used as headers in the sections. The four pillars, or program areas, are:

- Program Area 1: Understanding Flood Risks
- Program Area 2: Strengthening Flood Risk Governance
- Program Area 3: Enhancing Flood Preparedness, Response, and Recovery
- Program Area 4: Investing for Flood Resilience

How to Read this Report

Within each of these four program areas, key themes from participant feedback are identified with headers in **bold font (Theme: ...)**. In a box, each section contains a summary of specific advice gathered from participants on critical changes to the Intentions Paper to consider in the development of the strategy. Throughout the report, direct quotes from participants are included to illustrate what was said; they are enclosed in quotation marks (“...”) and formatted in *italics grey font*. In addition to feedback garnered on the four program areas, this report also includes a section containing comments on the engagement process and a section compiling general feedback on the Intentions Paper.

Note: this What We Heard report is a compilation of individual comments formulated during the engagement sessions and does not reflect a consensus across all attendees.

A. Comments on engagement process

Some of the comments heard on the engagement process include:

- Clarify how the stakeholders involved in flood management will affect the strategy moving forward
- Be thoughtful about bridging jurisdictional gaps when writing policy
- Be mindful of the potential for political pushback
- Consider consultation requirements for affected regional districts and municipal government councils. Some of the language used requires consultation based on community charters. Public surveys are usually largely inefficient when it comes to reaching municipal councils and boards.
- Plan for continuous consultation with community members to communicate the value of the changes to communities, industry, infrastructure and land use brought about by implementation of the strategy

B. General Feedback on Intentions Paper and Vision

General feedback on the Intentions Paper:

The overall feedback on the Intentions Paper was positive. Attendees were eager to see how the strategy would unfold and come to fruition: *“I think the Intentions Paper is put in the right format, with the right things and the correct challenges.”* However, uncertainty was expressed around how many of the actions listed in the Intentions Paper would be funded; further clarification around the roll-out was requested: *“These ideas in the Intentions Paper are great, but what does the timeline look like? How do we move forward with implementation?”*

Several participants liked the forward-thinking notion of a 10-year plan and then revisiting the issue. However, others would have liked a clearer indication that the strategy was an ongoing and open-ended process, which they deemed imperative for dealing with flood as something that *“is not likely to go away anytime soon”*: *“It’s good that we’re updating it; [we will] need to take a step back and examine what has been done.”*

Yet more participants, while recognizing that the Intentions Paper seemed to unveil an important strategy, thought it should not be the only thing the Province is doing: *“We should be looking for low-hanging fruit now and invest now where we can. We need to start action on preventing flood risks as soon as possible and not wait until 2024 to start.”*

There were a few comments on how heavily intertwined the four program areas appeared to be, causing some participants to feel at a loss to prioritise the actions listed in the Intentions Paper. One reason that came up for this was the perceived absence of acknowledgment of *“where we are currently at.”* Indeed, some participants expressed that the Intentions Paper did not provide a clear sense of the origins of the problems and wished for a better articulation of the issues: *“Without a clear understanding of root problems and failures, there can be a lack of adequate social and financial investment and potential for repeating mistakes from a policy and government perspective.”*

Another person found the general terminology around “environmental sustainability” to be too vague and felt detailed priorities were needed. A few people found the Intentions Paper technical and the process of trying to fully digest it arduous and time-consuming. One solution proposed to increase accessibility was to make the Intentions Paper available in different languages or to offer it as an audio file.

Feedback on the vision:

The vision of the B.C. Flood Strategy Intentions Paper is: *“Together, we are leaders in innovative, holistic flood risk management, enhancing B.C.’s flood resilience for the 21st century.”*

Some attendees wanted a reference to climate change in the vision, to communicate the sense of increasing urgency with the risks of climate change.

The expression ‘Together, we are leaders’ was perceived by some as a *de facto* involvement of Indigenous perspectives, even though there were comments that many First Nations communities’ voices seem to be missing from the engagement. One participant felt that the topic of flood management lacked a unifying factor: *“There’s going to be winners and losers no matter how hard we try to prevent that. There will not be togetherness, there will be hardness, realness, and division.”*

The aspirational “together” should not obscure one of the biggest perceived challenges associated with this work which was to “*get stakeholders from multiple jurisdictions together and all on the same page*”.

Discussion arose around the term “leaders”, with some folks arguing the Province may want to be a follower, in the sense of implementing solutions known to have worked elsewhere, instead of running the risk of reinventing the wheel. “*We should be looking to others*”. However, to reference the previous point, one area the Province could lead on is bringing together stakeholders involved in flood management.

Some folks questioned the term “innovative” as they felt it excluded the notion of effectiveness, which is necessary to consider for successful implementation of the strategy. “*We don’t always need to create new; we can improve the current systems we have*”. Continual adjustment was suggested as a more useful framing of this idea, aiming for “*sustainable long-term solutions*”, and incorporating traditional Indigenous knowledge that has “*been effective for so long*” and “*is tried, trusted, and true*”, even if it is not always ‘innovative’ “*as it not new*”.

Finally, the Intentions Paper should answer the question: “what does flood resilience look like for B.C.?”

A note on the term ‘holistic’:

Based on what we heard from participants, the term ‘holistic’, which is used in the Intentions Paper vision, may have been interpreted in various ways by different people during the engagement sessions. Here, for illustrative but non-exhaustive purposes, we attempt to provide synonyms to explain potential interpretations for the term ‘holistic’ that may have occurred in the engagement sessions.

- **Holistic as in ‘exhaustive’:** participants would like the Province to consider all types of flooding that can occur (river flooding, groundwater flooding, coastal flooding from sea level rise or tsunami, etc.)
- **Holistic as in ‘cross-disciplinary’:** participants would like the Province’s approach to data management to integrate all factors contributing to flood risks (e.g. how forest fires affect runoff and increase peak flow)
- **Holistic as in ‘eco-system wide’ or ‘whole of society’:** participants would like the Province to engage the entire community and consider how floods affect not only infrastructure, but also animals, land and people
- **Holistic as in ‘decolonized’:** participants would like the Province to embrace Indigenous ways of knowing and doing and fully include Indigenous perspectives, tools and approaches in flood planning
- **Holistic as in ‘sustainable’:** participants would like the Province to consider how floods affect the four pillars of sustainability, i.e. the environmental, the economical, the societal and the governance implications
- **Holistic as in ‘comprehensive’:** participants would like the Province’s approach to flood management to include mitigation as well as adaptation; preparedness is as important as dealing with the aftermath of a flood

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- **Holistic as in ‘co-beneficial’:** participants would like the Province to consider solutions that bring multiple benefits to mitigating flood impacts
 - **Holistic as in ‘integrated’:** participants would like to see the strategy implemented through collaborations between different levels of government and connections with what is happening on the ground and in the community

Participants' advice - General Feedback

Format and Terminology

- Make the Intentions Paper more accessible, clearer and easier to understand: by avoiding technical jargon, and presenting information in summarized formats

Collaboration, Responsibilities and Alignment

- Clarify opportunities for cross-jurisdictional collaboration and coordination regarding strategies, implementation and planning
- In general, embrace traditional Indigenous worldviews and ways of doing and knowing to a fuller degree
- Acknowledge how respective provincial strategies are nested within one another (i.e. does the B.C. Flood Strategy fit under the Watershed Security Strategy), not just how they connect to one another
- Ensure the provincial flood strategy aligns with related federal strategies
- Identify which ministries/government agencies will be responsible/accountable for delivering these intersecting program action areas for flood resilience in B.C.
- Break down government silos, identified as a major hindrance, to make the process more transparent and the implementation more coordinated
- Determine the role of the Province in setting flood risk prevention standards and their oversight

Framing and Iterative Learning

- Move beyond identifying the problems to clearly articulating the origins of the issues faced, to develop a lucid solutions-oriented path forward through adequate social and financial investment
- Unpack action areas and identify priorities (triage approach)
- Define success: how will we know the strategy is successfully implemented?
- Present the Intentions Paper as a living document and the strategy as an ongoing process to be updated constantly as it is implemented and as more is learned
- Make space for continuous improvement in the vision
- Make the strategy adaptable and able to incorporate future uncertainty and variability
- Include a comprehensive framework of evaluation and accountability to measure quality of results and implementation, perhaps entrusted to an *ad hoc* working group
- Apply evaluation metrics at a frequency greater than every 10 years: the starting point should be to highlight which projects are underway, as this would help identify which projects require increased resources and support

Topics to Include and Expand

- Include a knowledge exchange component in the Intentions Paper (e.g. case studies) to illustrate successful examples of proposed actions from other jurisdictions
- Increase actions around communications and capacity building-with a focus on co-benefits and value-added, not just about preventing bad things from happening
- Emphasize the role of flood mitigation as an integral part of the preparedness strategy
- Address food security and flood impacts in the agricultural land reserve, which was found missing from the Intentions Paper (i.e., Sumas Prairie, where a lot of food production for Canada comes from) [this comment came up multiple times and generated a lot of agreement amongst participants]

C. Feedback on Program Area 1: Understanding Flood Risks

Theme: Plurality of flood risks and other disaster risks

Participants acknowledged flood risks came in all shapes and forms, not just over land, and that the Intentions Paper needed to address all types of flooding: *“I think there needs to be an improvement in how we communicate about floods, flood risks and even what flooding is. Flooding is more than just river flooding and urban flooding. It is storm surges, coastal flooding, flooding from groundwater.”* A few people brought up a lack of information on soil liquefaction from groundwater flooding that can cause soil deformation issues: *“It makes the ground move. The Earth turns into Jell-O.”*

They argued that, while the Intentions Paper seemed to focus mostly on freshwater flooding, it should also mention risks associated with coastal exposure, such as tsunamis: *“We need to consider new disasters that might come and have not yet been explored.”*

Theme: Improve data collection, aggregation

From the perspective of data gathering, a few participants pointed out there was not a good network of data despite work being done aggregating data. This included data related to land cover, land use change and snowmelt. Recommendations included a cross-disciplinary approach to data integration across sectors, such as forest management, to better understand associated feedback loops and correlations with flood risks. A word of caution was shared about the difficulty in obtaining statistics on stormwater runoff because this phenomenon was very site-specific. A recommendation for building partnerships with the private sector for data management was conveyed.

Theme: Develop accurate mapping and forecasting to use as decision-making tool

Numerous participants identified the glaring issue around inconsistent flood mapping. Most of the mapping participants have encountered seemed outdated and therefore seen as not reliable: *“We need to understand better where our vulnerable communities and First Nations communities are.”*

Priority should be placed on developing accessible, predictive, flood maps: this was deemed critical to evaluating flood risks and understanding which areas are vulnerable/susceptible to flooding: *“Traditionally in flood management and planning, we have a lot of trails and backroads that aren’t on any maps that the Province has, which can pose for ineffective management or evacuation.”* Regular updating of flood hazard

maps was required because riverbeds can shift quite significantly over time: *“Look at what happened in Merritt. The river permanently moved. Where houses were is now the river.”*

Accurate flood maps were underscored as a critical tool for informed decision-making during a disaster and also to mitigate risk when rezoning and planning for the future of cities. Having an inventory of municipal assets and flood modelling in populated cities would be helpful for emergency preparedness and understanding risks of loss: *“We can model the failure of a dike system and see what and who is affected and how businesses are affected.” “We need to have the same reference of flood maps across industry, advocacy and government groups. There is a benefit to utilizing one set of universal flood maps for multiple use.”*

LiDAR¹ came up as an example of a tool that could prove useful for flood risk mapping. For instance, bathymetric LiDAR could be used to survey rivers to understand the depths of the water. Participants also pointed out that commissioning these kinds of surveys could be a huge financial burden on small municipalities: *“We did bathymetric surveys for the Quesnel River, but the river is large, and this is too expensive for small municipalities. We have to choose priority focus areas with higher populations such as Baker Creek.”*

Participants discussed how climate change has affected forecasting capabilities and made predictions more difficult. With the increasing frequency of extreme weather events, there was a need for improving forecasting abilities to understand future events and potential impacts. Forecasting should be conducted with current climate change projection data; otherwise, updated flood mapping would only be dependable for a limited period of time: *“How do we build maps that are current as well as projected for the future that consider climate change? We don’t know what climate change will do. There is uncertainty there. We shouldn’t be taking the lower projections.”*

Current models used for data visualization and data modelling were seen as producing inconsistent results and falling short of accurately displaying the current magnitude of floods: *“Without a resilient floodplain to allow energy migration for watercourses, no matter how prepared we are, the magnitude will only escalate as we are headed to more frequent natural events combined with climate change.”*

Another challenge identified was the deficit in human resourcing for forecasting. Forecasting organizations appeared to be at capacity and to lack time to adapt to new technology. Participants supported more staff being hired for better forecasting results, even suggesting hiring private companies. Participants recognized that managing staffing could be difficult and recruiting enough competent staff such as hydrogeologists and geologists could be a challenge as these particular skillsets *“are hard to come by”*: *“We don’t have people that have expertise [in] how to react to what is coming.”*

One of the top priorities that emerged was communicating flood risk to communities in an accurate and timely manner, which continues to be a challenge: *“We contacted a consultant to flood map communities through Coast Salish lands [and] asked permission from the Band to do this for them to show them their risk levels for when water levels come up. I think it helped First Nations communities to learn about their risk levels.”*

One person suggested changing real estate legislation so purchasers were aware they were buying property located on a floodplain.

¹ LiDAR is an acronym for light detection and ranging; it is a remote sensing method that uses light in the form of a pulsed laser to generate precise three-dimensional information about the shape of the Earth and its surface characteristics.

Theme: Rendering information more accessible

It seemed that some residents were largely unaware they were living on floodplains, so it would be critical to create universal floodplain maps so people could understand where their residences were located: *“I couldn’t believe there was no information that we are living in a floodplain. Had I known this area could be flooded I might not have looked to settle here and buy a home.”* Participants asked for this information to be publicly accessible before 2030, to let people know if they were at risk of flooding.

Audience-specific outreach strategies were needed, which would require communicating in different ways. When reaching out to communities, participants discussed the need to be intentional with words and actions. The dialogue process with communities should be focused on hearing the needs of the people and what was best for them: *“Some communities are just waiting to be hit by these catastrophes. We need to remember these are people and community issues. We need to hear from them directly since they’re the most affected.”*

From a data perspective, some participants found publicly-available information to be rather inaccessible. There were suggestions to use infographics, understandable language and displaying QR codes on materials to convey information in a simplified and user-friendly manner. Ensuring that technological solutions were also clearly described and met the technical literacy level of the audience was essential: *“Data is highly technical; we need to add a human element in the way we communicate.”*

Theme: Updating insurance processes and expanding beneficiaries

Linked to the theme of mapping and information was the topic of insurance: *“There aren’t good flood maps; the risk is not clear, so insurance companies stay away from it. People don’t know they need flood insurance or think they have flood insurance, but it is the wrong type.”*

A lot of conversations revolved around limitations surrounding insurance processes: *“Insurance only covers the rebuilding of the house, not the loss of land. The value is in the land.”* Participants flagged that either insurance was too expensive due to the high cost of deductibles, that clients could be ineligible for adequate coverage, or that clients incorrectly assumed they are covered for flooding when they are not: *“First Nations and elderly people are affected and cannot access affordable flood or other disaster insurance.”*

Representatives from the insurance industry attending the sessions provided background and explained their sector has not been very active in residential flood insurance: *“Commercial flood insurance has been far more available for decades; we are not as focused on residential insurance or flood insurance on Indigenous lands.”* The insurance industry representatives described dealing with tight budgets in the insurance industry; the economic climate may mean there were not enough resources to go around for all the insurance claims received: *“Insurance agencies would rather lose out on business than be on the hook for payouts following a flood.”* These same representatives described the lack of dialogue with the government around potential government insurance subsidies. They called for collaboration between private business and government to invest in communities to ensure communities receive compensation and coverage when these issues take place. As an example, insurance industry representatives were recently in discussion with the federal government on a potential backstop flood program for those who have been affected and have no access to flood insurance or disaster financial assistance.

Participants' advice on Program Area 1: Understanding Flood Risks

- Include specific information about understanding how infrastructure (e.g. dams) affects flood risks across provincial or international borders (e.g. cross-border rivers)
- Explore in greater depth how addressing other types of natural disaster risks (e.g., earthquakes) relates to flood risk management
- Include more information about compounding flood risks, (e.g., how tree disappearance due to forest fires or overlogging affects runoff and increases peak flow)
- Ensure data is up to date and integrated across other areas such as forest management
- It would be more cost-effective for the Province to take on province-wide bathymetric surveys instead of small municipalities being responsible for such expensive surveys
- Prioritize data collection and aggregation to create a robust network of easily accessible data
- Recognise professional associations as partners who complete legislated flood assessments and be more specific about which guidelines require updating to current standards (*ref. Intentions Paper Action 2.3*)
- Improve communication about the definition of flooding and different types of flooding: river flooding, urban flooding, storm surges, coastal flooding, flooding from groundwater
- Improve communication to residents who are unaware they are living on floodplains
- Modernise the disaster financial assistance process
- Establish systems to recognise and support those who cannot purchase insurance

D. Feedback on Program Area 2: Strengthening Flood Risk Governance

Theme: Address the jurisdictional fracture

Flood management was depicted as hampered by jurisdictional fracture, making it unclear who was responsible for what, and challenging to get multiple jurisdictions to work together, which unfortunately resulted in asynchronous flood plans: *“A large system like the Fraser River is under multiple jurisdictions and needs better control.”*

In participants’ view, local governments had limited authority without buy-in from senior levels of government: *“I think there is a disconnect between municipal governments and [the] provincial government on who is responsible for things like dikes and land use management. Cities don’t have the same level of resources as senior government levels.”*

One participant mentioned the necessity for multi-level government coordination around liability for flood events: *“I want to amend legislation to protect local government from liability for flooding events. They should not be insurers for climate change, nor should the Province.”*

A consistent, strategic approach to decision-making would help set the bar for professional practitioners—for example, guidelines for professional associations performing legislated flood assessments: *“The standards are not met for the practices being carried out.”*

Theme: Remove barriers across provincial and federal governments that hinder First Nations’ involvement in flood planning

Several participants wanted to see increased inclusion of First Nations in flood mitigation planning: *“I am very interested in how First Nations get engaged in this process. [First Nations] have not been well engaged in the Lower Mainland flood strategy.”*

Coordination between the provincial and federal governments for reserves on federal land and regulated under the *Indian Act* was deemed key; there was often a regulatory gap when Indigenous peoples did not have treaty rights and were denied the agency to self-govern. Participants expressed concern around how the B.C. Flood Strategy would be implemented on reserves: *“Issues that used to be dealt with federally are now left up to Indian Bands that do not have the resources to manage.”*

Coordination of ministries, both at the federal and provincial levels, would go a long way: *“We want to see Indigenous governments and municipal governments along with senior governments work together and come together.”*

A participant strongly recommended the Province coordinate with federal entities like Canadian National Railway and Canadian Pacific Railway: *“During the 2013 Calgary floods, a train was stuck on a bridge. This emphasized the need for federal entities to be included and coordinated.”* An ask was put to the federal government for a national strategy and funding since other regions in the country also faced flood issues and because municipalities and provinces did not have the financial power to solve these problems alone: *“Amalgamate flood strategy planning with other provinces to see where there are parallels, successes and difficulties.”*

To move forward, participants felt both federal and provincial governments needed to come together and be leaders in the region to get all players to work together cohesively. This could be enabled by centralization of authority, responsibility, and coordination.

Theme: Convene cross-stakeholder collaboration tables

Some challenges mentioned were around stakeholders' involvement and getting them all on the same page. Examples referenced a network of players around the Kootenay River who meet a few times every year to go over each other's projects, the City of Abbotsford flood mitigation plan and the Build Back Better, Together coalition: *"This will take cross-team collaborations to ensure there is transparency on what everyone is managing."*

Theme: Communicate with the United States

Several participants were concerned about harmonization of work on flooding issues between the Province and the U.S. Government, as B.C. and neighbouring states shared waterways and had similar topography: *"Water doesn't see boundaries; it doesn't care when [there are] international borders."* Collaboration with other agencies across the border for regional preparedness for flood and other emergencies would be extremely beneficial. Participants referenced notable flood hazard map examples and approaches used in the U.S. that B.C. could learn from: *"Each county in Washington State has its own flood teams to manage in flooding situations. This approach creates larger capacity."*

Theme: Look at other jurisdictions or countries nationally and internationally

More generally, participants advised looking at other places for best practices and case studies to inform the B.C. Flood Strategy. To some people, the term "leaders" in the vision came across as a bit too lofty; the Province could also be followers in the sense that it should be looking to others for what may be working: *"We don't need to reinvent the wheel. Let's leverage success stories to create change."* Participants suggested that consulting with other countries that build dikes, such as the Netherlands, could be helpful: *"Look at where we stand nationally, and look at what other people are doing internationally and what ideas can be borrowed."*

Theme: Build relationships for inclusive collaboration

Attendees expressed concerns around missing voices in the conversation about flood risks. Other groups who were more at risk, such as people with disabilities, Métis and First Nations, needed to be brought in: *"A voice that we seldom get to hear are the voices we need to hear most of all. I would love for the strategy to provide guidance on how we can hear from those who are most impacted by a standard of practice."*

Attendees underlined the importance of multi-generational consultation and including more than the Elders and Band leaders when it comes to engaging with Indigenous communities to avoid gaps in perspectives. Authentic relationships are grounded in trust, which takes time and commitment to build.

Participants' advice on Program Area 2: Strengthening Flood Risk Governance

- Ensure diverse perspectives are involved in flood planning; be sure to include all Indigenous peoples in BC and that all community members, not just Elders and Band Leaders are engaged throughout all stages of planning.
- Describe the desired state of governance in more detail: What does it look like? What is the relationship among government levels (local, provincial, federal, Indigenous)? Who is responsible for what? How much authority, responsibility and coordination is centralized?
- Clarify roles and power dynamics in governance
- Consider a co-constructed governance model (e.g. local governments/First Nations/province)
- Leverage existing inter-regional governance boards that are already working well rather than creating net new bodies
- Give more material support and tangible capacity building to local authorities to “empower” and allow them to “remain in control of flood planning”
- Increase capacity to address the issue of orphan dikes. This topic is treated as a “political football”.
- Increase coordination to avoid disjointed flood responses
- Emphasize enabling successful cooperation across municipal/provincial/federal/international borders (e.g. Washington State and Sumas Prairie)
- Involve BC Hydro earlier in the engagement process for planning flood mitigation and response

E. Feedback on Program Area 3: Enhancing Flood Preparedness, Response, and Recovery

Theme: Recognize impacts of floods on mental health

Several participants identified that the topic of mental health was virtually absent from the Intentions Paper, when in fact, mental health impacts related to floods manifested in a number of ways.

The negative impact on Indigenous peoples from colonial practices resulting in disputable land use planning decisions needed to be addressed: *“We need to understand the trauma faced by First Nations communities that settled around lakes that were drained; dikes can’t fix everything.”*

Some attendees shared personal experiences of living in floodplain areas, including the emotional toll and the effects on their quality of life. They wished residents who did not live on floodplains better understood the permanent worry they dealt with: *“People not in floodplains don’t understand what people in floodplains go through. It needs to be known what our minds go through: fear for our properties, our land, our animals, and our lives.”*

“Dairy farmers were hit really badly in the Sumas Prairie region last year; they’re very scared about what’s going to happen this fall.”

“People are still suffering from [post-traumatic stress disorder] after flooding evacuation.”

One participant remarked on the anxiety-inducing use of terms such as “atmospheric river” in weather reports and suggested more careful communication was needed to avoid putting people on alert in a potentially traumatizing way when the actual flood risk had yet to be fully understood.

Theme: Increase emergency preparedness

There was general agreement that the immediate priority should be addressing emergency preparedness for natural disasters: *“There is still no proactive approach, no preparation for the next flood/fire disasters.”*

Participants argued that a key component of preparedness was having a close-knit community where residents knew each other and knew the location of vulnerable people when help was needed: *“When the Sumas Prairie flooded, I knew the signs and what to look for, so I warned my neighbours and took the necessary precautions to prepare. We didn’t hear any communication from the City, no notifications or anything, until after the second flood.”* Other perspectives should be brought into planning for preparedness, including First Nations, Métis and other Indigenous groups.

Theme: Adopt a holistic approach to flood planning in agricultural zones that mitigates potential impacts to land, animals, people, infrastructure and systems

Participants would like to see a holistic approach to flood management. The impact on Indigenous lands and Indigenous peoples should not be diminished: *“Sumas Prairie was a lake; it was an important food source for First Nations, and now it is farmland. When Sumas Prairie flooded, this brought back ancestral memories.”*

Emergency planning should include mitigating the impacts of all natural disasters like earthquakes, floods, and wildfires on transportation corridors and supply chains in the affected areas: *“If highways were shut down before that rainstorm, people wouldn’t have [died]. As soon as the roads are washed out, it’s critical, because nothing can get in or out.”*

Several people raised the importance of including animals and farms in mitigation and risk reduction planning, not just focusing on homes: *“Land and animals are part of a community too; pets can be traumatized. For example, in the Sumas Prairie flood, a lot of animals died.”*

“A holistic approach to preparedness is one where communities are engaged and included in planning and preparing for disasters.”

A few participants flagged the agricultural sector was missing from the Intentions Paper, when actually, a lot of fertile agricultural land was located in the valleys, which were prone to flooding. Many participants expressed concern around food security and protecting agricultural land: *“A lot of food production for Canada comes from Sumas Prairie. It’s so important it’s not forgotten.”*

Theme: Support an ethical approach to Indigenous ways of knowing

According to participants, part of taking a more holistic approach to flood management would be respecting Indigenous ways of knowing with the same regard as western science when planning: *“This current system entrenches dominant engineering perspectives that do not integrate or collaborate with Indigenous peoples and knowledge.”*

One attendee referenced a story that illustrated First Nations’ resilience: during a flood in 2018, nine feet of water came in; the community was able to leave on time, then they returned and rebuilt. Meaningful examples like this could be examined and learned from in terms of the conditions that enabled a safe retreat and successful return. For instance, another attendee recommended investigating seven-generation planning, a methodology for community planning and flood mitigation followed by many Indigenous communities.

Theme: Expand/improve education, communication and inclusivity of evacuation strategies

One participant shared a positive personal experience of evacuation in a recent flood event: *“The Province did a good job with informing prior [to] and preparing for evacuation. People helped each other in [a] time of need, but I’m still anxious that it will happen again.”*

On the contrary, many other participants recounted a total lack of communication from their local government on the meaning of evacuation orders. Some would like to see more public education related to preparedness and how much advance notice people have when dealing with flood or fire events. There was room for improvement in post-flooding messaging: *“Often people do not have enough time to prepare, pack and collect their belongings.”*

Stories were told of First Nations communities left to their own devices and who were not included in the municipality’s or region’s emergency plan: *“We [an Indigenous community on a federal reserve] are often left out of the loop when natural disasters happen; we have to go to the nearest town for help.”*

Concerns were voiced around the absence of a plan to mitigate the risk to people and infrastructure in the event of a flood in some areas, and to instead rely on the federal government to come to the rescue. Generally, participants would like to see global response evacuation plans and improved early crisis communication. They would also like to see a unified response and recovery plan that takes into consideration learnings from the 2021 flood events and outlines a consistent approach to get help to people who need it when they need it: *“Based on events from last year, including the evacuation in Lytton, it’s clear that we are not taking care of people who are affected and their properties.”*

“What does recovery look like? Let’s research the communities that just flooded in B.C. Let’s see where we failed, what it cost, where we sit in terms of flood recovery, and use this as a pilot project.”

Theme: Improve response and recovery-oriented strategy

Participants expressed dismay that siloed government structures complicated processes, and the tendency for high employee turnover made it difficult to build trust when it came to communicating with people impacted by flood events: *“We are adding more bureaucracy to the system by creating more and more organizations. It creates paralysis in response and recovery.”*

“It’s been super challenging getting the ear of the government. It’s incredibly siloed; there’s no one person to connect with on all things recovery.”

There was a widely-held opinion that disaster financial assistance processes needed updating and modernizing: *“We need to improve how we are treating people after floods. [Disaster financial assistance] is not enough and needs to be disbursed faster.”*

Theme: Prevent floods through mitigation

Many participants found there was a lack of holistic approach when it came to flood and disaster prevention: *“We need to change things, be more proactive than reactive. Communities need to be involved in planning and preparing for disasters from a holistic point of view.”* The goal should be mitigating damage to people as much as considering impacts to the economy. Risk mitigation was discussed at length as a key component of preventing flooding: *“Governments need to add infrastructure to protect communities at risk, like designing roadways so they do not flood by building them higher than [the] axle of a fire truck.”*

Participants’ advice on Program Area 3: Enhancing Flood Preparedness, Response, and Recovery

- Take a holistic approach to risk management that includes all natural and social assets (water, land, animals, people), not only economic assets
- The strategy should specifically mention people in a personal way: how do people get to work, go to school, move forward in life when impacted by floods?
- Re-examine the retreat strategy on floodplains with high agricultural value, which was concerning for the farming industry
- Plan to increase education and awareness around unpopular notions such as flood retreat
- Support solutions at a watershed scale

F. Feedback on Program Area 4: Investing for Flood Resilience

Theme: Adaptive flood response requires a paradigm shift beyond just reactive and infrastructure-based flood response; alternative, sustainable, and nature-based approaches are needed too.

A couple of participants acknowledged that nature was very powerful and could not be stopped: *“We can’t control Mother Nature; we have to learn to live in harmony with her.”* They added that the best thing to do was to allow the flood to happen, because trying to control it cost more than to repair infrastructure and damaged houses: *“Floods are natural. We’ve only ever looked at flooding as a problem, and we build dikes higher to address it, but perhaps we need to pursue changing the status quo.”*

One participant wished society would change the way it thinks about floods: *“We won’t see change unless we see investment in new ways of knowing and doing.”*

Related to this, another person commented that while the term “innovation” contained the connotation of constantly wanting to adjust and change things, a beneficial framing could also be on finding sustainable long-term answers, with a vision for many generations ahead that moved away from reactionary approaches. Acceptable solutions did not always need to be innovative; common sense could be just as effective: *“Indigenous knowledge has been effective for so long and is tried, trusted and true.”*

A couple of participants wished environmental considerations were front and centre when calculating impacts to assets and monitoring was not based solely on economic measures: *“More is being lost than homes.”*

Examples of immediate actions that could be taken right away to mitigate flood risks included planting trees and promoting nature-based solutions: *“Overlogging is a key issue in contributing to floods. When the snow melts, there are no trees to absorb the extra water.”*

“Wildlife are our best teachers in this scenario. Beavers are nature’s best engineers; with their help, we can slowly return to ‘stage zero’ floodplain connectivity, without having to alter the landscape too much with human structures.”

Theme: Engage communities around planning retreat and relocation

The crux of flood resilience was managing retreat and relocation: thinking about how to remove animals and people from the floodplains. The ever-increasing risk of repeat flooding brought relocation into the conversation as a way to mitigate flood damage: *“If a property continues to flood over and over, relocation might be the best solution.”*

Participants recognized relocating residential infrastructure would look very different from relocating farmland: *“We can’t relocate valuable fertile farmland. It looks like we are sacrificing the west highland, which tends to be dairy and poultry. This just makes it hard for farmers to prepare. We need dry barns for our livestock.”*

To build flood awareness, discussing retreat with communities and explaining what it entailed and where it was applicable was deemed crucial: *“After a flood, many residents won’t be able to go back to their homes. The land to rebuild might no longer be there. We see this in Merritt: the river is now where a community was.”*

Participants agreed discussing retreat would be particularly challenging as it may be politically unpopular and expensive, and suggested it was essential to provide education on this topic: *“How can you expect people to just move away from their homes after 35 years or longer? I’m in the last house on the reserve. It’s very quiet, and I LOVE it; I would hate to relocate.”*

Participants wondered how municipalities would be impacted by potential reduction in tax revenue due to the purchase of damaged flood lands, at risk of future flooding and limiting rebuilding in the area. Examples of successful retreat strategies observed in other jurisdictions where properties impacted by flooding were bought out and replaced with a state park included Christchurch, New Zealand after the Ōpāwaho/Heathcote River flooding and New Jersey after Hurricane Sandy. Landowners may need compensation as current development was based on a lack of flood mapping information.

Participants highlighted the time sensitive issue of dealing with existing buildings on floodplains: *“It is not as simple as saying ‘Don’t build in the floodplain.’ This work cannot wait; we need to start now.”*

The role of the real estate market was questioned, along with issues of liability around approved developments in floodplains that were now being devalued: *“Do we allow a property that repeatedly floods to be resold? How do we communicate flooding risks in expensive real estate markets?”*
“The liability is increasing for local governments, and [there are] definitely more buyer beware situations.”

Theme: Balance feasibility and urgency in implementation

One attendee explained they appreciated the vision set forth in the Intentions Paper, however they found it idealistic: *“This is about setting expectations. This is a time to be very pragmatic, not pie in the sky or blue-sky thinking.”* Many participants expressed concern about the implementation timeline for the B.C. Flood Strategy: *“We cannot wait until 2030 to start mitigating flood risks. The planning starts in 2024, but what are we doing now?”*

Participants urged the Province to act now to complete the easily addressed topics which would allow more space and capacity for implementing the strategy: *“Spend now to prevent. What deserves the first dollars?”* A strong sense of the need for immediate action was emphasized: *“Can we see a parallel process that takes care of urgent needs? Let’s get on it right away.”*

A couple of participants believed we already knew a lot, and we needed to consider what we could do with that knowledge: *“We don’t need to fund more information gathering/research. We need to know what to do with the information. Turn knowledge into action.”*

Participants strongly encouraged the Province to incorporate continuous improvement principles into the work, with periodic evaluation and assessment to measure progress and success, especially given the uncertain variability of the future climate in B.C.: *“I feel the need for a broad-scale approach that can be implemented and constantly updated as we go along. This will be an ongoing process over decades.”*

Theme: Build back better applies beyond infrastructure to systems, including relationships, governance, industry practices, and social norms

Participants discussed land-use planning decisions that precipitated flood risks and, both figuratively and literally, pushed risks downstream during flooding events. Many felt a root cause of flood and fire is poor land management—for example, when landslides happened in areas that had been logged: *“Who is responsible for approving the timber sales? Who [is] allowed to build houses in areas that historically had flooding? Municipalities are allowing that.”*

When dealing with the aftermath of a flood, wise spending decisions were needed. Residents should not be allowed to move back to areas where flooding was a repeat cycle: *“Take, for example, the City of Abbotsford, who spent \$2.5 billion to rebuild after the flood. The build back looks exactly like it did before the flooding, and this means it will flood again. Don’t lock cities into bad decisions.”*

Several participants talked about watershed approaches that integrate considerations of downstream impacts when making decisions.

There were several discussions about the type of innovation that would be required to ensure all future infrastructure was flood-resistant. Roads, docks and railway tracks needed to withstand major flooding events. *“We really need to come up with a universal best practice for B.C. Housing developments should be built outside floodplains.”*
“Accommodating flood avoidance means building at higher flood levels. This will translate into density.”

In terms of civil engineering, a participant talked about pervasive hardening of infrastructure (concrete). Instead of stormwater flowing into storm sewers, which increased river flow and caused flooding and further erosion, the use of green infrastructure would allow stormwater to infiltrate green space or land: *“We need better city planning and change in building guidelines that allow the rain to soak into the soil.”*

In terms of housing planning and development, resilience in flood risk prevention might mean changing building codes, reimagining the way we build (e.g., raising buildings off the ground) and creating principles for renewed benchmarks and supervision processes: *“If one community does everything right and is a gold standard and another community does everything bad, does the Province oversee this? Will there be a bare minimum standard?”*

Optimizing agricultural land use might mean farming with a smaller footprint. One participant referenced a type of vertical farming that used greenhouses. Beyond doing “better,” there was a general idea around doing “different”: *“We have to make different choices and accept different social norms. We can’t keep repeating the same failures.”*

Theme: Adopt a forward-thinking co-benefit approach

Participants reiterated the need to include climate change in the planning process: *“What are we going to do about the potential for significant escalation of exposure? How do we build resiliency for that? Areas that never flooded in 50 years that are now flooding.”*

They advised incorporating a forward-thinking approach so future generations could benefit from the current work undertaken, such as First Nations communities that were trying to foresee future environmental changes: *“In order to have salmon coming back to the stream, we need to take care of more than just the stream, to maintain the food base.”*

Incentivizing multi-beneficial solutions could help foster a holistic view. For example, in ecosystem restoration, there was an opportunity to create a multi-functional landscape that would also increase biodiversity: *“Fish are typically a health indicator of our ecosystems. We are currently working on releases of fish (sturgeon) in the wetlands, a key component to bring nutrients and resources back to the land.”*

Theme: Co-ordinate and streamline funding requirements and access

One of the biggest concerns conveyed by participants was cost: *“These are great ideas, but every one of them is expensive. How will this be funded? Where is the investment coming from?”*

It was deemed extremely important that the Province allocate considerable funding and resources to implement the strategy and support initiatives in a coordinated way, with both short-term and long-term goals in mind. Both industry and the federal government may have a responsibility to cost share: *“We have \$9 billion to deal with sea level rise in the Lower Mainland. We need senior governments to show up more in preventing the risks of flooding due to climate change.”*

Other participants admitted that funding did exist for some elements but local governments struggled to access funding, suggesting changes were needed to increase funding accessibility: *“There is frustration around grant funding processes. Plus, for the time invested [writing the grant], funding is not guaranteed.”*

Other ideas included prioritizing funding for front-line organizations and First Nations that were already resource-strapped and regularly had to compete against local governments.

Theme: Build capacity and resources

Several participants deplored a lack of human resource capacity: *“The province of B.C. does not have enough flood professionals to do the necessary work.”* *“We have maybe four or five flooding firms. How will they help all the communities?”* They questioned whether there would be *“enough people to help when flooding happens”*, recalling when the military came to Merritt to assist with flood response. *“The Quesnel River runs long, and when it floods, multiple communities are at risk. What if we run out of sandbags before everyone can create tiger dams?”* One attendee suggested each local government district have their own skilled flood teams. Another proposed creating a regional network of flood coordinators to share resources and support stakeholders.

Theme: Equalize differences in capacity between small and large communities

Participants described an inequality in resource allocation and capacity between small and large communities. They shared stories of small communities turning to big cities for support when there is flooding: *“A great example is Merritt didn’t have the capacity or knowledge to handle the flooding. They did not know what to do or how to respond.”* Participants called upon the Province to provide equitable funding and support to ensure communities of all sizes have the resources they needed to adequately plan and manage flooding: *“We need to separate small communities’ needs from large communities’ needs. After a flood, some big communities can respond better in terms of resources, knowledge and capacity than small communities.”*

When small communities cannot purchase, invest in or upgrade flood risk tools, one participant proposed addressing the funding challenge by having the small communities pool their resources and raise bonds for green infrastructure.

Another person thought that information sharing and knowledge sharing between big cities and smaller towns would inspire ideas for bylaws, building restrictions and improved infrastructure such as diking or seawalls: *“How would this look in another location? How to approach similar challenges?”*

One of the proposed solutions to this issue was leverage existing inter-regional bodies (e.g., Okanagan Basin Water Board, Fraser Basin Council), whose structures support collaboration between regional districts, large communities and small communities: *“This model can grow capacity and share resources, including funding.”*

Theme: Keep the momentum going

One participant framed flood resilience as maintaining the impetus to build resilience even outside of times of flooding: *“When we have flooding events, then there’s care and money invested, but when there’s no active flooding, there’s no momentum.”* They acknowledged there was a lot to learn from Indigenous communities around this intermittence and keeping flood management sustainable.

Participants' advice on Program Area 4: Investing for Flood Resilience

- The strategy should be a very practical and realistic action plan that complement the Intentions Paper's idealistic vision
- The action plan should answer the questions: what, who, when, where, how, why?
- Engage planners in the implementation phase
- Address head-on the fate of existing infrastructure built in floodplains
- Increased public communication and education is needed across the board
- Specify a detailed timeline for strategy roll-out; the current timeline is much too long, consider constraining it
- The Intentions Paper needs to be informed by the changing climate and consider climate uncertainty; if it is a 30-year plan, it needs to integrate long-term projections and not use past events as indicators for future events
- Focus on a long-term proactive vision that will benefit future generations, that moves away from the reactionary approach and sets innovative standards (nature-based solutions, community resilience)
- Favour and incentivize solutions that address several problems at once and yield co-benefits
- Incorporate ecology considerations in the restoration of natural environments (for instance, fish populations are typically a reliable ecosystem health indicator)
- The Intentions Paper needs to reflect the sense of urgency of the changing climate, the increasing severity and frequency of flood events, and heightened vulnerability of communities
- Describe in detail the funding mechanisms and resources that will be made available to support capacity to implement the strategy
- Secure funding in the provincial budget is imperative, no matter the presence or absence of flooding
- Clarify funding sources and distribution, as well as requirements and conditions to access funding
- Prioritize allocation of funding to those who need it the most and are regularly competing with others for funding
- Highlight opportunities to invest in local community capacity to do the work and bridge the historical lack of connection between government and work done on the ground
- Explore a more cooperative approach to capacity building
- Allocate a stronger B.C. government response to smaller communities who don't have as much capacity as larger cities to develop infrastructure and to address flooding events

IX. Next Steps

In addition to the virtual and in-person sessions led by Alderhill and the Centre for Dialogue, public feedback was also welcomed via an online survey and by sending in written submissions. The summary reports from the public online survey and written submissions will also help guide the development of the B.C. Flood Strategy, which is scheduled to be released in summer 2023.

APPENDIX: Summary of Participants' advice on the B.C. Flood Strategy Intentions Paper

This appendix lists the summary of participants' advice on the Intentions Paper, to be considered as the B.C. Flood Strategy is developed. In the body of the report, participants' advice is included in a box at the end of each section of feedback.

Participants' advice - General Feedback

Format and Terminology

- Make the Intentions Paper more accessible, clearer and easier to understand: by avoiding technical jargon, and presenting information in summarized formats

Collaboration, Responsibilities and Alignment

- Clarify opportunities for cross-jurisdictional collaboration and coordination regarding strategies, implementation and planning
- In general, embrace traditional Indigenous worldviews and ways of doing and knowing to a fuller degree
- Acknowledge how respective provincial strategies are nested within one another (i.e. does the B.C. Flood Strategy fit under the Watershed Security Strategy), not just how they connect to one another
- Ensure the provincial flood strategy aligns with related federal strategies
- Identify which ministries/government agencies will be responsible/accountable for delivering these intersecting program action areas for flood resilience in B.C.
- Break down government silos, identified as a major hindrance, to make the process more transparent and the implementation more coordinated
- Determine the role of the Province in setting flood risk prevention standards and their oversight

Framing and Iterative Learning

- Move beyond identifying the problems to clearly articulating the origins of the issues faced, to develop a lucid solutions-oriented path forward through adequate social and financial investment
- Unpack action areas and identify priorities (triage approach)
- Define success: how will we know the strategy is successfully implemented?
- Present the Intentions Paper as a living document and the strategy as an ongoing process to be updated constantly as it is implemented and as more is learned
- Make space for continuous improvement in the vision
- Make the strategy adaptable and able to incorporate future uncertainty and variability
- Include a comprehensive framework of evaluation and accountability to measure quality of results and implementation, perhaps entrusted to an *ad hoc* working group

- Apply evaluation metrics at a frequency greater than every 10 years: the starting point should be to highlight which projects are underway, as this would help identify which projects require increased resources and support

Topics to Include and Expand

- Include a knowledge exchange component in the Intentions Paper (e.g. case studies) to illustrate successful examples of proposed actions from other jurisdictions
- Increase actions around communications and capacity building-with a focus on co-benefits and value-added, not just about preventing bad things from happening
- Emphasize the role of flood mitigation as an integral part of the preparedness strategy
- Address food security and flood impacts in the agricultural land reserve, which was found missing from the Intentions Paper (i.e., Sumas Prairie, where a lot of food production for Canada comes from) [this comment came up multiple times and generated a lot of agreement amongst participants]

Program Area 1: Understanding Flood Risks

- Include specific information about understanding how infrastructure (e.g. dams) affects flood risks across provincial or international borders (e.g. cross-border rivers)
- Explore in greater depth how addressing other types of natural disaster risks (e.g., earthquakes) relates to flood risk management
- Include more information about compounding flood risks, (e.g., how tree disappearance due to forest fires or overlogging affects runoff and increases peak flow)
- Ensure data is up to date and integrated across other areas such as forest management
- It would be more cost-effective for the Province to take on province-wide bathymetric surveys instead of small municipalities being responsible for such expensive surveys
- Prioritize data collection and aggregation to create a robust network of easily accessible data
- Recognise professional associations as partners who complete legislated flood assessments and be more specific about which guidelines require updating to current standards (*ref. Intentions Paper Action 2.3*)
- Improve communication about the definition of flooding and different types of flooding: river flooding, urban flooding, storm surges, coastal flooding, flooding from groundwater
- Improve communication to residents who are unaware they are living on floodplains
- Modernise the disaster financial assistance process
- Establish systems to recognise and support those who cannot purchase insurance

Program Area 2: Strengthening Flood Risk Governance

- Ensure diverse perspectives are involved in flood planning; be sure to include all Indigenous peoples in BC and that all community members, not just Elders and Band Leaders are engaged throughout all stages of planning.
- Describe the desired state of governance in more detail: What does it look like? What is the relationship among government levels (local, provincial, federal, Indigenous)? Who is responsible for what? How much authority, responsibility and coordination is centralized?
- Clarify roles and power dynamics in governance
- Consider a co-constructed governance model (e.g. local governments/First Nations/province)
- Leverage existing inter-regional governance boards that are already working well rather than creating net new bodies
- Give more material support and tangible capacity building to local authorities to “empower” and allow them to “remain in control of flood planning”
- Increase capacity to address the issue of orphan dikes. This topic is treated as a “political football”.
- Increase coordination to avoid disjointed flood responses
- Emphasize enabling successful cooperation across municipal/provincial/federal/international borders (e.g. Washington State and Sumas Prairie)
- Involve BC Hydro earlier in the engagement process for planning flood mitigation and response

Program Area 3: Enhancing Flood Preparedness, Response, and Recovery

- Take a holistic approach to risk management that includes all natural and social assets (water, land, animals, people), not only economic assets
- The strategy should specifically mention people in a personal way: how do people get to work, go to school, move forward in life when impacted by floods?
- Re-examine the retreat strategy on floodplains with high agricultural value, which was concerning for the farming industry
- Plan to increase education and awareness around unpopular notions such as flood retreat
- Support solutions at a watershed scale

Program Area 4: Investing for Flood Resilience

- The strategy should be a very practical and realistic action plan that complement the Intentions Paper’s idealistic vision
- The action plan should answer the questions: what, who, when, where, how, why?
- Engage planners in the implementation phase
- Address head-on the fate of existing infrastructure built in floodplains
- Increased public communication and education is needed across the board

- Specify a detailed timeline for strategy roll-out; the current timeline is much too long, consider constraining it
- The Intentions Paper needs to be informed by the changing climate and consider climate uncertainty; if it is a 30-year plan, it needs to integrate long-term projections and not use past events as indicators for future events
- Focus on a long-term proactive vision that will benefit future generations, that moves away from the reactionary approach and sets innovative standards (nature-based solutions, community resilience)
- Favour and incentivize solutions that address several problems at once and yield co-benefits
- Incorporate ecology considerations in the restoration of natural environments (for instance, fish populations are typically a reliable ecosystem health indicator)
- The Intentions Paper needs to reflect the sense of urgency of the changing climate, the increasing severity and frequency of flood events, and heightened vulnerability of communities
- Describe in detail the funding mechanisms and resources that will be made available to support capacity to implement the strategy
- Secure funding in the provincial budget is imperative, no matter the presence or absence of flooding
- Clarify funding sources and distribution, as well as requirements and conditions to access funding
- Prioritize allocation of funding to those who need it the most and are regularly competing with others for funding
- Highlight opportunities to invest in local community capacity to do the work and bridge the historical lack of connection between government and work done on the ground
- Explore a more cooperative approach to capacity building
- Allocate a stronger B.C. government response to smaller communities who don't have as much capacity as larger cities to develop infrastructure and to address flooding events