

Collingwood Climate Adaptation Plan

Workshop #2

January 14, 2026



AMETHYST
INFRASTRUCTURE
MANAGEMENT



redbrick
COMMUNICATIONS



Agenda

- ✓ Introductions
- ✓ Project Overview
- ✓ Climate Profile & Projected Impacts
- ✓ Vulnerability Assessments
- ✓ Breakout Sessions
- ✓ Key Takeaways from Breakout Sessions
- ✓ Next Steps



Land Acknowledgement

For more than 15,000 years the First Nations walked upon, and cared for, the lands we now call home: Anishinabek, Haudenosaunee, Ojibwe, and many others who cared for their families and communities, the way we now seek to care for ours.

The Town of Collingwood acknowledges the Lake Simcoe-Nottawasaga Treaty of 1818 and respects all of the Nation-to-Nation agreements that have formed relationships with the original inhabitants of Turtle Island; the reality of our shared history; the current contributions of Indigenous people within our community and seeks to continue empowering expressions of pride amongst all of the diverse stakeholders in this area.

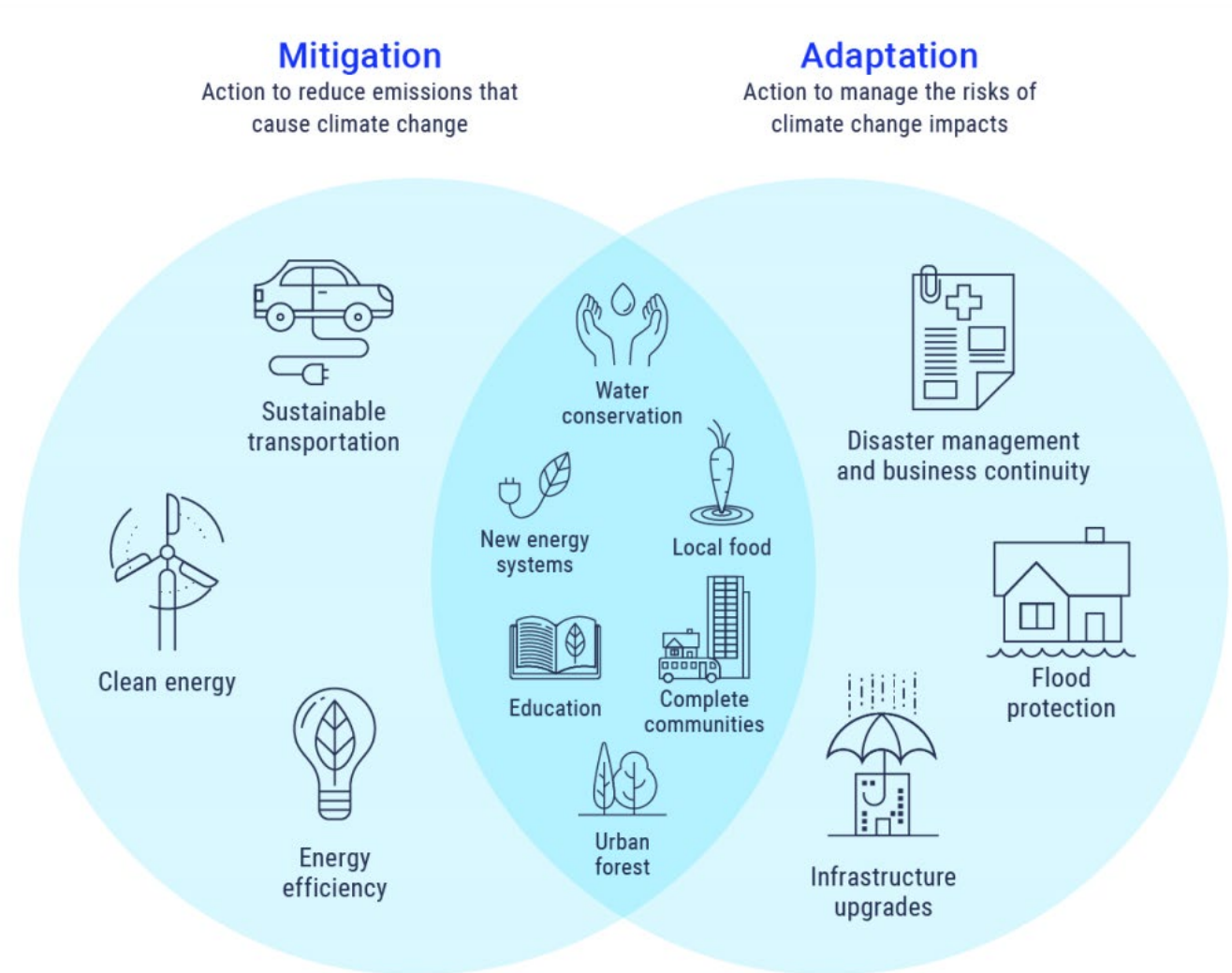
We seek to do better, to continue to recognize, learn, and grow, in friendship and community, Nation-to-Nation.



Collingwood Climate Adaptation Plan

What is Climate Adaptation

Mitigation vs. Adaptation



Source: Government of Canada (2022)

What is Climate Adaptation



Infrastructure Upgrades and Design Standards



Policy, Planning and Regulatory Updates



Emergency Planning and Response Enhancement



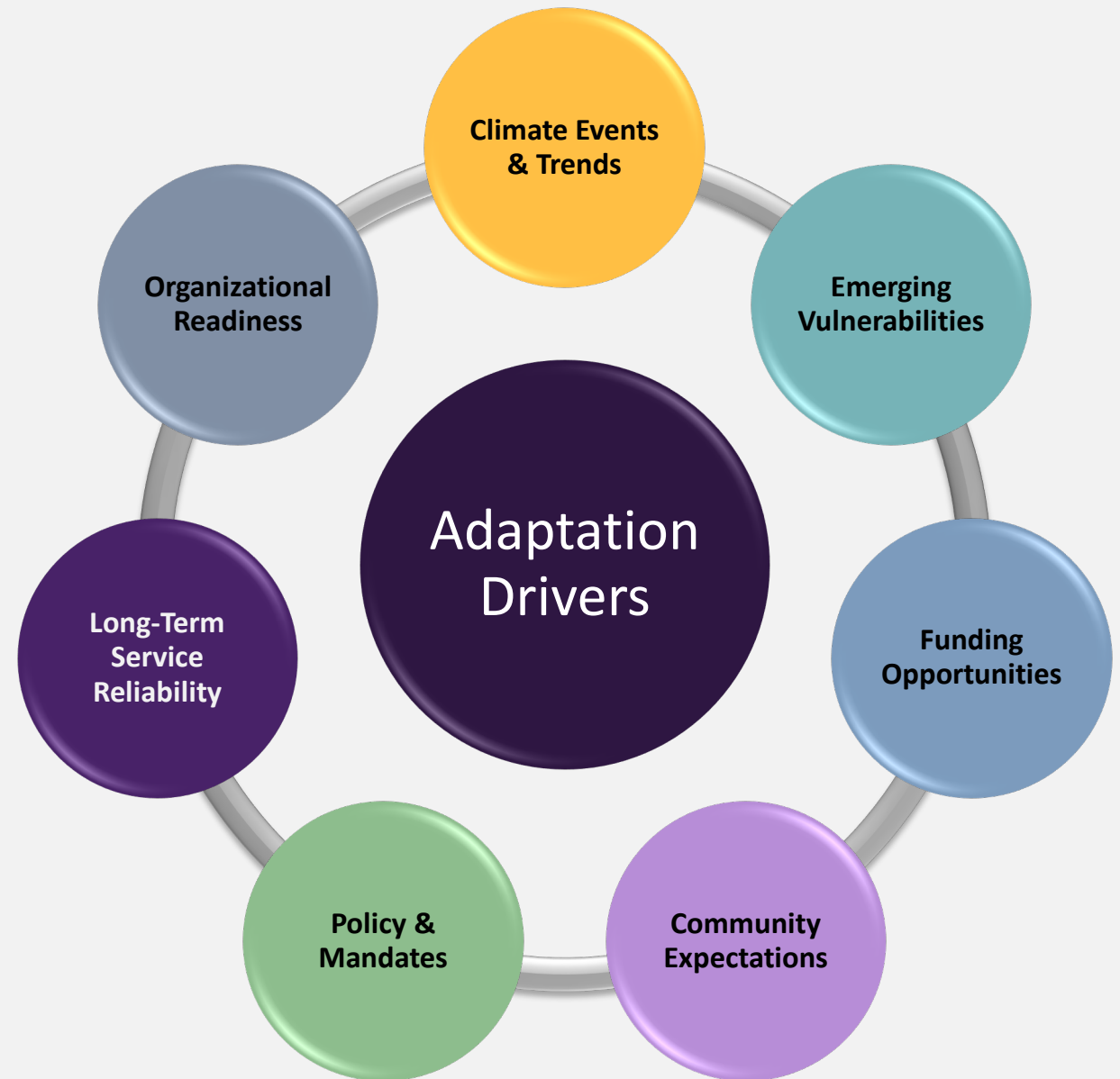
Education, Capacity Building, and Partnerships



Maximizing Economic and Ecological Opportunities

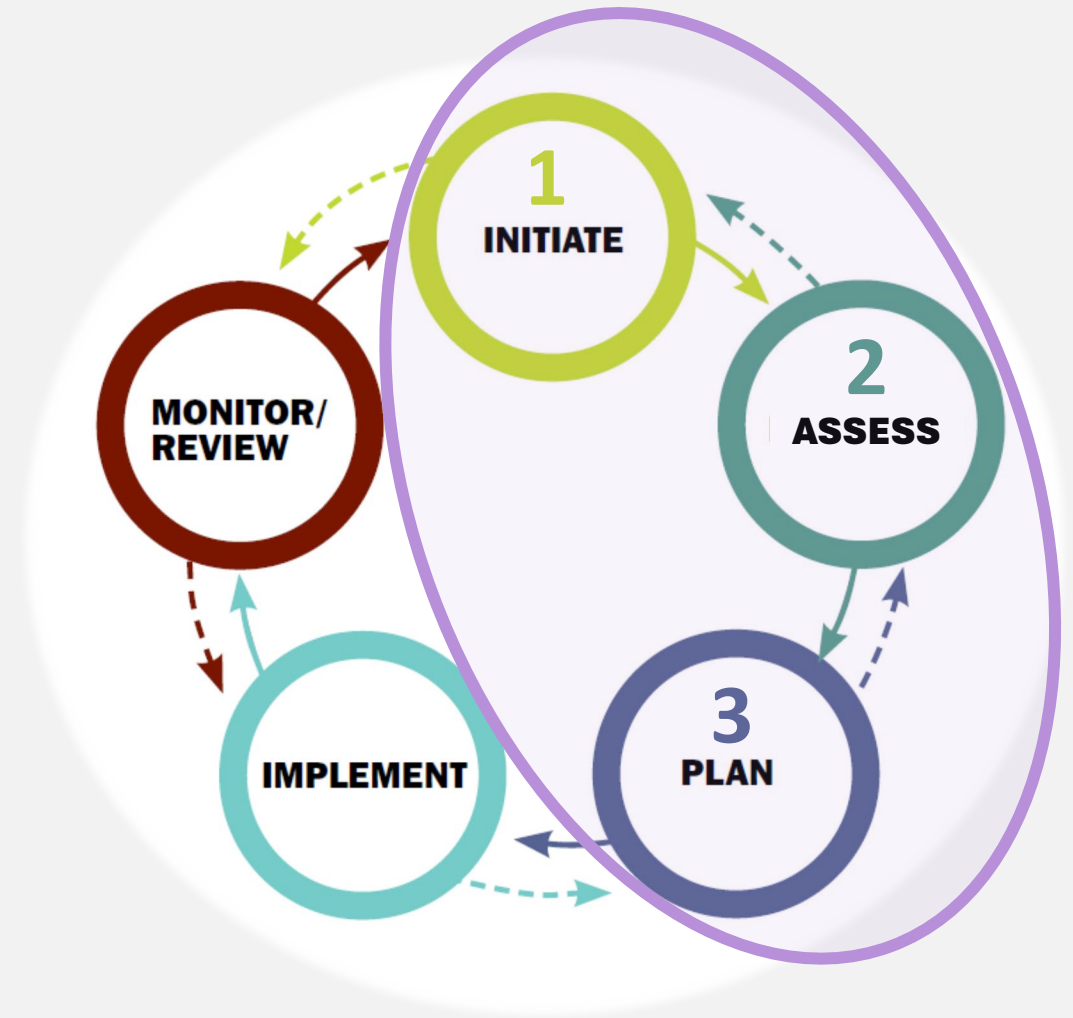
Why develop a climate adaptation plan for Collingwood?

- Increasing climate impacts affecting services and infrastructure
- Council and community direction through existing plans and policies
- Need to integrate climate risk into current and future projects
- Opportunity to build long-term resilience through collaboration



Building Adaptive & Resilient Communities (BARC)

Five milestone framework developed by the International Council for Local Environmental Initiatives (ICLEI) Canada



Source: Adapted from ICLEI Canada

Resilient Collingwood Task Force

Primary Functions

Collaborate

Bring together stakeholders to share knowledge and coordinate actions

Advise

Review climate risk and vulnerability assessment findings and help identify adaptation priorities and feasible actions

Champion

Promote integration of climate resilience into decision-making, budgets, and operations

Collingwood Climate Adaptation Plan

Key Deliverables & Schedule



Today's Workshop

Purpose & Objectives



What we are doing today

- **Validating** and refining climate impact statements
- **Assessing vulnerability** across systems using sensitivity and adaptive capacity
- Building a **shared understanding** of priority climate risks for Collingwood



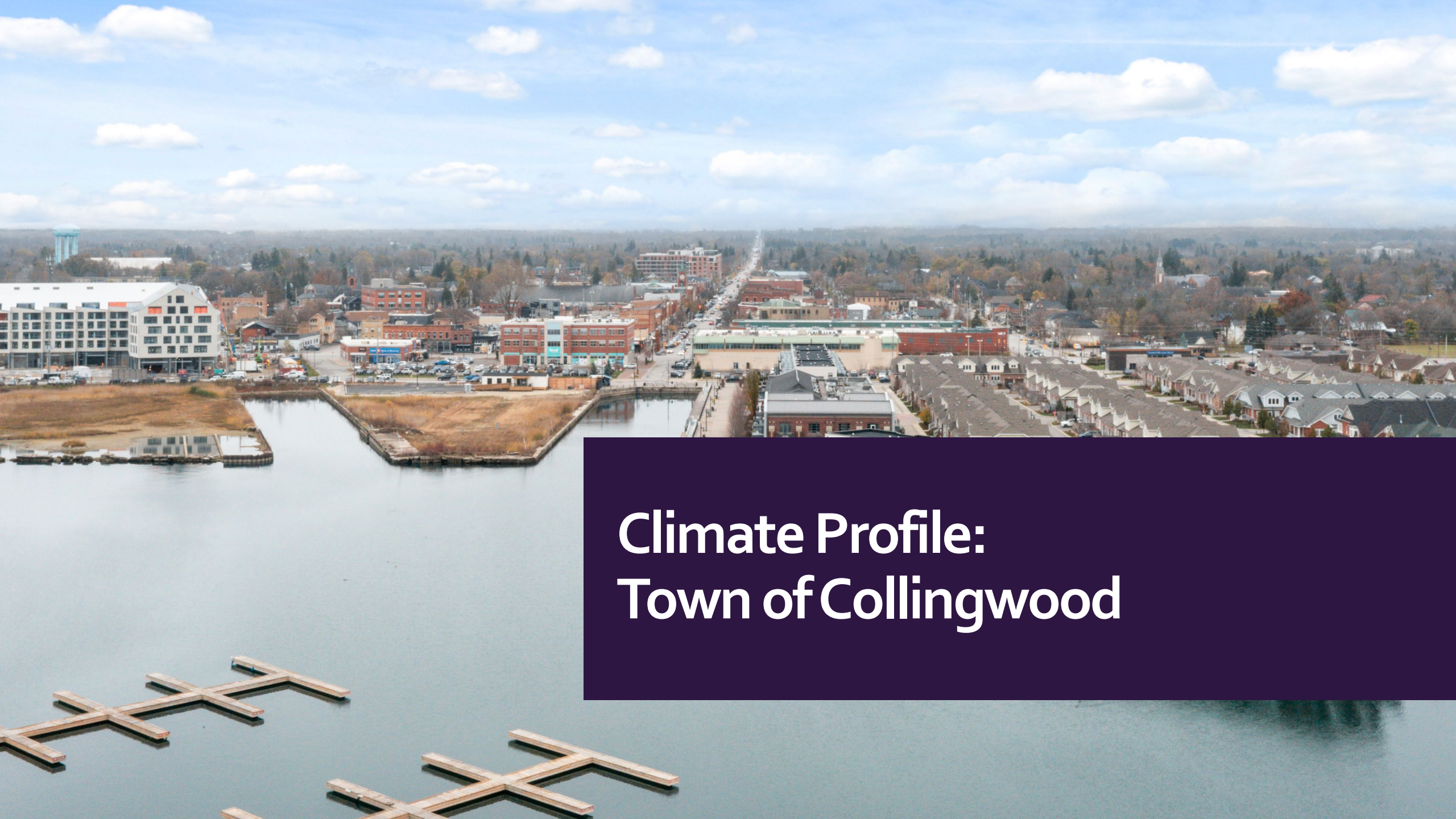
What we need from you

- Bring your **operational and community perspectives**
- Focus on how **systems and services** are affected
- **Share insights**, not perfect answers



How this supports the project

- **Strengthens** the vulnerability assessment
- Grounds analysis in **local experience**
- **Informs priority risks** and next steps



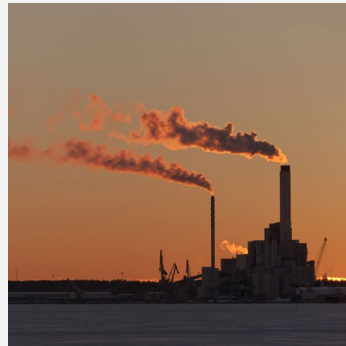
Climate Profile: Town of Collingwood

Data Sources & Methodology



Data Sources

- Publicly available climate models
- Regional climate studies



Emissions Scenarios

- Low Carbon Scenario (RCP4.5)
- High Carbon Scenario (RCP8.5)



Time Horizons

- Baseline (1976-2005)
- Near term (2021-2050)
- Long term (2051-2080)

Historical Climate: Collingwood

Cold winters and mild summers



Moderate annual precipitation with seasonal variability



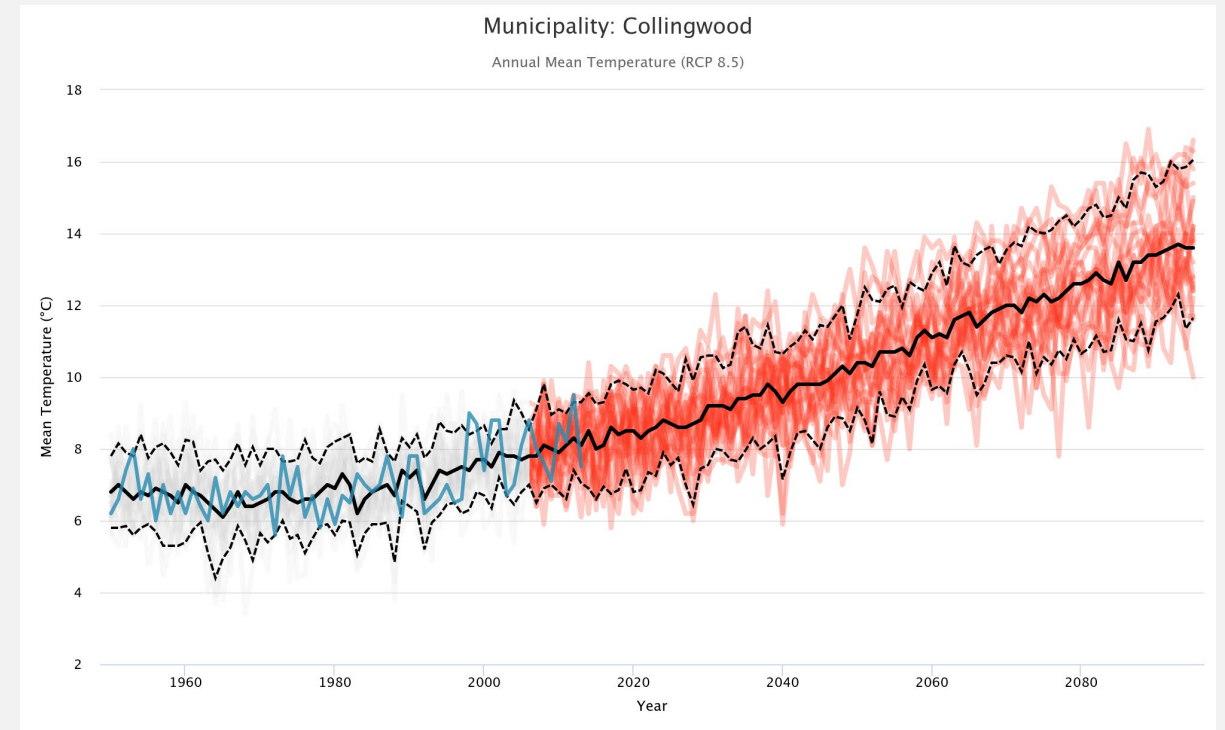
Frequent freeze-thaw cycles



Limited heat extremes

Projected Climate Trends: Collingwood

Annual Mean Temperature

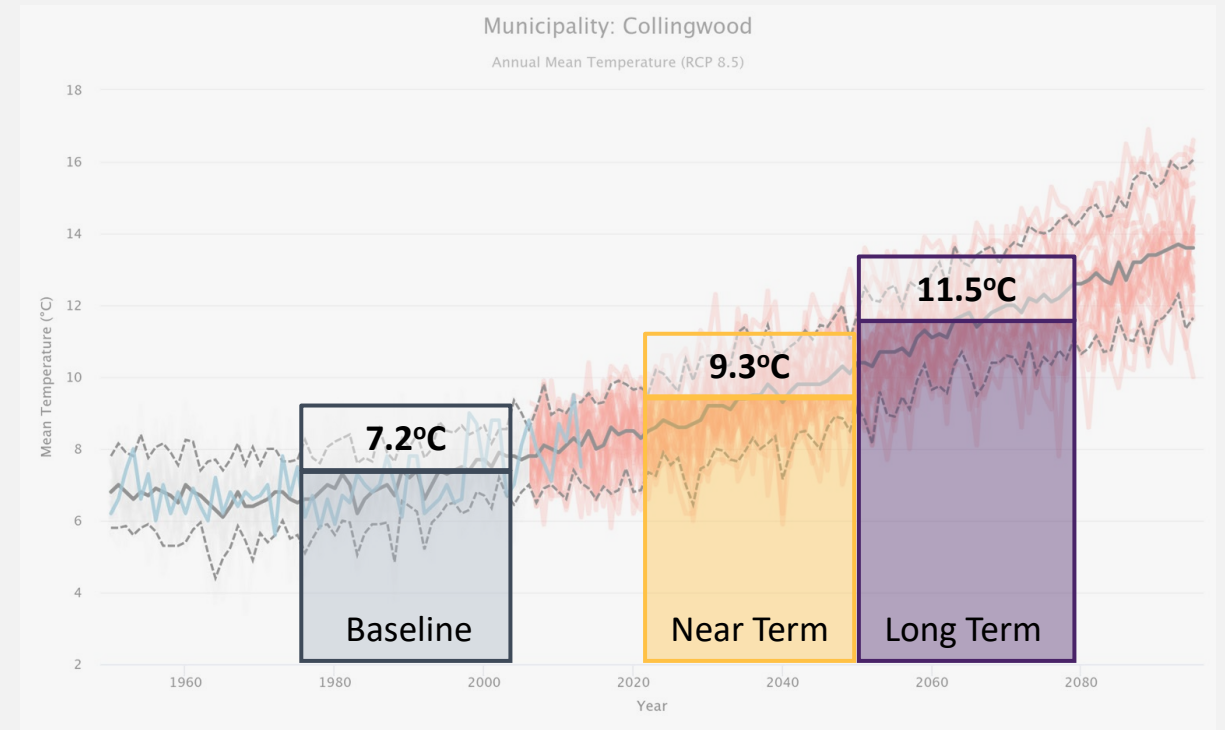


Summary data

- Ensemble mean
- Historical Values
- 10th percentile
- 90th percentile

Projected Climate Trends: Collingwood

Annual Mean Temperature



Summary data

- Ensemble mean
- Historical Values
- 10th percentile
- 90th percentile

Projected Climate Trends: Collingwood



Temperature

- Rising averages throughout the year
- More frequent and hotter summer days
- Fewer cold winter days



Precipitation

- More precipitation annually
- More variability in winter (snow, rain, ice)



Extreme Weather

- Greater frequency and severity of storm events
- More intense short-duration precipitation events



Seasonality

- Longer growing season
- Wetter winters and springs

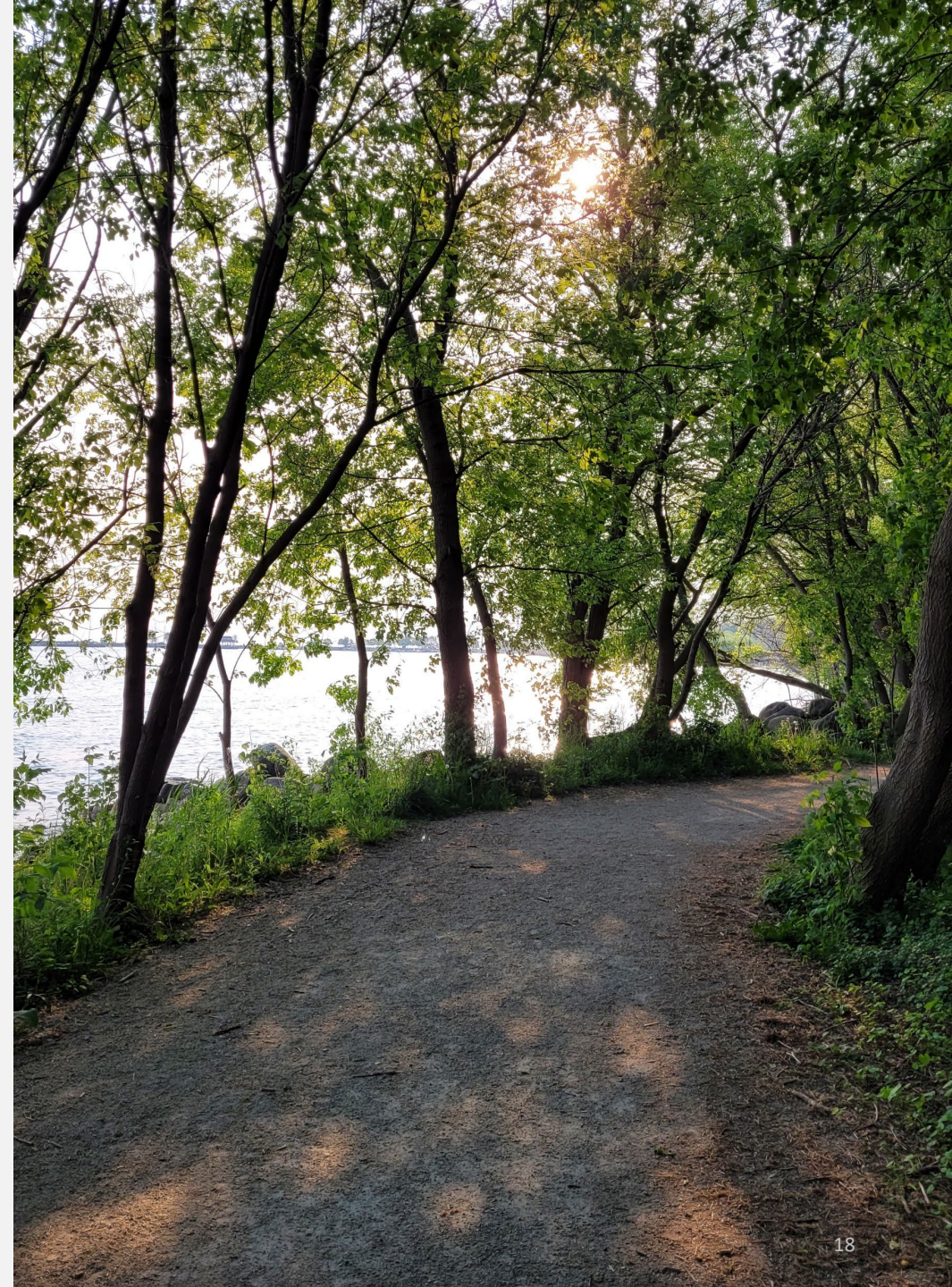
Identifying & Defining Local Climate Impacts

How might projected climatic changes intersect with the unique characteristics of Collingwood?

- Infrastructure conditions
- Land use patterns
- Economic drivers
- Social dynamics
- Natural environment

Climate impacts are often complex and multidimensional

- Direct or indirect
- Occurring immediately or over time
- Interacting with other hazards in cascading, compounding, or cumulative ways



Identifying & Defining Local Climate Impacts

How might projected climatic changes affect vulnerable populations?

- Impacts are not felt equally
- Consider those at higher risk
 - Older adults, children, low-income households, those without AC, people with mobility limitations, renters, outdoor workers
- Think about how consequences may compound existing vulnerabilities



Climate-Related Hazards

- Summary of impact themes identified through climate impact statements
- These impacts often interact and overlap
- Need to look beyond individual events to understand vulnerability



Heat and air quality stresses



Water availability and drought pressures



Flooding and excess water



Shoreline erosion and fluctuating lake levels



Storm and wind damage



Winter stress on infrastructure and services

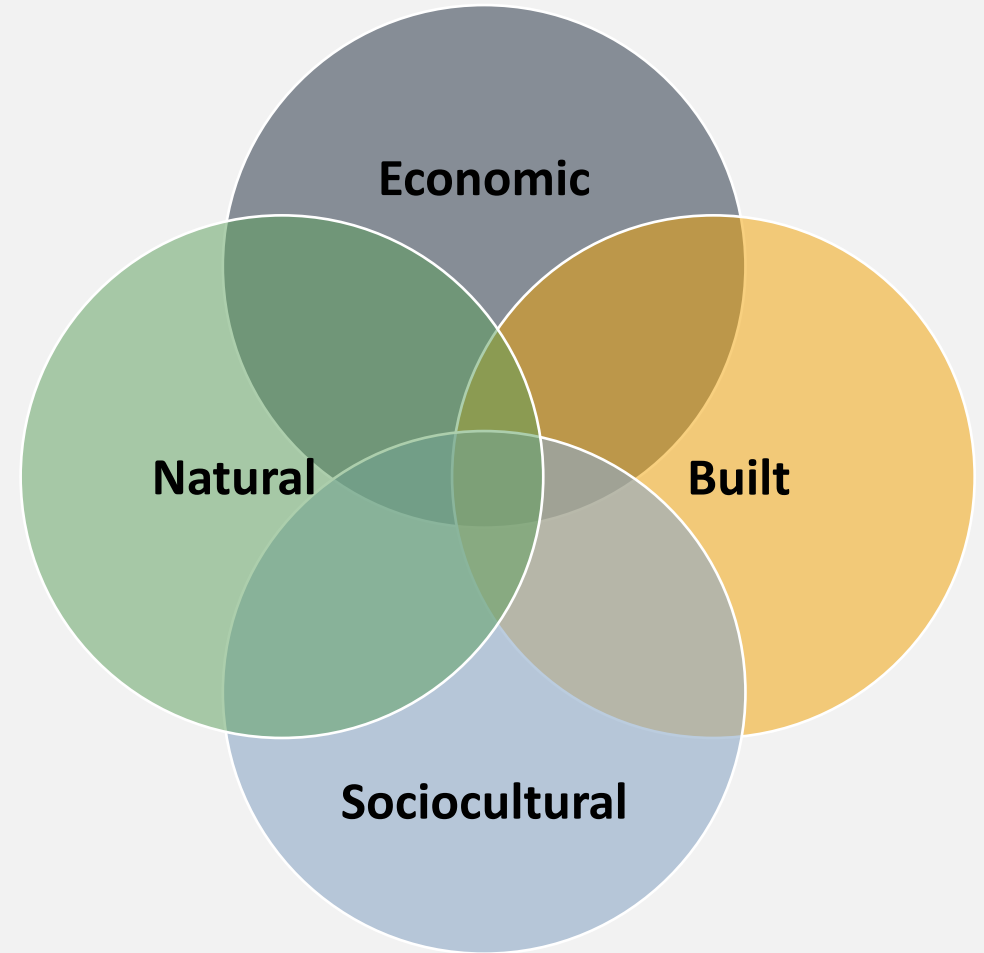


Compounding and cumulative effects

What is Systems Thinking?

- Everything is connected
- Climate impacts ripple across systems
- Siloed actions can create new risks
- Integrated solutions build resilience

A way to understand how climate impacts affect services and people across the community



Systems Thinking

Climate impacts often affect more than one system at the same time

Built Systems



The Backbone of the Community

Transportation and underground services

Municipal buildings and facilities

Energy and communications

Sociocultural Systems



How People Live, Connect and Find Meaning

People, cultural practices

Health, education, social services

Culturally significant places

Economic Systems



Drivers of Prosperity

Workers, commerce

Industry, including agriculture and tourism

Supply chains

Natural Systems



Ecosystems Supporting Life and Services

Shorelines, wetlands, watersheds & forests

Aquatic and terrestrial ecosystems

Urban trees and green spaces

Common Climate Outcomes Across Systems

Built System



- Service strain and maintenance pressure
- Reduced service reliability during extremes
- Accelerated asset deterioration

Economic System



- Higher operating and recovery costs
- Business disruption
- Household financial stress

Sociocultural System



- Emergency and health care service strain
- Health, safety, and wellbeing impacts
- Access and mobility disruptions

Natural System



- Ecosystem degradation
- Invasive species expansion
- Loss of recreational and cultural value



Vulnerability Assessment

Understanding Vulnerability in Climate Planning

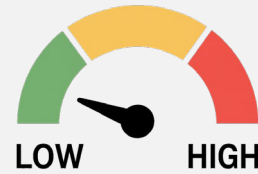
- Vulnerability describes **how strongly a system is affected** by climate impacts
- It reflects both **sensitivity** and the system's **ability to adapt**
- Helps identify **where impacts are hardest to manage** – not just where hazards exist



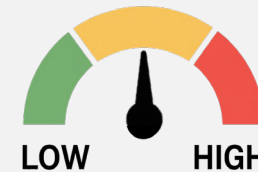
Sensitivity

How strongly are we affected?

- Degree of disruption to services or systems
- Extent of damage, stress, or loss
- Frequency or persistence of impacts



Low – The system is affected; impacts are limited or easily absorbed



Medium – The system experiences noticeable disruption; impacts are manageable with effort



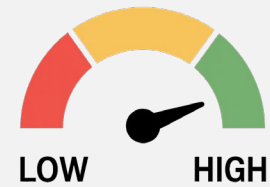
High – The system is strongly affected; impacts are difficult to manage or recover from

Sensitivity focuses on the **severity of impact**, not how likely the event is

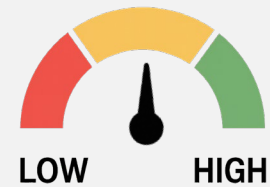
Adaptive Capacity

Ability to Prepare, Respond, and Recover

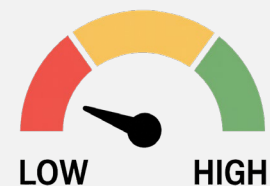
- Existing policies, plans, and procedures
- Resources, staffing, and funding flexibility
- Ability to learn and adjust over time



High – The system is well-positioned to prepare for, respond to, and recover from impacts



Medium – The system can respond and recover, but with constraints, delays, or trade-offs



Low – The system has limited ability to respond or adjust; impacts are likely to persist or worsen.

Adaptive capacity focuses on our **ability to cope and adjust**, not the size of the impact

Assessing Vulnerability

	Low Sensitivity	Medium Sensitivity	High Sensitivity
Low Adaptive Capacity	Medium Vulnerability	High Vulnerability	High Vulnerability
Medium Adaptive Capacity	Low Vulnerability	Medium Vulnerability	High Vulnerability
High Adaptive Capacity	Low Vulnerability	Low Vulnerability	Medium Vulnerability

*High sensitivity & low adaptive capacity
→ high vulnerability*

*Low sensitivity & high adaptive capacity
→ low vulnerability*



Breakout Groups: Vulnerability Assessment

Climate Vulnerability Assessment

Part 1: Sensitivity Assessment



1. Review the climate impact
2. Consider system effects for this impact; revise as appropriate
3. Assign a qualitative sensitivity rating – Low/Medium/High
4. Document the rationale for the rating

Optional:

1. *Document additional climate impact statements and system effects that were not already captured*
2. *Complete a sensitivity assessment for these additional statements*

Climate Vulnerability Assessment

Part 2: Adaptive Capacity Assessment



1. Review the existing capacity available for the climate impact
2. Consider response and recovery
3. Assign a qualitative adaptive capacity rating – Low/Medium/High
4. Document the rationale for the rating
5. Note any particular concerns relating to vulnerable populations, coordination with external partners and regulated services

Optional:

1. *Determine the vulnerability rating for the climate impact using the results of the sensitivity and adaptive capacity assessment*
2. *Note your confidence in the vulnerability assessment results*

Key Takeaways



Which climate impacts stood out as the most vulnerable in your group — and why?



Were there any impacts that ranked higher or lower than expected?



What factors most influenced your vulnerability ratings?



Were there particular populations or services that emerged as especially affected?

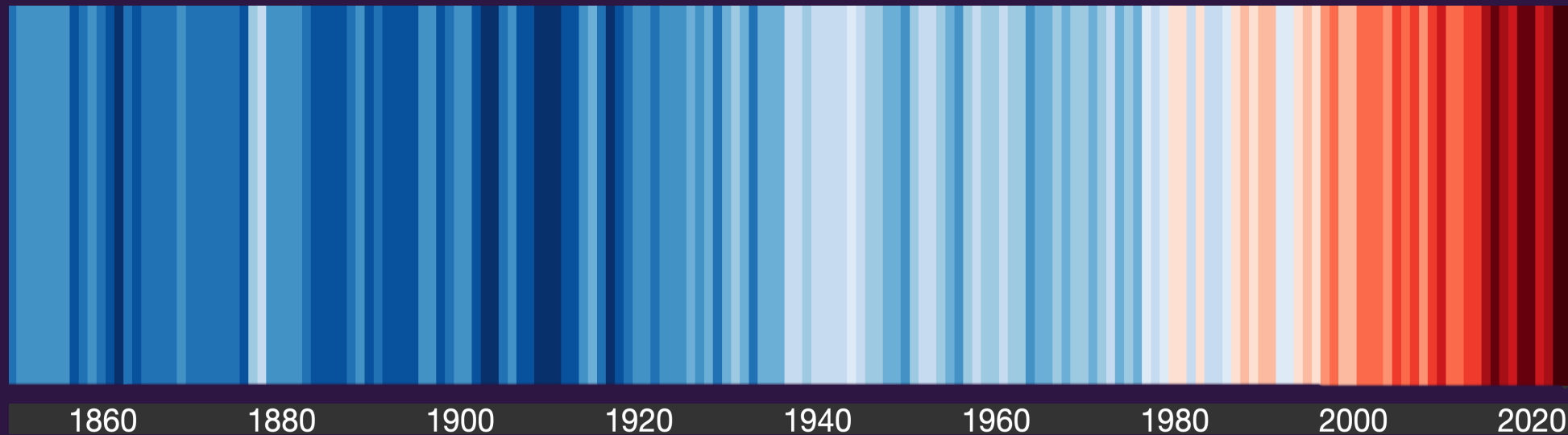
Next Steps



1. Compile vulnerability assessment results from today's workshop
2. Circulate list of high, medium and low vulnerability climate impacts in advance of risk assessment workshop
3. Workshop #3: Risk Assessment on Wednesday February 4

Thank You

#ShowYourStipes



Global temperature change from 1850-2024 (relative to the average temperature between 1961-2010)