

Climate Change Adaptation Strategy

Acting now for a more resilient future

Climate Change Adaptation Strategy
Summer 2017

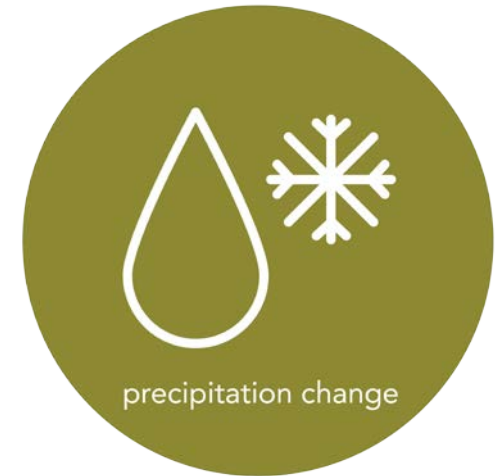
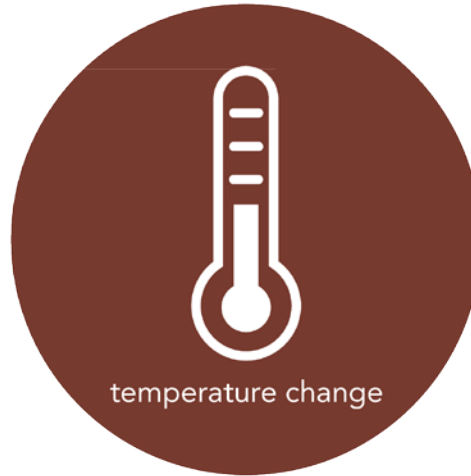


THE PREDICTION

By 2050s, in the District:

1. Warmer average annual air temperatures
2. Changing precipitation
3. Sea level rise
4. More frequent extreme weather events

>> Without action, these changes will intensify and significantly impact the District



THE CHALLENGE

THE EFFECTS OF CLIMATE CHANGE ARE ALREADY EVIDENT

Examples from 2014 - 2016:

- Record-setting summer temperatures
- Windstorms
- Droughts
- Forest fires
- Heavy rainfall events – flooding and small landslides
- Limited snow / heavy snow!



THE CHOICE

TO TAKE CLIMATE ACTION

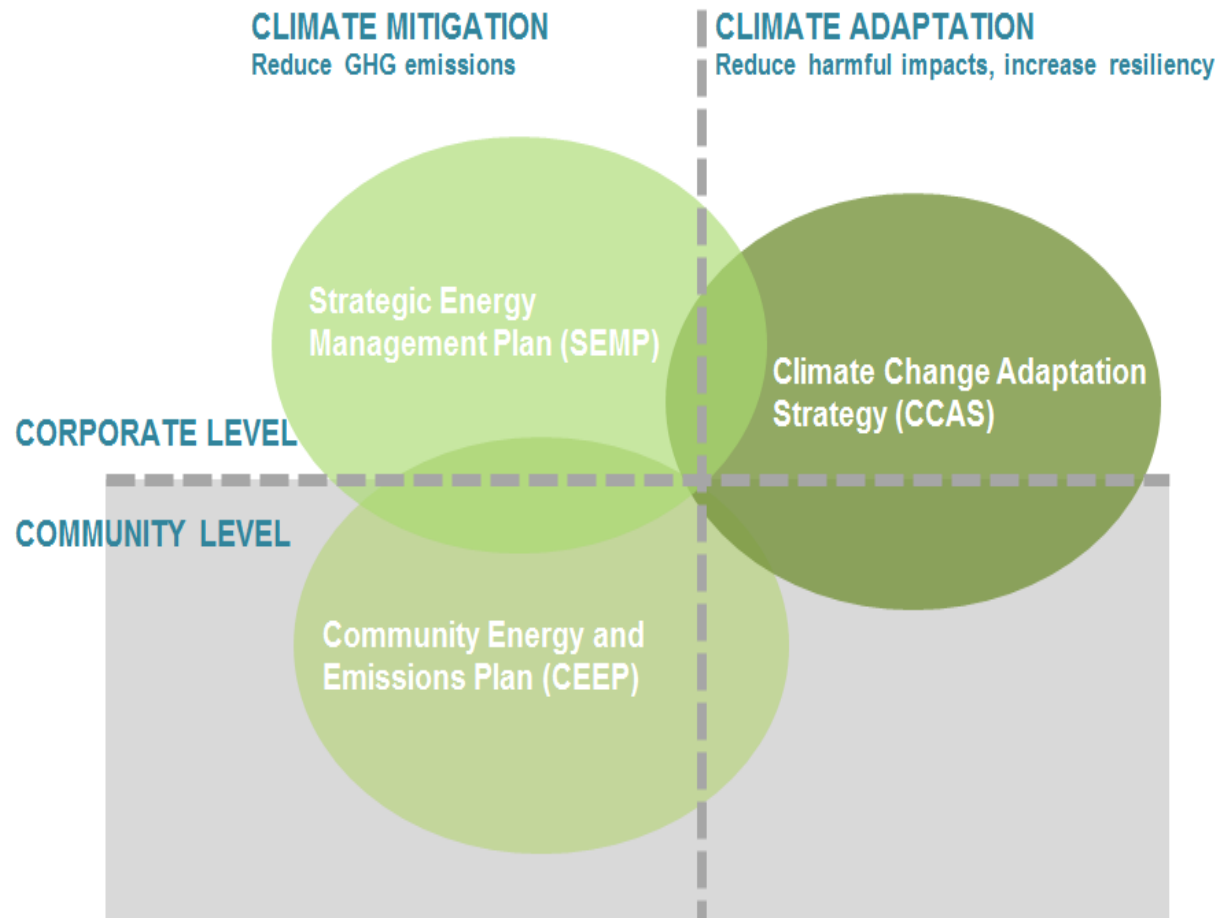
Mitigate

- Reduce GHGs
- Avoid the unmanageable

Adapt

- Prepare for impacts
- Manage the unavoidable

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



ADAPTATION IN CONTEXT

- Builds on and enhances existing work
- Bridges cross-departmental gaps by breaking down silos
- Better coordinate work
 - Identify synergies
 - Reduce costs
 - Achieve maximum benefit

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

AN OVERARCHING STRATEGY TO FOCUS EFFORTS

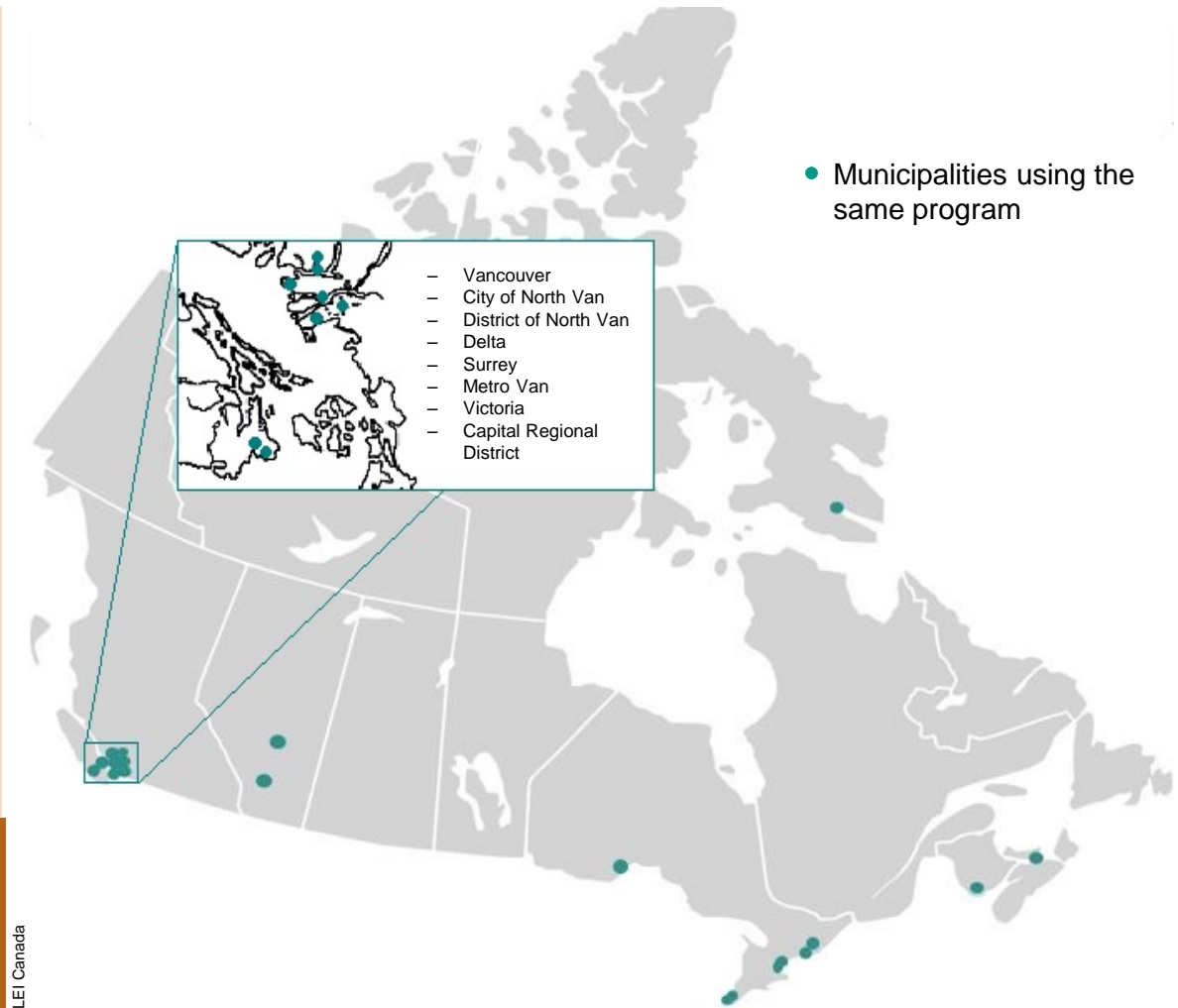


GUIDED BY BEST PRACTICES

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 was guided by a national best practice, tailored to the District



THE PLANNING PROCESS

BUILDING ADAPTIVE & RESILIENT COMMUNITIES (BARC)

1. Initiate adaptation planning
2. Identify priority climate change impacts
3. Create a Climate 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

THE PLANNING PROCESS

Milestone 1: INITIATE



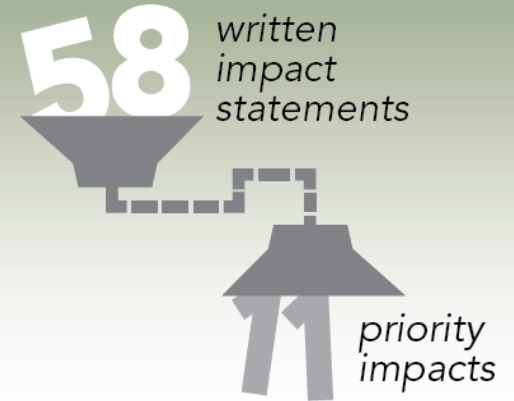
Milestone 2: RESEARCH



Research
best climate
science



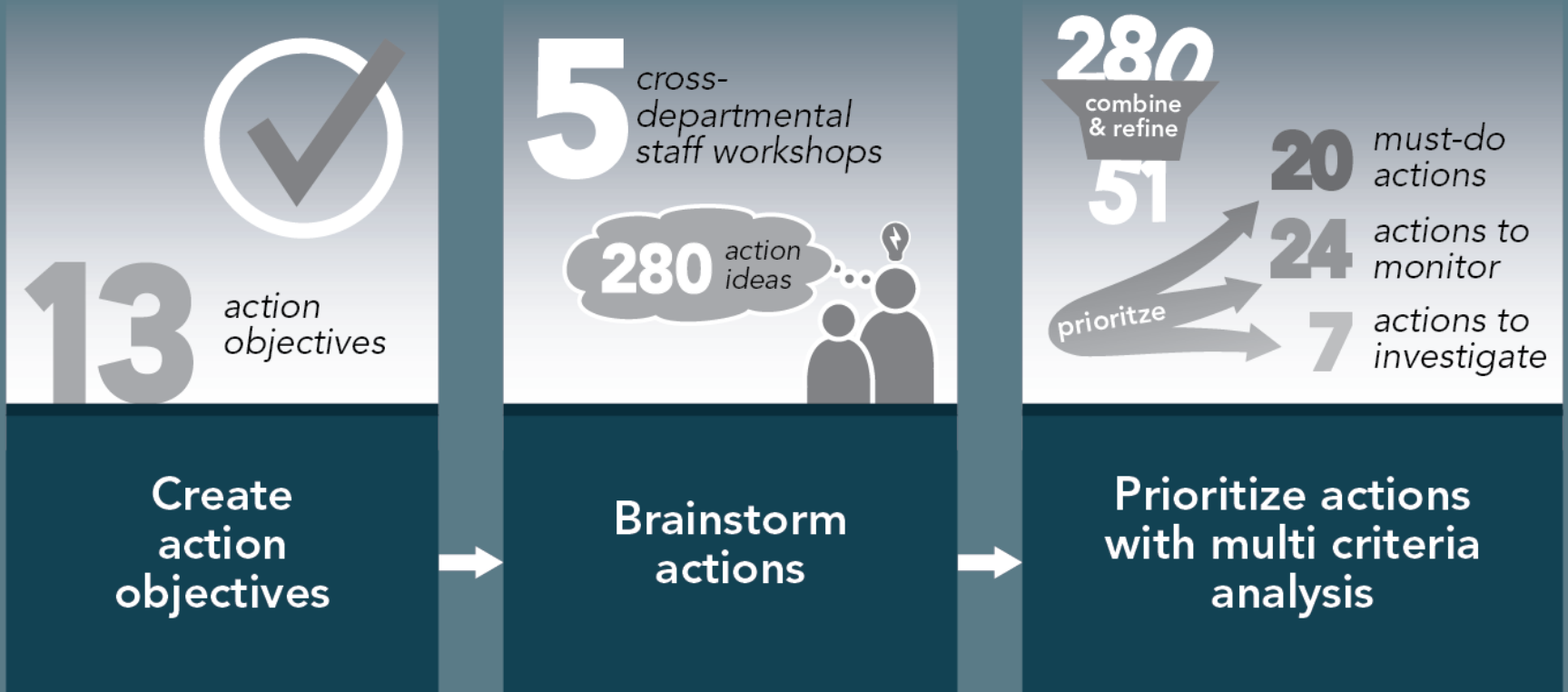
staff
focus
groups = written
impact
statements



Prioritize climate
impacts based on
vulnerability
and risk

THE PLANNING PROCESS

Milestone 3: PLAN



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

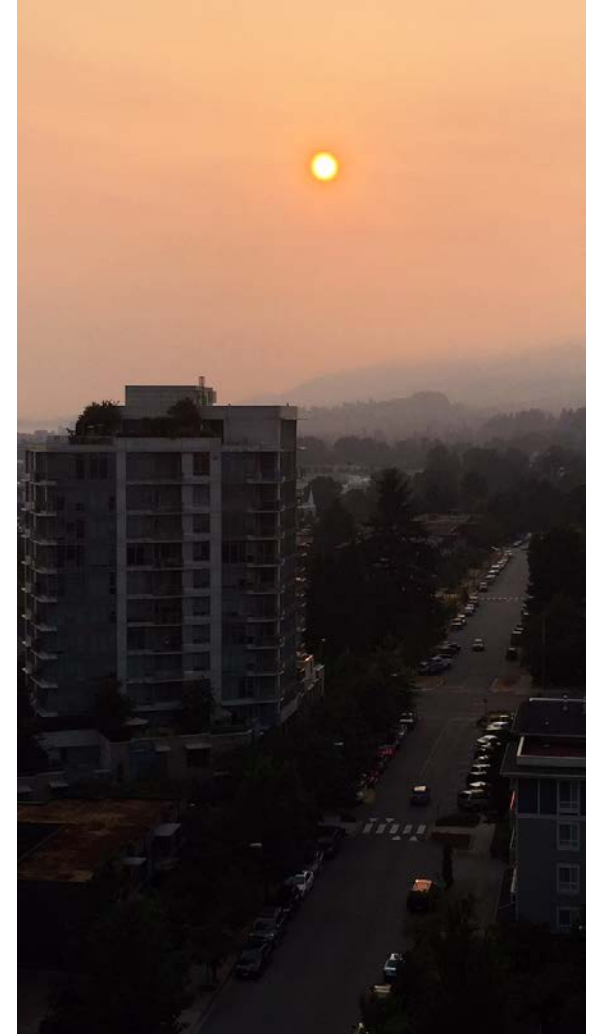
RISK ASSESSMENT



PRIORITY CLIMATE CHANGE IMPACTS

RISK ASSESSMENT RESULTS

1. Wildfires
2. River flooding
3. Landslides and debris flows
4. Urban flooding (sewer back up/basement flooding)
5. Coastal flooding
6. Windstorms
7. Droughts
8. Heatwaves
9. Invasive organisms spreading
10. Soil and sediment erosion
11. Storm surges



ACTION PLANNING

ACTION OBJECTIVES



1	Strengthen capacity to respond and provide continuity of service
2	Increase resiliency of municipal assets
3	Support residents with proactive management of private properties to adapt
4	Ensure critical municipal services are served by robust power systems
5	Support long term health of natural forest ecosystems
6	Reduce potable water consumption
7	Provide alternative water sources for emergency response
8	Seek opportunities for inter-agency coordination to minimize health impacts
9	Reduce the spread of invasive organisms
10	Restore and protect native biodiversity
11	Preserve and enhance critical foreshore habitat
12	Support implementation of adaptation actions

REQUIRED ACTIONS



Objective 1: Strengthen capacity to respond and provide continuity of service

Governance and Management	Assets and Operations	Education and Training
Complete Continuity of Operations Plans to ensure priority service delivery	Implement technology tools to assist in situational awareness and emergency response communication	Provide targeted training for clerks to ensure emergency service requests and concerns are responded to in a timely manner
Plan for the distribution of alternative potable water supply during an emergency	Enhance fire suppression equipment, training, and North Shore collaborations to strengthen the capacity to respond to WUI fires	Seek opportunities for interagency coordination to minimize adverse health impacts to staff, responders, and the public during heat waves and air quality advisories

REQUIRED ACTIONS



Objective 2: Increase resiliency of municipal assets

Governance and Management	Assets and Operations	Education and Training
Update the CWPP and implement recommendations to enhance forest resiliency and protect people, assets and environment	Identify natural capital, conduct risk assessment under climate change conditions, and include in AMP	Strengthen communication and education with the public about the economic, ecological, and social benefits of proactive management of the District's forested areas
Complete ISMPs and implement recommendations to maintain watershed health and reduce the impacts of extreme runoff	Implement recommendations in Debris Geohazard Risk and Risk Control Assessment for debris flood/flow creeks by integrating into AMP	

REQUIRED ACTIONS



Objective 3: Support District residents in proactively managing privately owned property to adapt to more frequent and severe extreme weather

Governance and Management	Assets and Operations	Education and Training
Create and implement a Coastal Hazard Development Permit Area to protect people, property, and foreshore ecosystems from coastal impacts	Review and strengthen building and development policies to require consideration of climate change over the entire lifecycle of a structure	Develop and implement an education and incentive program to encourage more resilient choices for private development design, maintenance, and renewal

REQUIRED ACTIONS



Objectives 5, 6, 7, 8: Support the long-term health of natural forest ecosystems and sensitive areas

Governance and Management	Assets and Operations	Education and Training
Proactively manage all District owned forested areas to increase forest resilience, health, and structure and simultaneously reduce other natural hazards	Implement the Invasive Plant Management Strategy to manage, prevent, treat, and control harmful invasive plants on both public and private land	Create and implement a Coastal Hazard Development Permit Area to protect people, property, and foreshore ecosystems from coastal impacts
Generate area-specific guidelines to acquire sensitive areas, restore existing lands with native species, and increase connectivity between biodiversity hubs, within a Biodiversity Conservation Strategy		

REQUIRED ACTIONS



Objectives 9 & 10: Reduce potable water consumption and provide alternative supply for emergencies

Governance and Management	Assets and Operations	Education and Training
Plan for the distribution of alternative potable water supply during an emergency	Plan for alternative supply of potable water for distribution	Develop and implement programs for rainwater and grey water collection and recycling

REQUIRED ACTIONS



Objective 11: Reduce vulnerability to heatwaves and poor air quality

Governance and Management	Assets and Operations	Education and Training
	Create more opportunities for heat refuge areas in the District	Support health and social support-related organizations and other sector stakeholders with the distribution of regular public safety messaging using the District's communication channels

NEXT STEPS

Finalize Plan

- Incorporate Council's comments
- Graphic design & layout

Implement via

- Departmental plans
- Asset management plans
- Annual financial planning

Monitor

- Indicators

Review

- Annual update
- 5-year review

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

COMPLETE MILESTONES 4 & 5



ADAPTATION IS WELL UNDERWAY

