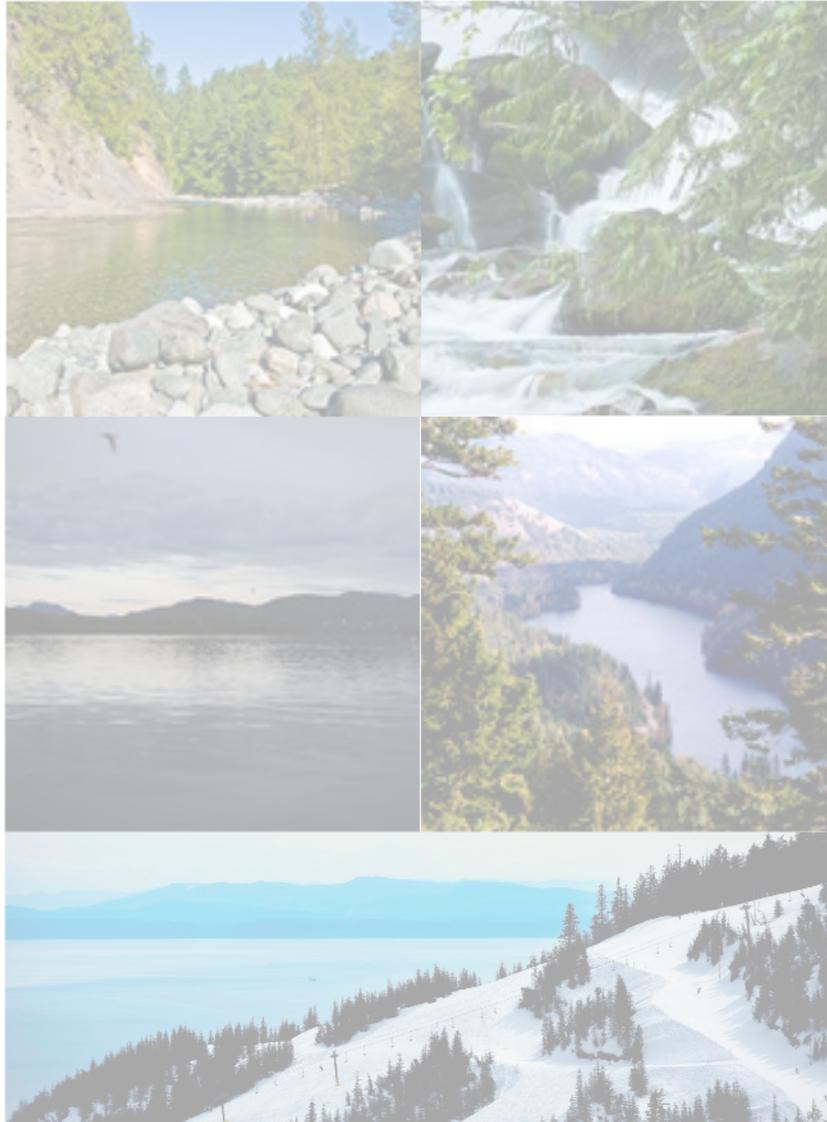


# B.C. Flood Strategy Intentions Paper Survey Summary



March 2023



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# Introduction

The Ministry of Forests (FOR), supported by the Ministry of Emergency Management and Climate Readiness (EMCR), is leading the development of a B.C. Flood Strategy (the Strategy) to support progress toward a more flood resilient British Columbia in a changing climate. It will address provincial commitments in the *B.C. Declaration on the Rights of Indigenous Peoples Act* (the Declaration Act) and align with the United Nations Sendai Framework for Disaster Risk Reduction (the Sendai Framework) relating to flood and drought management in the province. The Strategy is intended to address ongoing flood management challenges, climate change adaptation, increase partnerships with First Nations and local governments, and improve public safety.

The Government of B.C. (the Province) started work towards the Strategy in 2020, with plans for a Flood Resilience (Implementation) Plan to follow. Early conversations with First Nations, local governments, and federal government agencies in 2021 resulted in a Discussion Paper and subsequently, an update led to an [Intentions Paper](#)<sup>1</sup> (and a [Summary of the Intentions Paper](#)<sup>2</sup>) for the Strategy. The Intentions Paper is a proposed strategic framework that includes a **Vision, Outcomes, and Principles** for flood resilience in the province. The framework sets four strategic 'program areas' and associated potential actions for future implementation. The Strategy will remain high level and leave more detailed decisions for implementation planning.

Strategy development with industry, academia, professionals, and non-government agencies (NGOs) was delayed due to paused engagement and redirection of resources toward response and recovery to the November 2021 flood events. In July 2022, provincial government direction, and discussions with key First Nation organisations supported re-initiating engagement on the Strategy and releasing the Intentions Paper in the fall of 2022.

## Purpose of the Survey

The purpose of the survey is to:

- Validate the work that has already been conducted on the Province's Flood Strategy.
- Build on the feedback heard to date by delving deeper into key policy themes that require more detail, clarity, or scope.
- Support the prioritisation of program areas and actions of the Strategy.

The survey was released in October 2022, kicking off the second phase of public engagement. A series of engagement sessions (virtual and in person) were held throughout the province. Some sessions were led in partnership with [Alderhill](#)<sup>3</sup> Planning Inc. (Alderhill) (an Indigenous owned planning firm), Local Governments and First Nations. These sessions were structured based on First Nations language group regions and water basins. [Simon Fraser University Morris J. Wosk Centre for Dialogue](#)<sup>4</sup> also hosted sessions to engage industry, business, professional associations, academia, not-for-profits, government, and engaged members of the public. Those who were unable to attend sessions were invited to share their thoughts on the Intentions Paper through the survey.

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<sup>1</sup> <https://engaae.gov.bc.ca/app/uploads/sites/121/2023/06/From-Flood-Risk-to-Resilience-in-B.C.pdf>

<sup>2</sup> <https://engaae.gov.bc.ca/app/uploads/sites/797/2022/10/BC-Flood-Intentions-Paper-Summary-FINAL.pdf>

<sup>3</sup> <https://www.alderhill.ca/bcflood>

<sup>4</sup> <https://www.sfu.ca/dialogue.html>



## A Note on Survey Engagement with First Nations, Métis, and Inuit Peoples (FNMI)

FNMI Peoples, especially since the Declaration Act, have been overwhelmed with requests for information, engagement, and response. Many FNMI live in rural and remote parts of the province that may face barriers to accessing information and responding to the survey request. The low response rate from FNMI in our survey engagement may reflect some of these realities. The survey is meant to complement the other engagement that was conducted (such as focus groups and interviews with Alderhill) to provide more fulsome insights to inform the development of the Strategy.

## Disclaimer

This Intentions Paper Survey Summary (Survey Summary) highlights the insights and themes during the October through January 2023 collection period. It is a high-level summary based upon survey participant responses. 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. This "Survey Summary" is provided for information, discussion, and policy recommendation purposes.



# Executive Summary

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## Methodology

- The survey began October 19, 2022 and closed January 6th, 2023.
- While the survey received 513 responses, 200 responses satisfied a true survey response to be included in the analysis of the survey data.

## Key Findings

### Sentiment on the Strategy

- When asked *"How well does the overall Strategy combine research, community input, and Indigenous Knowledge?"*, the majority of respondents (54%) answered *"Well."*
- When asked to rate the level of agreement to the statement, *"The vision and outcomes represent the needs of my community,"* the majority of respondents (58.4%) answered *"Agree"*
- When asked to rate the level of agreement to the statement, *"The vision and outcomes will be effective in the foundation of the B.C. Flood Strategy,"* the majority of respondents (52.6%) answered *"Agree"*
- When asked to rate the level of agreement to the statement, *"The principles represent the needs of my community,"* the majority of respondents (60.8%) answered *"Agree"*
- When asked to rate the level of agreement to the statement, *"The principles will be effective in the foundation of the B.C. Flood Strategy,"* the majority of respondents (57.3%) answered *"Agree"*

## Program Areas

When asked to rank Program Areas by need, respondents selected the following order:

1. Investing for Flood Resilience (67.2%)
2. Understanding Flood Risks (66.0%)
3. Strengthening Flood Risk Governance (58.7%)
4. Enhancing Flood Preparedness, Response, and Recovery (58.1%)



## Overall Themes

The following eight themes describe patterns and similarities found in the open-ended responses throughout the entire survey:

1. The Strategy needs to include urgent proactivity.
2. Flooding solutions need to consider time (past to present) and geographic (local to global) scales.
3. Flooding solutions need to integrate multiple types of knowledge and approaches to create systemic resilience and sustainability.
4. Government has accountability to lead disaster resiliency.
5. A people-first approach must centre the needs and lived realities of British Columbians.
6. Honouring and respecting First Nations knowledge, voices, and leadership.
7. Enable multi-level and multi-stakeholder collaboration.
8. Appropriate resource allocation is essential for an effective flood strategy.



# Survey Methodology

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## Survey Distribution

The request to complete the survey was distributed primarily by the Ministry of Forests staff team through varied channels. Distribution included an email list server that linked to the survey, a direct link through an [engagement website](#)<sup>5</sup>, and through social media posts (including LinkedIn). Calls for survey response were sent through channels at the launch of the survey, at the midpoint of the survey duration, and near the end of survey duration.

The survey began October 19, 2022 and closed January 6th, 2023.

## Sampling Method

This survey used a combination of *convenience sampling* and *purposive sampling* approaches. Convenience sampling is selecting the most convenient respondents– to respond to the survey through both direct (e.g., email, word of mouth, etc.) and indirect distribution (e.g., link from engagement website) methods. Purposive sampling is –selecting respondents to speak to specific engagement needs–to reach different demographic peoples and groups (e.g., people with lived experience of flooding, Indigenous Peoples, academics, etc.).

The use of these sampling approaches are forms of non-probability sampling and do not capture a representative perspective on the population of the province.

## Survey Analysis

### Response Verification

While the survey received 513 responses, 200 responses satisfied a *true* survey response to be included in the analysis of the survey data. The criteria for a true survey response included:

- Question Completion: the majority of non-demographic questions were completed.
- Non straight-lined responses: Submissions demonstrated actual engagement with questions, rather than selecting the first response option for every question.
- Time: More than 3.5 minutes total time taken for the survey submission.

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<sup>5</sup> <https://engage.gov.bc.ca/govtogetherbc/engagement/b-c-flood-strategy-2/>



## Thematic Coding Analysis

The survey asked respondents open-ended questions which were analysed for qualitative information that provided information on the needs, opinions and experiences related to the Intentions Paper. Through these open-ended questions, keywords and text from respondents were analysed, patterns and connections between responses were identified, and information was grouped to determine themes.

Thematic categorising was achieved for the themes presented in this summary when new information was no longer presented regarding a specific theme, or a point of diminishing return was reached as responses were analysed.

## Limitations

**Technical nature of survey and document:** While the purpose of the survey was to collect feedback on a specific document and portion of the overall Flood Strategy, it also presented a limitation to engagement. Due to the nature of the survey and the Intentions Paper—documents that contain technical and uncommon language—respondents may have faced barriers in reading, understanding, and providing feedback on the paper, and the process overall.

**Distribution focus and methods:** A possible limitation for survey engagement was the method used to advertise and distribute it to the public. The survey was distributed digitally. Engagement may have reached more people if alternative forms (e.g. paper surveys) were used to engage those with different technological needs, or if advertisement and recruitment centred the needs of particular communities (e.g., in-person advertisement at a remote community centre).



## Key Findings

The Key Findings are divided into three sections:

**Sample Profile:** The Sample Profile contains the demographic information of the people who responded to the survey.

**Overall Themes:** The Overall Themes describe patterns and similarities found in the open-ended responses throughout the entire survey. Many of the responses spoke to a variety of issues despite the framing of a specific question.

**Section by Section:** The Section by Section looks at specific parts of the survey in more depth (i.e., the Vision and Outcomes section, the Principles section, the Key Actions section). In each part of the survey, this section of the summary presents the survey results of the rating and ranking style questions, and is followed by additional commentary on the specific part of the survey.

## Key Findings: Sample Profile

**Total Respondents: 200**

*NOTE: Each percentage shown represents the percentage of the answered surveys per question (e.g., interested member of the public (65.8%) represents the percentage of 184 answered surveys)*

**Interest in the B.C. Flood Strategy (multiple response)**

Answered: 184

Skipped: 16

- Interested member of the public (not associated with any of the following groups) **(65.8%)**
- Representative of a non-profit organisation **(15.2%)**
- Representative of a commercial business **(10.3%)**
- Representative of a local government **(10.3%)**
- Member/representative of an academic institution **(6.5%)**
- Representative of an Indigenous organisation **(3.8%)**
- Representative of a First Nations government **(0.5%)**
- Other **(16.8%)**
  - Respondents included interest as non-registered grassroots organisations, lived experience, agricultural sector, health sector, landowner, climate justice groups, disaster response organisation, scientists outside of academia, religious institution, environmental professionals



<p><b>Familiarity of Flood Strategy</b> <b>(multiple response)</b></p> <p>Answered: 199 Skipped: 1</p>	<ul style="list-style-type: none"> <li>● Reviewed Summary <b>(76.5%)</b></li> <li>● Lived / Personal Experience <b>(66.5%)</b></li> <li>● Professional Experience <b>(46.5%)</b></li> <li>● Reviewed Full Paper <b>(40.0%)</b></li> <li>● Scientific / Academic Knowledge <b>(32.5%)</b></li> <li>● Indigenous Knowledge <b>(6.0%)</b></li> <li>● Little to no experience <b>(3.0%)</b></li> </ul>
<p><b>Indigenous Peoples</b> <b>(multiple response)</b></p> <p>Answered: 170 Skipped: 30</p>	<p><b>First Nations, Inuit, Métis</b></p> <ul style="list-style-type: none"> <li>● Métis <b>(5.3%)</b></li> <li>● First Nations - On Reserve <b>(2.4%)</b></li> <li>● First Nations - Off Reserve <b>(2.4%)</b></li> </ul> <p><b>Language Group</b></p> <ul style="list-style-type: none"> <li>● Salishan <b>(1.2%)</b></li> <li>● Tsimshianic <b>(0.6%)</b></li> <li>● Wakashan <b>(0.6%)</b></li> </ul>
<p><b>Equity-Seeking Groups (multiple response)</b></p> <p>Answered: 160 Skipped: 40</p>	<ul style="list-style-type: none"> <li>● 2SLGBTQIA+ persons <b>(11.9%)</b></li> <li>● Low-income individuals <b>(8.8%)</b></li> <li>● Persons with disabilities <b>(9.4%)</b></li> <li>● Racialized individuals [e.g., East Asian, Latino, South West Asian, North African, South Asian, Southeast Asian, etc.] <b>(3.8%)</b></li> <li>● Newcomers to Canada [arrived in Canada within the past 5 years] <b>(2.5%)</b></li> <li>● Black individuals [e.g., African, Afro-Caribbean, African-Canadian, etc.] <b>(0%)</b></li> </ul>
<p><b>Primary Water Basin Region</b> <b>(multiple response)</b></p> <p>Answered: 182</p>	<ul style="list-style-type: none"> <li>● Fraser River Basin <b>(62.2%)</b></li> <li>● Columbia River Basin <b>(14.1%)</b></li> <li>● Skeena River Basin <b>(3.3%)</b></li> <li>● Mackenzie River Basin <b>(1.6%)</b></li> <li>● Nass River Basin <b>(0%)</b></li> </ul>



<p>Skipped: 18</p>	<ul style="list-style-type: none"> <li>● Stikine River Basin <b>(0%)</b></li> <li>● Taku River Basin <b>(0%)</b></li> <li>● Yukon River Basin <b>(0%)</b></li>   <li>● I do not live or work near any of these regions. <b>(22.2%)*</b></li> </ul> <p><i>* This means that respondents did not identify as being a part of one of the listed River Basins</i></p>
<p><b>Gender Identity (single response)</b></p> <p>Answered: 167</p> <p>Skipped: 33</p>	<ul style="list-style-type: none"> <li>● Female <b>(43.1%)</b></li> <li>● Male <b>(52.1%)</b></li> <li>● Non-binary <b>(2.4%)</b></li> <li>● Other <b>(2.4%)</b> <ul style="list-style-type: none"> <li>○ Responses included Male to Female Transgender identity</li> </ul> </li> </ul>
<p><b>Age (single response)</b></p> <p>Answered: 169</p> <p>Skipped: 31</p>	<ul style="list-style-type: none"> <li>● 19 to 29 years <b>(12.4%)</b></li> <li>● 30 to 49 years <b>(36.1%)</b></li> <li>● 50 to 64 years <b>(28.4%)</b></li> <li>● 65 to 69 years <b>(8.9%)</b></li> <li>● 70 years or older <b>(14.2%)</b></li> </ul>
<p><b>Total Annual Household Income (single response)</b></p> <p>Answered: 137</p> <p>Skipped: 63</p>	<ul style="list-style-type: none"> <li>● Less than \$24,999 <b>(6.6%)</b></li> <li>● \$25,000 to \$49,999 <b>(11.7%)</b></li> <li>● \$50,000 to \$74,999 <b>(18.2%)</b></li> <li>● \$75,000 to \$99,999 <b>(17.5%)</b></li> <li>● \$100,000 to \$124,999 <b>(17.5%)</b></li> <li>● \$125,000 to \$149,999 <b>(8.8%)</b></li> <li>● \$150,000 to \$174,999 <b>(8.0%)</b></li> <li>● \$175,000 or more <b>(11.7%)</b></li> </ul>



# Key Findings: Overall Themes

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## Using these Themes

The following eight themes presented in this section describe patterns and similarities found in the open-ended responses throughout the entire survey. Many of the responses elaborated on specific opinions and experiences that went beyond the framing of a particular question, and spoke to the Strategy as a whole.

The survey is non-representative in terms of the province's demographic populations. The overall sample size of the survey, and the demographic identities of those who responded to the survey are too small to ensure statistical significance among different cross sections of the data (e.g., what is the average ranking of key actions in Program Area 1 by income level).

However, the resulting themes provide some information on areas to further explore and validate some of the themes present in the Intentions Paper. While these eight themes show patterns of interest, they do not demonstrate which themes may be more important or prevalent for respondents. However, in the Key Findings: Section by Section, relevant themes will be contextualised based on survey findings.

## Themes

### 1) The Strategy needs to include urgent proactivity.

Respondents described a clear need for urgent action. While the strategy is yet to be finalised, respondents urged preventative measures against future flooding be taken immediately. *"Clearly we've waited too long to deal with flooding events and we need to take a more proactive approach so that people are not worried about the risks every time it begins raining."*

- *"The earlier flooding can be forecasted or warned, the better. I do feel that our current forecasting is decent, but it can always be improved."*

Many of the solutions offered can be categorised into two broad categories: 1) to reduce the intensity of flooding, and 2) prepare for and mitigate the effects and damages from floods. Some of these solutions include:

- Begin allocating resources to reinvest in green infrastructure and include allocations into the Province's asset management
- Update flood mapping and information to empower communities and citizens to prepare for flooding
- Research, test and set standards to flood-proof inundated structures
- Strengthen existing structures and research new innovations for flood structures
- Some respondents felt it was important to update flood maps and have current flood information, whereas others felt it was less of a priority.



## 2) Flooding solutions need to consider time (past to present) and geographic (local to global) scales.

Many of the responses highlighted the importance for program areas to approach flooding across time and geography. Considering a time horizon, respondents noted that solutions should address flooding before it happens, as it occurs, and build resiliency for the future.

- *"We need to first understand the history and the current situation before moving forward. This includes assessing the physical system as well as the community and cultural impacts."*
- *"Also, with climate change we have a warmer atmosphere and it is capable of holding more moisture, making storms more damaging and flooding more likely. We can't use historical models alone, we must use predictive climate models to anticipate what has not happened before."*

Additionally, respondents spoke of the connection between local flooding, provincial climate events, and climate change at a global level—highlighting a need for solutions to be scalable to local communities while being informed on provincial and global forces.

- Adapt global frameworks such as UNDRIP and the Sendai Framework to local communities through community consultation, and remaining accountable to these communities

## 3) Flooding solutions need to integrate multiple types of knowledge and approaches to create systemic resilience and sustainability.

From analysis, to planning and implementation, respondents stated a need for systemic and more holistic approaches to address the complexity of flooding. Respondents spoke of different approaches to flooding including evidence-based and scientific methods, Indigenous and land-based approaches, to individual and collective based approaches

- *"We have to learn to live with water instead of being stuck in a cycle of flood, destroy, rebuild in the same areas with the same fragile infrastructure."*
- *"... a public discussion by scientific, technological and social psychology experts, without business or political inclusion, with widespread reporting of what we think is needed."*
- *"...take a holistic watershed-based approach that addresses the relationship between drought, fire and flood..."*

## 4) Government has accountability to lead disaster resiliency.

The majority of respondents expressed an expectation for the provincial government to be proactive by leading disaster prevention and recovery—including the B.C. Flood Strategy. They identified a need for greater governmental accountability and felt the responsibilities across the various levels of government are unclear giving the perception of the government failing to meet the needs of the community. This lack of faith and trust in government may be mitigated by ensuring clarity and transparency in all communications and actions.

- *"Expediency.. this needs to be prioritised:"*



- *"...all 3 of my local governments failed my family every chance they got, and continue to do so."*
- *"We need a better overall (holistic) approach that incorporates an ALL of government approach."*

Respondents articulated a need to update policies and modernise legislation, with more comprehensive and stricter standards as well as regulatory practices. One respondent felt that the powers exist within legislation but they are not fully utilised.

- *"...some of the powers already in provincial legislation have not been fully utilised, such as Section 5 (f)(i) of the Environmental Management Act, whereby the Minister has the authority to prepare plans for "flood control, flood hazard management and development of land that is subject to flooding."*
- *"The strategy really needs to result in more comprehensive regulations and legislations that will hold local government, developers and engineers to stricter standards that will prepare communities and infrastructure for the increased risk posed by flood."*
- *"Modernise legislation, regulations and policies. Currently the flood management guidelines are being treated as only that by engineers, and they need to be regulated so that building does not continue in flood plains and development does not continue in sea level rise/storm surge areas."*

There was a general sentiment that governments lack technical capacity and capabilities to be able to effectively and efficiently respond to disasters.

- *"...failure due mainly to lack of technical capacity at the local government level to manage the required projects, and also an extended time period where no funding was available for the required engineering analyses."*

## 5) A people-first approach must centre the needs and lived realities of British Columbians.

For people living in British Columbia to fully participate and make better decisions, it is essential to be people-first. This means:

- Trauma-informed planning that prioritises respect for landowners and land users' rights
- Clear, transparent, and accessible information that is backed by science and is evidenced-based.
- Government to understand the constraints communities face (and their lived realities) to have 'meaningful' engagement.
- Inclusion of rural and remote communities

A people-first approach also means education on flood risks and changes in behaviour with respect to how and where communities settle and live in floodplains, on the accountabilities of professionals and governments in flood planning, and on mitigating and adapting to flood risks, including:

1. Helping people to understand the correlation between flooding and climate change, including the impacts of other environmental disasters.



2. Not providing a false sense of security on what effective flood 'investments' are (e.g, while dikes are one solution for flooding, they should not be presented as a comprehensive solution to flooding to avoid providing a false sense of security to the public).
3. Creating accountability by raising awareness of risks, consequences, and level of preparedness.
  - *"These principles are already embedded in the professional practices of those qualified to work in this field in BC and Canada. More education of the client base (governments of various levels, including research funding agencies) is however required in order to enable qualified professionals to deliver effective projects and problem solutions."*

## 6) Honouring and respecting First Nations knowledge, voices, and leadership.

Many respondents felt it was essential to have First Nations leadership as Rights and Title holds have their knowledge, experience, and culture centred at the heart of the strategy.

- *"Making it holistic and Indigenous centred is of utmost importance."*
- *"Visions and outcomes need to address indigenous peoples needs expressively."*
- *"You have involving First Nations as a separate action. I believe First Nation communities need to be consulted and included within EVERY action."*
- *"Indigenous knowledge is absolutely irreplaceable. They've been here forever and have managed floods long before settlers came and started building impervious cities in floodplains. Their input needs to be integrated in the very beginning and addressed throughout the process as they have deep connections with the land and are often the communities that are affected by floods due to where Federal Government placed their Reserves."*

Currently, respondents perceive that equity, ethics, and fairness is absent from flood management and mitigation - including the privacy of people and Indigenous communities.

- *"...we need real solutions that work and protect privacy of people and the Indigenous communities that are in risk zones."*

Indigenous people have lived in harmony with the land since time immemorial. As such, the vision, principles and the Strategy need to be for both people and nature. It needs to address the impact on the environment (a broad term to include plants, animals, forests, and water).

- *"Holistic approach will be difficult since the very nature of our communities is to manage nature and natural processes, not work with them holistically."*
- *"I am very concerned that 'environment' is always at the end of any list in this report."*
- *"Environmental/ecosystem approaches front and centre... the time has come to change how we think about where and how we build and how we impose ourselves on our local environments rather than work with and within them."*
- *"Floods can have major impacts on the ag industry."*



## 7) Enable multi-level and multi-stakeholder collaboration.

Survey respondents called for greater collaboration to address flooding, and for the Strategy to help foster these types of partnerships. In this context, collaboration means the inclusion of multi-disciplinary stakeholders that hold different perspectives on flooding—scientific experts, Indigenous Knowledge holders, industrial leaders, etc.—to actively play roles in planning and implementing the Flood Strategy.

- *"We need to break down the silos that enable one well-meaning interest to take actions that harm other important interests."*

Respondents also noted that collaboration can operate at different scales, and partnerships can happen among different levels of governance. This could include better collaboration among municipal to federal levels of government, local community organisations, and cross-provincial and international groups.

To foster these partnerships, respondents offered different solutions:

- Setting provincial standards and sharing research and knowledge to help shape local and community responses to flooding
- Using partnerships to reduce the cost of flooding response resources (e.g., work with insurance agencies to reduce rates for less wealthy communities)

Respondents also noted the roles of private corporations in flooding, in particular to the insurance industry. Respondents spoke of barriers they faced (such as lack of information, and changing costs) and where the government can play a larger role in making it more equitable and accessible (i.e., advocacy and transparency of risks).

- *"Remove barriers to the insurance industry becoming more competitive regarding flood insurance. Free market insurance has a long history of driving innovation to reduce risk or reduce the impact."*
- *"...more widespread insurance coverage to deal with events..."*

## 8) Appropriate resource allocation is essential for an effective flood strategy.

It is essential the government allocates resources adequately, including equipment, human resources, research, is transparent with budgeting, and avoids funding gaps.

- *"...making flood protection and disaster prevention INVESTMENTS a regular and predictable budget item rather than a special project or an optional event."*
- *"Budget for increased flooding. Equipment, training, recovery costs."*
- *"An extended time period where no funding was available for the required engineering analyses."*

Some respondents felt the fulsome picture of costs (from planning costs, to emergency costs, to re-settlement costs, etc.) was missing from the Intentions Paper as more resources will be needed to have an effective Strategy.

- *"...missing is a discussion of the equity and cost of resettlement and building of sectors of the population..."*

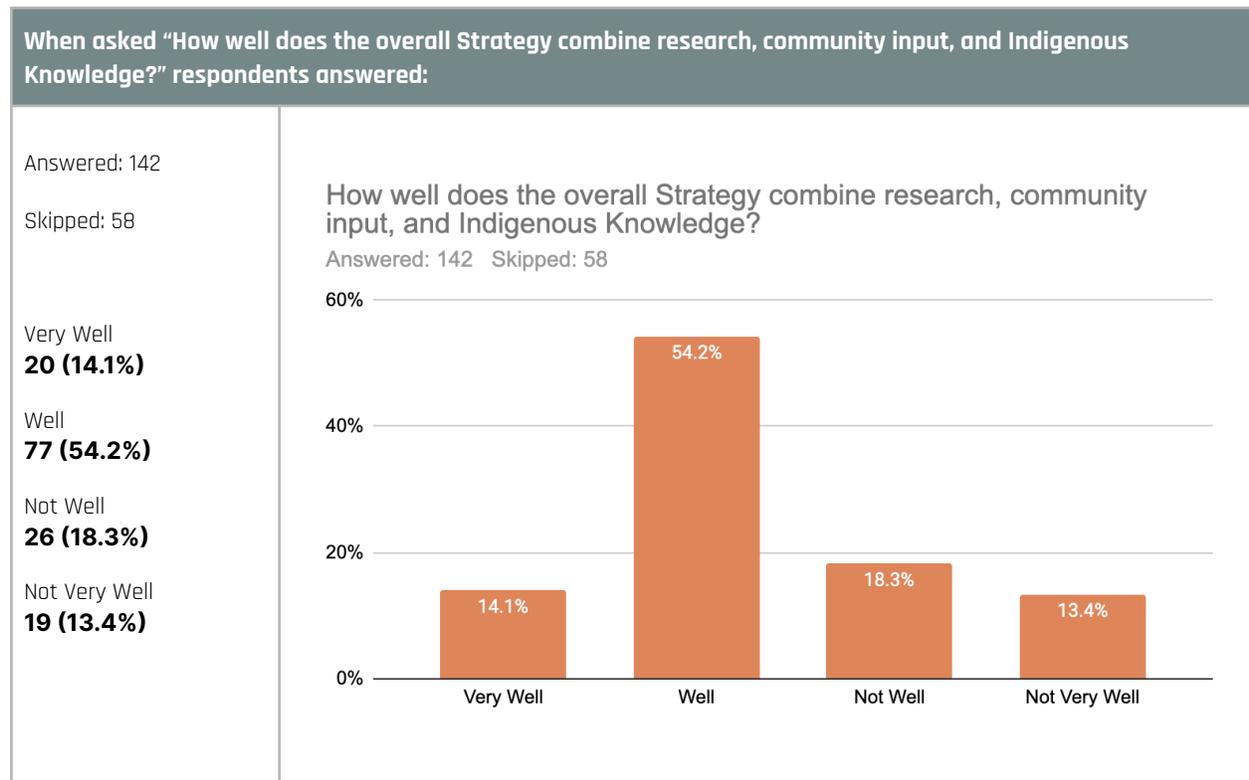


- "Moving forward will take ministry re-organization - i.e. flood expertise should be in the new Emergency Management Ministry, plus new funding for staff hires, and funds to support local government cost sharing/implementation and dike upgrades as part of the Strategy."

## Key Findings: Section by Section

### Overall Strategy

#### Survey Results



### Commentary on the Intentions Paper and Summary

Overall, the sentiment from respondents is that the Intentions Paper is well written and the vision and outcomes are good focusing statements. However, language throughout the paper can be strengthened by emphasising standards, where regulations read more like guidelines and are not monitored or enforced. Whilst some respondents were not familiar with the UN Sendai Framework, a number of respondents felt the framework is a good tool to follow.

- "Modernise legislation, regulations and policies. Currently the flood management guidelines are being treated as only that by engineers, and they need to be regulated so that building does not continue in flood plains and development does not continue in sea level rise/storm surge areas."

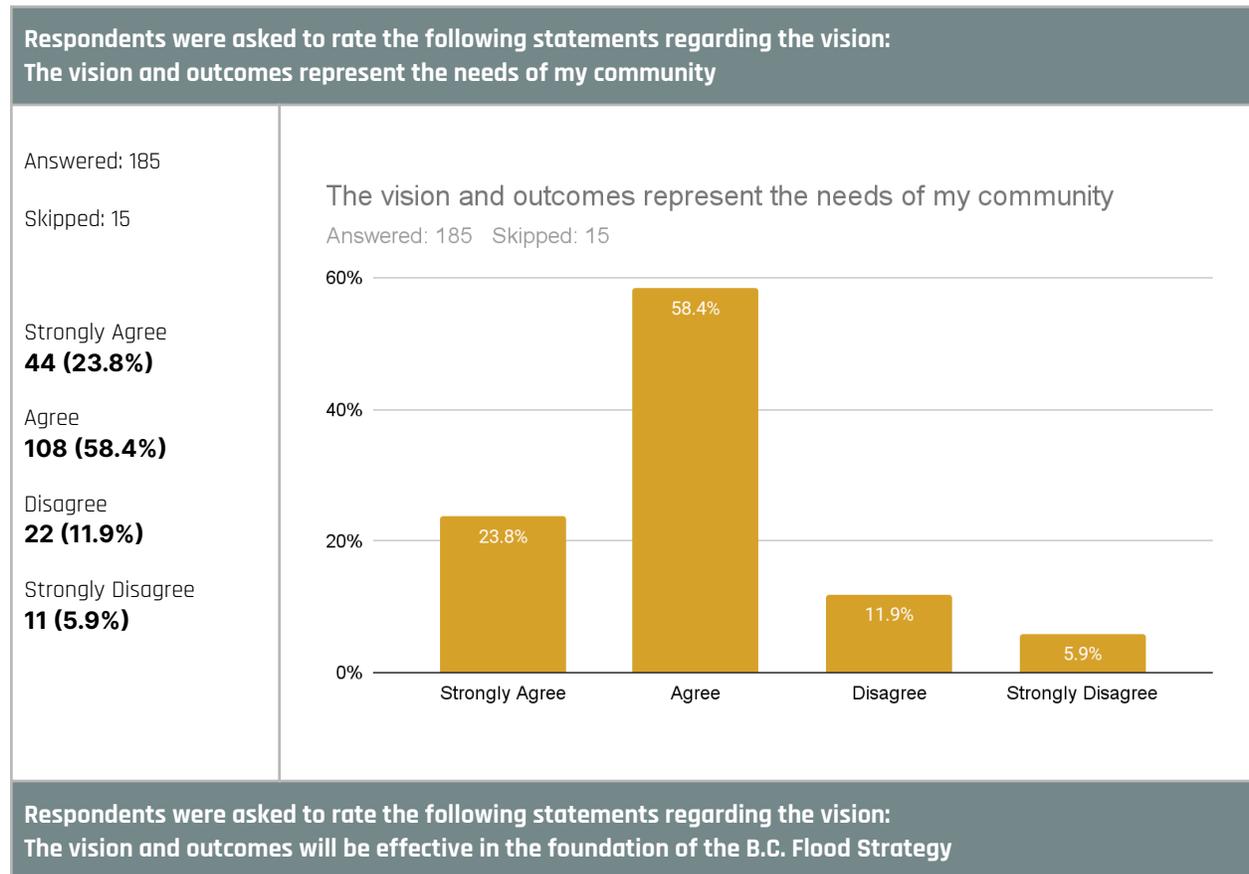


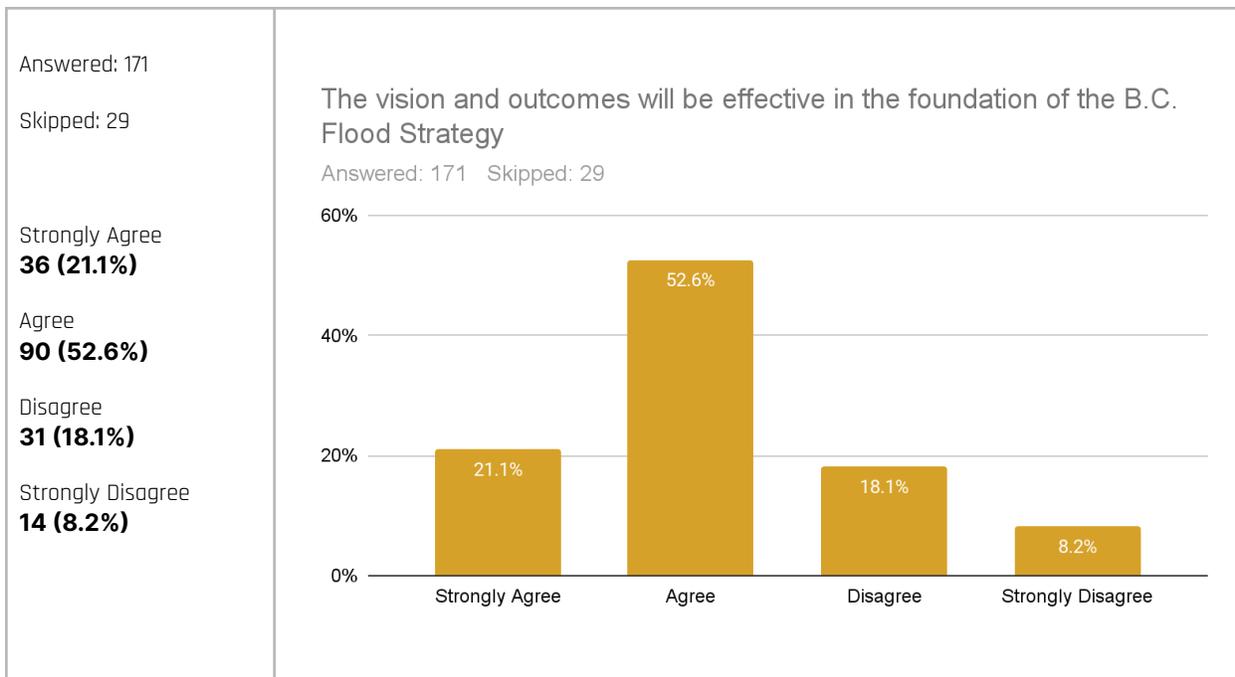
Respondents identified a major gap is the 'how', as the action plan is unclear and does not include implementable steps that are measurable. Respondents also expressed a strong sense of urgency to act, versus spending time researching a strategy and prioritising which actions to take, as they are all important. As such, being clear with timelines is critical.

- "HOW they will be implemented, as this will determine if these visions and outcomes are an effective flood strategy for B.C."

## Vision and Outcomes

### Survey Results





## Commentary on the Vision and Outcomes

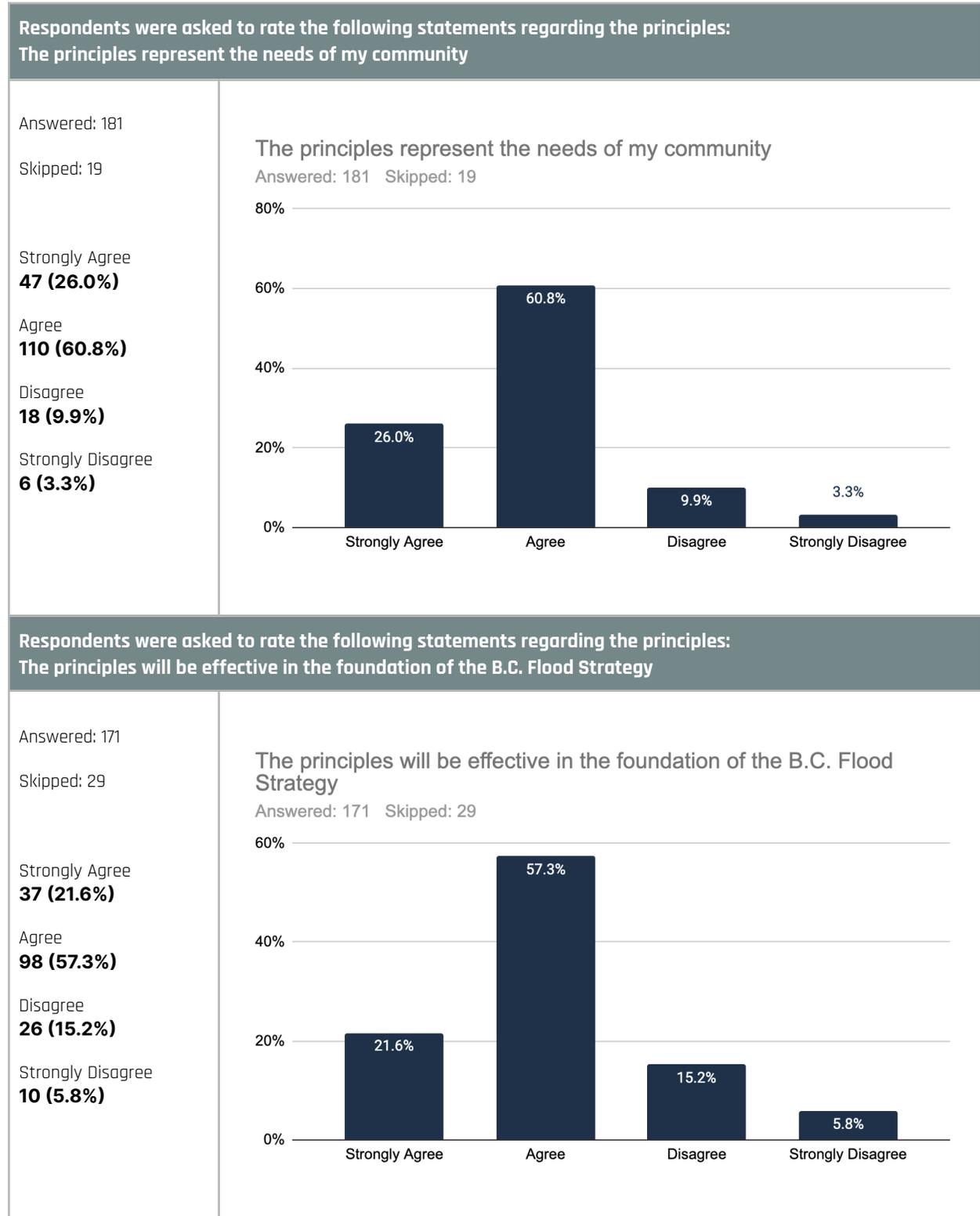
The majority of respondents see the vision as both representative of their communities, as well as effective in the B.C Flood Strategy. Additions and potential changes to the vision and outcomes may include:

Relevant Theme	Additional Comments
<b>Flooding solutions need to integrate multiple types of knowledge and approaches in order to create systemic resilience and sustainability</b>	<ul style="list-style-type: none"> <li>• The outcomes need to address the impact on the ecosystems as a whole including the plants, animals, forests and water.</li> <li>• The vision needs to explicitly frame a different approach to address flooding. Rather than an antagonistic relationship with nature, the vision can help people work towards nature-based resiliency where humans work together with the environment.</li> <li>• The vision and outcomes can provide more clarity on how approaches can work together (e.g. how science-based and Indigenous Knowledge-based approaches can complement flooding solutions).</li> </ul>
<b>Government has an accountability to lead disaster resiliency.</b>	<ul style="list-style-type: none"> <li>• The vision and outcomes need to include government accountability and transparency so the public can see action.</li> </ul>
<b>Economic stability and resource allocation is essential to an effective flood strategy</b>	<ul style="list-style-type: none"> <li>• The vision and outcomes can emphasise economic stability.</li> </ul>



# Principles

## Survey Results



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## Commentary on the Principles

The majority of respondents see the principles as both representative of their communities, as well as effective in the B.C Flood Strategy. Additions and potential changes to the principles may include:

Relevant Theme	Additional Comments
<b>Flooding solutions need to consider time (past to present) and geographic (local to global) scales</b>	<ul style="list-style-type: none"> <li>• The principles can guide communities, governments and others to include climate and biodiversity perspectives in all decision-making.</li> <li>• Consider adding a principle that embeds future-proofing into every flood strategy approach</li> </ul>
<b>Flooding solutions need to integrate multiple types of knowledge and approaches in order to create systemic resilience and sustainability</b>	<ul style="list-style-type: none"> <li>• The principles can more explicitly describe working with nature rather than trying to manage it or impose onto it.</li> </ul>
<b>A people-first approach must centre the needs and lived realities of British Columbians.</b>	<ul style="list-style-type: none"> <li>• Ensure transparency, clarity, accessibility in information/language that is science and evidence-based while meeting the communication needs of people in British Columbia.</li> <li>• Ensure communities and local governments are appropriately educated and engaged with experienced professionals to help inform decision making.</li> </ul>
<b>Honouring and respecting First Nations knowledge, voices, and leadership</b>	<ul style="list-style-type: none"> <li>• Continuing to incorporate Indigenous approaches to flood management is important</li> </ul>
<b>Enable multi-level and multi-stakeholder collaboration</b>	<ul style="list-style-type: none"> <li>• Consider adding a principle around “multi-benefit” or mutual benefit in order to align the goals of different parties in collaboration.</li> </ul>
<b>Economic stability and resource allocation is essential to an effective flood strategy</b>	<ul style="list-style-type: none"> <li>• Missing the fulsome picture of costs (e.g., resettlement costs, investment in infrastructure, etc.)</li> </ul>



## Program Areas - Overall

### Survey Results

When asked to rank the program areas by need, respondents selected the following order on average:

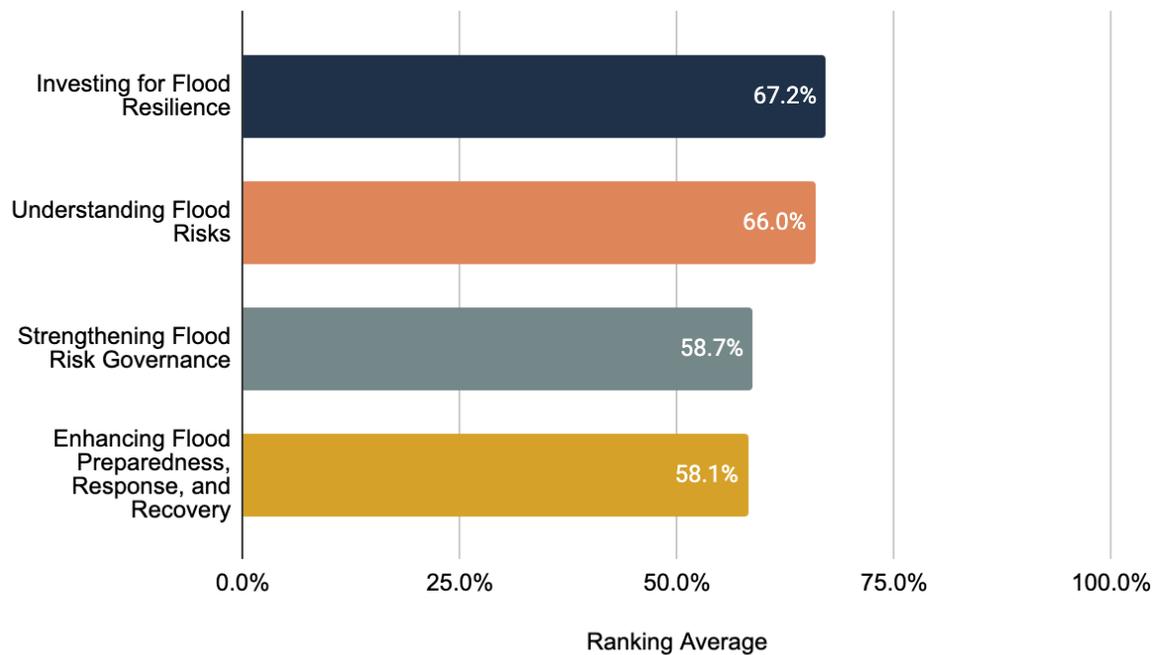
Answered: 166

Skipped: 34

1. Investing for Flood Resilience **(67.2%)**
2. Understanding Flood Risks **(66.0%)**
3. Strengthening Flood Risk Governance **(58.7%)**
4. Enhancing Flood Preparedness, Response, and Recovery **(58.1%)**

### Program Areas Ranked by Need

Answered: 166 Skipped: 34



## Program Area 1: Understanding Flood Risks

### Survey Results

When asked to rank the key actions in Program Area 1 by need, respondents selected the following order on average:

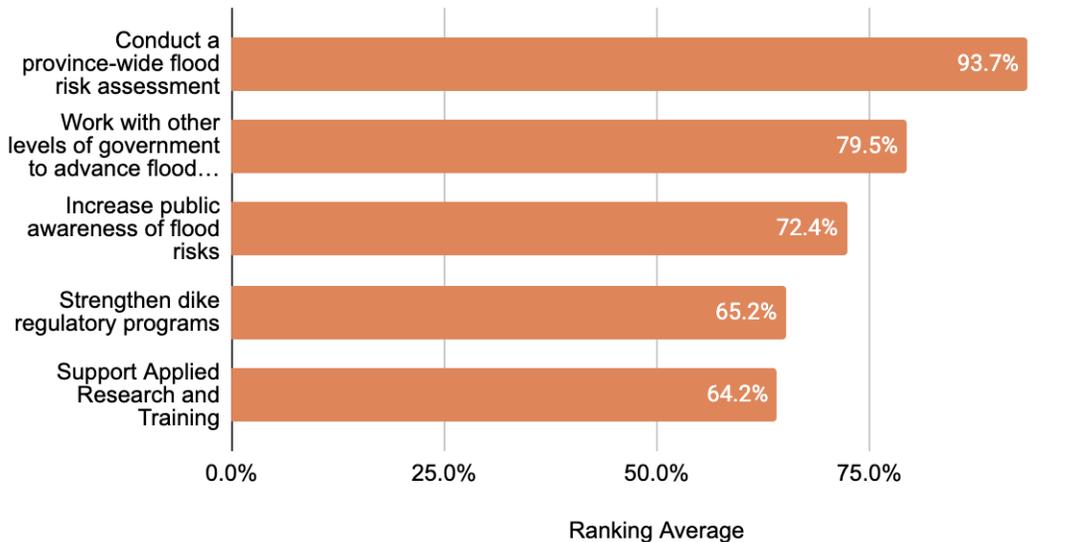
Answered: 174

Skipped: 26

1. Conduct a province-wide flood risk assessment **(93.7%)**
2. Work with other levels of government to advance flood maps **(79.5%)**
3. Increase public awareness of flood risks **(72.4%)**
4. Strengthen dike regulatory programs **(65.2%)**
5. Support Applied Research and Training **(64.2%)**

### Program Area 1: Understanding Flood Risks

Answered: 174 Skipped: 26



### Commentary on Program Area 1

Relevant Theme	Additional Comments
<b>Flooding solutions need to consider time (past to present) and geographic</b>	<ul style="list-style-type: none"> <li>• <i>"Inclusion and further clarification of timelines and degrees of risk and the importance of long range perspectives for harm reduction ethics..."</i></li> </ul>



<b>(local to global) scales</b>	<ul style="list-style-type: none"> <li>Understand the local and global relationships to other disaster risks as a whole (e.g. how earthquake risks might affect the degree of flooding damage).</li> </ul>
<b>Government has an accountability to lead disaster resiliency</b>	<ul style="list-style-type: none"> <li>Government can lead or support current flood mapping.</li> </ul>
<b>A people-first approach must centre the needs and lived realities of British Columbians.</b>	<ul style="list-style-type: none"> <li>Emphasis on helping people understand flood risks, how to prepare, and the consequences/implications on how individual actions may increase their vulnerability to flood damage</li> <li>Include rural and remote communities in risk assessments, and support them to participate in flood strategies</li> </ul>
<b>Enable multi-level and multi-stakeholder collaboration</b>	<ul style="list-style-type: none"> <li>Engage with local communities to ensure participation when collecting flood risk data.</li> </ul>

## Program Area 2: Strengthening Flood Risk Governance

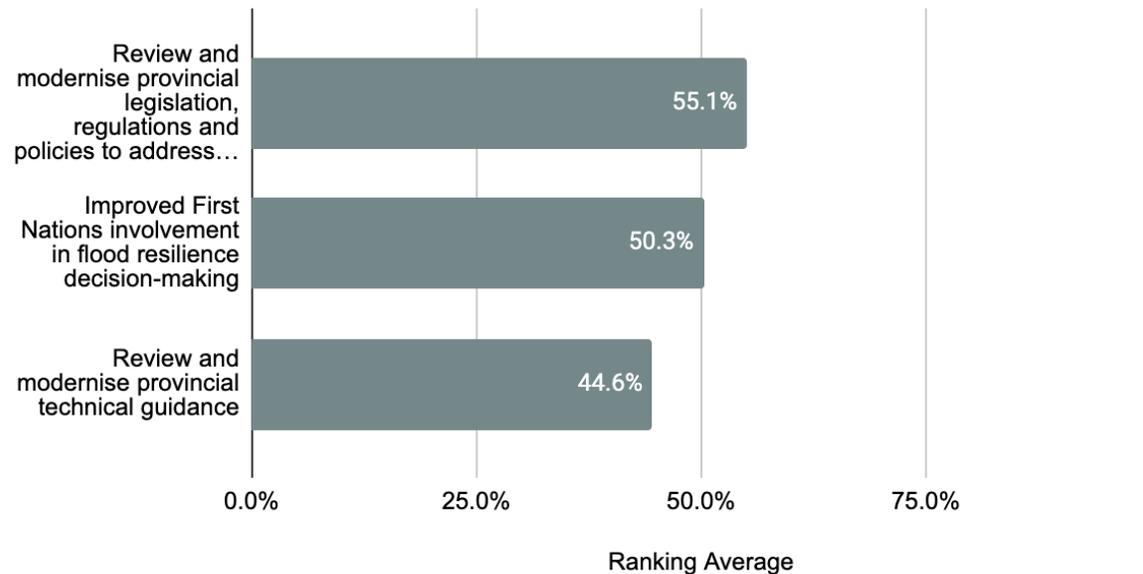
### Survey Results

<b>When asked to rank the key actions in Program Area 2 by need, respondents selected the following order on average:</b>	
<p>Answered: 181</p> <p>Skipped: 19</p>	<ol style="list-style-type: none"> <li>Review and modernise provincial legislation, regulations and policies to address flood risks <b>(55.1%)</b></li> <li>Improved First Nations involvement in flood resilience decision-making <b>(50.3%)</b></li> <li>Review and modernise provincial technical guidance <b>(44.6%)</b></li> </ol>



## Program Area 2: Strengthening Flood Risk Governance

Answered: 181 Skipped: 19



### Commentary on Program Area 2

Relevant Theme	Additional Comments
<b>The Strategy needs to include urgent proactivity</b>	<ul style="list-style-type: none"> <li>• <i>"Too much on rehashing and just rewording the information already produced. Start making definitive actions."</i></li> <li>• A lot of out-of-date information requires updating.</li> </ul>
<b>Flooding solutions need to consider time (past to present) and geographic (local to global) scales</b>	<ul style="list-style-type: none"> <li>• There is an expectation to see significant sea level rise in the next 100 years but there is no mention of climate modelling.</li> </ul>
<b>Flooding solutions need to integrate multiple types of knowledge and approaches in order to create systemic resilience</b>	<ul style="list-style-type: none"> <li>• Need for innovation in policy and technical guidance to enable flood management to be adaptive.</li> <li>• <i>"Technical guidance can also come from first nations knowledge keepers around flooding in the area."</i></li> </ul>



<b>and sustainability</b>	<ul style="list-style-type: none"> <li>● <i>"Current legislation does not allow for adaptive management or for communities to build back better, only the same."</i></li> </ul>
<b>Government has an accountability to lead disaster resiliency</b>	<ul style="list-style-type: none"> <li>● There is a general hesitancy and distrust in government to lead the process as the government has been slow to act or make necessary changes.</li> <li>● <i>"Province must lead flood management programs, and work in cooperation and collaboration with LGs/FNs."</i></li> </ul>
<b>A people-first approach must centre the needs and lived realities of British Columbians.</b>	<ul style="list-style-type: none"> <li>● Respondents would like to see stake and rightsholders be involved in decision making - <i>"particularly with respect to acceptable levels of exposure to flood risks."</i></li> <li>● Smaller communities need to be involved and provided with adequate resources to address flooding.</li> </ul>
<b>Honouring and respecting First Nations knowledge, voices, and leadership</b>	<ul style="list-style-type: none"> <li>● <i>"First Nations should help inform all decision making processes from the start."</i></li> <li>● First Nations have incredible resilience to living with flooding, invaluable insights, and traditional ecological knowledge and their leadership needs to be centred. This may be because <i>"First nations are often living on land that faces more challenges because of Trutch and others in our history that displaced indigenous communities and stole the land."</i></li> <li>● <i>"Indigenous knowledge must be accepted as having credibility for their community resilience and too many gaps exist in the provincial legislation, regulations and policies because there hasn't been enough government supervision for the forestry practices."</i></li> </ul>
<b>Enable multi-level and multi-stakeholder collaboration</b>	<ul style="list-style-type: none"> <li>● It is expected that all levels of government be involved and work with First Nations in developing solutions (e.g., addressing legislation and policy changes).</li> <li>● <i>"The provincial government needs to get the permitting agencies working together to ensure efficient schedules - an example is we should not have multiple agencies doing consultation on multiple projects."</i></li> </ul>

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

#### Survey Results

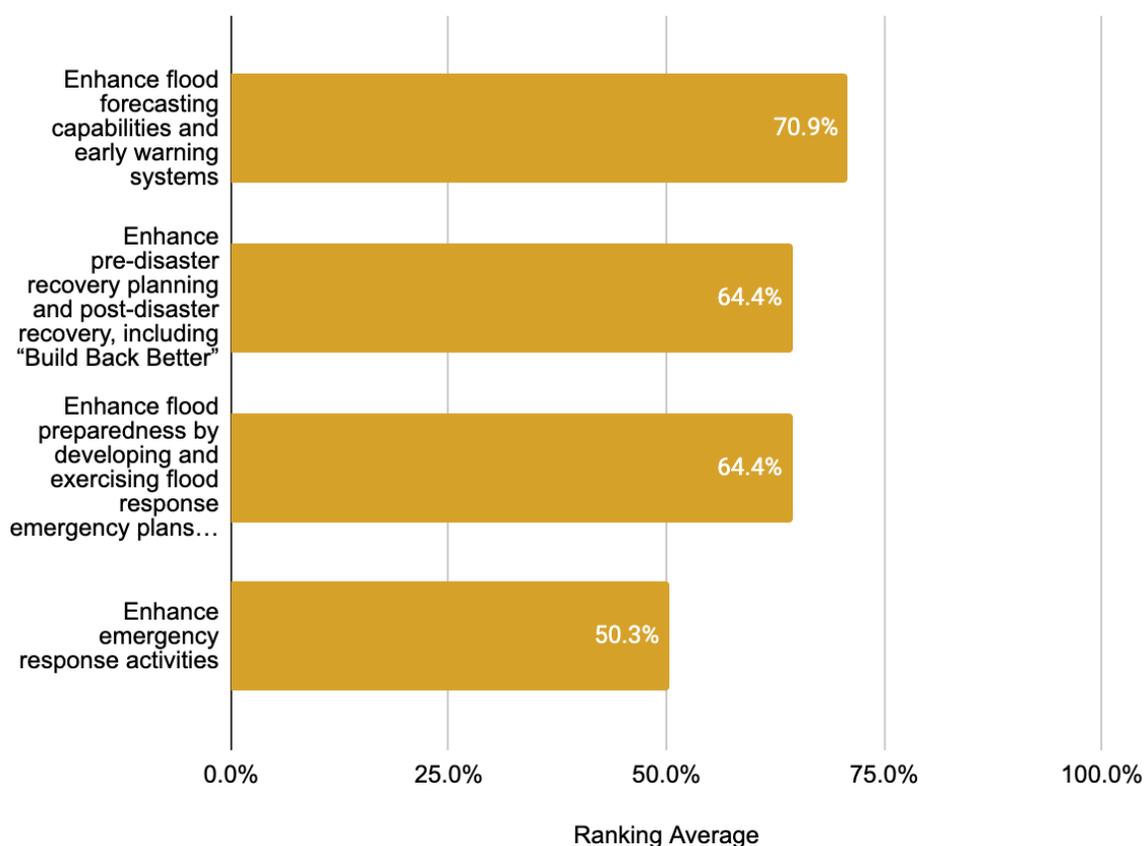
<b>When asked to rank the key actions in Program Area 3 by need, respondents selected the following order on average:</b>	
Answered: 170	1. Enhance flood forecasting capabilities and early warning systems <b>(70.9%)</b>



Skipped: 30	<ol style="list-style-type: none"> <li>2. Enhance pre-disaster recovery planning and post-disaster recovery, including “Build Back Better” <b>(64.4%)</b></li> <li>3. Enhance flood preparedness by developing and exercising flood response emergency plans at multiple scales <b>(64.4%)</b></li> <li>4. Enhance emergency response activities <b>(50.3%)</b></li> </ol>
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### Program Area 3: Enhancing Flood Preparedness, Response, and Recovery

Answered: 170 Skipped: 30



#### Commentary on Program Area 3

Relevant Theme	Additional Comments
<b>The Strategy needs to</b>	<ul style="list-style-type: none"> <li>• Emphasise planning, preventing disaster, improving disaster forecasting and communication to help prepare communities for emergencies.</li> </ul>



include urgent proactivity	
<b>Flooding solutions need to integrate multiple types of knowledge and approaches in order to create systemic resilience and sustainability</b>	<ul style="list-style-type: none"> <li>● Include trauma-informed practices in planning and emergency response to help psycho-social recovery from floods.</li> </ul>
<b>A people-first approach must centre the needs and lived realities of British Columbians.</b>	<ul style="list-style-type: none"> <li>● Consider avoiding the “over-professionalism” of emergency response, and support the engagement of citizen and community-led emergency flood planning. The provincial government can find ways to respectfully participate and collaborate with citizens for their safety.</li> </ul>
<b>Economic stability and resource allocation is essential to an effective flood strategy</b>	<ul style="list-style-type: none"> <li>● Ensure emergency response services are appropriately funded for effective response. Budgets for emergency equipment, training and other recovery costs are needed.</li> </ul>

Program Area 4: Investing for Flood Resilience

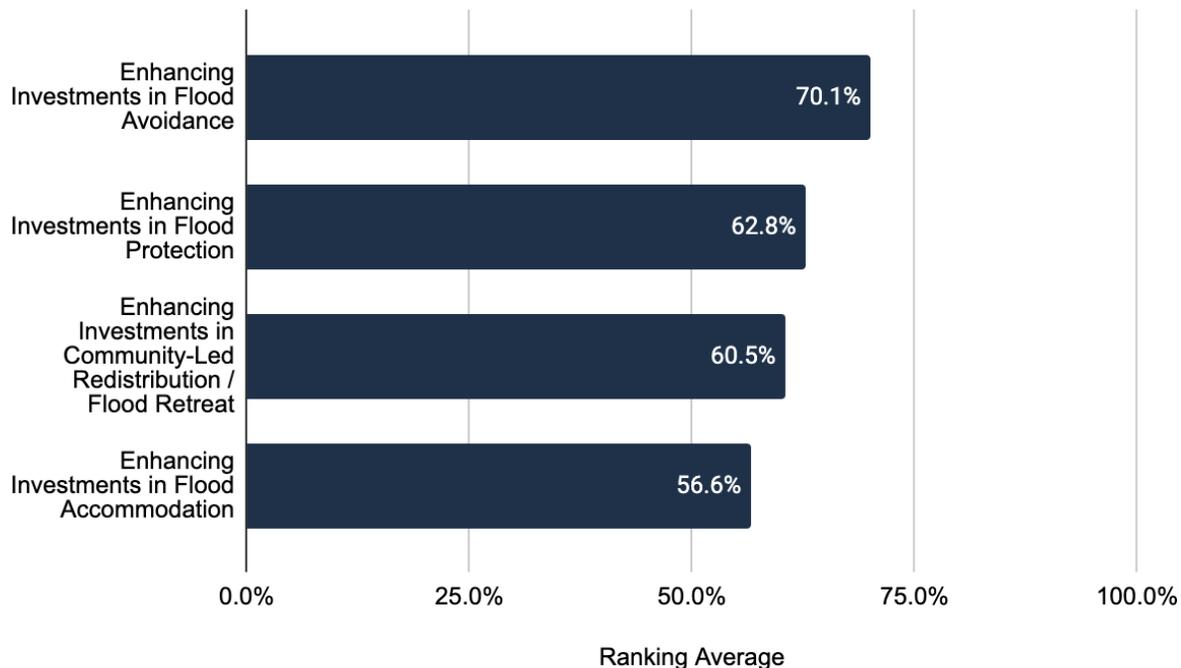
Survey Results

<b>When asked to rank the key actions in Program Area 4 by need, respondents selected the following order on average:</b>	
Answered: 162	1. Enhancing Investments in Flood Avoidance <b>(70.1%)</b>
Skipped: 38	2. Enhancing Investments in Flood Protection <b>(62.8%)</b>
	3. Enhancing Investments in Community-Led Redistribution / Flood Retreat <b>(60.5%)</b>
	4. Enhancing Investments in Flood Accommodation <b>(56.6%)</b>



## Program Area 4: Investing for Flood Resilience

Answered: 162 Skipped: 38



### Commentary on Program Area 4

Relevant Theme	Additional Comments
<b>The Strategy needs to include urgent proactivity</b>	<ul style="list-style-type: none"> <li>Protect flood prone areas from human settlement (e.g., prevent building residential or commercial structures in flood prone areas through policy action, support people in moving away from flood prone areas, etc.)</li> </ul>
<b>Flooding solutions need to consider time (past to present) and geographic (local to global) scales</b>	<ul style="list-style-type: none"> <li>Prioritise upstream causes of flooding as part of systemic solutions</li> </ul>
<b>A people-first approach must centre the needs and lived realities of British Columbians.</b>	<ul style="list-style-type: none"> <li><i>"Enhancing investments in public education. People need to know how to prevent floods, how to work with nature, where not to build, and what to do when there is a flood."</i></li> </ul>



<p><b>Honouring and respecting First Nations knowledge, voices, and leadership</b></p>	<ul style="list-style-type: none"> <li>● Prioritise leadership and participation from First Nations communities in directing investments in flood resiliency initiatives.</li> </ul>
<p><b>Enable multi-level and multi-stakeholder collaboration</b></p>	<ul style="list-style-type: none"> <li>● Further understand the constraints that communities experience with flood resiliency initiatives and partner with local communities to support capacity in flood resiliency.</li> </ul>
<p><b>Economic stability and resource allocation is essential to an effective flood strategy</b></p>	<ul style="list-style-type: none"> <li>● <i>“Flood Protection approaches of the past relying on massive infrastructure projects are expensive, subject to failure over time or during earthquakes, create a false sense of security among those behind dykes/dams/structures, and cannot be applied everywhere fast enough without bankrupting the province and taking away attention from all other pieces of the flood resilience puzzle”</i></li> </ul>



# Appendix - Survey Questionnaire

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## Context

What knowledge or experience do you have with Flooding and Flood Resilience in B.C.? Please select all that apply. [select all that apply; if "I have little to no knowledge/experience with the topic" select one]

- I have experience with the topic (e.g., personally experienced, or know someone who has experienced a flood-related event)
  - I have Indigenous Knowledge (sometimes referred to as Traditional Knowledge or Traditional Ecological Knowledge) about the topic
  - I have professional knowledge about the topic
  - I have science, or socio-economic related academic or research experience with the topic
  - I have reviewed the Summary of the Intentions Paper
  - I have reviewed the complete Intentions Paper
  - I have little to no knowledge/experience with the topic
  - Other, please specify
- 

## Vision + Outcomes

### Introductory Text

The core of the Strategy is a guiding Vision and Outcomes that help imagine the future of B.C.'s Flood Strategy ([click here to read the Vision and Outcomes](#)).

Vision: Together, we are leaders in innovative, holistic flood risk management, enhancing B.C.'s flood resilience for the 21st century.

#### Outcomes:

- Enhanced Public Safety
- Economic Stability
- Environmental Sustainability



## Questions

1. Please rate the following statements from your perspective: [rating-style question per statement]
    - The vision and outcomes represent the needs of my community
      - Strongly Disagree / Disagree / Agree / Strongly Agree / I don't know
    - The vision and outcomes will be effective in the foundation of the B.C. Flood Strategy
      - Strongly Disagree / Disagree / Agree / Strongly Agree / I don't know
  2. What are the reasons for your ratings (optional)? [open-ended]
  3. What would you change or add about the vision and outcomes (optional)? [open-ended]
- 

## Principles

### Introductory Text

Principles provide high-level guideposts and approaches when planning flood resilience initiatives ([click here to read about the Principles](#)).

#### Principles:

- Holistic
- Proactive
- Place-Based
- Accountable
- Collaborative
- Transparent
- Fair

## Questions

4. Please rate the following statements from your perspective: [rating-style question per statement]
  - The principles represent the needs of my community
    - Strongly Disagree / Disagree / Agree / Strongly Agree / I don't know



- The principles will be effective in the foundation of the B.C. Flood Strategy
    - Strongly Disagree / Disagree / Agree / Strongly Agree / I don't know
5. What are the reasons for your ratings (optional)? [open-ended]
6. What would you add or change about the principles (optional)? [open-ended]
- 

## Program Areas + Key Actions

### Introductory Text

Program Areas and Key Actions are the steps that the Province will take in order to carry out the Flood Strategy. The Program Areas draw from community engagement insights, and from the [United Nations Sendai Framework for Disaster Risk Reduction](#). Each area has a set of Key Actions (click here to read more about the Program Areas and Key Actions).

#### Program Areas:

1. Understanding Flood Risks
2. Strengthening Flood Risk Governance
3. Enhancing Flood Preparedness, Response, and Recovery
4. Investing for Flood Resilience

### Questions

#### **Program Area 1: Understanding Flood Risks**

7. Please rank the Key Actions for Understanding Flood Risks by need from your perspective (the first position being the most needed action, and the last position being the lesser needed action).
- Work with other levels of government to advance flood maps
  - Conduct a province-wide flood risk assessment
  - Strengthen dike regulatory programs
  - Increase public awareness of flood risks
  - Support Applied Research and Training
8. What are the reasons for your ranking (optional)? [open-ended]



9. What would you add or change about the program area/actions (optional)? [open-ended]

### **Program Area 2: Strengthening Flood Risk Governance**

10. Please rank the Key Actions for Strengthening Flood Risk Governance by need from your perspective (the first position being the most needed action, and the last position being the lesser needed action).

- Improved First Nations involvement in flood resilience decision-making
- Review and modernise provincial legislation, regulations and policies to address flood risks
- Review and modernise provincial technical guidance

11. What are the reasons for your ranking (optional)? [open-ended]

12. What would you add or change about the program area/actions (optional)? [open-ended]

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

13. Please rank the Key Actions for Enhancing Flood Preparedness, Response, and Recovery by need from your perspective (the first position being the most needed action, and the last position being the lesser needed action).

- Enhance flood forecasting capabilities and early warning systems
- Enhance flood preparedness by developing and exercising flood response emergency plans at multiple scales
- Enhance emergency response activities
- Enhance pre-disaster recovery planning and post-disaster recovery, including "Build Back Better"

14. What are the reasons for your ranking (optional)? [open-ended]

15. What would you add or change about the program area/actions (optional)? [open-ended]

### **Program Area 4: Investing for Flood Resilience**

16. Please rank the Key Actions for Investing for Flood Resilience by need from your perspective (the first position being the most needed action, and the last position being the lesser needed action).

- Enhancing Investments in Flood Avoidance
- Enhancing Investments in Flood Accommodation
- Enhancing Investments in Flood Protection
- Enhancing Investments in Community-Led Redistribution / Flood Retreat



**17.** What are the reasons for your ranking (optional)? [open-ended]

**18.** What would you add or change about the program area/actions (optional)? [open-ended]

## Overall Program Areas

**19.** Please rank the four Program Areas by need from your perspective (the first position being the most needed Program Area, and the last position being the lesser needed Program Area).

- Understanding Flood Risks
- Strengthening Flood Risk Governance
- Enhancing Flood Preparedness, Response, and Recovery
- Investing for Flood Resilience

**20.** What are the reasons for your ranking (optional)? [open-ended]

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## Overall Strategy

**21.** How well does the overall strategy combine research (e.g., the use of the United Nations Sendai Framework), community input, and Indigenous Knowledge (sometimes referred to as Traditional Knowledge or Traditional Ecological Knowledge)? [open-ended]

- Very Well
- Well
- Not Well
- Not very Well
- I don't know

**22.** What are your reasons for selecting your answer (optional)? [open-ended]

**23.** Overall, is there anything else you would like to share, edit, or add about the Strategy (optional)? [open-ended]

## Part 3: Demographic Questions

It's important that we hear from a diverse group of people and perspectives when considering the B.C. Flood Strategy. The following questions will help us determine how the feedback we receive represents the diversity of the community. The information collected has no personal identifying information, and it will be reported on as an overall group - not as specific individuals. All questions are optional.



## Questions

**1.** Do you identify as First Nations, Inuit or Métis? Please select all that apply. [select all that apply; if "No" or "Prefer not to answer", select one]

- First Nations - on reserve
- First Nations - off reserve
- Modern Treaty First Nations
- Métis
- Inuit
- No, I do not identify as First Nations, Inuit or Métis.
- Prefer not to answer

[Conditional question. Only if any of the following is selected: "First Nations - on reserve"; "First Nations - off reserve"; "Modern Treaty First Nations"; "Métis"; "Inuit"]

Do you identify with the following language families spoken in B.C.? Please select all that apply. [select all that apply; if "No" or "Prefer not to answer", select one]

- i. Algonquian
- ii. Athabaskan-Eyak-Tlingit or Na-Dene
- iii. Ktunaxa
- iv. Salishan
- v. Tsimshianic
- vi. Wakashan
- vii. Xaad Kil / Xaayda Kil
- viii. No, I do not identify as part of these language groups.
- ix. Prefer not to answer

**2.** Do you identify as part of the following equity-seeking groups? Please select all that apply. [select all that apply; if "No" or "Prefer not to answer", select one]

- Black individuals (e.g., African, Afro-Caribbean, African-Canadian, etc.)
- Racialized individuals (e.g., East Asian, Latino, South West Asian, North African, South Asian, Southeast Asian, etc.)

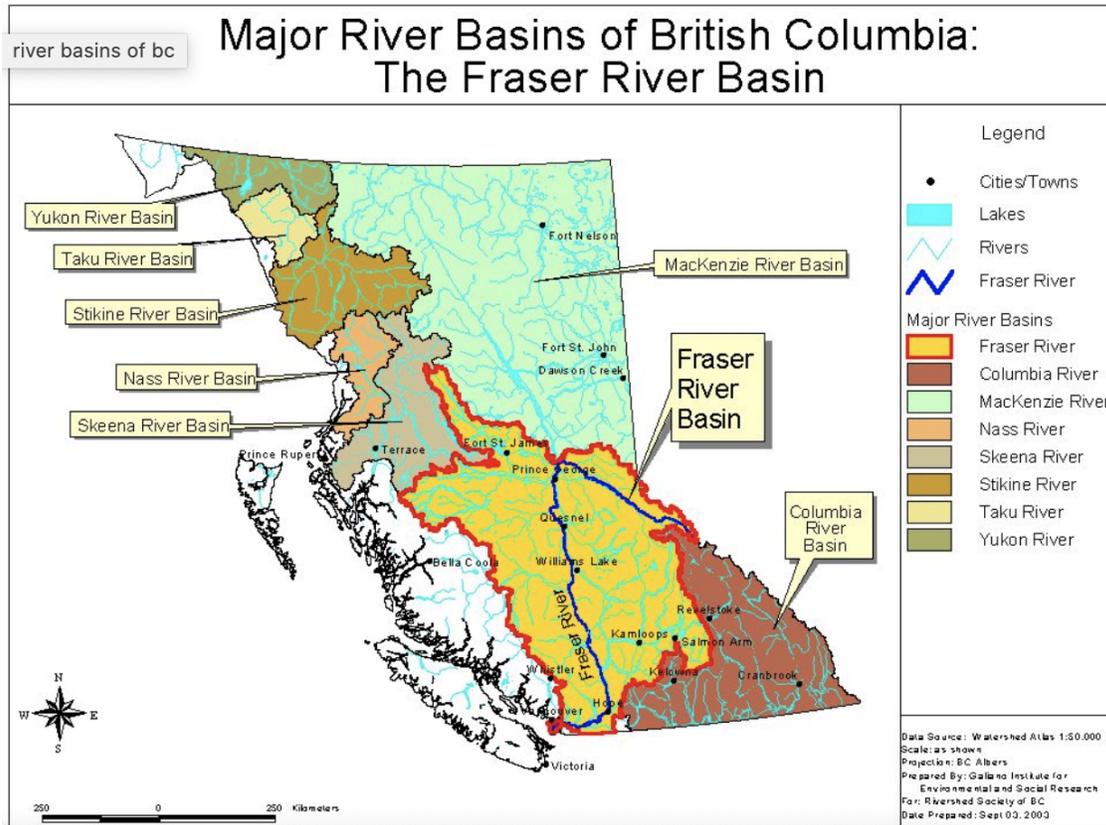


- Persons with disabilities
  - 2SLGBTQIA+ persons
  - Newcomers to Canada (arrived in Canada within the past 5 years)
  - Low-income individuals
  - No, I do not identify as part of these equity-seeking groups.
  - Prefer not to answer
- 3.** Please tell us which of the following represents your interest in the B.C. Flood Strategy. Please select all that apply. I am a/an... [select all that apply; if "No" or "Prefer not to answer", select one]
- Interested member of the public (not associated with any of the following groups)
  - Representative of a commercial business
  - Representative of a non-profit organisation
  - Member/representative of an academic institution
  - Representative of a local government
  - Representative of an Indigenous organisation
  - Representative of a First Nations government
  - Other, please specify [option to describe]
  - Prefer not to answer
- 4.** What is your gender identity? [single select]
- Male
  - Female
  - Non-binary
  - Prefer to describe [option to describe]
  - Prefer not to answer
- 5.** What is your age? [single select]
- Under 19 years
  - 19 to 29 years
  - 30 to 49 years



- 50 to 64 years
  - 65 to 69 years
  - 70 years or older
  - Prefer not to answer
6. In which water basin region do you primarily live and/or work? Click here to see an image of water basin regions. Please select all that apply. [select all that apply; if “No” or “Prefer not to answer”, select one]
- Columbia River Basin
  - Fraser River Basin
  - Mackenzie River Basin
  - Skeena River Basin
  - Nass River Basin
  - Stikine River Basin
  - Taku River Basin
  - Yukon River Basin
  - I do not live or work near any of these regions.
  - Prefer not to answer





7. What is your total annual household income before taxes? [single select]

- Less than \$24,999
- \$25,000 to \$49,999
- \$50,000 to \$74,999
- \$75,000 to \$99,999
- \$100,000 to \$124,999
- \$125,000 to \$149,999
- \$150,000 to \$174,999
- \$175,000 or more
- Prefer not to answer

## Closing

Thank you for completing the Province of B.C.'s survey on the Flood Strategy. Your input has been recorded.

For more information about the B.C. Flood Strategy project as a whole, please see our website at [www.engage.gov.bc.ca/bcfloodstrategy](http://www.engage.gov.bc.ca/bcfloodstrategy)

For more information or questions about the survey, or the broader BC Flood Strategy engagement process, please contact [BCFloodStrategy@gov.bc.ca](mailto:BCFloodStrategy@gov.bc.ca).

