

# CLIMATE CHANGE ADAPTATION STRATEGY 2024-25 UPDATE

March 13, 2024





The City of Vancouver is on the unceded traditional territory of the Musqueam, Squamish and Tsleil-Waututh First Nations.

These lands are the foundation of thousands of years of living culture of the Musqueam, Squamish and Tsleil-Waututh peoples.

We acknowledge hə́n'qəmiṇə́m and Skwxwú7mesh as the original languages of these lands.



# Agenda

1. Climate change context
2. History of the Climate Change Adaptation Strategy
3. 2024-25 Strategy Update
4. Financial implications
5. Looking forward



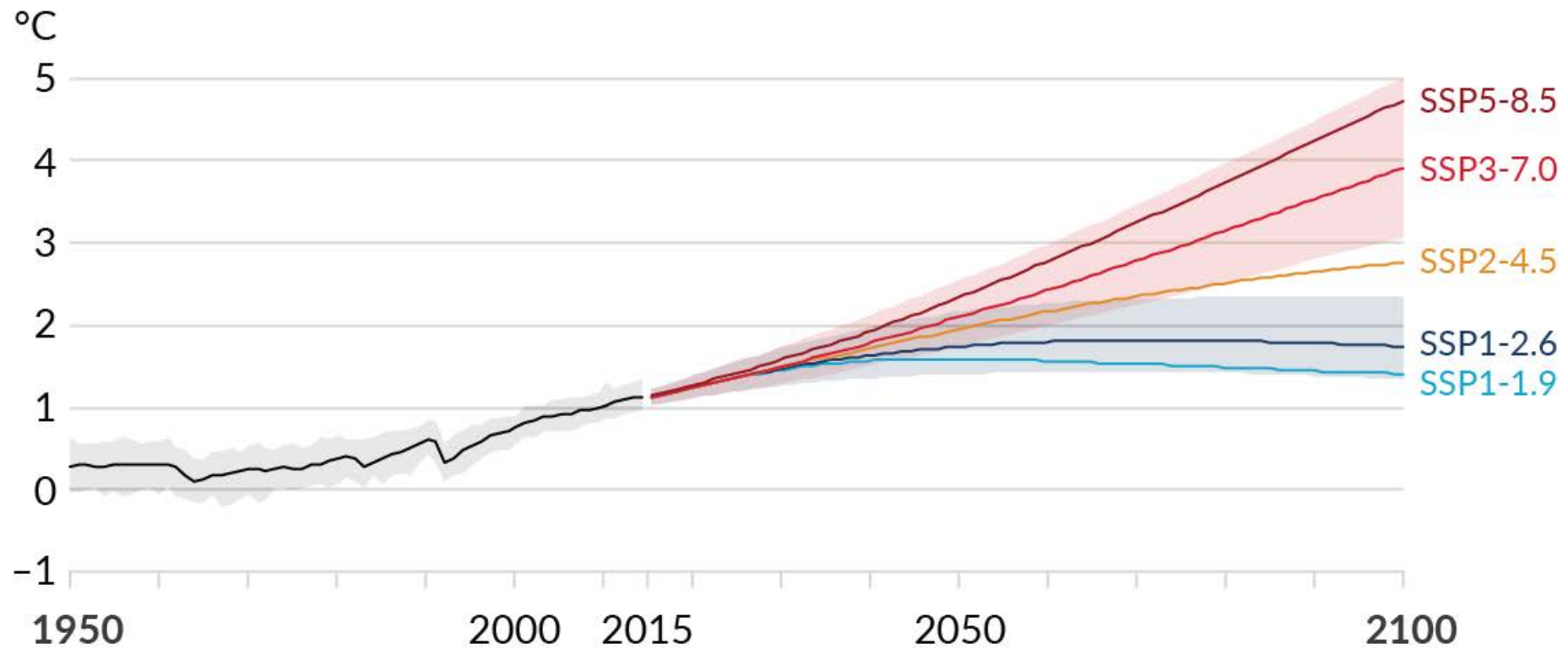


# 1. Climate change context



# Climate change context

## Global changes





**Canada is warming at twice the  
global average rate**

**Climate change is increasing risks to health  
and wellbeing, nature and biodiversity,  
infrastructure, and the economy**

# Climate change context

## Local impacts

In the last three years, British Columbia has experienced:

- Canada's most fatal climate-related event (2021 heat dome)
- The province's most costly weather event (2021 flooding)
- The most destructive and expensive wildfire season on record (2023)



The background image is a blurred photograph of a city park. In the foreground, several people are walking, their figures out of focus. To the left, a person is walking towards the camera. In the center, a person is walking away. To the right, a person is walking towards the camera. In the background, there are tall city buildings and a large tree. A bench with a rainbow flag is visible in the middle ground.

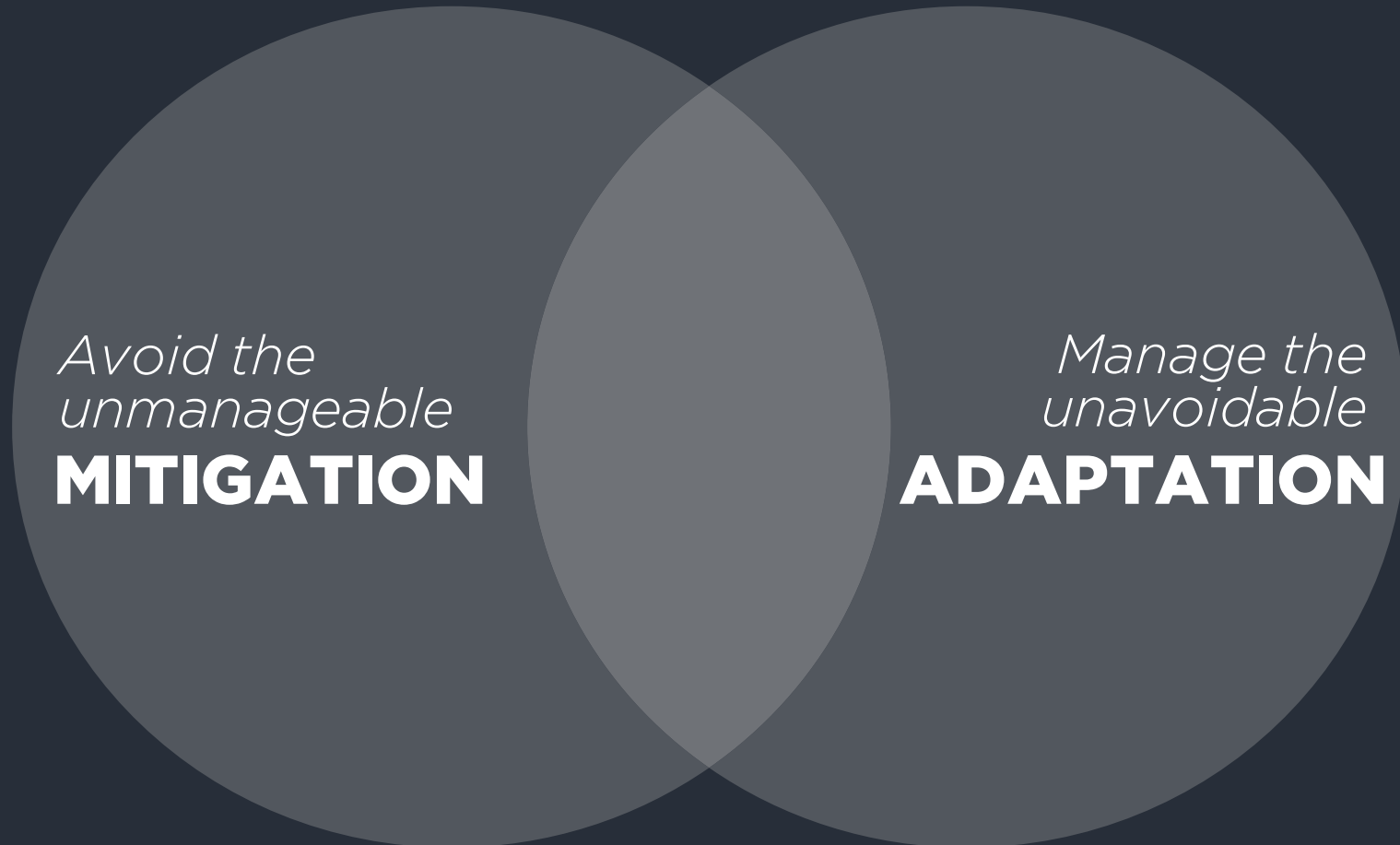
**93% of polled Vancouver residents are concerned or very concerned about climate change.**

**Extreme weather and disasters are the top concern.**

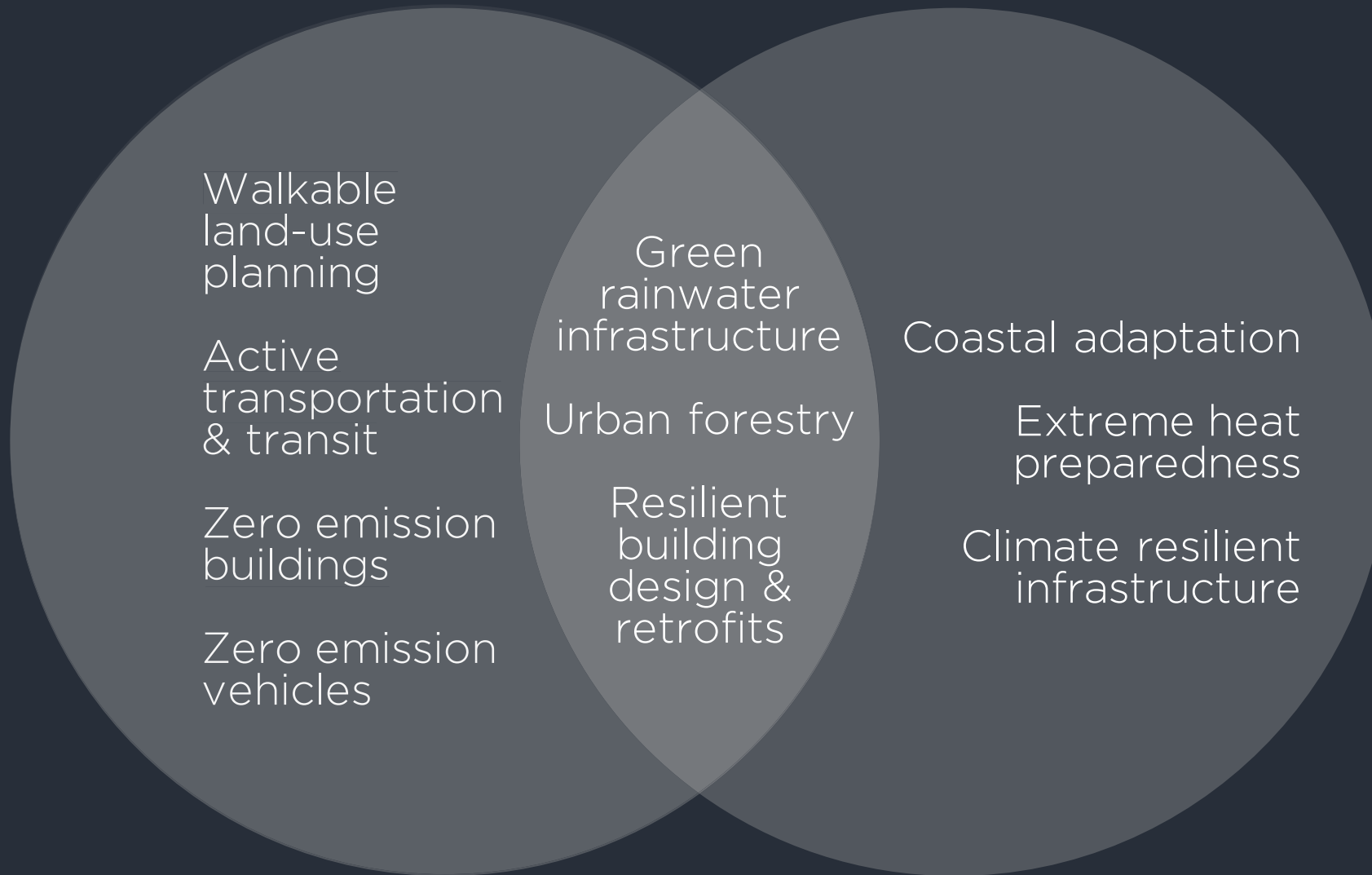


# Climate change context

Responding to this challenge



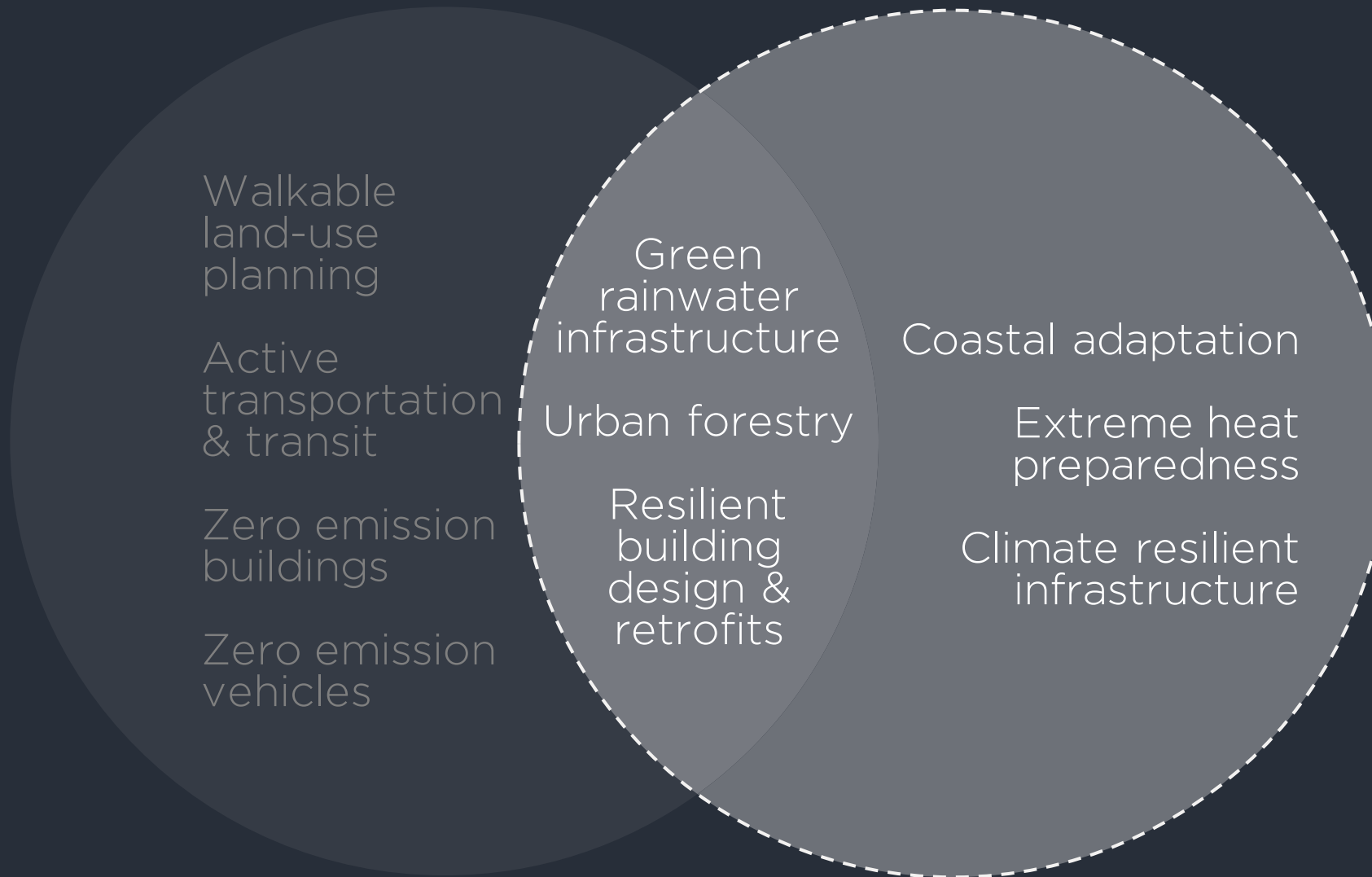




**CLIMATE EMERGENCY  
ACTION PLAN**

**CLIMATE CHANGE  
ADAPTATION STRATEGY**





**CLIMATE EMERGENCY  
ACTION PLAN**

**CLIMATE CHANGE  
ADAPTATION STRATEGY**



# Associated benefits

## Health and safety

- Decreased health risks from hazard exposure
- Improved access to greenspace for physical activity and social connection
- Improved mental health outcomes

## Financial

- Every dollar spent on adaptation measures in Canada could save \$13 to \$15 in the long term

## Environmental

- Improved ecological connectivity and habitat
- Improved air and water quality



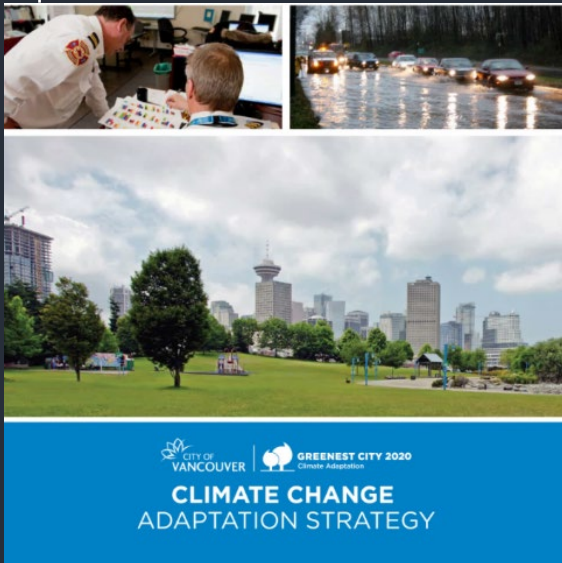


## **2. History of the Climate Change Adaptation Strategy**



# Climate Change Adaptation Strategy

2012



2018



- Robust infrastructure
- Resilient buildings
- Natural areas & green space
- Connected & prepared communities
- Coastal preparedness
- Enabling actions



# 2018 Strategy

## Progress update

### 101 core and enabling actions over 2018-23

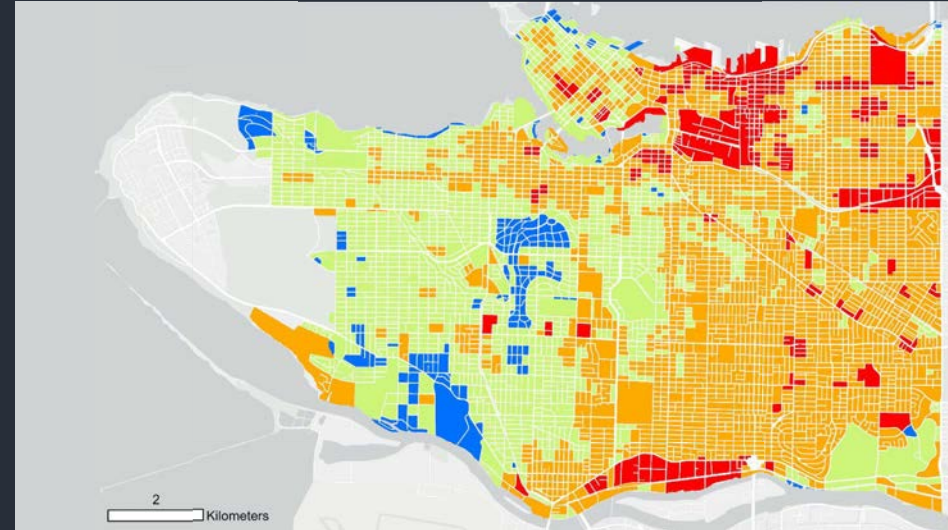
|                 |                     |               |                            |
|-----------------|---------------------|---------------|----------------------------|
| Redundant<br>15 | Carry-Forward<br>20 | Ongoing<br>27 | Complete or On Track<br>39 |
|-----------------|---------------------|---------------|----------------------------|

# Adaptation highlights





# Adaptation challenges





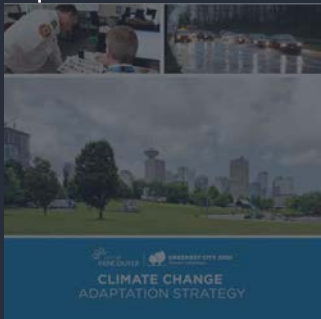


### **3. 2024-25 Strategy Update**



# Climate Change Adaptation Strategy

2012



2018



2023

- Report out on 2018 actions
- Update process begins

2024



# Updating the Strategy Process

## PHASE 1

Planning  
& initiation

*January – April 2023*

## PHASE 3

Action evaluation  
& refinement

*October – January 2024*

# 2026-30 Climate Plan

2018  
Strategy

## PHASE 2

Staff workshops  
& action development

*May – October 2023*

## PHASE 4

Implementation  
& monitoring

*2024-2025*



# Changes since 2018

Vancouver's main climate-related hazards



**EXTREME  
HEAT**



**POOR AIR  
QUALITY**



**DROUGHT**



**EXTREME  
RAINFALL**



**SEA LEVEL  
RISE**



# Extreme heat

2050s projections [SSP585]

## warmer temperatures

# 2.4°C

Warmer temperatures year-round, with an average temperature increase of 2.4C

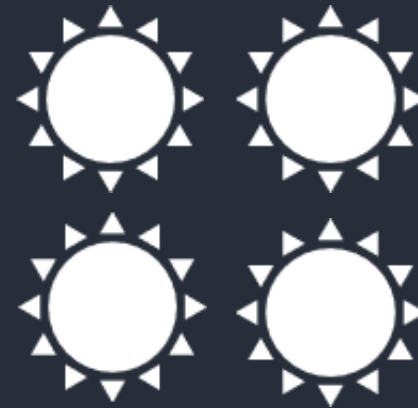


The hottest days will be hotter

**9x** as many days over 30°C

**3x** as many days over 25°C

## more frequent & intense heatwaves



**Heatwaves will be 4x more frequent**

On average, heatwaves will last

# 3-6 days

and involve warmer day and nighttime temperatures





# Poor air quality

Climate change-related poor air quality has two main causes:

## wildfire smoke



Longer fire seasons cause more exposure to smoke

Increasing wildfire frequency and intensity

## ground-level ozone



The main cause of this harmful gas is vehicle exhaust

Warmer and drier summers can lead to elevated levels



# Drought

2050s projections [SSP585]

## decreasing summer rainfall



A 4% decrease in average summer rainfall, to 140mm

## longer rain-free dry spells



The length of an average dry spell will increase by 17% to 27 days





# Extreme rainfall

2050s projections [SSP585]

## shifting precipitation patterns

Average fall rainfall is expected to increase by:

# 12%

and by the end of the century, some years may have more rain in fall than in winter



**Annual average snowfall will decrease by 60%**

## more frequent and intense rainfall



**One-in-twenty year rainfall events will double in frequency**

The amount of rain in a single day extreme rainfall event will increase by 20% to:

# 86mm



# Sea level rise

Future projections [Province of BC]

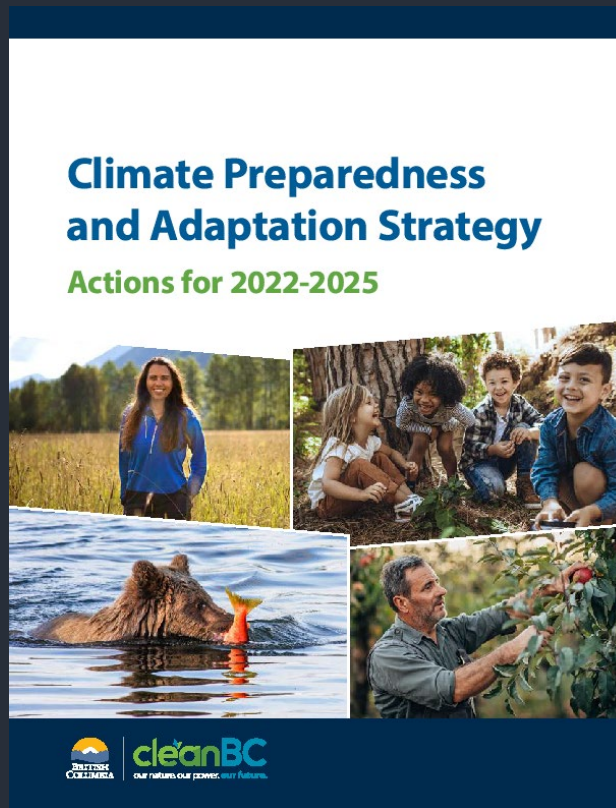
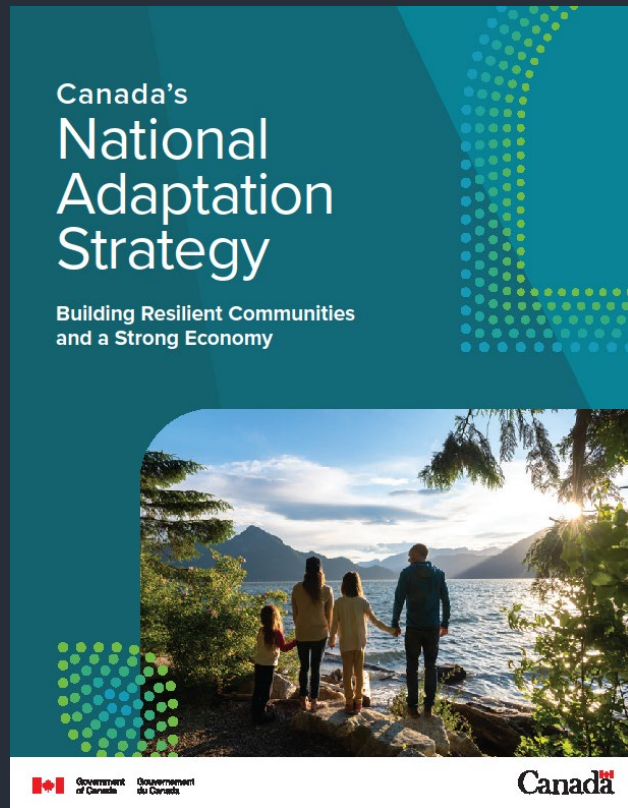
The Province of British Columbia currently advises cities to plan for 50cm of sea level rise by 2050 and 1m by 2100, though projections past 2050 vary widely.





# Changes since 2018

## New policy landscape



# 2024-25 Strategy



**EXTREME  
HEAT**



**POOR AIR  
QUALITY**



**DROUGHT**



**EXTREME  
RAINFALL**



**SEA LEVEL  
RISE**

## **ENABLING ACTIONS**

- Climate projections
- Impacts
- Disproportionately impacted populations
- Objectives
- Actions





## EXTREME HEAT

### Priority focus areas

- Supporting indoor cooling and thermal safety at home
- Improving access to cooling in public spaces
- Stewarding the urban forest and green space to support outdoor cooling

### EXAMPLE ACTION

Install 20-40 new tree pits (and planted trees) in low canopy areas per year, including appropriate soil volume improvements.



## **POOR AIR QUALITY**

### **Priority focus areas**

- Reducing risk to poor air quality
- Cross-cutting actions: extreme heat and air quality

#### **EXAMPLE ACTION**

Expand on 2023 DIY Air Cleaner (filter) pilot in partnership with the Pacific Institute for Pathogens, Pandemics, and Society to provide supplies for 300 air cleaners, and enable community members to build their own.





## DROUGHT

### Priority focus areas

- Minimize risk from drought through proactive management in collaboration with key partners

#### EXAMPLE ACTION

Accelerate residential metering and transition to advanced metering infrastructure meter reading systems as outlined by the Water Demand Management Strategy and supported by regional direction from Metro Vancouver.





EXTREME  
RAINFALL

## Priority focus areas

- Improving our understanding of extreme rainfall
- Managing rainwater through green rainwater infrastructure and the built environment
- Supporting community stewardship of rainwater infrastructure

### EXAMPLE ACTION

Incorporate green rainwater infrastructure into three hectares of street area in City right-of-way reconstruction projects.





## SEA LEVEL RISE

### Priority focus areas

- Planning for sea level rise and coastal hazards
- Piloting creative solutions for coastal resilience

### EXAMPLE ACTION

Develop a coastal adaptation and flood management policy that outlines a city-wide approach to coastal adaptation planning, including governance, policy tools, and funding mechanisms.

A background image showing a group of people in a workshop or meeting room. Some are seated at long tables, looking at documents or writing. Others are standing and talking. The room has large windows and a whiteboard in the background. The image is dimmed to allow text to be read.

## ENABLING ACTIONS

### Priority focus areas

- Mainstreaming climate adaptation in City practices
- Collaborating with key partners and senior levels of government
- Building community awareness of climate change hazards
- Setting intentions and commitments for the 2025 Strategy

### EXAMPLE ACTION

Integrate updated climate projections into City processes to inform relevant planning, policies, and infrastructure projects.





## **4. Indicator and Financial Framework**

# Indicator framework

## Climate change indicators

- # of days under Special Weather Statements for heat or rainfall
- # of days under Air Quality Advisories
- climate-related costs

## Strategy action indicators

- # of residential water meters installed
- hectares of street area managed by GRI added
- % tree canopy cover
- # cool kits and DIY air cleaners distributed



# Financial framework

Investment in current Capital Plan

## \$73.9M

**97%** of this Strategy will be funded within the existing 2023-26 Capital Plan, as an extension of ongoing work or through workplan refinement/reallocations.



## 4. Looking forward



# Looking forward



# Looking forward

- Annual progress reporting with CEAP and HRVA
- Undertake public engagement on climate adaptation for the 2026-30 Climate Plan, focusing on those most impacted by climate change
- Seek meaningful collaboration with Musqueam, Squamish and Tsleil-Waututh on Host Nations priorities
- Develop future investment needs and potential savings for longer term climate adaptation





**Thank you**