

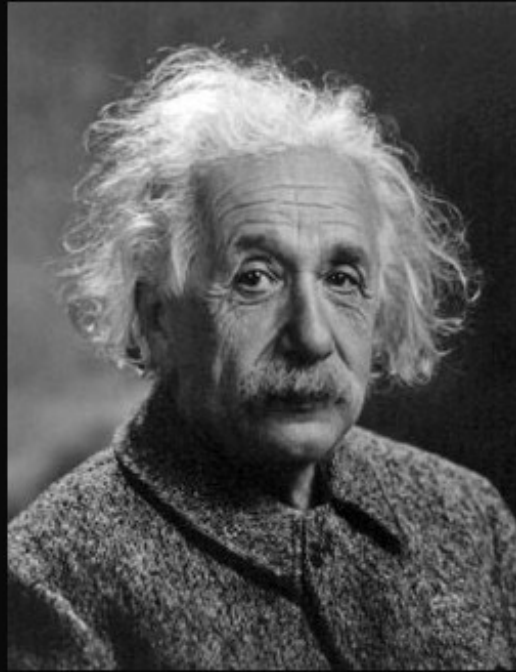
# Multiple Perspectives: The Art of Risk Assessment

Erica Crawford, Principal, HeronBridge Consulting

*With thanks to Tamsin Lyle, Ebbwater Consulting*



*Building Resilient Communities Conference  
November 19<sup>th</sup> 2024, Penticton, BC*



We cannot solve our problems with the same thinking we used when we created them.

(Albert Einstein)

[izquotes.com](http://izquotes.com)

## COMPLEX



## COMPLICATED



*DISORDER*

## CHAOTIC



## OBVIOUS



# THE BLIND AND THE ELEPHANT

OUR OWN EXPERIENCE IS RARELY THE WHOLE TRUTH

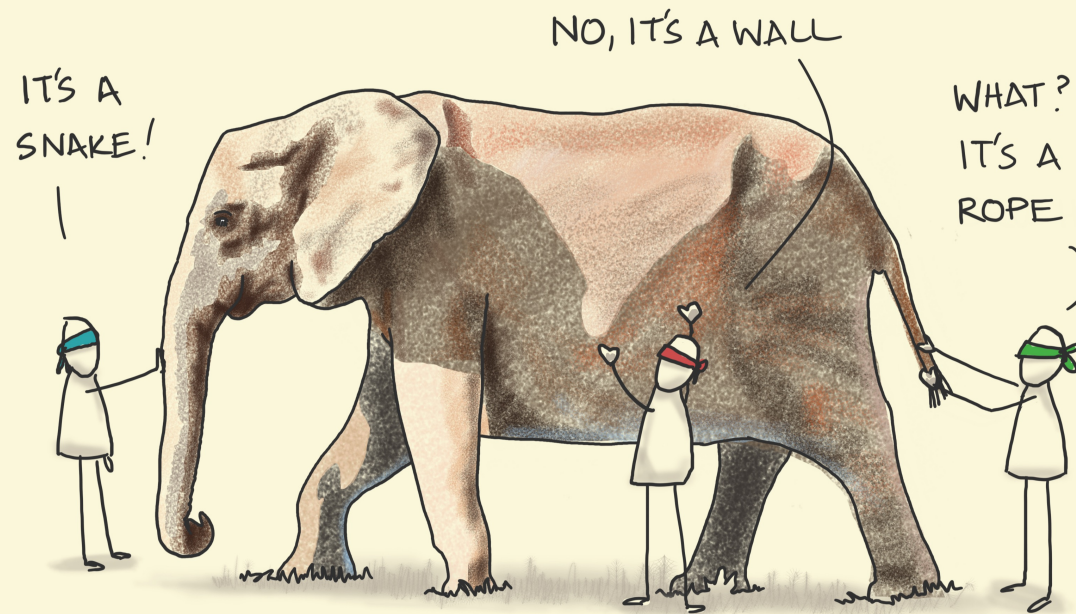


Image: Jono Hey, [sketchplanations.com](http://sketchplanations.com)

[sketchplanations](http://sketchplanations.com)



## Principles for Building Community Resilience

- Systems thinking
- Collaboration
- Reconciliation
- Building capacity & taking action



## What Hats are You Wearing?



# Applying Multiple Lenses in Risk Assessment & Planning



# 1. Whole Systems


## How?


- Multi-criteria
- Values-based
- Engagement and decision-support tools




Image courtesy of Tamsin Lyle, Ebbwater Consulting



 People (many older) and homes exposed to small and large floods

 Commercial properties (resort, shops) exposed to small and large flood

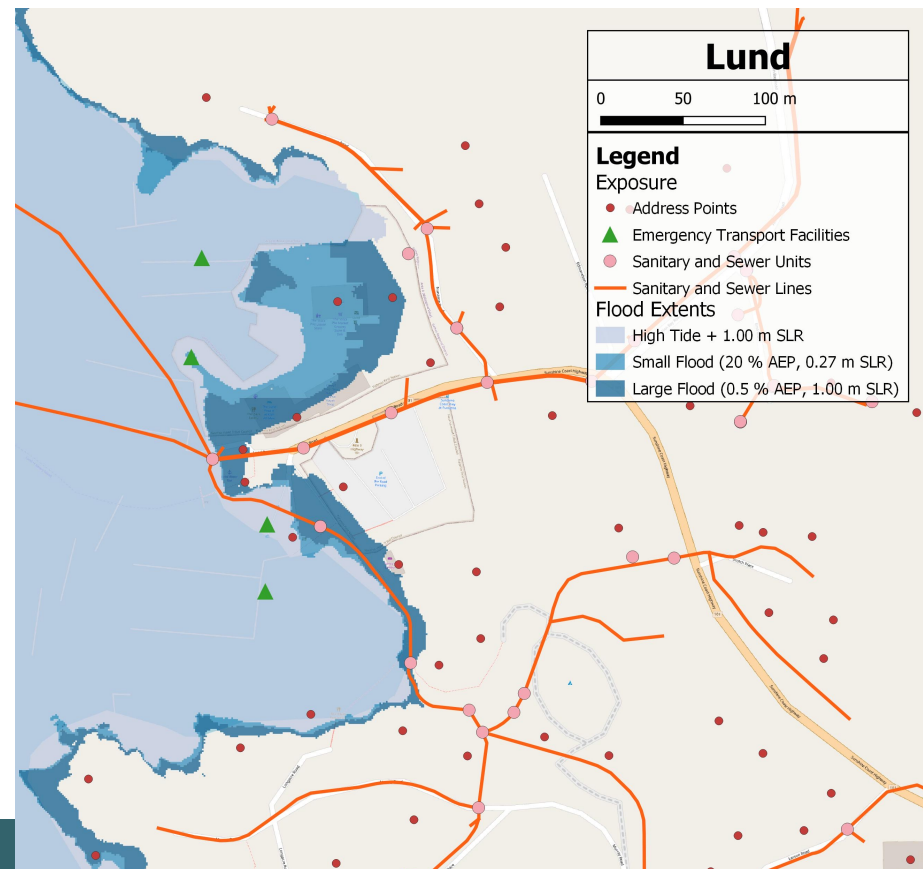
 Regional transportation hub (water taxi service, helipad)

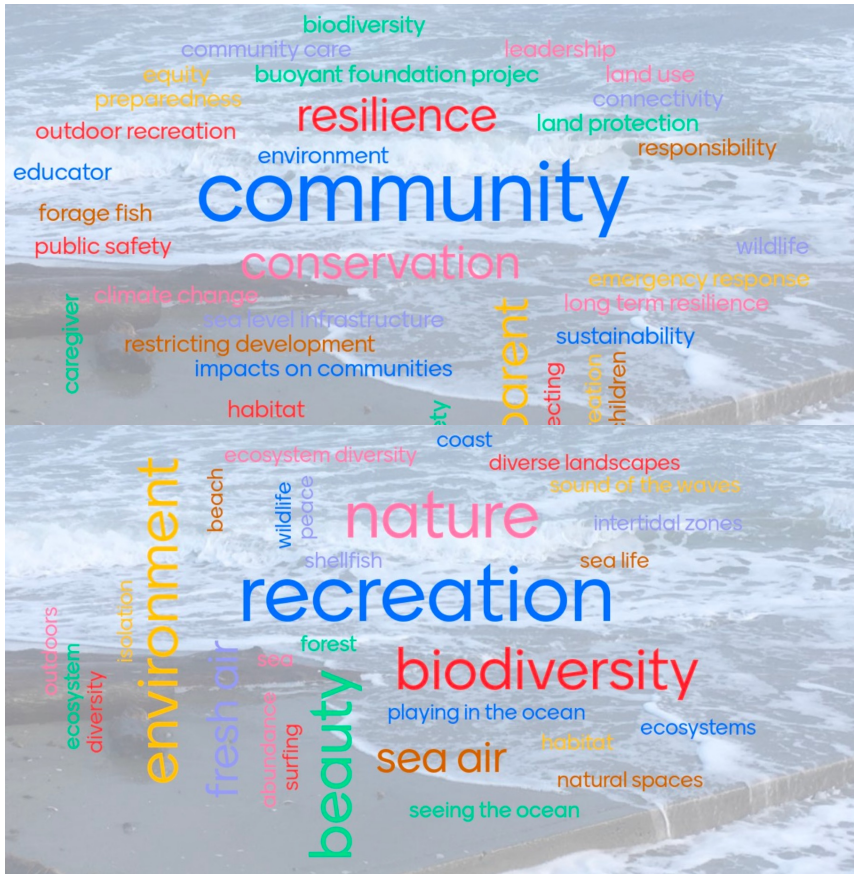
Sewer outfall infrastructure exposed to coastal storms

 Important community and recreational hub

### Qathet Coastal Adaptation Strategy

<b>Partner Lands</b>	Tla'amin Nation Lands and qRD Area A
<b>Setting</b>	More urban





Pathway Number and Strategies Emphasized	Do Nothing	1: Protect (Nature-Based and Structural)	2: Avoid, Retreat, Resilience	3: Accommodate, Resilience	4: Resilience, Retreat	
<b>Effect of the Pathway During a Flood</b>						
Human Health and Safety	Worse	Slightly better	Better	Slightly better	Far better	
Residential Properties	Worse	Slightly better	Far better	Slightly better	Far better	
Culture	Worse	Slightly better	Slightly worse	Far better	Far better	
Infrastructure	Slightly worse	Far better	Far better	Far better	Better	
Economy	\$\$	Neutral	-\$	Neutral	-\$	
<b>Effect of the Pathway Itself</b>						
Community involvement	Much worse	Neutral	Far better	Far better	Far better	
Environment	Worse	Slightly worse	Far better	Slightly better	Far better	
Recreation	Worse	Slightly worse	Slightly better	Slightly better	Far better	
Implementation cost	Neutral	\$\$\$	\$\$	\$\$	Neutral	
Maintenance cost	No Change	\$\$	-\$-\$	Neutral	-\$-\$	
Implementation	No Change	Challenging	Slightly challenging	Slightly challenging	Very challenging	
<b>Performance Scale (relative to status quo)</b>						
Much Worse, \$\$\$, Very Challenging	Worse / \$\$ / Challenging	Slightly Worse / \$ / Slightly Challenging	Neutral / No Change	Slightly Better / -\$	Better / -\$-\$	Far Better / - \$\$\$

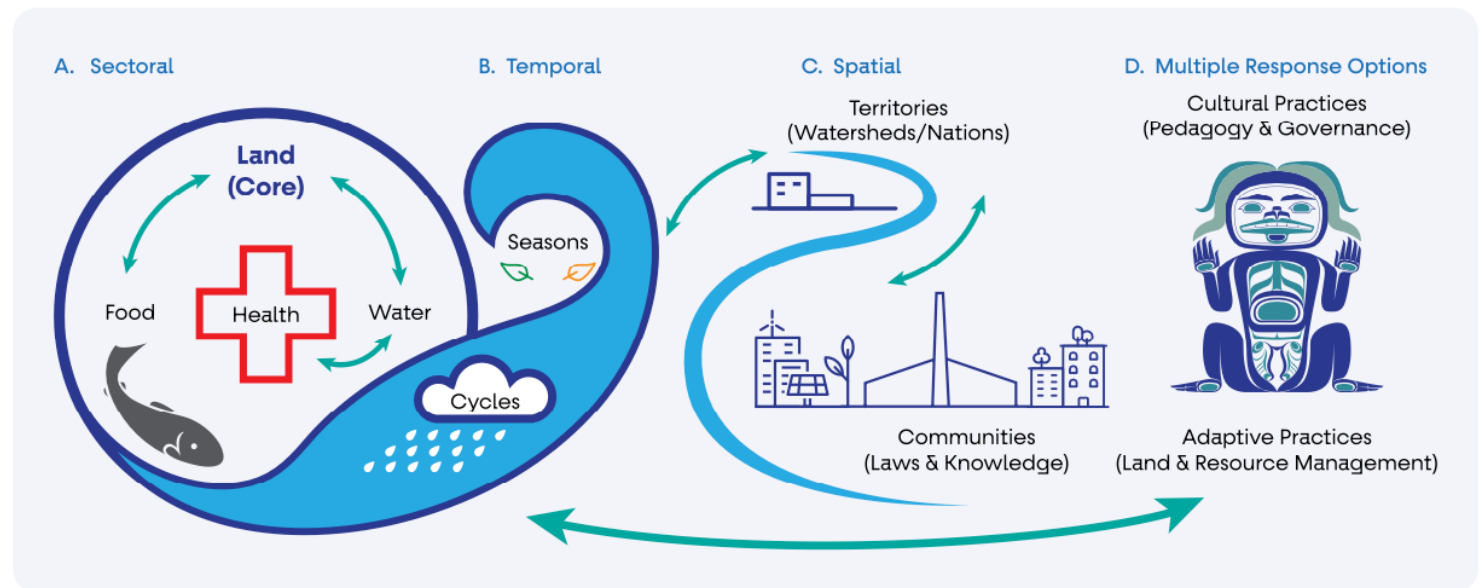
Comox Valley Regional District Coastal Flood Adaptation Strategy



## 2. Indigenous and First Nations Worldviews, Knowledge & Rights

### How?

- Grow in self-awareness & humility
- Slow down, make space, listen first
- Build relationships and trust



Wale, J. and B. Huson, 2024, "FROM RISK TO RESILIENCE: Indigenous Alternatives to Climate Risk Assessment in Canada." Yellowhead Institute

# Fraser Canyon Geohazard Assessment



*Image by: Jack Park, BGC Engineering*

Welcoming Space:  
Lower Fraser Floodplains  
Coalition, Regional Forums



**Flood Recovery, Resilience and  
Reconciliation in the Lower Fraser**

REPORTING BACK: BUILD BACK BETTER, TOGETHER – JULY 14 2022 FORUM



### 3. All of Community / Society

How?

- Invite the system
- Different methods / types of engagement
- Make sense of complex issues together





“My property is eroding, leading to the inevitable time when **I will have to move my house** at great cost. I am unsure if my well will keep producing enough water to live on.”

“We can let go of the ‘my property, my choice’ mentality and **work together** to determine what needs to be done to protect the land for future generations.”

“Preservation of personal property cannot be the priority over **public and natural resources** as the former is the risk of ‘living on the edge.’”



#### WATERFRONT

residents placed a higher value on:

- minimizing **environmental impacts** to shoreline habitats
- spread the **costs of protecting private property** across the community and across time



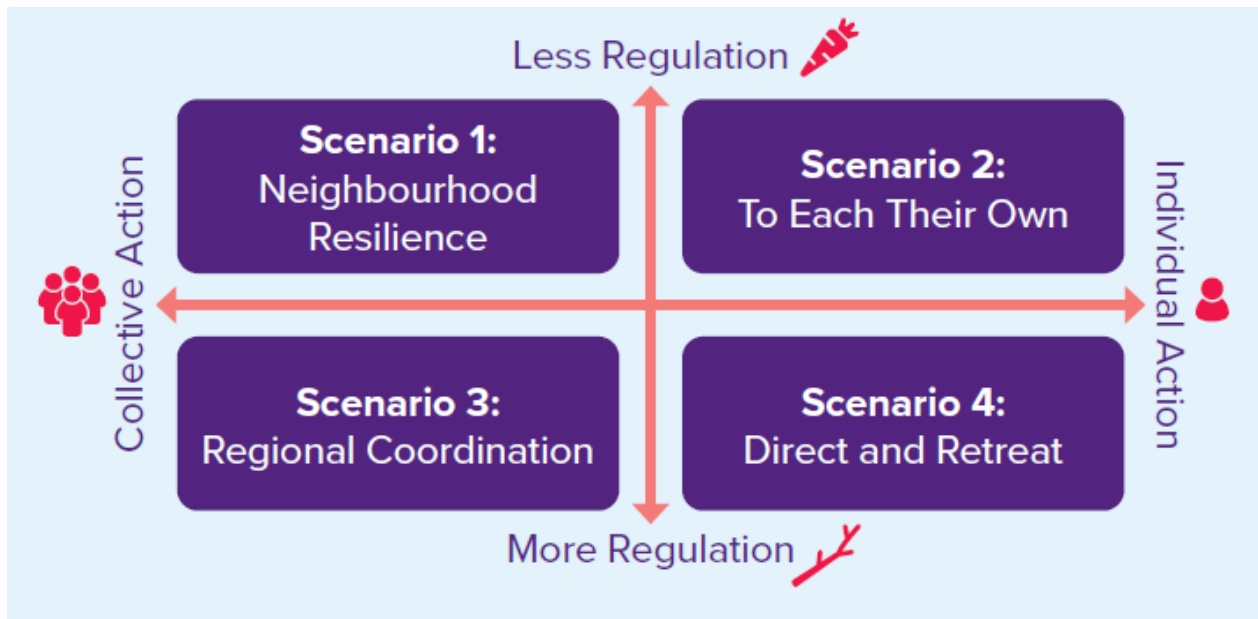
#### NON-WATERFRONT

residents placed a higher value on:

- maintaining **public access** to the waterfront
- allowing **natural processes** to take their course
- maintaining **individual choice** and responsibility for protecting personal property



## Qathet Coastal Adaptation Strategy



“Coastal flooding is not best addressed at individual scale. The system is much larger than individual properties.”

“Individual responsibility feels right, but there’s no clear direction. Where do I go for answers? How do I know what to do?”

“People mostly want to do good things, We need to start with education.”

“[The scenarios do not] address concerns of future generations. People take the risks themselves.”

*Qathet Coastal Adaptation Strategy*



# Serious Games: Flood Resilience Challenge

[www.frcgame.com/](http://www.frcgame.com/)

**FRC**

**Local Business Owner**

**Scoring**

**Budget**

**Expenses**

**Next Business Challenge**

**Progress**

Phases	I	II	III
Choose Flood Risk Measures	1	2	3
Check for Flood Event	2	3	4
Update Budget	3	4	1
Vote	4	1	2

In favour	Against
Mayor	
Provincial Politician	
Federal Politician	

<b>Dam</b> Protect	Place on a river. Protects buildings downstream near the banks from river based flooding. Doesn't help against floods that don't come down the river.	<b>-\$30</b>
<b>Restricted Development</b> Avoid	Townwide effect: The Land Developer can't build in flood risk zones or Wetlands this round.	<b>-\$0</b>
<b>Wetland Protection</b> Accommodate	Place on an existing wetland. Nearby buildings are considered protected if hit by a low severity flood.	<b>-\$15</b>



## 4. Differentially impacted groups and individuals

- How?
  - Widening perspectives
  - Include intentionally

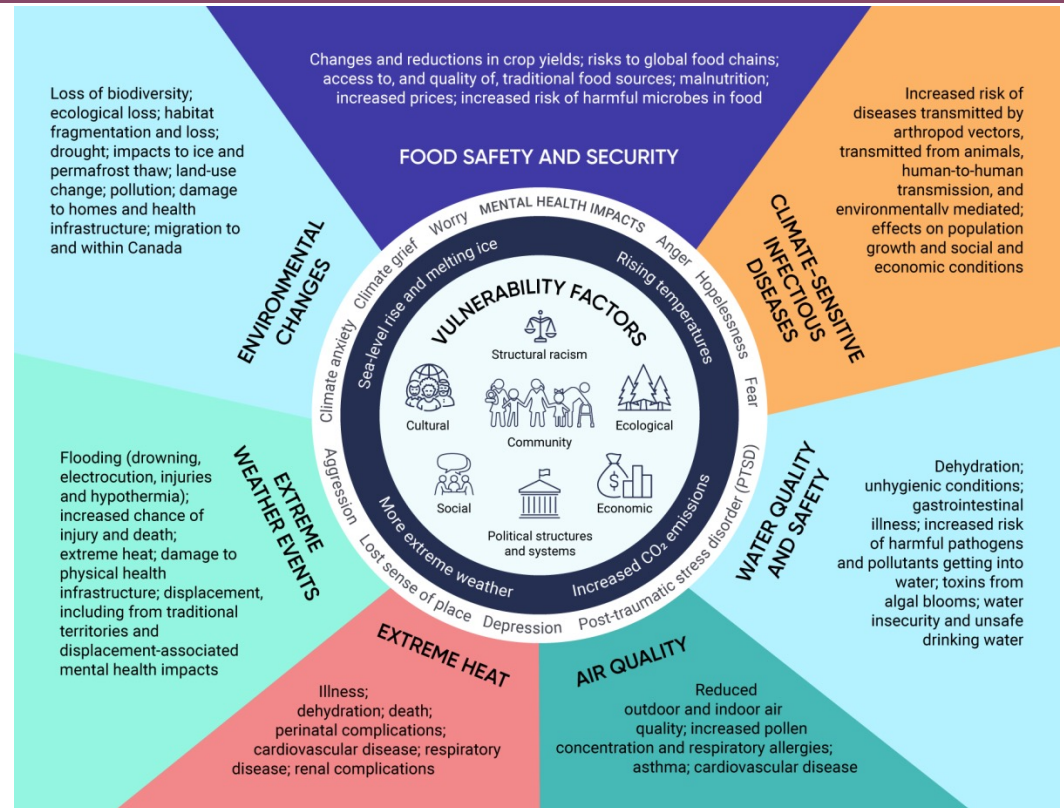


Image: [Canada in a Changing Climate Synthesis Report \(2023\), Figure 4](#)

### Choose a Role

Environmental Organization	Planner
Community Service Agency	Fire Chief
K'ómoks First Nation Councillor	Low income resident in flood zone
Retired resident with high financial assets in flood zone	Long-time resident, outside of flood zone
CVRD Director	Outdoor enthusiast
Local business owner	Campground operator
Provincial Ministry of Transportation	Engineer

### Your Role


### What Matters to You? (concerns, values, key risks & vulnerabilities)


### What Strateg(ies) Would You Prefer?


### Adaptation Strategies

#### Protect



Reduces the hazard by building infrastructure to keep floodwater out or by building infrastructure to reduce the power of the hazard and protect areas and community assets.

#### Accommodate



Reduces vulnerability by using a range of actions to allow flooding to occur with minimal damage / consequence. Sometimes described as a "living with water" strategy.

#### Retreat



Reduces exposure by moving existing structures out of flood risk areas.

#### Avoid



Reduces exposure by limiting development within the floodplain through planning.

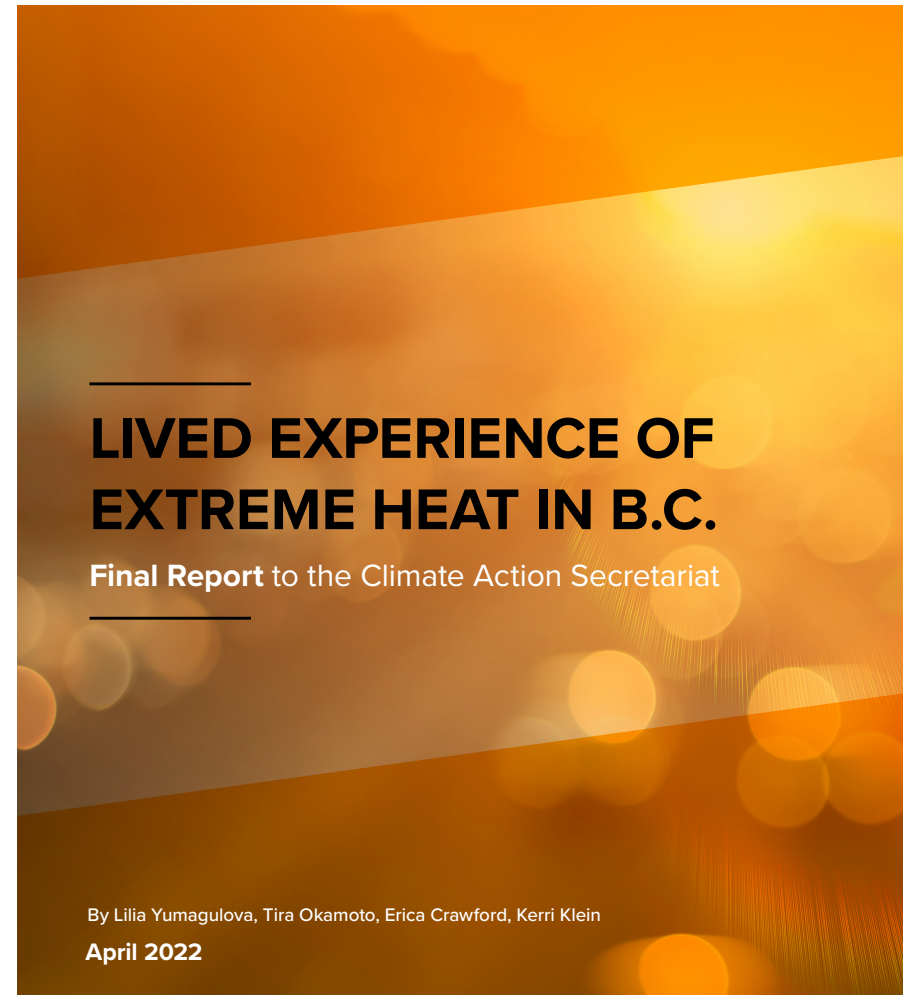
#### (Enhance) Resilience



Covers all aspects of work with the community to enhance its ability to cope with and recover from a flood event, and the cumulative effects of change.

## Lessons learned

- Dignity & respect (listen!)
- Meet people in their worlds
- Existing relationships
- Compensation
- Accountability





## 5. Individual Participants

How?

- Trauma-informed
- Learning styles
- Always bring value
- Accessibility



## 6. Future Generations

### LOOKING AHEAD...

From where you are here in 2022, look ahead to 2030...2040... 2050... Perhaps you have grandchildren, great grandchildren, nieces, nephews, big old trees you planted, eel grass beds you helped restore, things you have helped to build or protect...

Imagine what you would like to see for the coastal areas of this region...

What is important to you, and what would you wish for future generations of people and all of life here?



### LOOKING BACK...

Now put yourself in the shoes of the next generations, 30 years from now (2050). Imagine some of the ways that the coast may have changed, given the circumstances they face now:

- Average sea levels are almost 10 cm higher than they were in 2020...
- Some places you used to walk along the shore in 2020 are now wet at low tide...
- Some areas have small floods every year now, usually in the winter during frequent, more intense coastal storms...
- Erosion has continued to advance, more in some areas than others...
- Ecosystems have changed due to changing sea levels, ocean acidification and rising temperatures...

What might future generations ask of us?  
What advice might they give us?









# Small Groups

Subtitle Here

# Group agreements



Maintain confidentiality



Stay curious, listen with an open mind and heart



Respect the space and each other



Step Forward, Step Back



Be present

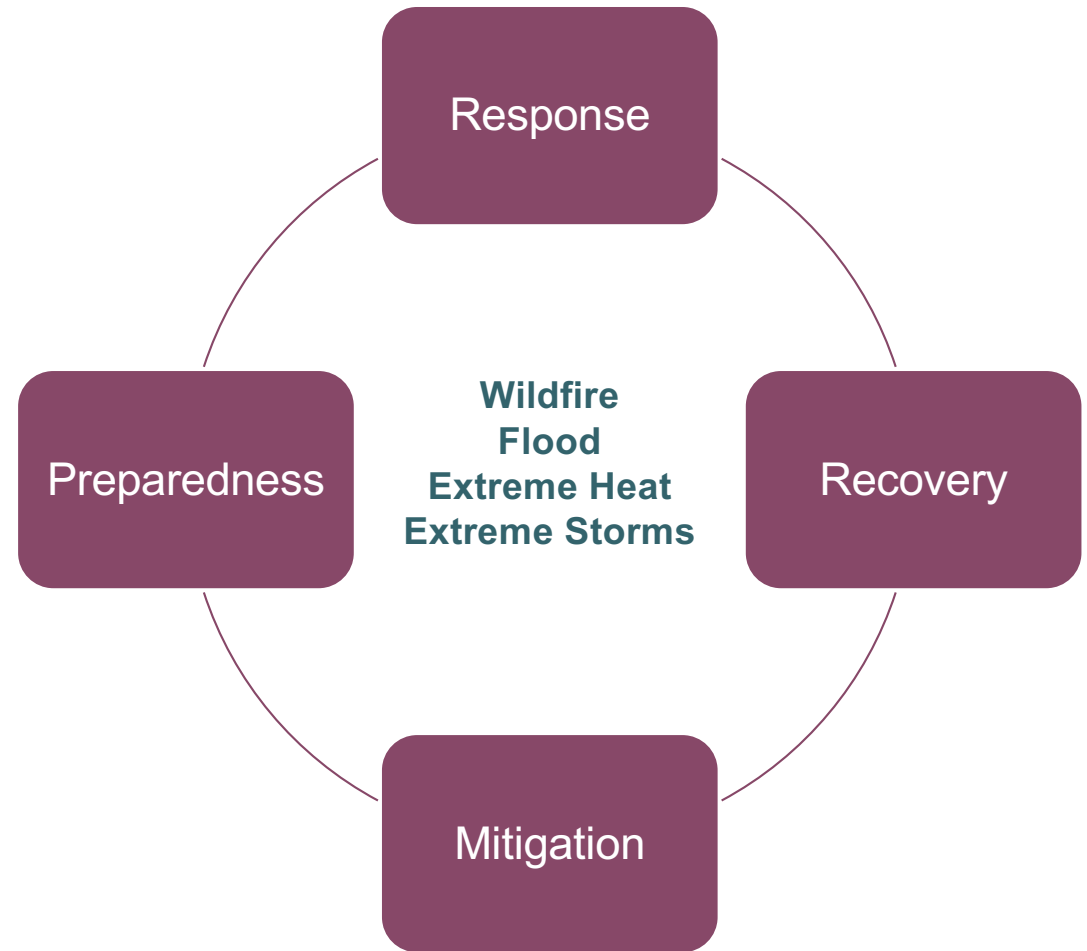


Take a Breath...

# Community Meeting: Building Community Resilience to Extreme Events

- Choose a table: wildfire, flood, extreme heat, extreme storms
  - Introductions at your table
- Choose a card (this is your persona)
- At your table:
  - *Introduce yourself as your persona*
  - *Share what has brought you to this community meeting – what matters to you about this topic, and why? How have you been personally affected? What role do you play in relation to this?*

*As your personas,  
consider the phases of  
disaster management –  
what types of actions are  
you most concerned or  
interested in, and why?*



## What?

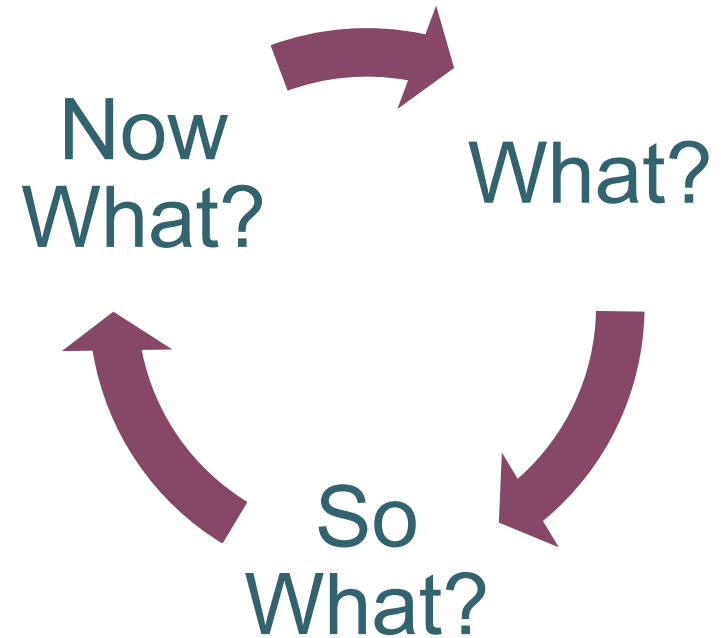
- What happened?
- What did you observe?
- What did you feel?

## So What?

- What matters here?
- What insights have come?
- What themes or questions are alive for you?

## Now What?

- What is one “next wise action” you can take?







# Contact Us

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