

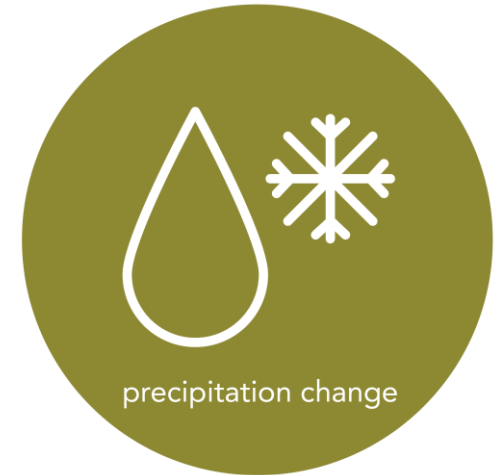
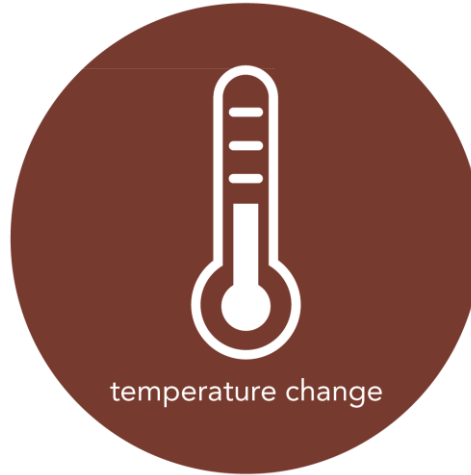
Climate Change Adaptation Strategy

BY 2050, IN METRO VANCOUVER

TYPES OF CLIMATIC CHANGES

1. Hotter average annual air temperatures
2. Changing precipitation
3. Higher sea level
4. More frequent extreme weather events

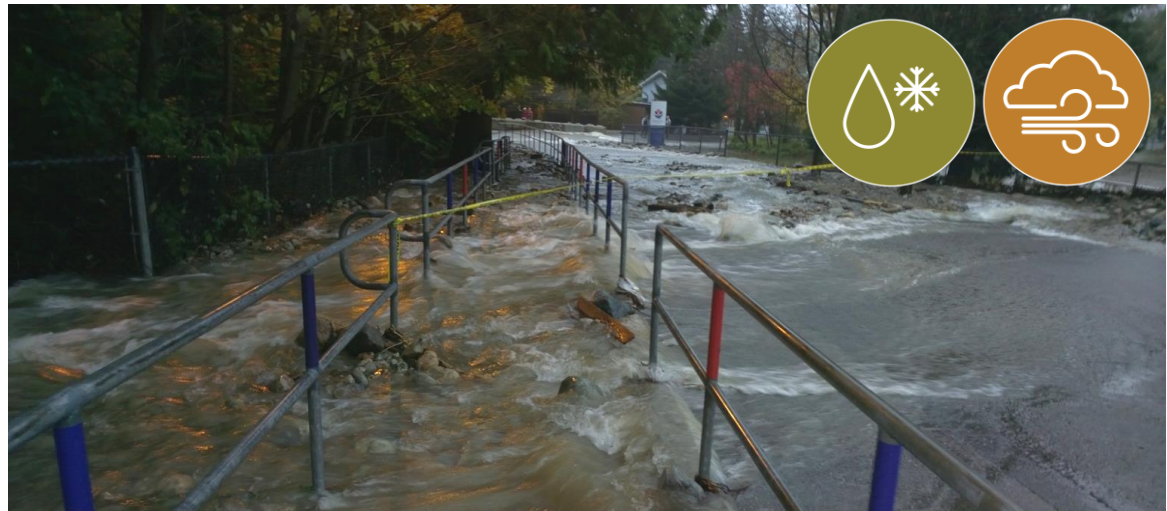
>> Although these changes are predicted to occur by 2050s, some are already happening



CLIMATE CHANGE IN THE DISTRICT

A LOCAL PERSPECTIVE (2014 – 2015)

- Record-setting summer temperatures
- Windstorms
- Drought
- Forest fires
- Heavy rainfall events
- Limited snow



CLIMATE CHANGE IMPACTS

RESIDENTS

- Personal health and safety concerns
- Water systems affected
- Property and public amenities damaged
- Recreation areas damaged
- Quality of life reduced

>> What we value is vulnerable to a changing climate



CLIMATE CHANGE IMPACTS

THE DISTRICT

- Natural hazards more challenging to manage
- Increased spending to maintain public assets
- Staff priorities redirected to deal with emergency response
- Reduced capacity to maintain current operations



Gordon Montgomery

>> Municipal services and public infrastructure will be affected by climate change

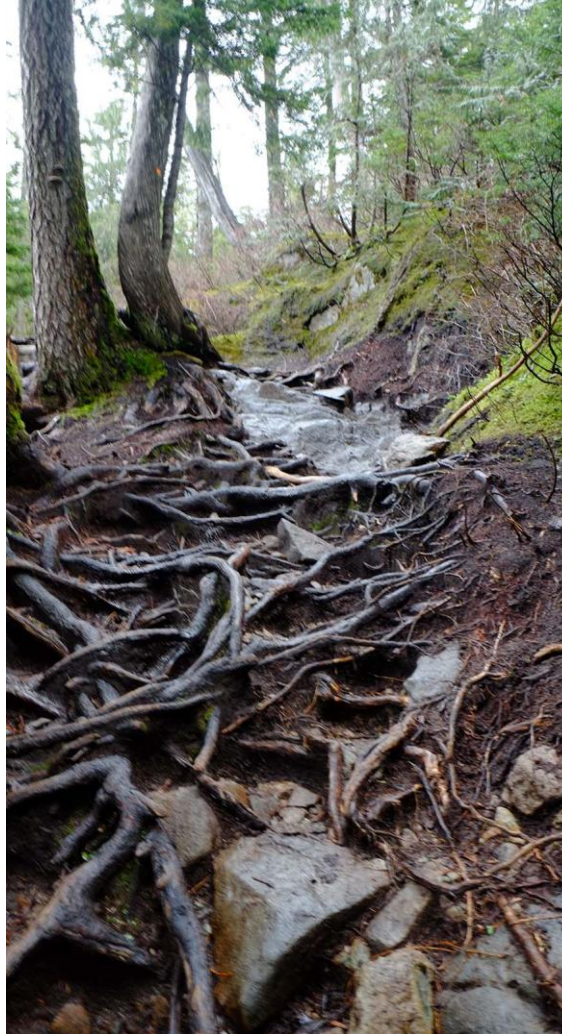
CLIMATE CHANGE IMPACTS

THE ENVIRONMENT

Loss or reduction of:

- Native biodiversity
- Ecosystem services
- Foreshore areas

>> The environment is invaluable and irreplaceable, and climate change is a major threat



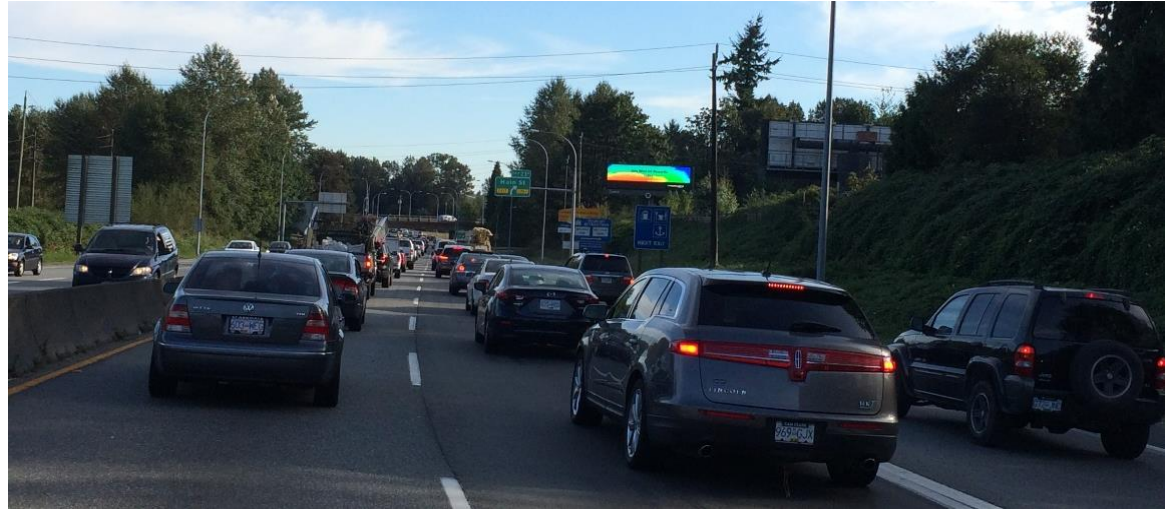
WHAT CAN WE DO ABOUT IT?

MITIGATE AND ADAPT

Two ways to address climate change:

1. **Mitigate:** prevent future climate change from happening by reducing GHG emissions
2. **Adapt:** become more resilient by preparing and responding to climate change

>> To become resilient to climate change, both mitigation and adaptation are needed



District of West Vancouver

ADAPTATION IS NOT NEW

ONGOING WORK AT THE DISTRICT

- Risk assessments for natural hazards
- Natural hazard management plans and implementation strategies
- Hazard and environment development permit areas
- Development standards for buildings, infrastructure, and utilities
- Long-term (40–50 years) asset management framework

>> The District needs a strategy to coordinate and integrate actions and identify gaps



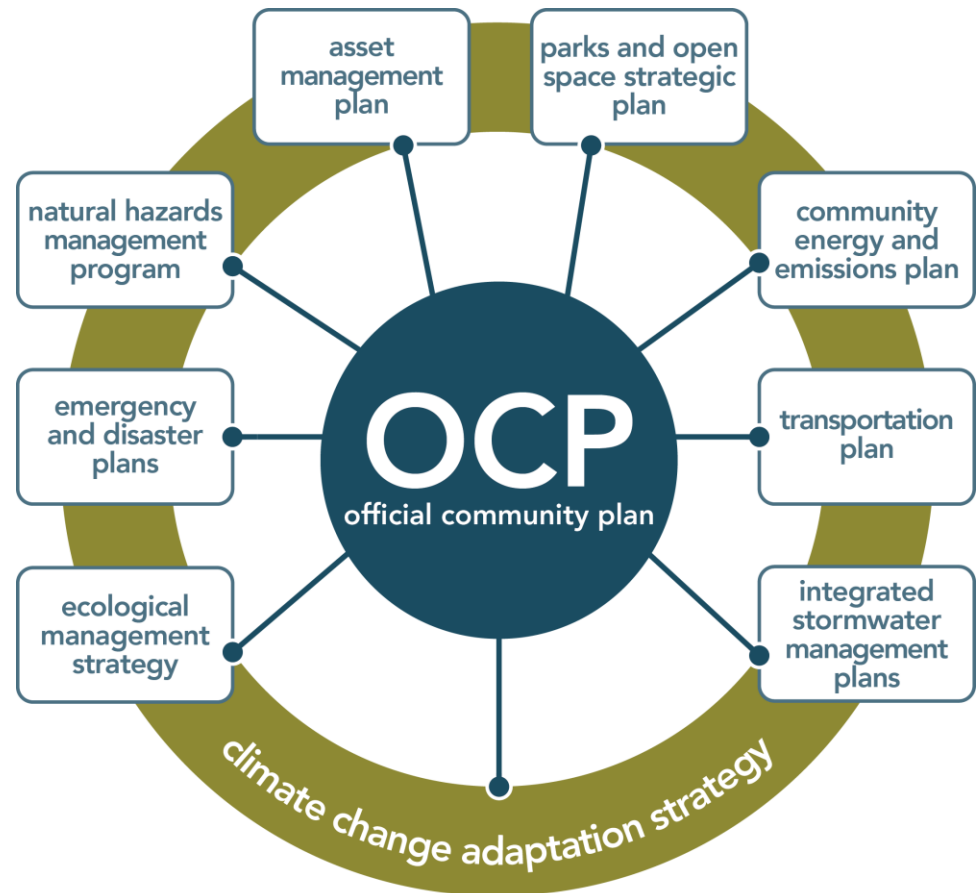
Andrew Kolper, Kerr Wood Leidal

AN OVERARCHING STRATEGY

- Identifies policy and program gaps and new actions
- Supports and informs other programs and plans
- Key to OCP implementation
- Coordinates work

>> The strategy will integrate adaptation into District programs and policies

CLIMATE CHANGE ADAPTATION STRATEGY

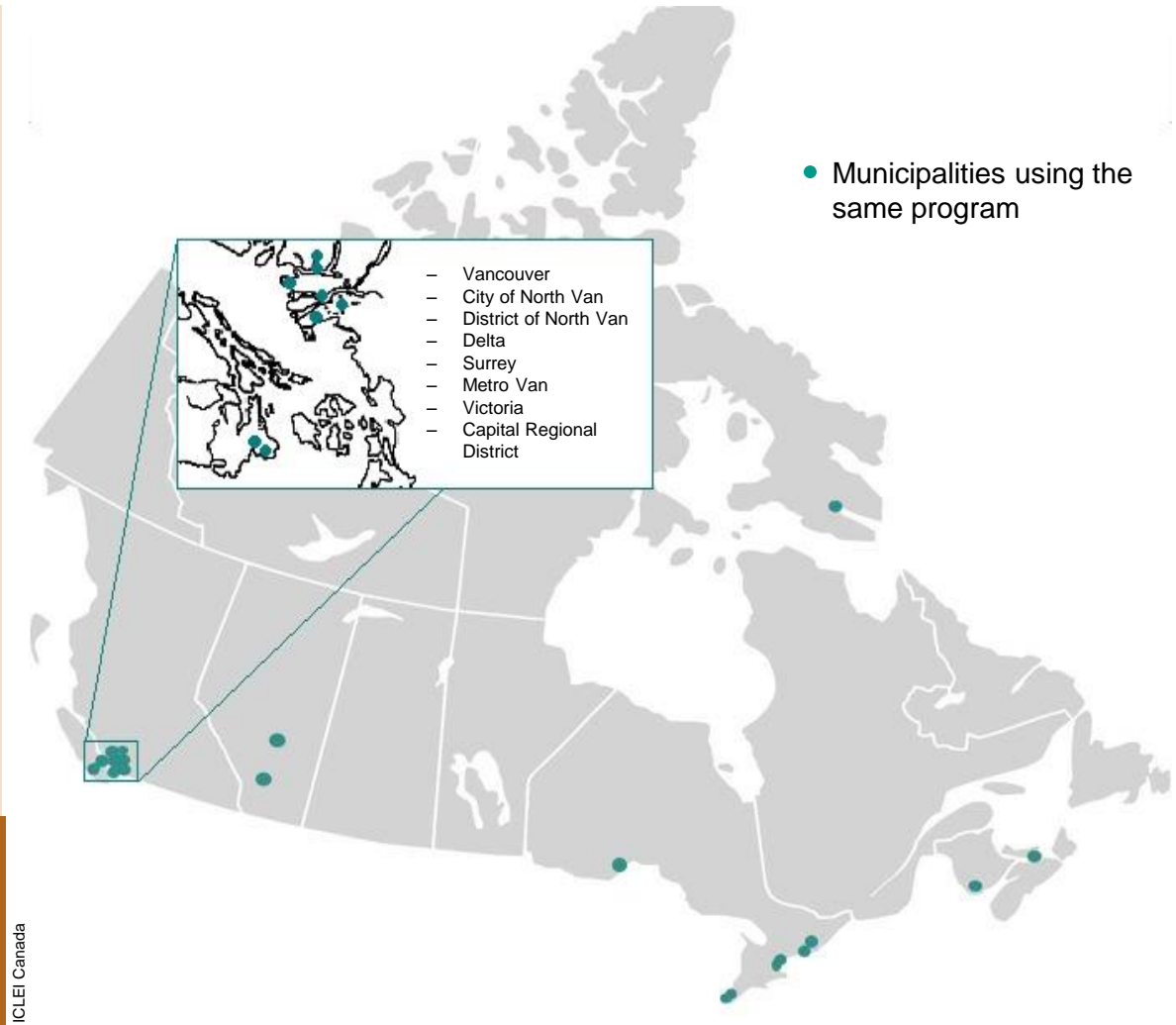


GUIDED BY BEST PRACTICES

ICLEI CANADA PROGRAM

- National program focused on community resilience and adaptation
- Supports communities to prepare for climate change
- Tools to help build internal capacity
- A growing community network

>> The planning process will be guided by a regional best practice, tailored to the District

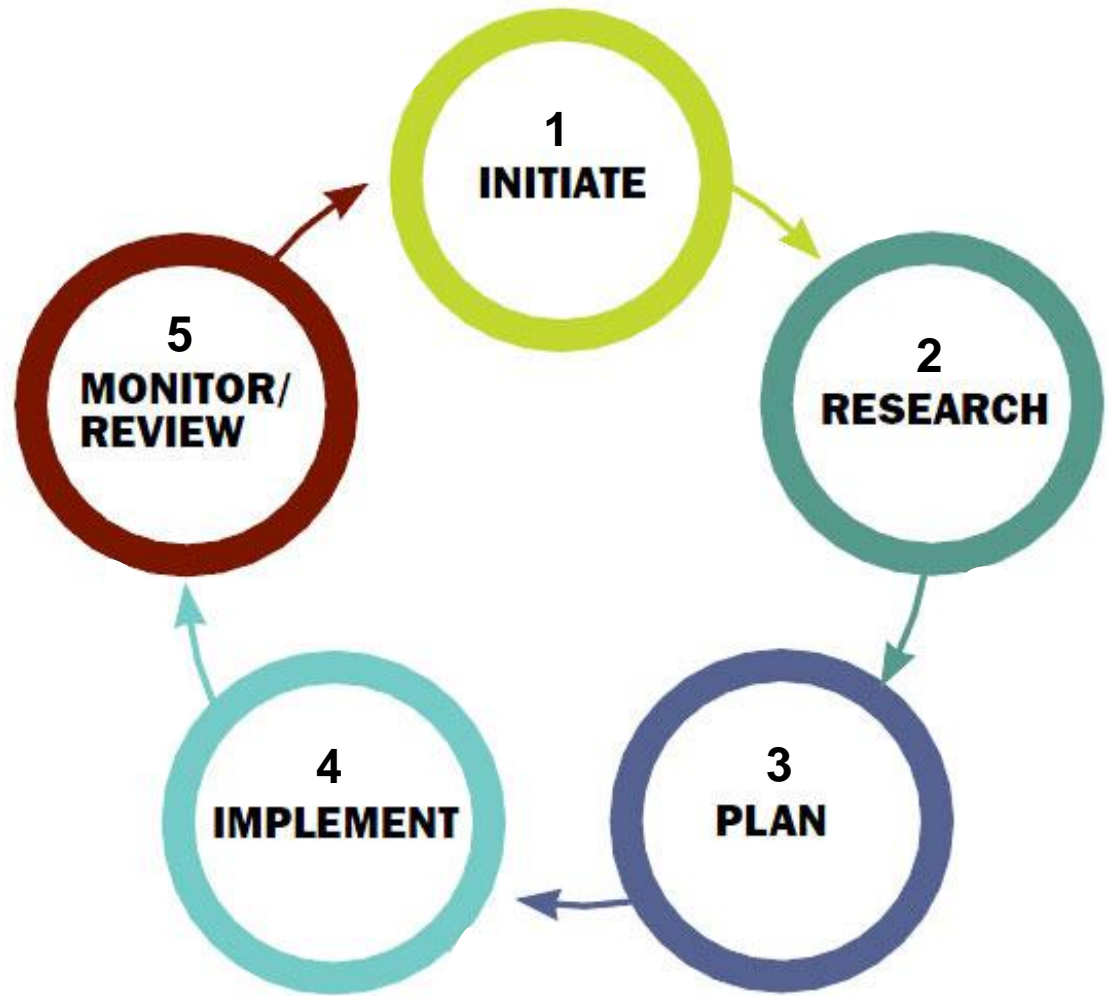


A FIVE-STEP PROCESS

BUILDING ADAPTIVE & RESILIENT COMMUNITIES (BARC) PROGRAM

1. Initiate adaptation planning
2. Identify priority climate change impacts
3. Create a Climate Change Adaptation Strategy
4. Implement the strategy
5. Monitor progress and review actions

>> This is an iterative process—
the strategy will be updated as
new science becomes
available



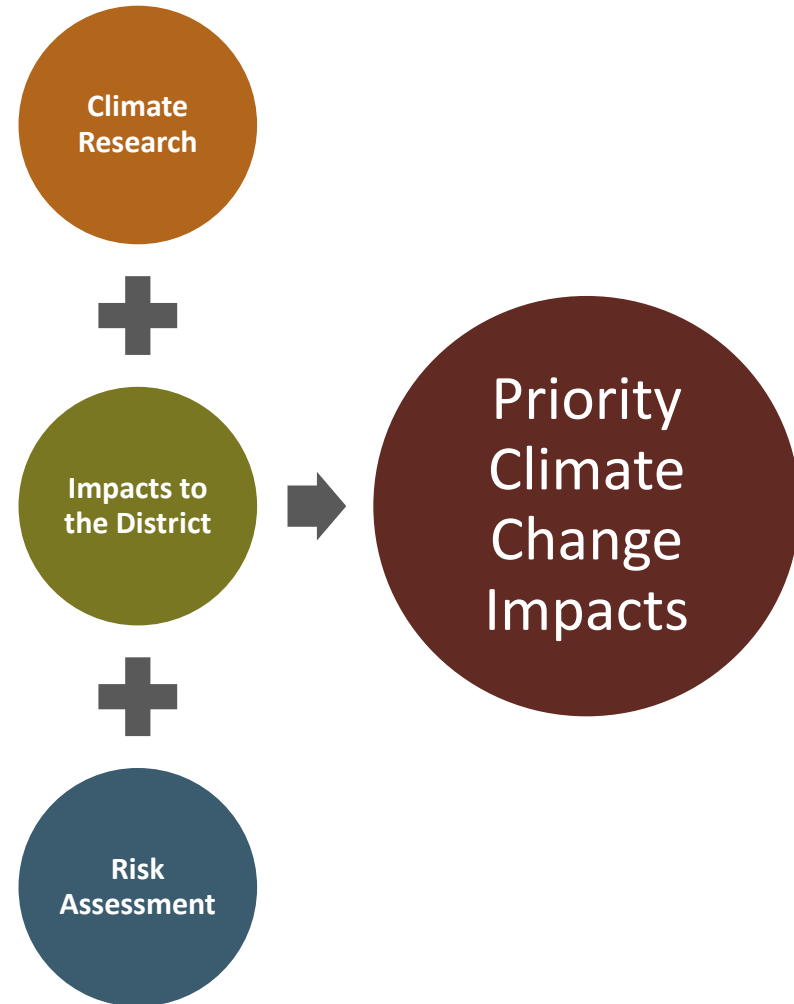
ICLEI Canada

PROGRESS TO DATE

- Research climate changes
- Identify climate change impacts
- Conduct risk assessment to prioritize impacts for action planning

>> The risk assessment helps prioritize climate change impacts for action planning

STEP 2: IDENTIFY PRIORITY CLIMATE CHANGE IMPACTS



PRIORITY CLIMATE CHANGE IMPACTS

- Consequence categories:
 1. Public health & safety
 2. Local economy & growth
 3. Community & lifestyle
 4. Environment & sustainability
 5. Public administration & governance

>> Climate change outcomes can be gradual long-term changes and short intense events

RISK ASSESSMENT

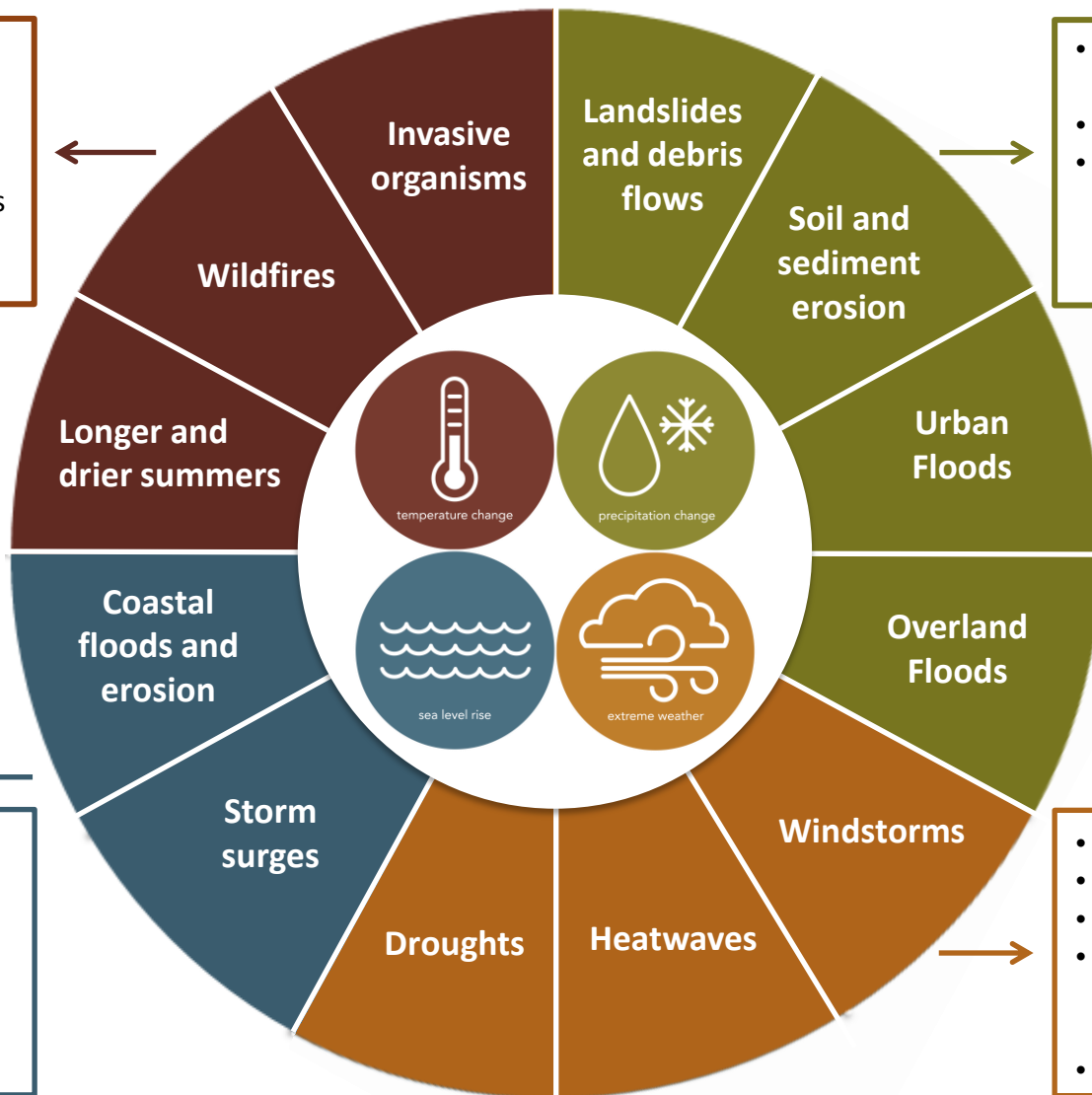


PRIORITY CLIMATE CHANGE IMPACTS

RISK ASSESSMENT EXAMPLES

- Structural damage
- Displaced residents
- Reduced access to recreational areas
- Psychosocial impacts to staff
- Reduced air quality

- Injury as a result of under-cutting
- Damage to park trails
- Decreased quality of freshwater ecosystems



- Water and salt damage
- Reduced access to coastal recreational areas
- Loss of critical foreshore habitat

- Injury
- Structural damage
- Damage to trees
- Delayed delivery of important municipal services
- Power outages

PRIORITY CLIMATE CHANGE IMPACTS

RISK ASSESSMENT

- For each climate change outcome, we assessed:
 - Likelihood
 - Consequence
- Risk = Likelihood x Consequences

Likelihood	
Rare (L1)	More than 20 years
Unlikely (L2)	Within 10-20 years
Possible (L3)	Within 3-5 years
Likely (L4)	Within 2 years
Almost Certain (L5)	Within 1 year

Consequences				
Public Health & Safety	Local Economy & Growth	Community & Lifestyle	Environment & Sustainability	Public Administration & Governance
Negligible (C1)				
Minor (C2)				
Moderate (C3)				
Major (C4)				
Catastrophic (C5)				

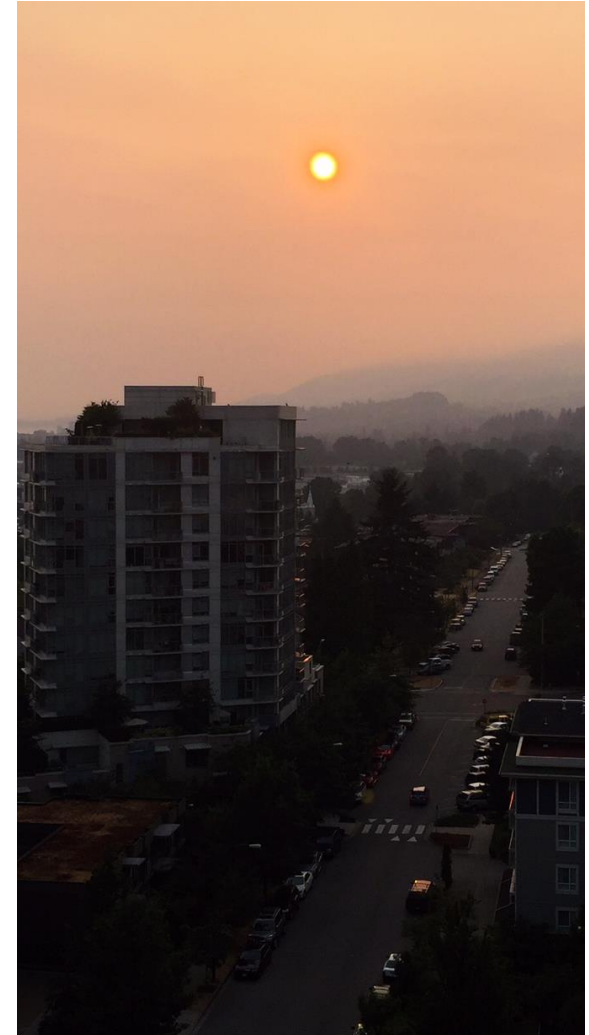


PRIORITY CLIMATE CHANGE IMPACTS

PRELIMINARY RISK ASSESSMENT RESULTS

- Higher risk
 - Wildfires
 - Windstorms
 - Overland floods
 - Landslides and debris flows
 - Coastal floods, erosion, and saltwater intrusion
- Lower risk
 - Droughts
 - Heatwaves
 - Invasive organisms
 - Soil and sediment erosion
 - Urban floods
 - Storm surges
 - Longer and drier summers

>> These results will help focus action planning



WHAT'S NEXT?

- Develop actions and goals to address priority climate change impacts
- Develop actions specific to our needs
- Integrate actions into current operations and day-to-day work plans
- Prepare for ongoing review and refinement

>> The strategy will be comprehensive, specific, integrative, and a “living plan”

STEP 3: CREATE A CLIMATE CHANGE ADAPTATION STRATEGY



CLIMATE ACTION

ADAPTATION ACTIONS AND GOALS

- Actions must address all aspects of the community
 - Social
 - Economic
 - Environment
- Strategic actions will be successful
 - Win-win
 - Co-benefit
 - No-regret

>> What we value is vulnerable.
We must act now for a more resilient future.



UPDATES

QUESTIONS? ASK OUR PROJECT COORDINATORS

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