

Climate Hazards and Housing: Risk, Resilience, and Local Action



IBC

Insurance Bureau
of Canada

Trends in Natural Catastrophes and Insured Losses in Canada

September 22, 2025 | Margot Whittington, Climate Policy Manager

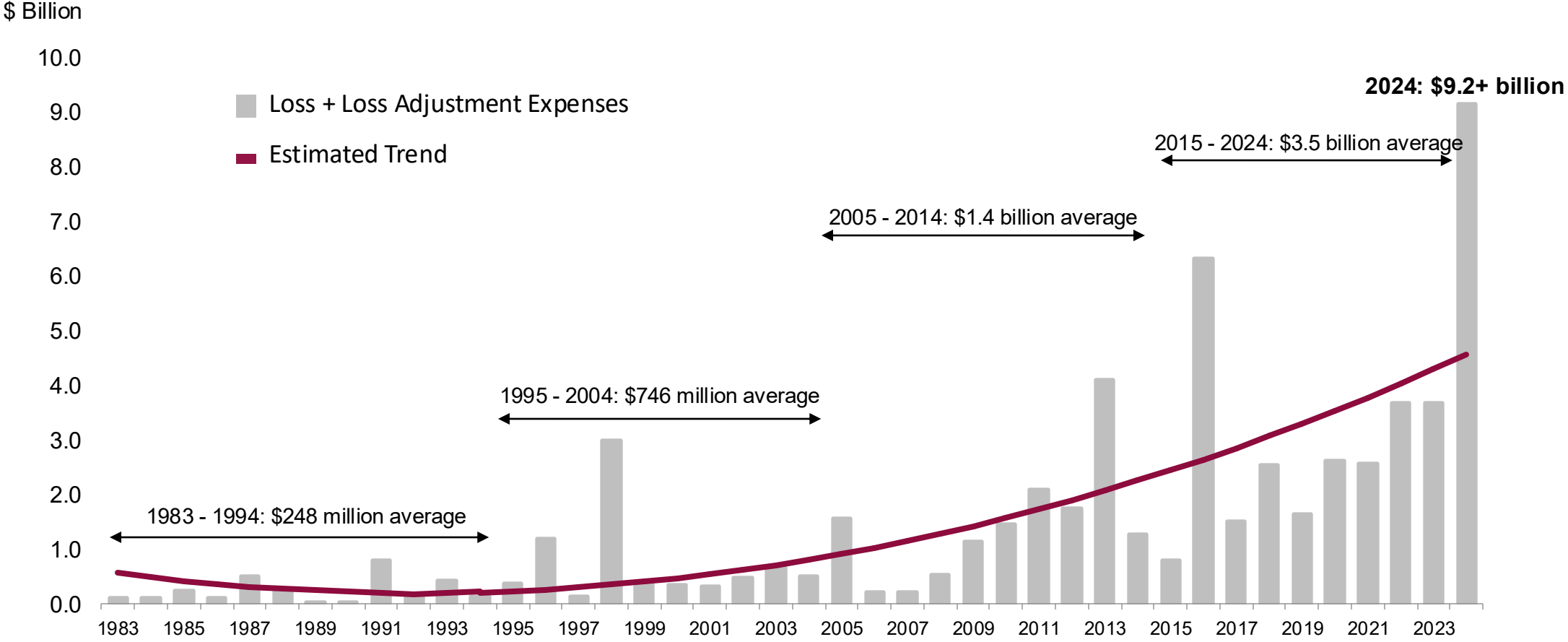


About IBC

As the leading advocate for Canada's private P&C insurers, IBC collaborates with governments, regulators, and insurance stakeholders to ensure that a competitive P&C insurance industry is positioned to protect Canadians from the risks of today and tomorrow.



Insured Catastrophic Losses in Canada

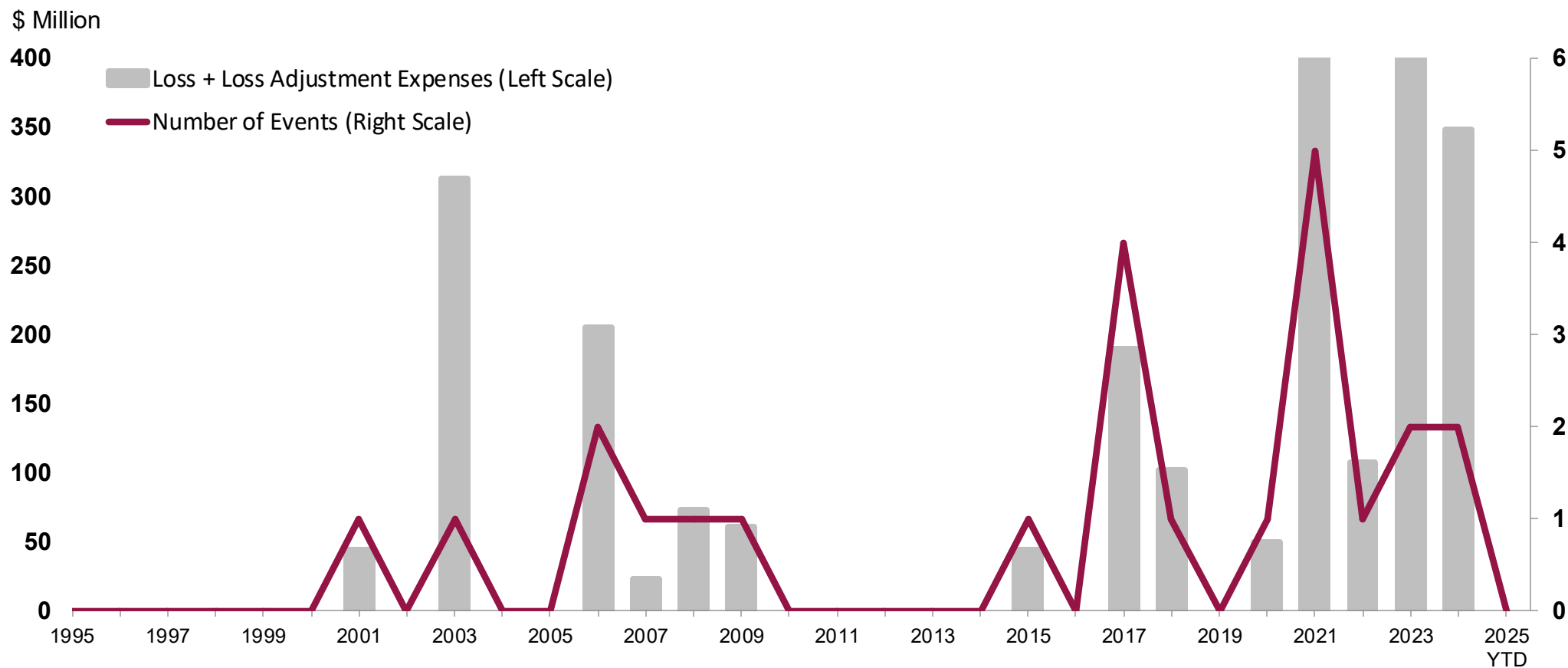


Source: IBC Facts Book, PCS, CatIQ, Swiss Re, Munich Re & Deloitte.
Since 2008, only events that cost \$30 million or more in insured losses (\$25 million prior to March 2022) are included.
Values in 2024 Canadian dollars, 2024 value is preliminary.



Insured Catastrophic Losses - BC

Perils: Fire, Hail, Wind, Water, Ice, Snow, Lightning



Source: IBC FactsBook, PCS, CatIQ, Swiss Re, Munich Re & Deloitte.

Since 2008, only events that cost \$30 million or more in insured losses (\$25 million prior to March 2022) are included.

Values include loss adjustment expenses and are in 2024 Canadian dollars, 2024 value is preliminary



Three-Point Resilience Plan: Making Canada a World Leader in Severe Weather Resilience

1. Improve how and where we build
2. Invest in resilience and help communities mitigate their risks
3. Address market gaps while avoiding interventions that reduce market capacity





ibc.ca



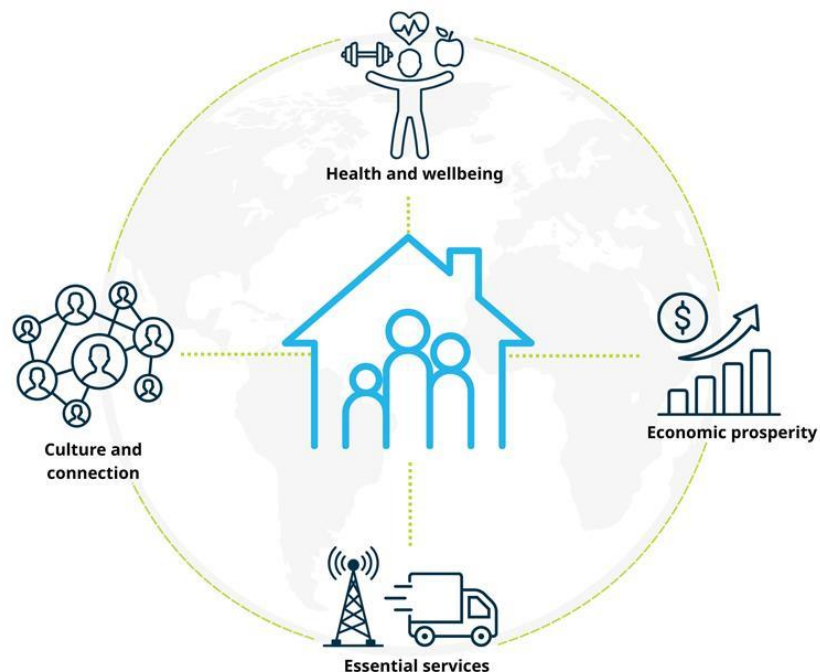


CHARTING UBCM THE COURSE 2025



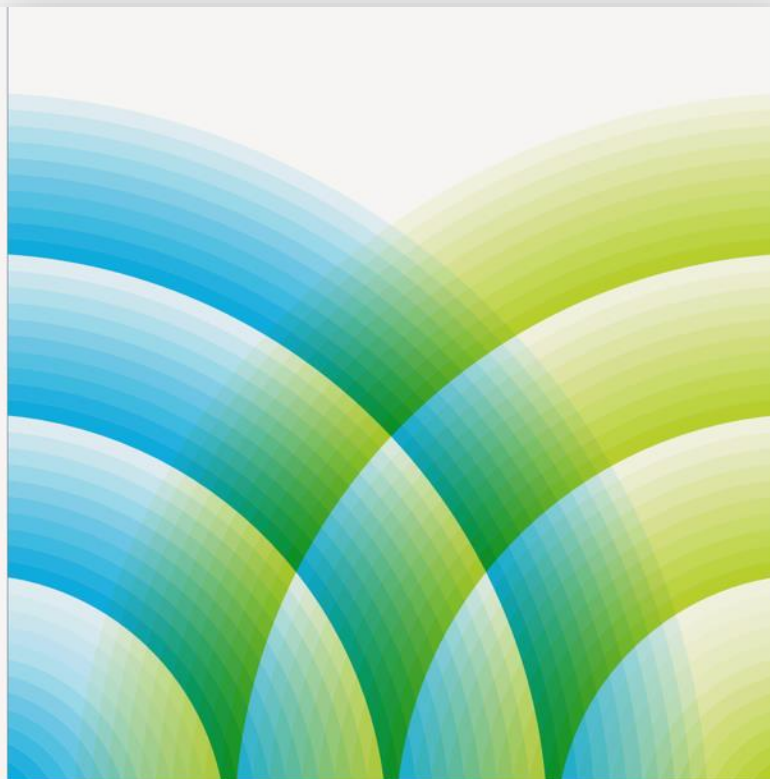


Climate Hazards and Housing: Risk, Resilience, and Local Action



*Dr. Ian Mauro, Executive Director
Pacific Institute for Climate Solutions
University of Victoria*

Monday September 22, 2025



Pacific Institute
for Climate Solutions

STRATEGIC PLAN: 2024 AND BEYOND

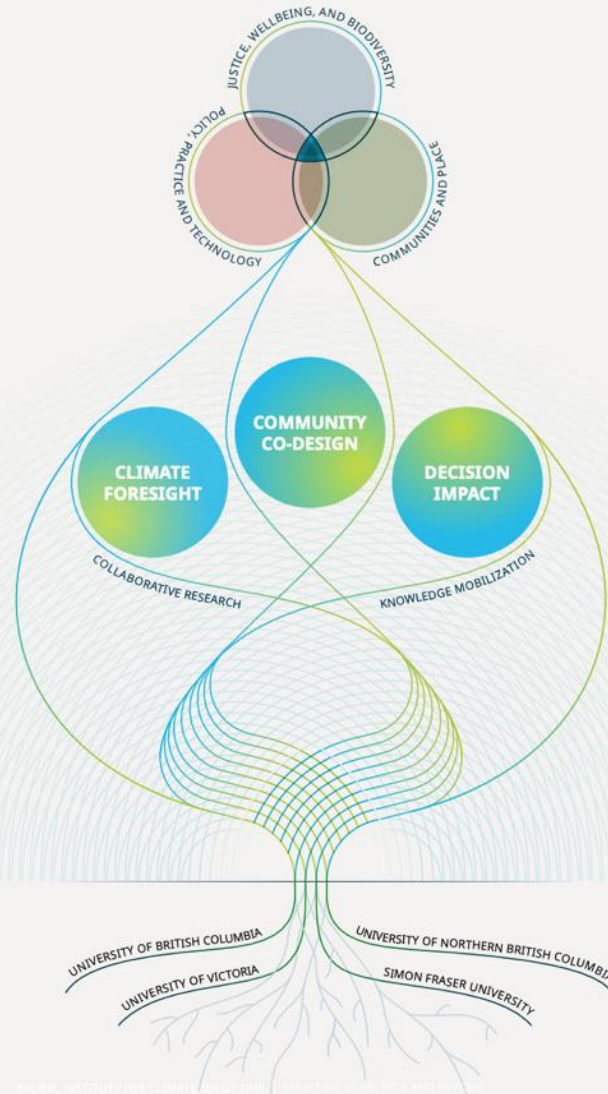
PICS is hosted and led by the University of Victoria in collaboration with the University of British Columbia, Simon Fraser University and University of Northern British Columbia.



Pacific Institute
for Climate Solutions

Purpose

To catalyze and mobilize research, partnerships, and knowledge that generate climate action.



MESSAGE FROM DR. IAN MAURO
– PICS Executive Director

Growing our collective capacity to act

The Pacific Institute for Climate Solutions (PICS) was created to accelerate British Columbia's climate leadership by investing in research and intellectual talent to frame and provide answers to the complex climate change issues facing the province and the world. PICS' origin story has many contributors, aligned by collective purpose, and a focus on transdisciplinary scholarship, partnership, and action.

Over the past 16 years, PICS has made considerable contributions – leveraging the strengths and insights of our remarkable university network – and we have developed deep roots as an organization. PICS has supported numerous faculty, student, and community-engaged initiatives that have advanced knowledge, policy, and impact. Yet, climate change has only become more pressing and problematic.

The speed and scale of the climate challenge – from wildfires, floods, and heatwaves to thorny issues related to decarbonization – require that PICS realign, refocus, and renew. By engaging in listening workshops and dialogue with our established and evolving network of collaborators, we have refreshed our organizational values, goals, and strategy.

Through collaborative research and knowledge mobilization, we want to seed, cultivate, and grow greater agility, ambition, and action to catalyze climate solutions. Our program streams and intended impacts will address

both mitigation and adaptation, and are designed to create value for our university network, governments, civil society, and partners.

We will be investing in relationships and initiatives with Indigenous organizations, Nations, and communities. We are committed to wise practices – that weave different ways of knowing and being – and believe that Indigenous knowledges and leadership must guide our approach. In general, our work will follow principles of justice, equity, diversity, and inclusion (JEDI), and advance truth and reconciliation through decolonizing practices.

While B.C. is on the frontlines of the climate crisis, we are also at the forefront of developing climate solutions, and that makes us a beacon for how to navigate a complex future – regionally, nationally, and internationally. As this journey unfolds, PICS will be here to help grow and catalyze our collective capacity to act.

THROUGH COLLABORATIVE
RESEARCH AND
KNOWLEDGE MOBILIZATION,
WE WANT TO SEED,
CULTIVATE, AND GROW
GREATER AGILITY,
AMBITION, AND ACTION
TO CATALYZE CLIMATE
SOLUTIONS.



News

PICS funds six efforts to prepare for tomorrow's challenges

August 19, 2025

Climate Foresight program to support two Dialogues, four additional projects



Collaboration & Funding Opportunities

Climate Internship Program

[Community Climate Action Events](#)[Climate Internship Program](#)[Climate Foresight Program](#)[Uplifting Reciprocal Research Scholarship Pilot Program](#)[University Climate Knowledge Mobilization Events](#)

PICS intern Isaac Kuugaayeng (right) collaborates with Sarah Jackman during his internship with Quw'utsun Cultural Connections Society, summer 2025.

Collaboration & Funding Opportunities

Community Climate Action Events

[Community Climate Action Events](#)[Climate Internship Program](#)[Climate Foresight Program](#)[Uplifting Reciprocal Research Scholarship Pilot Program](#)[University Climate Knowledge Mobilization Events](#)

"Without Water" symposium, sponsored by PICS, brought community members and decision makers together to discuss the future of watershed management in the Elk River Valley (June 2025)



FIRST NATIONS CLIMATE LEADERSHIP:

A CEREMONY AND CONVERSATION WITH HEREDITARY CHIEF FRANK BROWN

Free hybrid event, register today!

FIRST PEOPLES HOUSE

CEREMONIAL HALL
UNIVERSITY OF VICTORIA

OCTOBER 1

WEDNESDAY

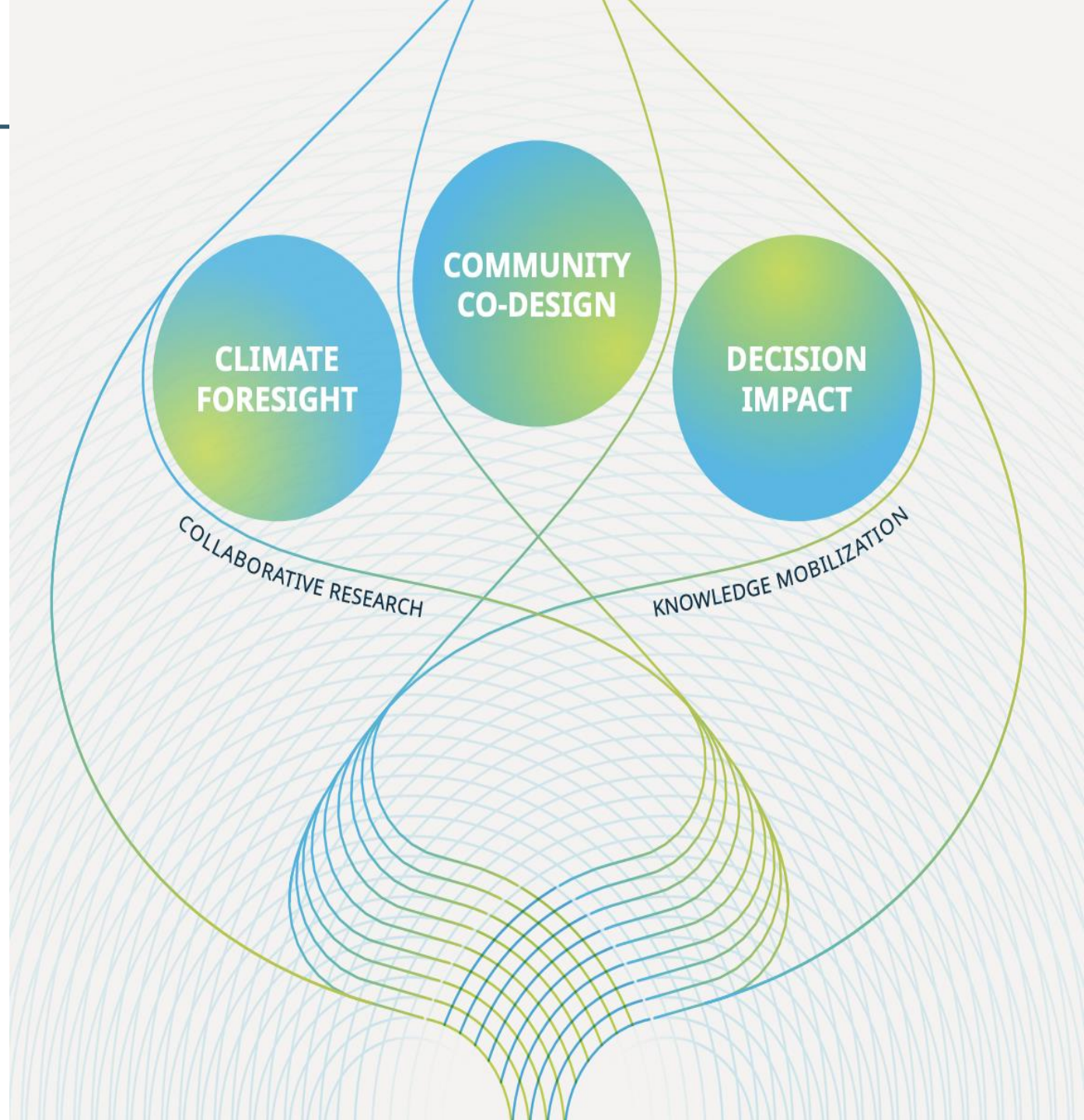
3:30 - 5:00





Decision Impact Stream

- Respond to expressed needs of B.C. decision-makers
- Co-development with decision-making organizations
- Mobilize knowledge for timely and credible advice on policy
- Commissioned research, developing tools, etc





Climate change is driving more frequent and severe events

TURNING DOWN THE HEAT:
How to better protect your community in extremely hot weather

Last updated: August 2025

Extreme heat is no longer a future threat to British Columbians — it's already here, and it's deadly. In 2021, B.C. experienced a deadly 'heat dome', which killed at least 512 people and significantly affected the health of thousands of others. Lytton, B.C. reached a record high temperature of 49.6°C on June 29, 2021, and burned to the ground the next day.

Local and regional governments and Indigenous Nations hold the power to better safeguard people in their communities. Below is the latest information on extreme heat, and what every decision maker needs to know to strengthen heat preparedness, response, and longer-term resilience.

Human-induced climate change is causing rapid warming. Canada is heating up about twice as fast as the rest of the world. Indeed, the annual average temperature has warmed about 2°C compared to the 1961 to 1990 period. The magnitude and frequency of temperature extremes is also changing. Extreme heat events are defined as a period where temperatures are unusually high for multiple days and nights in a row.

Climate change is making extreme heat events hotter, longer, and more frequent. For example, the 2021 heat dome would have been 150 times less likely without climate change. By 2030, B.C. could be dealing with ~6,000 heat-related hospitalizations per year and on average 1,370 heat-related deaths per year without adequate adaptation.

KEY MESSAGES

- Across B.C., extreme heat events are becoming hotter, longer, and more frequent because of climate change.
- Without better planning, extreme heat will have deadly effects and increase infrastructure, food and utility costs for governments and households.
- Health authorities, municipalities, regional districts, and Indigenous governments have an important role in heat preparedness, response, and longer-term planning.

Turning down the heat: How to better protect your community in extremely hot weather

Integrated flood management planning:
a guide for communities in B.C.

Aug 2025

FROM EMBER TO INFERNO:
Wildfires in B.C. explained

Last updated: July 2025

In British Columbia, many communities have a new name for summer: wildfire season. Local decision-makers like municipal councils and staff, Nation councils, and other leaders have a critical role to play in reducing wildfire risk and safeguarding their communities during the season of smoke and fire. Here's the latest information on climate change and wildfire, and what you need to know as you plan for wildfire mitigation and safety.

Fire is a natural process and many landscapes and ecosystems in B.C. have evolved with fire. However, B.C. has experienced increased wildfire activity over the last 20 years. 2017, 2018, 2021, and 2023 marked four of the most severe fire seasons in terms of area burned, number of wildfires, number of people evacuated, and costs of response and damage.

Research shows that climate change is making wildfires larger, more frequent, and more severe. Climate change is driving wildfire activity in several ways:

KEY MESSAGES

- Wildfire impacts in B.C. are increasing and likely to get worse as climate change drives longer fire seasons and more extreme fire weather, drought, and lightning.
- Local, regional, and First Nations governments have a key role in wildfire mitigation, preparedness, response, and recovery.

- 1 Extreme weather conditions conducive to starting and spreading fires (i.e. hot, dry, and windy conditions) are happening more often.
- 2 Warmer spring temperatures, earlier snowmelt, and warmer fall temperatures are making fire seasons longer.
- 3 A combination of drought and insect infestations dry out and kill trees and vegetation, making landscapes very flammable and wildfires more intense.
- 4 Lightning strikes, which ignite wildfires, are happening more often.

From ember to inferno: Wildfires in B.C. explained



B.C. hits Canadian September heat record again as smoke warnings persist

Smoky conditions may worsen in the next few days.

Canadian Press

Sep 4, 2025 9:17 AM

Updated Sep 4, 2025 9:50 AM



Getty Images



More heat and smoke in the forecast for B.C. as temperature records tumble

VANCOUVER — A ridge of high pressure has prompted more heat warnings in British Columbia and broken temperature records, including one that was nearly a century old.

Canadian Press

Sep 2, 2025 10:50 AM

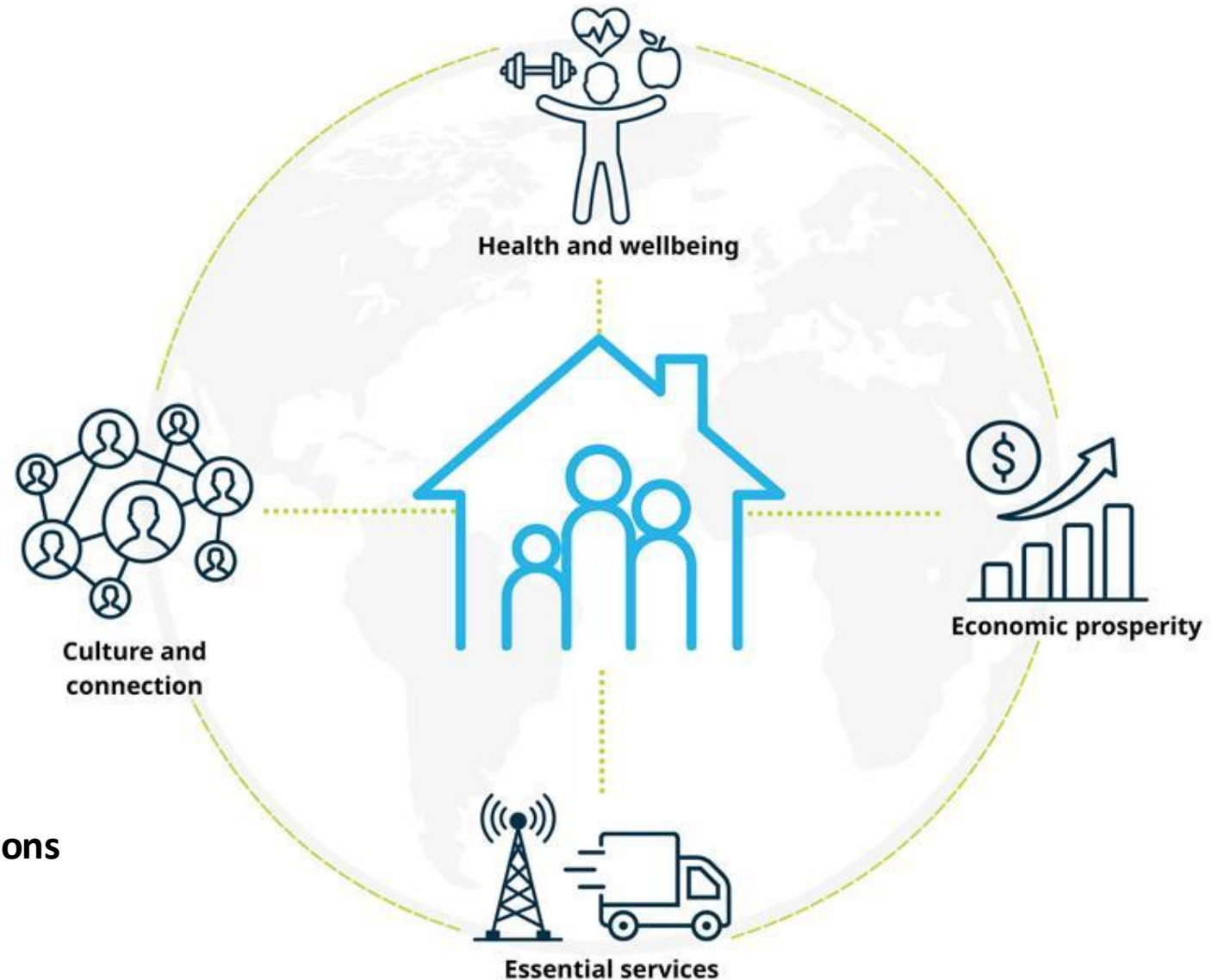
Updated Sep 2, 2025 11:05 AM





Everything comes back to home

- Choices now will shape affordability, safety, and emissions for the next 50+ years.
- Integration of new technologies
- Safe temperatures and out of harm's way
- Access to essential services
- Connection to our communities
- **Importance of weaving risk and emission reductions**





- **Heat Safety:** Passive cooling, shading, reflective materials, heat pumps
- **Flood & Fire Resilience:** Raised foundations, fire-resistant materials, defensible landscaping
- **Adaptable and transition-ready:** Homes built to last under future climate conditions and ready for new technologies (e.g. EV chargers)



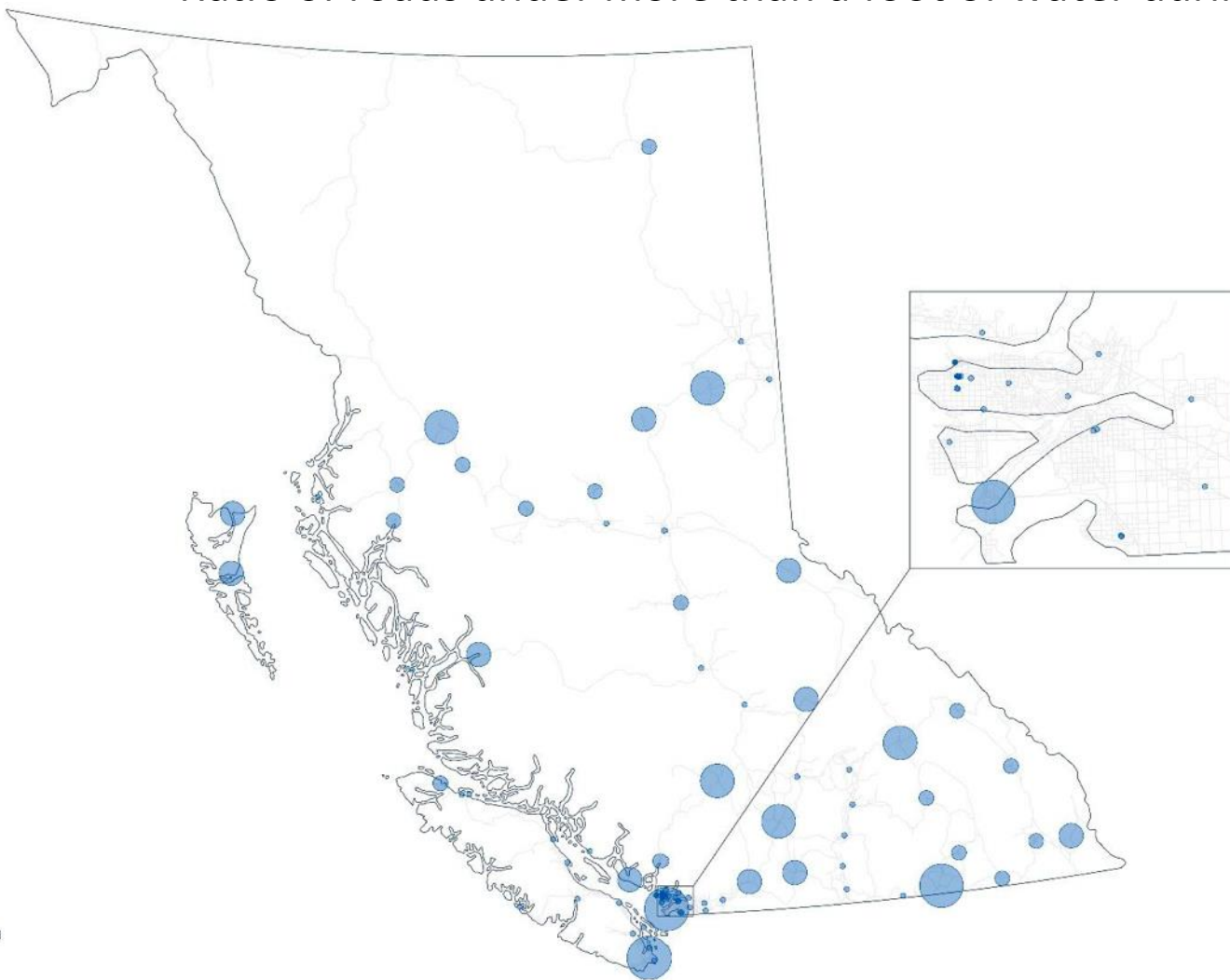
Designing homes to protect health



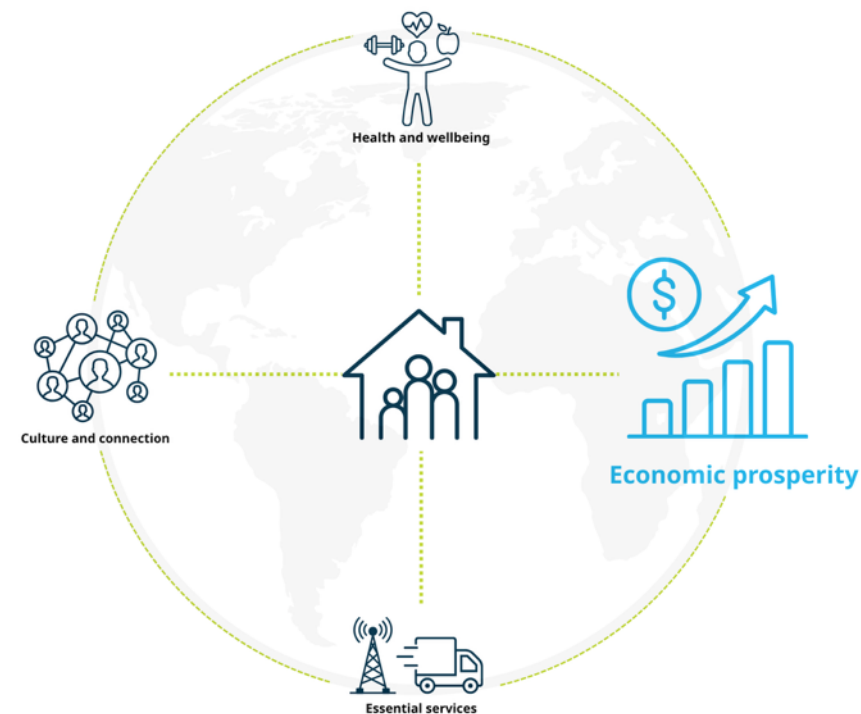


Travel distance to a hospital can increase substantially during floods

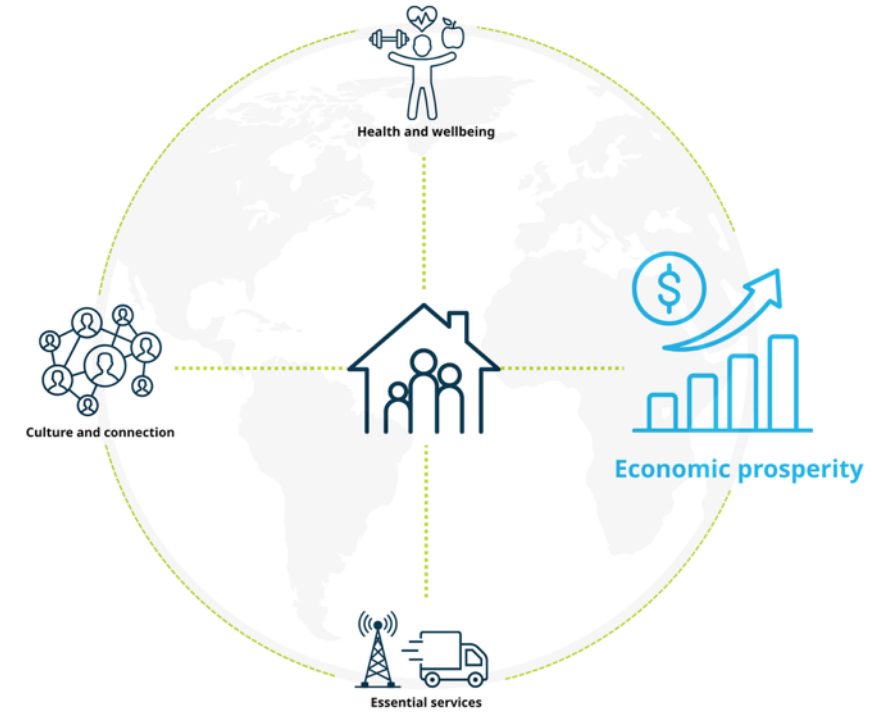
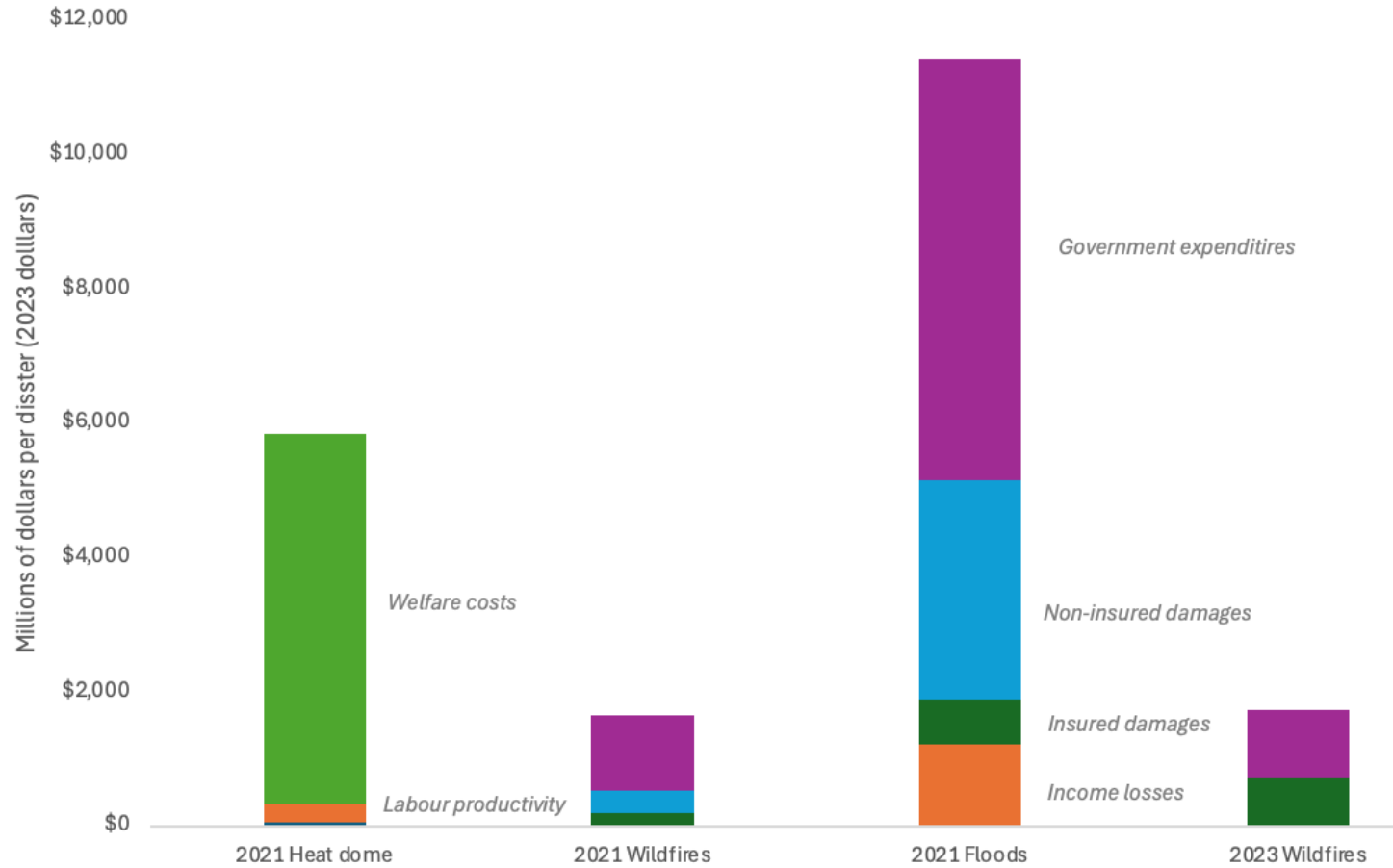
Ratio of roads under more than a foot of water during a 1:100 year flood



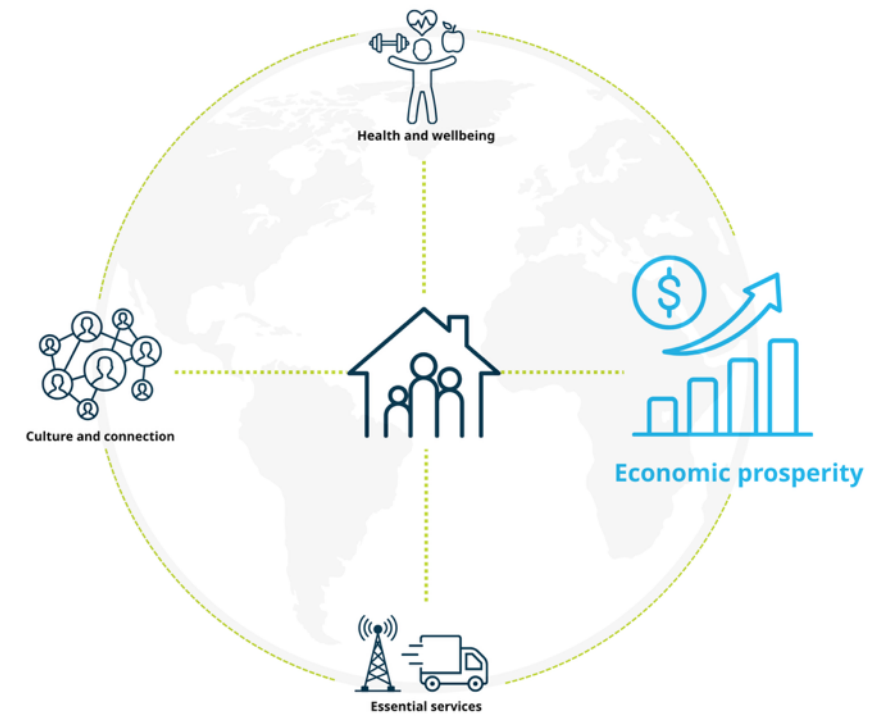
Ratio of Roads Blocked



Economic cost of B.C.'s recent climate disasters



Data from Canadian Disaster Database; Canadian Centre for Policy Alternative Report; IBC; and Climate Institute



- Clean growth is a driver of prosperity
- Tailor investments to regional strengths
- Embrace community owned solutions
- Indigenous leadership and partnership



Many communities rely on just a few power lines for electricity

Electricity network pinch-points across B.C.

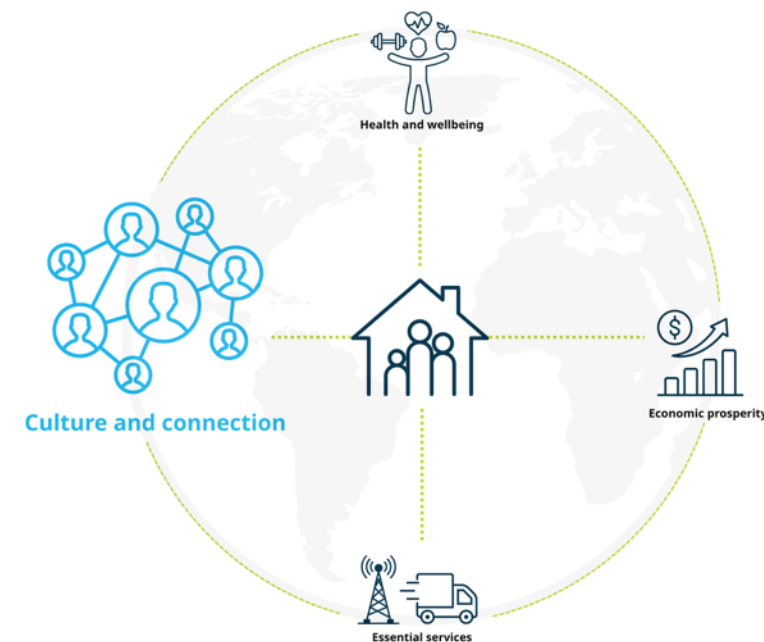


- Single transmission corridors supply whole regions
- Wildfire, flooding, and storms put lines and substations at risk
- Power outages disrupt heat safety, cooling, water, and communications
- Failures ripple into health care, emergency response, and community safety
- Hardening systems and local backup (e.g., microgrids) protect homes and services



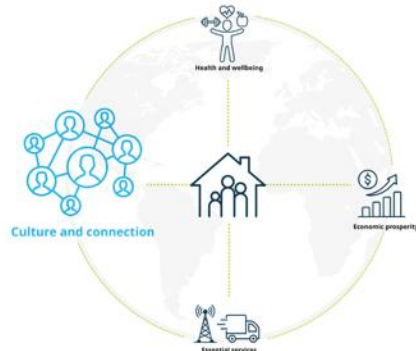
Culture and connection

- Homes as places of memory and identity
- Disasters displace families and traditions
- Build on Indigenous knowledge and leadership
- Resilient design strengthens culture and community



Hazards are inevitable, disasters are not

- Hazards will intensify with climate change
- Disasters result from choices, not inevitability
- Resilient homes and communities prevent losses
- Leadership today shapes safety for decades to come



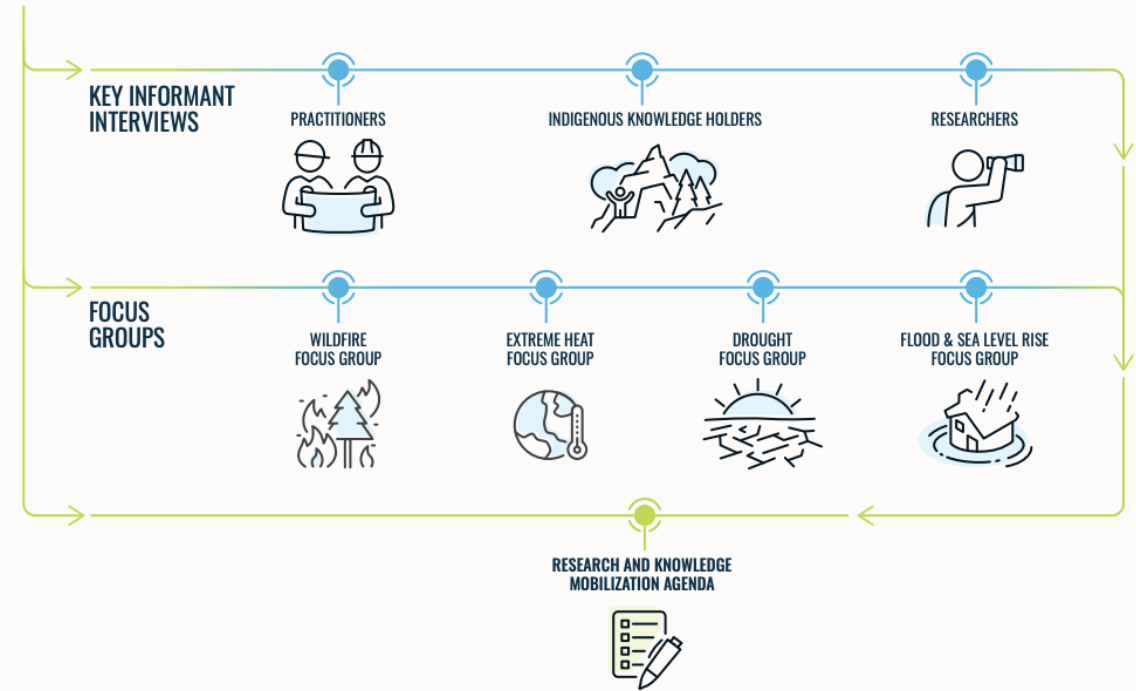


Bridging climate research and risk assessments:

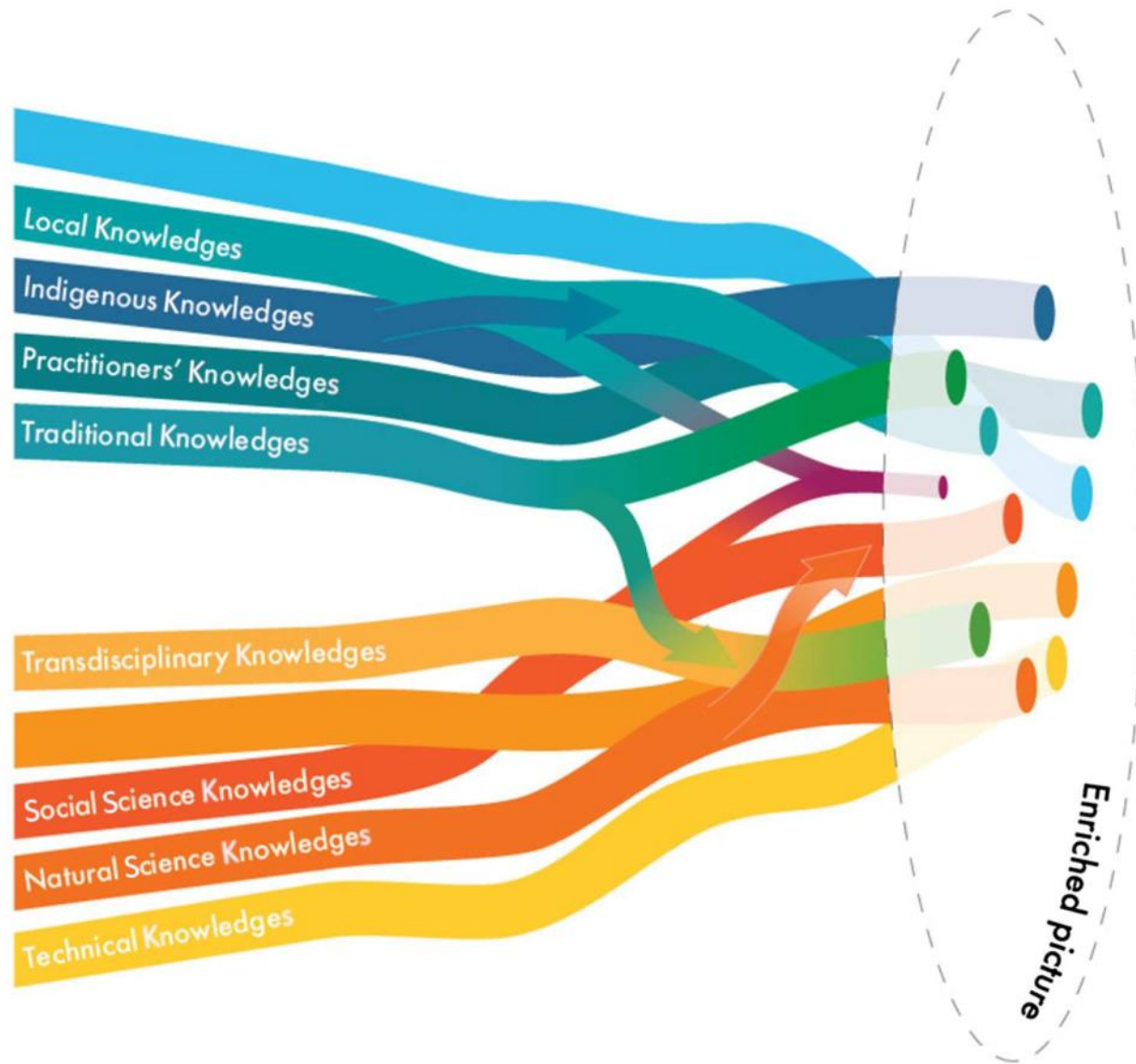
a research and knowledge mobilization agenda

June 2025

LITERATURE REVIEW



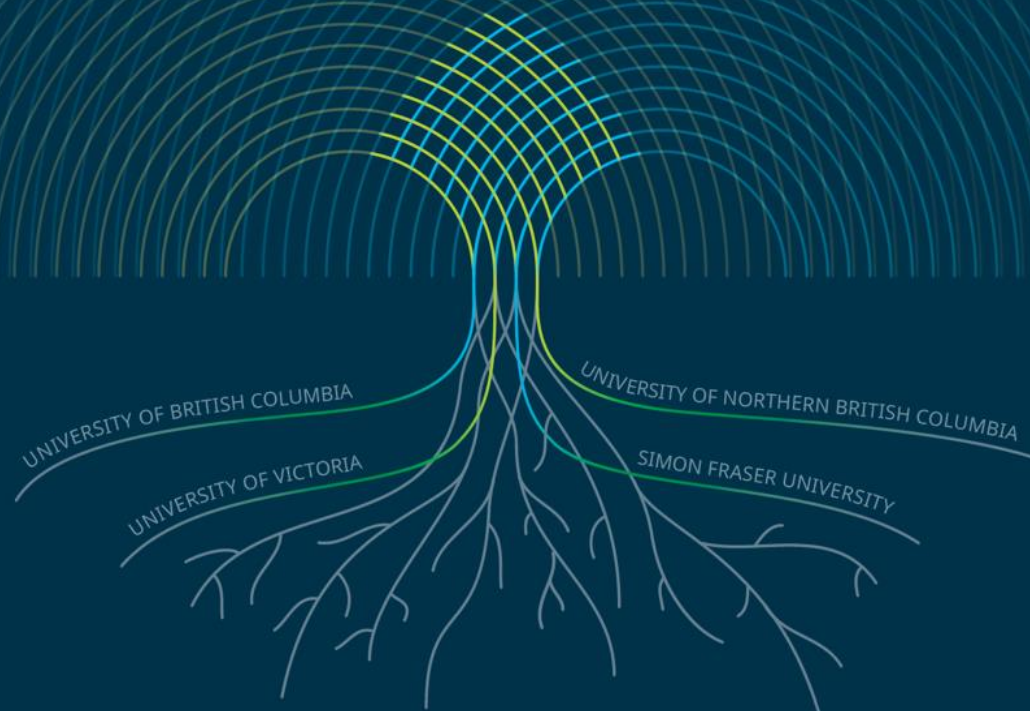
“This shift towards more complex, holistic, and participatory risk assessments necessitates different types and sources of information”



**Multiple Evidence-based
Approach, Tengo et al. 2014.**

Pacific Institute for Climate Solutions

Catalyzing and mobilizing research,
partnerships, and knowledge that
generate climate action.



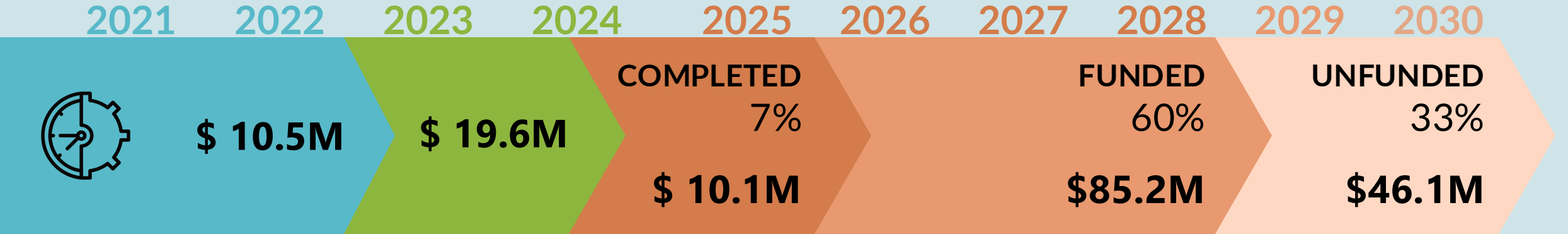


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Flood Response, Recovery and Mitigation

Project Timeline



COMPLETED

COMPLETED

IN-PROGRESS

◆ RESPONSE

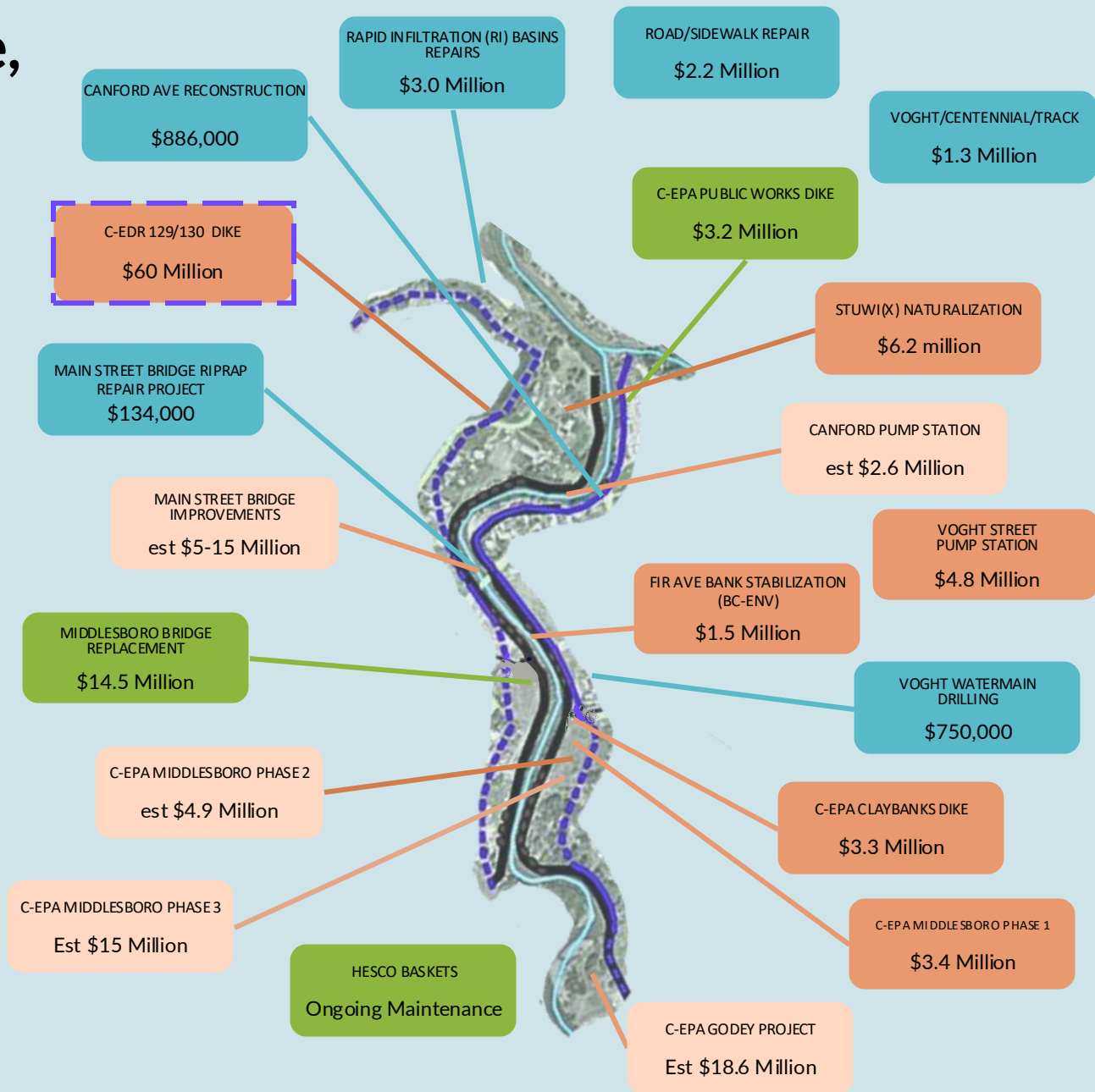
◆ RECOVERY

◆ MITIGATION



Flood Response, Recovery, and Mitigation Projects

Construction Overview



PREDICTABLE FUNDING

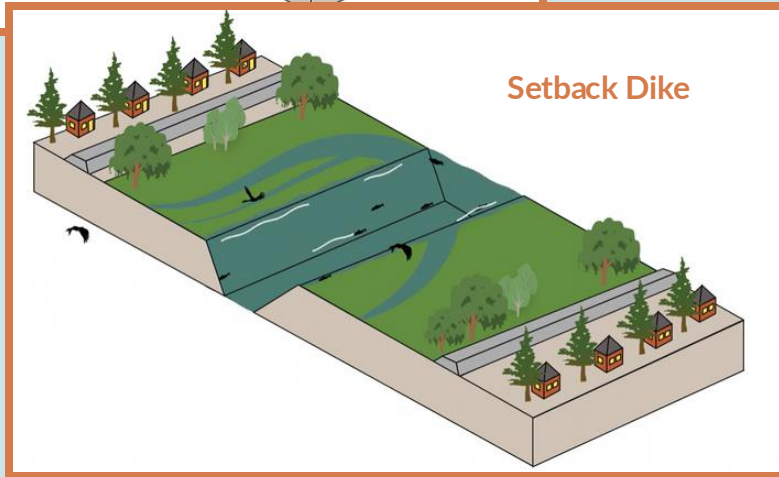
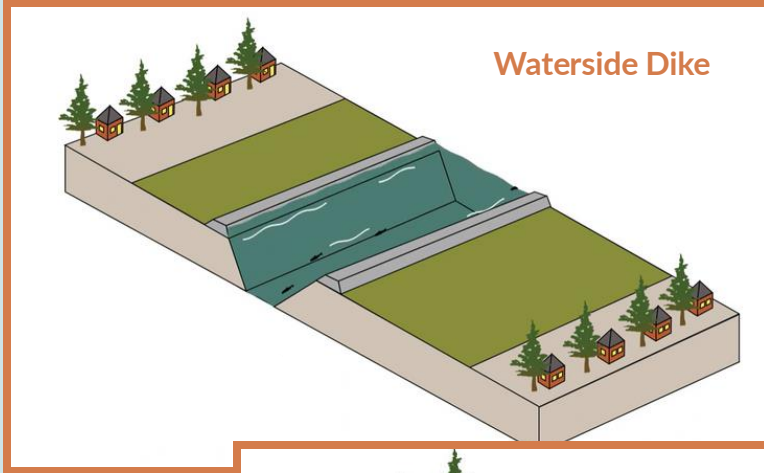
RESPONSE
RECOVERY
MITIGATION

Flood Mitigation

Set Back Dikes



PREDICTABLE
FUNDING



Benefits:

Reduces flood risk to communities
Improves groundwater
Vitality of the natural floodplain
Enhances wildlife habitat
Requires less riprap and lowers costs
Supports Traditional stewardship

Indigenous Engagement Plan (IEP)

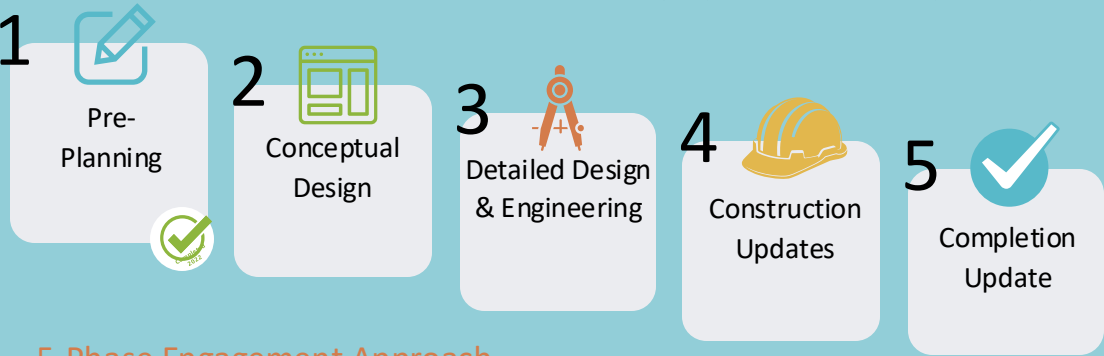


Touchpoints

Touchpoints are opportunities for community members to share their thoughts with project teams, with their feedback guiding our decisions.

This helps to build trust and foster a sense of community throughout the Nicola Valley.

How We Engage – At Every Stage



5-Phase Engagement Approach



In Person Touchpoints

~420

Phone Calls



~180

In-Person Connections



11

Committee Meetings



10

Chief and Council Meetings



10

Cultural Site Walks



6

Meetings with Staff



4

Open Houses



Online Touchpoints

1500

Engagement Emails



600

Teams Meetings



57

Presentation Overviews



111

Project-Specific Engagement Sessions



344

Project Update Memos



Social Media Updates



Online Contact Portal

FLOODMITIGATION@MERRITT.CA



Website

FLOOD.MERRITT.CA



Bridging Cultures



Cultural Site Walks



Relationship Building



Knowledge Keeper Sessions



Collaborative Dinners



Cross Cultural Liaison



Traditional Knowledge & Ceremony Liaison

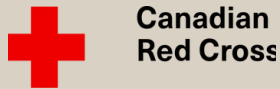


Active Representations at Community Cultural Events

Response and Recovery ~ From Crisis to Community



The 2021 Coldwater Flood was a devastating event.
Our community, emergency responders, and volunteers united.
Special thanks to Red Cross, Samaritan's Purse, and countless others.



Emergency Response 2021 - 2022

\$10.5M funded by Province of BC (EMCR)
123 claims filed | 99.5% success rate

Covered costs like:

- Water treatment plant
- Dike repairs
- Lodging
- Cleanup



Recovery Funding 2022 - 2024

\$19.6M funded by Province of BC –
DFA & partners 46 Recovery Projects

Examples of Recovery Projects:

- Middlesboro Bridge rebuild
- Sewer and watermain repairs
- Roads & sidewalks, Dog park and greenspaces
- Emergency Dike and riprap repairs



Protecting our Future Flood Mitigation



Flood Mitigation Funding (2024–2029)

**\$81.8M secured for Flood Mitigation
Funded by Province (EMCR & ARDM)**

**FUNDING
CO-ORDINATION**

Projects Underway & Upcoming:

- 3.2M Public Works Dike (completed)
- Claybanks Dike
- Rapid Infiltration Basin Dike
- STUWI(x) Naturalization
- Dikes 129 & 130
- Middlesboro Phase 1



**99.5% of Emergency Response
Costs were Re-imbursed by EMCR**

This is considered a very high success metric from the Finance team, especially when managing multiple funding streams with distinct reporting and reimbursement requirements.

CONSTRUCTION GAP (~30%)

Total Unfunded

\$46,100,000

FUNDING
CO-ORDINATION



Still Seeking
Funding for:

- Main Street Bridge Upgrades
- C-EPA Godey
- Middlesboro Phases 2 and 3
- Canford Pump Station

Total Secured Funding:

Total flood-related funding

Includes Provincial, Insurance, and other sources.

\$152,680,616



COMMITTED TO DATE

\$82.67M

Interim Flood Support (\$24.25M)

Emergency Claims (\$10.5M)

Insurance (\$12.28M)

Recovery DFA Projects (\$19.6M)

Public Works & STUWI(x) (\$4.29M total)



GREEN-ARDM
Support \$2M

UPCOMING FUNDED

\$70.23M

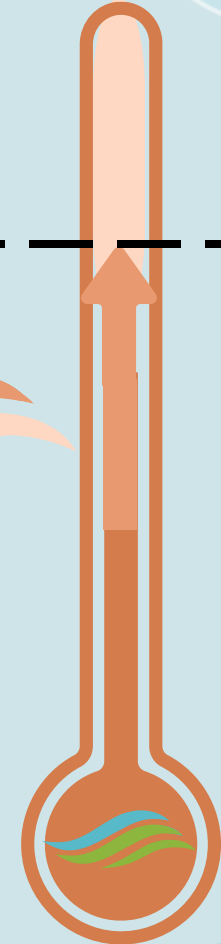
Setback Dike 129 and

Setback Dike 130 (\$60M)

Voght Pump Station (\$4.88M)

Remaining STUWI(x) (\$1.95M)

Middlesboro Diking Phase 1 (\$3.4M)





INSURANCE

**Merritt received \$12.28M from
Insurance recoveries**

Projects completed:

- Teen Centre
- Fire Dept trailer
- Fencing
- Picnic shelter
- Landscaping



Lessons Learned...



Water Coverages

- Sudden & Accidental
- Overland Flooding
- Sewer Backup
- Groundwater/Seepage



Fire

**Make Sure you're Covered!!
Ask for clarity from your insurance
broker today!!**





CHARTING UBCM 2025 THE COURSE





Climate Hazards & Housing: Risk, Resilience, and Local Action

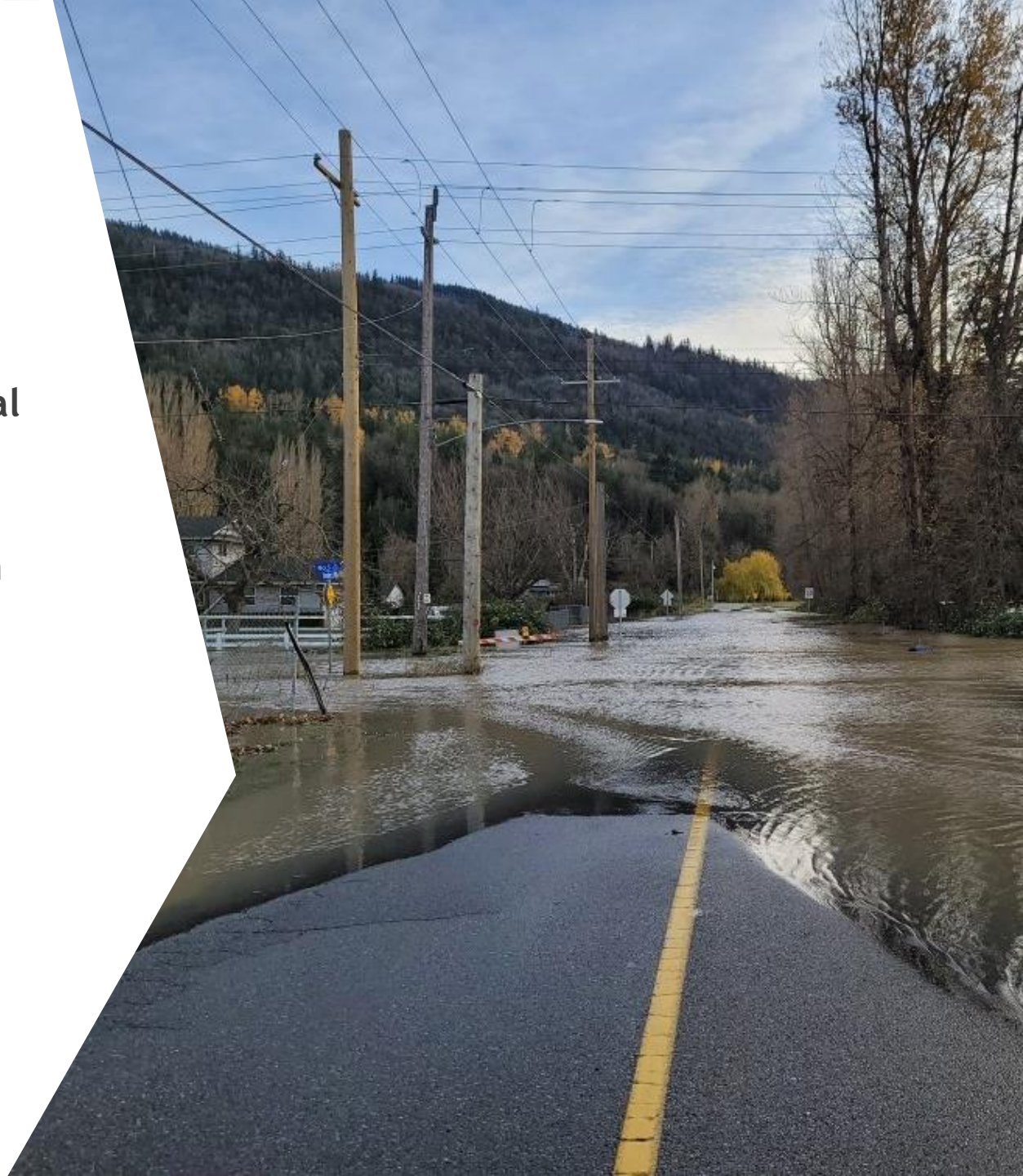
Jason Lum

Councillor, City of Chilliwack

Director, Fraser Valley Regional District

Who We Are

- ▶ Fraser Valley Regional District (FVRD)
- ▶ 14,000 km²:
Abbotsford to Boston Bar
- ▶ 6 municipalities, 8 electoral areas
- ▶ Where climate hazards and housing collide



November 2021 Atmospheric River

- ▶ Intense rain, rivers overtopped, highways collapsed
- ▶ Widespread evacuations (Sumas Prairie, Othello Rd., Chilliwack River Valley)
- ▶ Provincial state of emergency (Nov 17 - Jan 18)



On the Ground (FVRD Response)

- ▶ Emergency Operations Centre activated
- ▶ 50+ incidents tracked
- ▶ Evacuation orders in rural areas
- ▶ Multiple Provincial requests: \$30K for volunteer firefighters, emergency dyke works, etc.



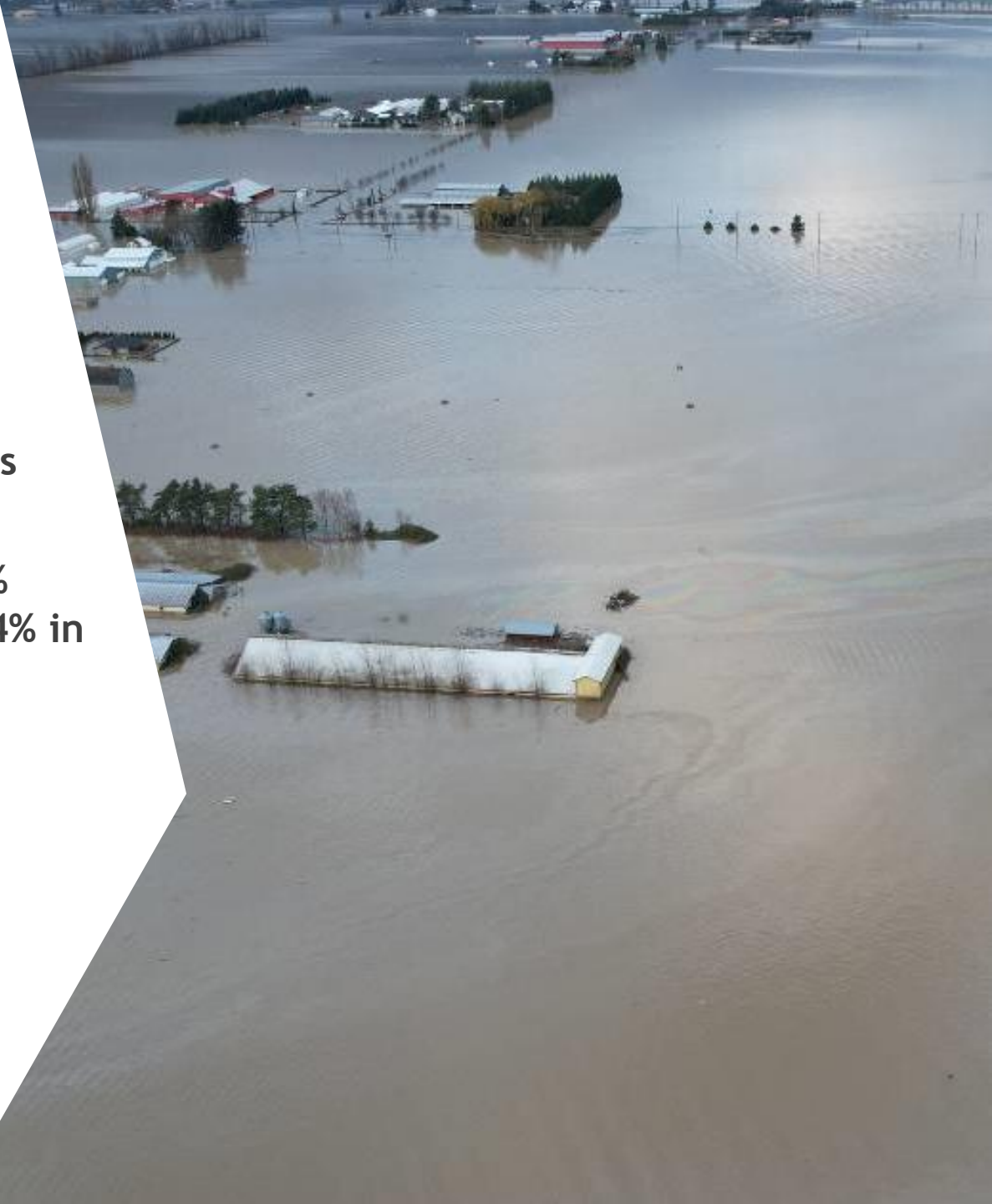
Key Lessons

- ▶ Time kills options - approvals need to be quick
- ▶ Thin tools - Regional Districts lack funding/ authority
- ▶ Alerting gaps - cell & roads fail in rural terrain
- ▶ Transboundary risk



Housing & Property Impacts

- ▶ Property values, and Assessment losses across FVRD
- ▶ Insurance uneven: ~40% coverage in 2019 → ~54% in 2021
- ▶ Rising systemic costs → affordability pressure



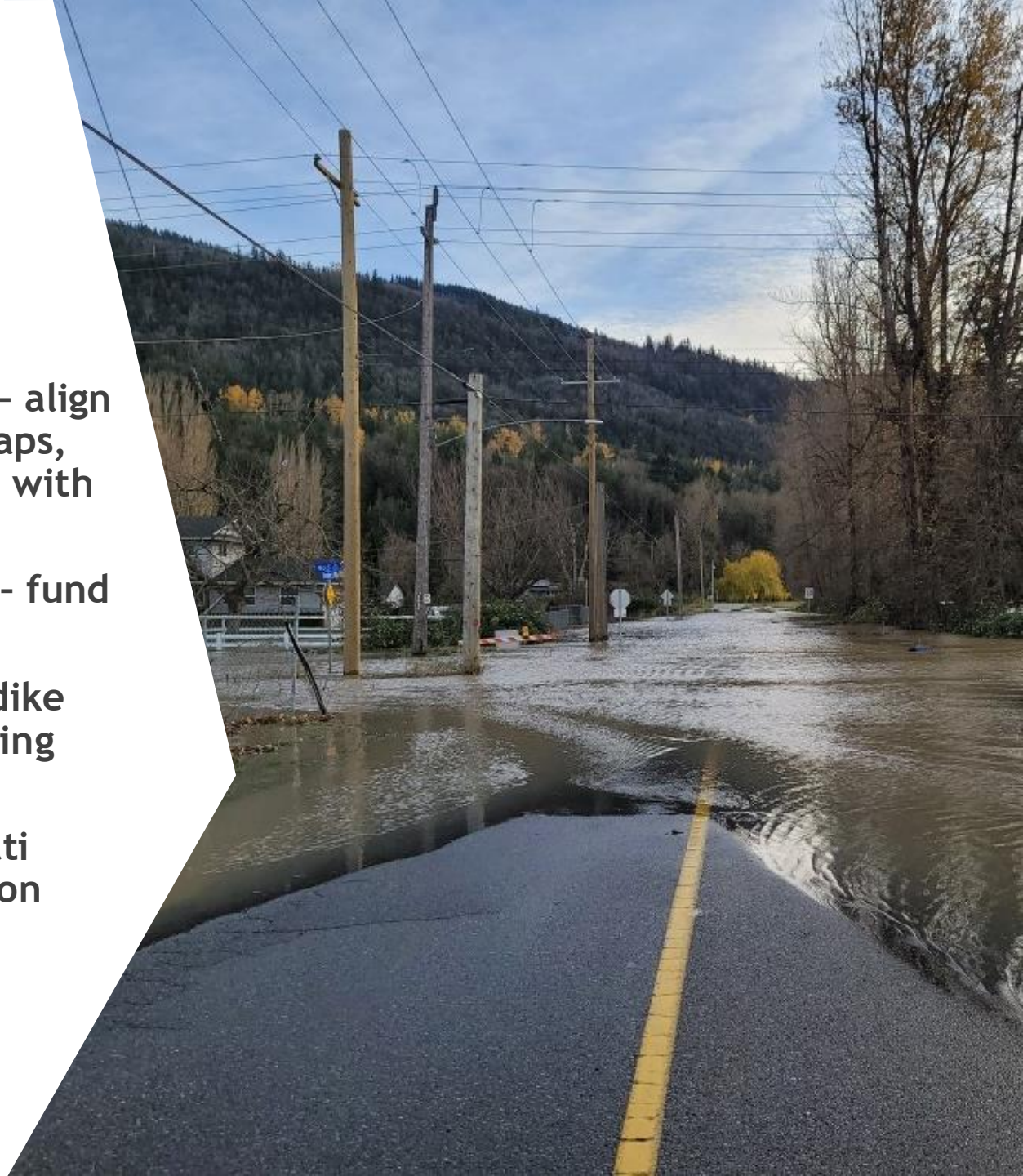
What's Changed Since 2021

- ▶ EDMA (2023): four-phase framework, Indigenous role recognized
- ▶ BC Flood Strategy (2024): roadmap to 2035
- ▶ Transboundary Initiative: BC & Washington partnership on Nooksack



What's Still Needed

- ▶ Stop creating new risk - align housing with hazard maps, balance housing orders with risk profile
- ▶ Buy down existing risk - fund buyouts/retrofits
- ▶ Fix governance gaps - dike ownership, stable funding streams
- ▶ Practice together - multi agency, cross jurisdiction exercises



The background image shows a construction site for a road. A large, deep pit has been excavated into the ground, revealing a layer of dark soil. In the foreground, there is a pile of large, light-colored rocks. To the right, a worker wearing a dark jacket and light-colored pants is standing on a paved surface, looking towards the pit. The overall scene is in grayscale, with a green geometric overlay on the right side.

Closing

- ▶ Climate risk = housing, food security, affordability
- ▶ Regional districts need authority + resources to act
- ▶ Residents deserve speed, clarity, and competence