Climate Ready BC: Preparing Together

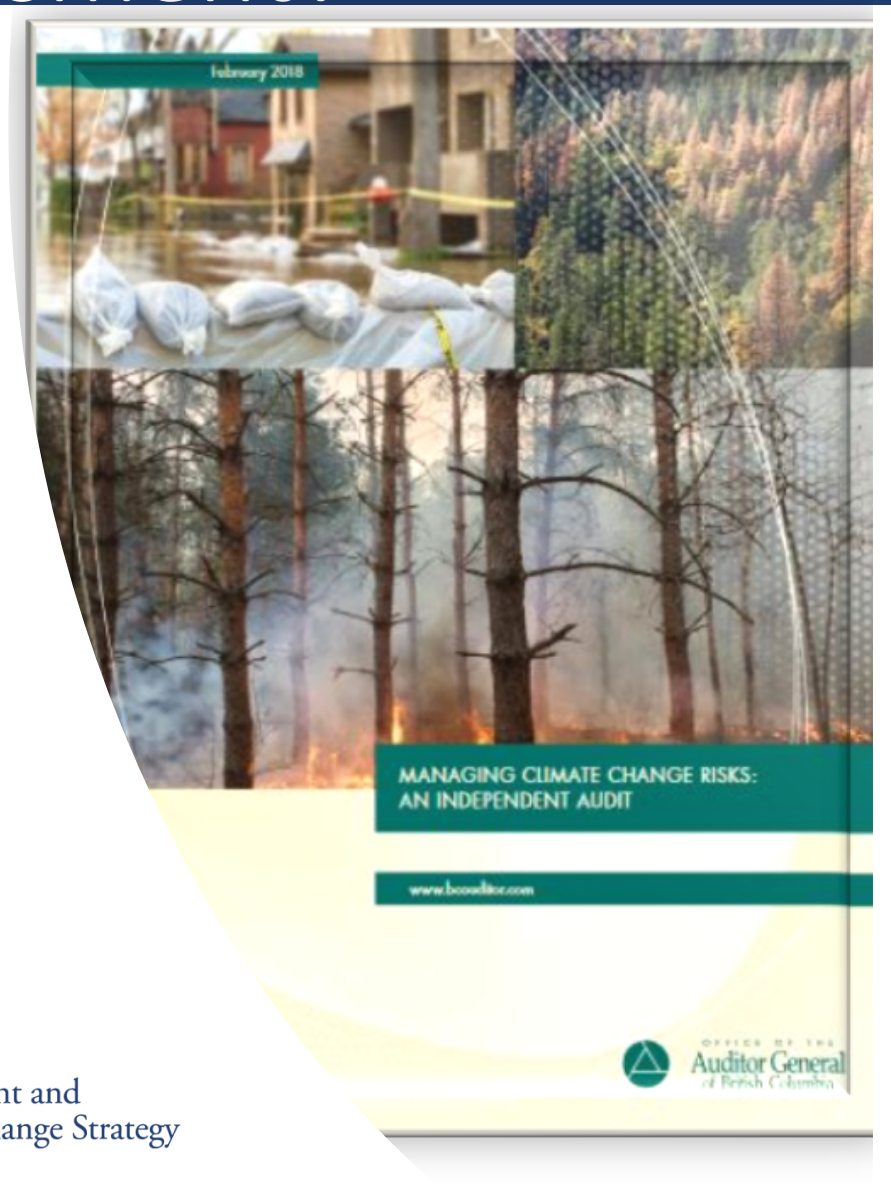
Developing a climate preparedness strategy for BC

Session outline

- Strategic Climate Risk Assessment for BC
- Climate Preparedness Strategy
- World café engagement

Why a Climate Risk Assessment?

- Response to 2018 BC Auditor General's Report "Managing Climate Change Risks"
- Inform 2020 Adaptation Strategy
- Reporting requirement under Climate Change Accountability Act



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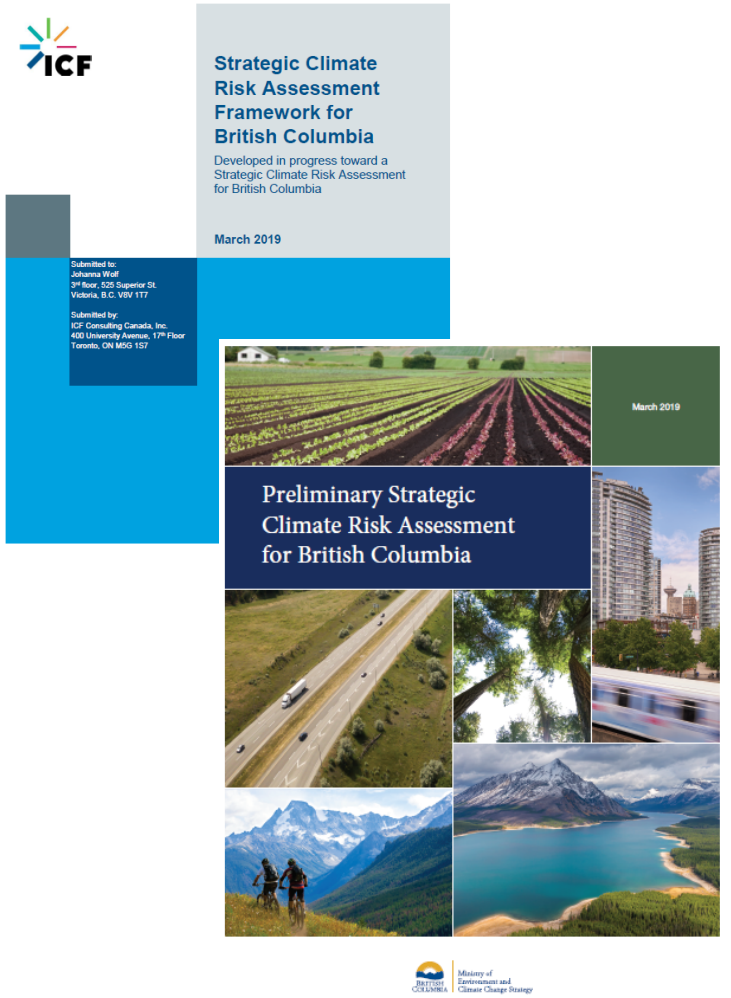
Project Overview

Objective

- Assess, compare, and prioritize potential climate-related risks with significant provincial impacts on fundamental qualities of life in the province

Components

- *Strategic Climate Risk Assessment Framework for British Columbia*
- *Preliminary Strategic Climate Risk Assessment for British Columbia*



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Climate Risk Assessment Framework

- Standard risk assessment method adapted for climate change
- Focus on “provincially significant” risk events
- Scenario-based approach
- Likelihood in the 2050s and consequence rating scales
- Confidence ratings

Criteria for “provincially significant”

Loss of life	Widespread injuries or disease outbreaks
Widespread damage to infrastructure, personal property, or other resources	Long-term disruption to a significant economic sector
Significant disruption to daily life	Widespread psychological impacts
Significant loss of natural resources	Significant loss of cultural resources

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Risk Events and Scenarios: Discrete Events

1. **Severe Riverine Flooding:** 500-year flood on the Fraser River
2. **Moderate Flooding:** Moderate flood in a single community
3. **Extreme Precipitation and Landslide:** Significant landslide in Hope triggered by extreme precipitation
4. **Seasonal Water Shortage:** Months-long summer water shortage affecting two or more regions
5. **Severe Coastal Storm Surge:** 3.9 m storm surge during a king tide along the B.C. coast
6. **Heat Wave:** Heat wave of at least three days that affects human health
7. **Severe Wildfire Season:** At least one million hectares burned that affect human settlements

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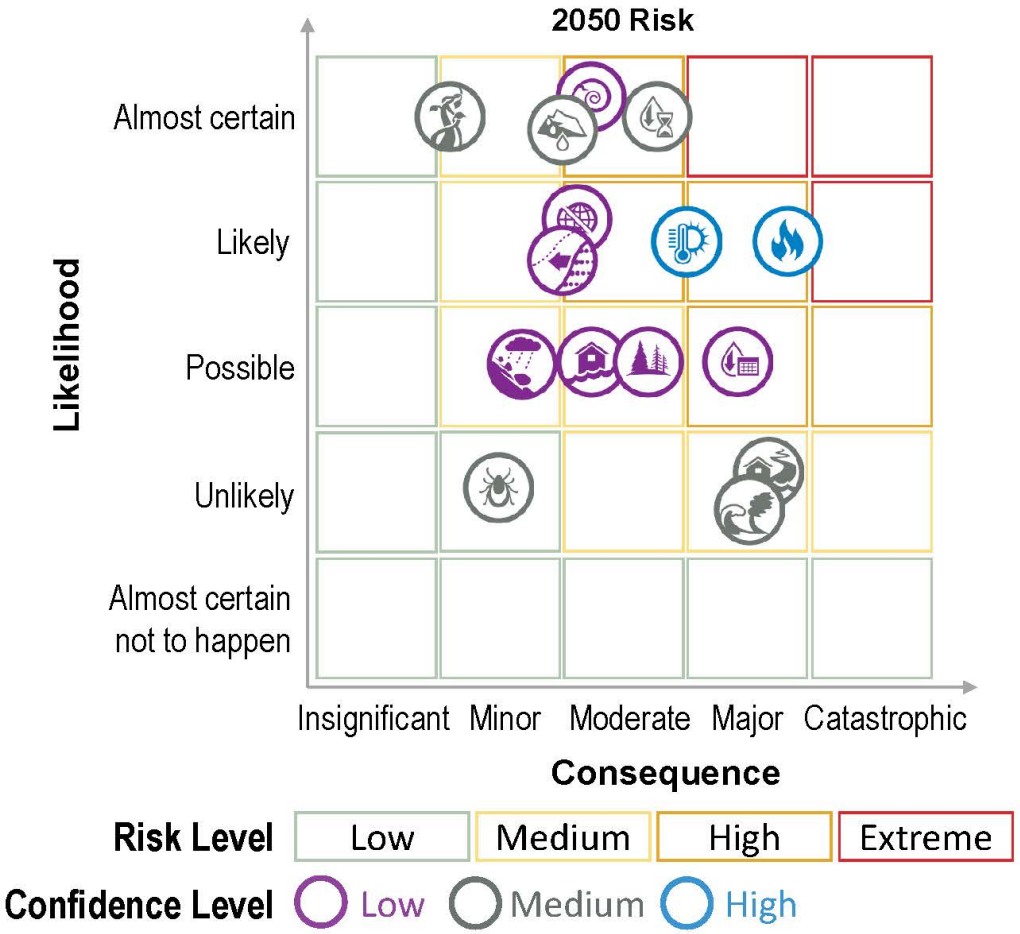
Risk Events and Scenarios: Slow-onset Risks

8. **Long-term Water Shortage:** Multi-year water shortage in at least one region
9. **Glacier Mass Loss:** 25% decline in glacier area by 2050
10. **Ocean Acidification:** 0.15 reduction in pH by 2050
11. **Saltwater Intrusion:** At least seasonal saltwater intrusion into the Fraser River delta and surrounding communities by 2050
12. **Loss of Forest Resources:** 25% decline in timber growing stock by 2050
13. **Reduction in Ecosystem Connectivity:** Reduction in ecosystem connectivity in the Okanagan-Kettle region by 2050
14. **Increase in Invasive Species:** Expansion of knotweed by 2050
15. **Increased Incidence of Vector-borne Disease:** At least a doubling of Lyme disease cases

Overall Results



Highest-ranked Risks

- Severe wildfire season – High
- Seasonal water shortage – High
- Heat wave – High
- Ocean acidification – High
- Glacier mass loss – High
- Long-term water shortage – High

Lowest-ranked Risks

- Increased incidence of vector-borne disease (Lyme disease) – Low

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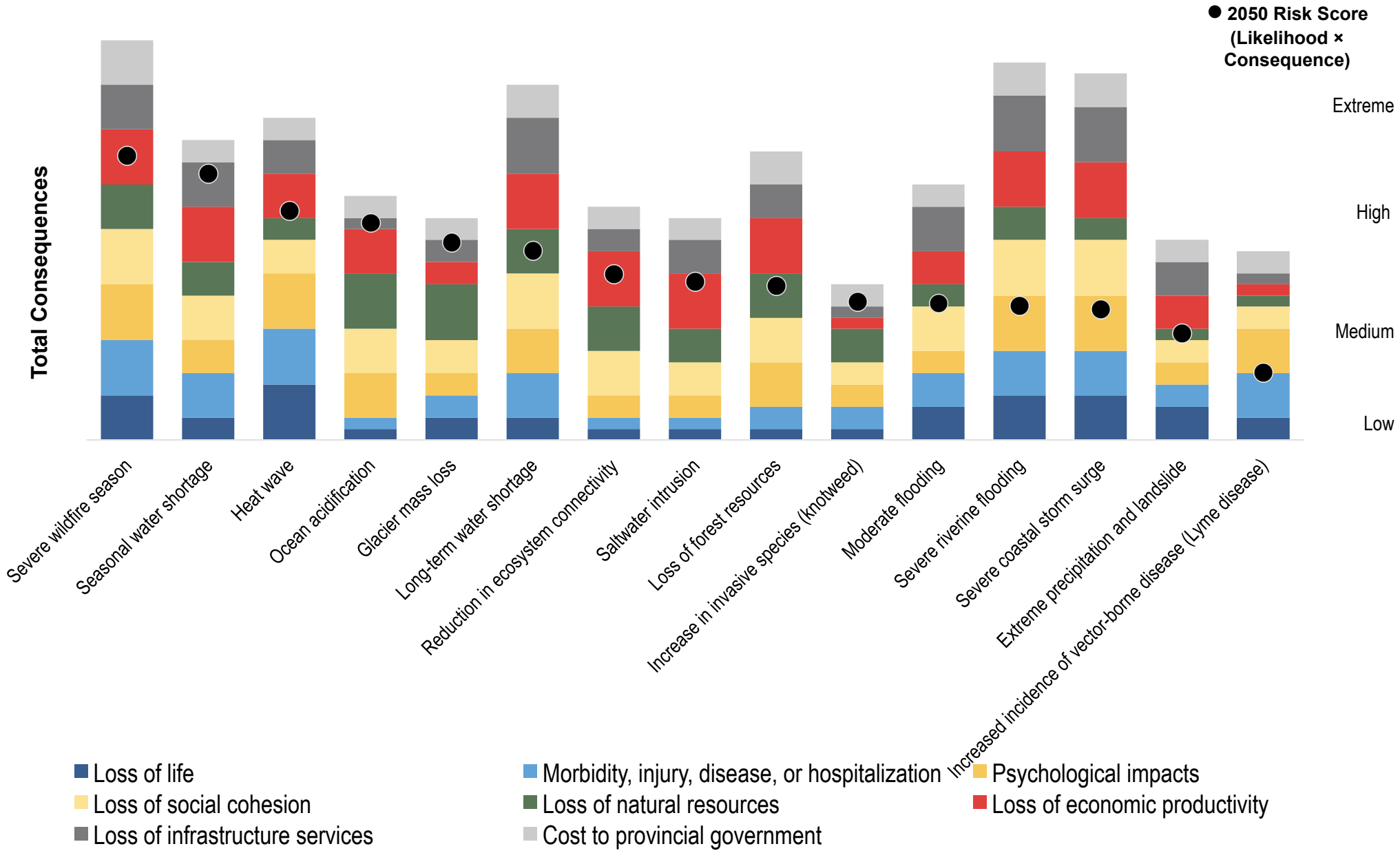
Overall Results - Consequences



*Individual consequences are rated on a scale of 1 to 5 (Insignificant to Catastrophic). The size of the bar indicates individual consequence ratings.

Next steps climate risk assessment

- Engage with Indigenous perspectives to develop culturally appropriate approaches to climate risk assessment
- GBA+ analysis
- Develop and pilot Strategic Climate Risk Assessment Framework for ministry/program, sectoral, and regional scales
- Draft first report under Climate Change Accountability Act

How is BC Managing Climate Risks?

Forestry	Replanting tree species tailored to the future climate, Forest and Range Practices Act modernization
Wildfire	Fire Smart fuel management programs
Agriculture	Working with producers to enhance climate resilience
Highways	Designing highways for future weather conditions
Flood Safety	Incorporating sea level rise into coastal dike design and land use
Emergency Management	Adopting the Sendai Framework, Emergency Program Act modernization
Water Management	Water Sustainability Act, regional water tools for decision makers
Building capacity	Pacific Climate Impacts Consortium information and resources

By 2020, the province will develop, in collaboration with Indigenous Peoples, a new adaptation strategy to manage climate-related risks.

Climate Preparedness Strategy 2020

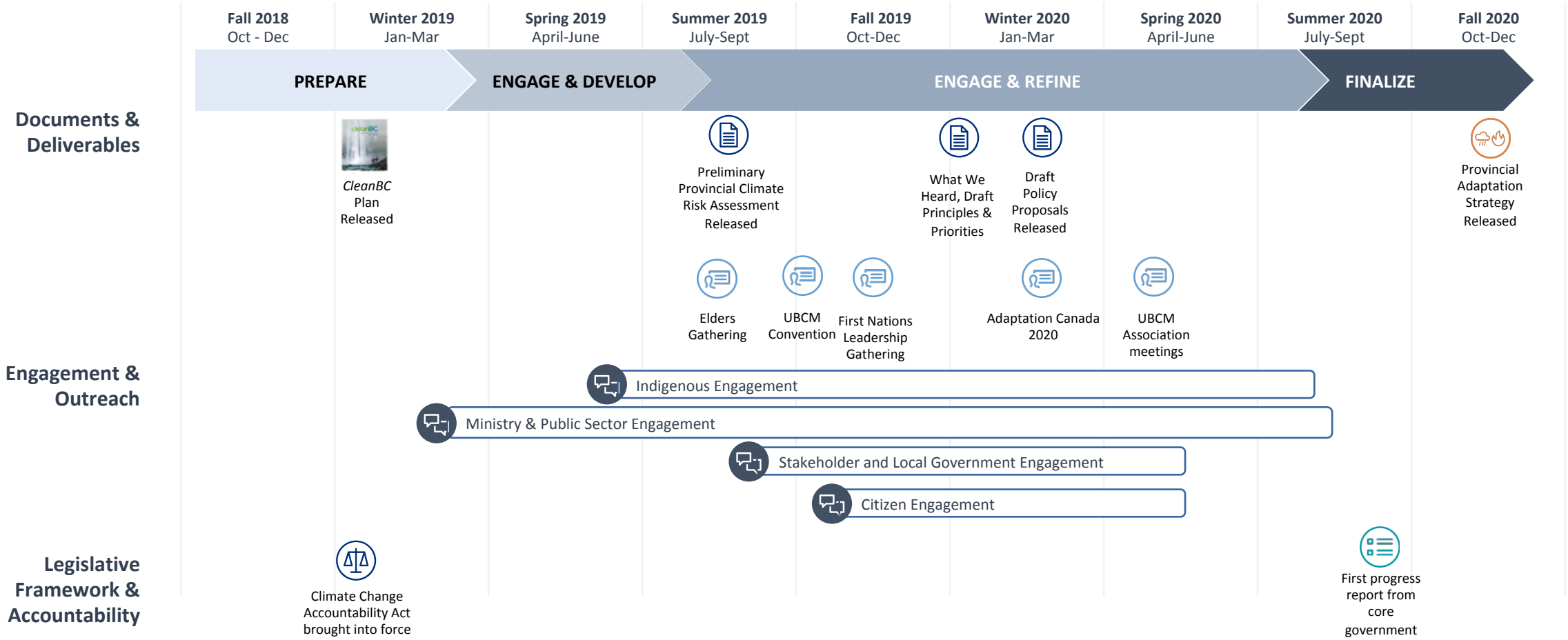
- Risk assessment > identify gaps and needs
- Strategy themes align with current and upcoming initiatives
  - **Disaster Risk Reduction**: Emergency Program Act Modernization, Flood Risk Strategy, Drought Management Plan, wildfire management
  - **Building for the Future Climate**: Guidance for resilient buildings, MOTI technical circular, capital projects & infrastructure funding
  - **Developing Capacity**: Professional development, future climate information & analysis
  - **Indigenous and Local Government Resilience**: Regional coordination & collaboration, information, tools, funding
  - **Public Sector Leadership:** Reporting requirements, Ministry/PSO risk assessment, climate risk management action

CLIMATE CHANGE ACCOUNTABILITY ACT

New Government Reporting Requirements beginning in 2020

- Climate risks reasonably to be expected to BC
- Plans and actions taken to reduce climate risks
- Progress made towards increasing climate resilience

Engagement Timeline



Discussion Questions

1. What are the most important needs and opportunities to improve flood resilience in your community and across BC?
2. How can a regional collaboration model support local government action on preparing for climate change?
3. What synergies between disaster risk reduction and preparing for climate change need to be prioritized and what new programs and policies are needed to support?
4. What is the role of natural assets and green infrastructure in preparing for climate change and what is needed to better support the use of natural assets as a mainstream approach?
5. What climate change impacts are you seeing in your community? What are you concerned about for the future? What does a climate resilient community look like?

Supplemental Slides

Likelihood Rating Scale for Discrete and Ongoing Climate-Related Risk Events

LIKELIHOOD	RATING	CRITERIA FOR DISCRETE CLIMATE-RELATED RISK EVENTS	CRITERIA FOR ONGOING CLIMATE-RELATED RISK EVENTS
Almost certain	5	Event is expected to happen about once every two years or more frequently (i.e., annual chance ≥ 50%*).	Event is almost certain to cross critical threshold.
Likely	4	Event is expected to happen about once every 3 to 10 years (i.e., 10% ≤ annual chance < 50%).	Event is expected to cross critical threshold. It would be surprising if this did not happen.
Possible	3	Event is expected to happen about once every 11 to 50 years (i.e., 2% ≤ annual chance < 10%).	Event is just as likely to cross critical threshold as not.
Unlikely	2	Event is expected to happen about once every 51 to 100 years (i.e., 1% ≤ annual chance < 2%).	Event is not anticipated to cross critical threshold.
Almost certain not to happen	1	Event is expected to happen less than about once every 100 years (i.e., annual chance <1%).	Event is almost certain not to cross critical threshold.

Consequence Rating Scale for Climate-Related Risk Events

	HEALTH		SOCIAL FUNCTIONING		CULTURAL RESOURCES	NATURAL RESOURCES	ECONOMIC VITALITY		COST TO PROVINCIAL GOVERNMENT[x]
	Loss of life	**Morbidity, injury, disease, or hospitalization**	**Psychological impacts**	**Loss of social cohesion**	**Loss of cultural resources**	**Loss of natural resources**	**Loss of economic productivity**	**Loss of infrastructure services**	
Catastrophic - 5	100+ people or >25% of a single community	1,000+ people affected or >25% of a single community	Widespread and severe disturbance resulting in long-term psychological impacts (e.g., post-traumatic stress disorder (PTSD))	Months-long disruption to daily life (e.g., inability to access employment, education) Widespread, permanent loss of livelihoods or way of life Severe, widespread erosion in public confidence in government Erosion of community institutions and community cohesion	Resource can never recover; destruction is permanent and irreversible (e.g., destruction of an irreplaceable artifact or knowledge)	Resource can never recover; destruction is permanent and irreversible (e.g., extinction of a species within the province)	Potential direct and indirect economic losses of over $1 billion* Long-term disruption or loss of an economic sector and associated job losses	Months-long disruption in infrastructure services Major impediment to day-to-day life	Added cost is far beyond Contingency Reserve Fund (e.g., > $1.5 billion)
Major - 4	10 to 100 people or > 15% of a single community	100 to 1000 people affected or > 15% of a single community	Localized severe disturbance resulting in long-term psychological impacts (e.g., loss of home, identity, or sense of place)	Weeks-long disruption to daily life (e.g., inability to access employment, education) Localized, permanent loss of livelihoods or way of life Moderate erosion of public trust in government or community cohesion	Recovery of the resource will take decades	Recovery of the resource will take decades	Potential direct and indirect economic losses of over $100 million* Months-long disruption to a major economic sector and associated job losses	Weeks-long disruption in infrastructure services Major impediment to day-to-day life	Significant added cost; up to 2x Contingency Reserve Fund amount (e.g., $750 million to $1.5 billion)
Moderate - 3	2 to 10 people or > 5% of a single community	10 to 100 people affected or > 5% of a single community	Widespread moderate disturbance resulting in temporary psychological impacts (e.g.,	Days-long disruption to daily life (e.g., inability to access employment, education) Seasonal loss of livelihoods or way of life	Recovery of the resource will take years	Recovery of the resource will take years	Potential direct and indirect economic losses of over $10 million* Weeks-long disruption to a major	Days-long disruption in infrastructure services Major impediment to day-to-day life	Added costs can be covered within Contingency Reserve Fund but would detract from other priorities (e.g., >50% of

Consequence Rating Scale (continued)

	HEALTH		SOCIAL FUNCTIONING		CULTURAL RESOURCES	NATURAL RESOURCES	ECONOMIC VITALITY		COST TO PROVINCIAL GOVERNMENT[x]
	Loss of life	**Morbidity, injury, disease, or hospitalization**	**Psychological impacts**	**Loss of social cohesion**	**Loss of cultural resources**	**Loss of natural resources**	**Loss of economic productivity**	**Loss of infrastructure services**	
			feelings of fear and anxiety)	Minor erosion of public trust in government or community cohesion			economic sector and employment		Contingency Reserve Fund or > $375 million)
Minor - 2	Low potential for multiple loss of life	<10 people affected	Localized moderate disturbance resulting in temporary psychological impacts (e.g., feelings of fear and anxiety)	Hours-day-long disruption to daily life (e.g., inability to access employment, education) Low potential for erosion of public trust in government or community cohesion	Recovery of the resource will take months	Recovery of the resource will take months	Potential direct and indirect economic losses of over $1 million* Days-long disruption to a major economic sector and employment	Hours-long disruption in infrastructure services	Added costs can be covered within Contingency Reserve Fund
Insignificant - 1	No possibility of loss of life other than through unforeseeable misadventure	No possibility for morbidity, injury, disease, or hospitalizations other than through unforeseeable misadventure	Minimal expected reactions of fear anxiety or disruption to daily life	Minimal disruption to daily life Trust in government remains unchanged	Little impact or resource can recover within days	Little impact or resource can recover within days	Potential direct and indirect economic losses less than $1 million*	Temporary nuisance	No expected additional costs to government

*Chained 2007 dollars. All dollar figures are in CAD unless otherwise specified.

[x]Based on a Contingency Reserve Fund of approximately $750 million (B.C. Ministry of Finance, 2018).