

# Town of Canmore

## Climate Change Adaptation Background Report and Resilience Plan

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PRAC Webinar – Tools for Municipal Adaptation Action

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Lori Rissling Wynn  
Sustainability Coordinator/Development Planner  
Town of Canmore

















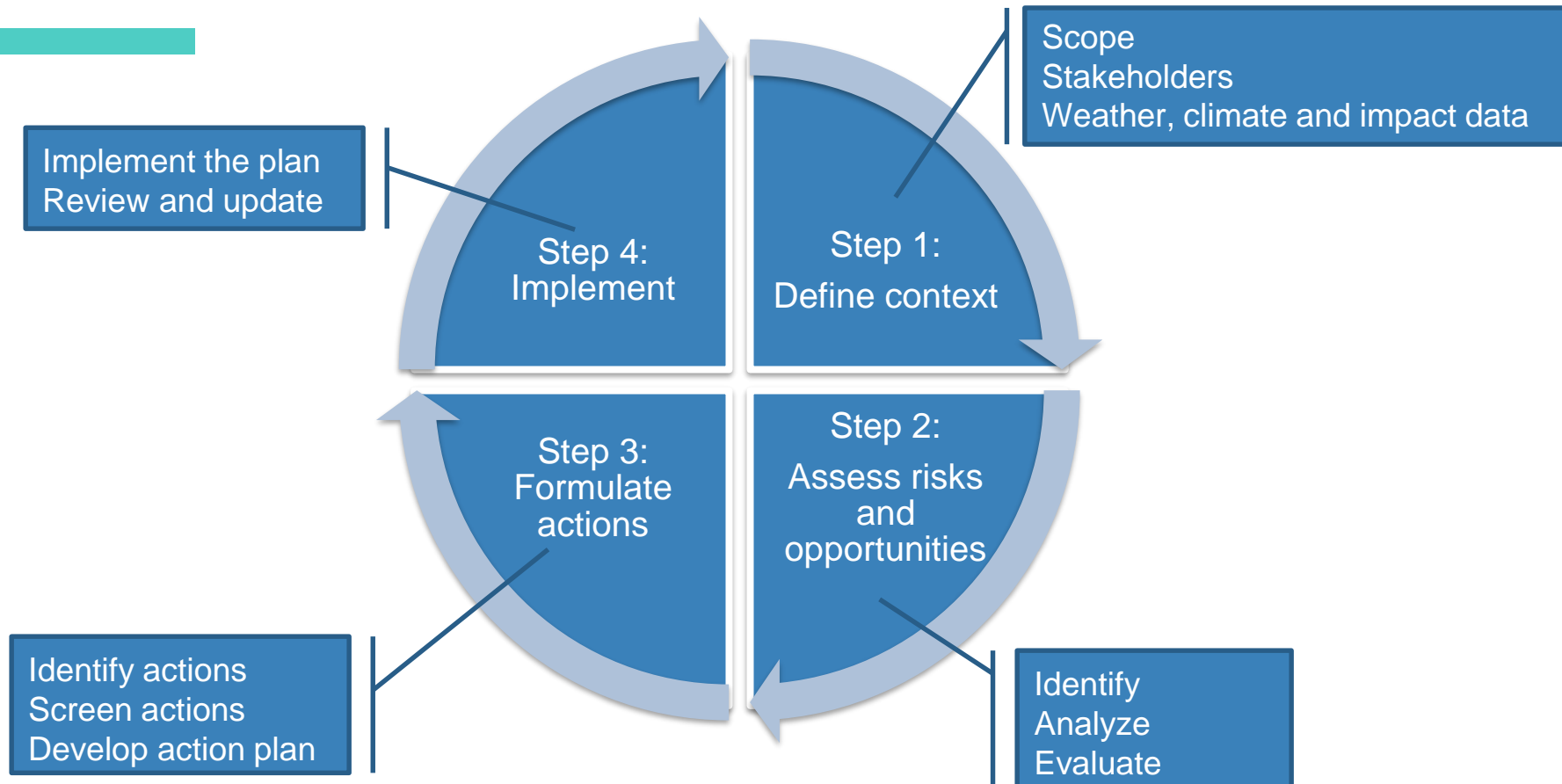
# Canmore Climate Adaptation and Resilience Plan

- To be a resilient community
- To proactively adapt to a changing climate and protect our residents
- It makes sense - broadly speaking an average of \$4 is saved for every \$1 spent on adaptation (FEMA)

# 1. Process

How and Why the  
Report and Plan  
were developed

# Process





# Link to Environmental Sustainability Action Plan

## Mitigation

Efforts to reduce or stabilize the levels of GHGs in the atmosphere.



## Environmental Sustainability Action Plan

## Adaptation

Adapting to life in a changing climate which requires adjusting to actual or expected future climate.



## Canmore Climate Adaptation and Resilience Plan

# 2.

## Climate trends and projections

Climate  
projections for  
the Bow Valley  
Corridor to 2050



in  
2  
0  
5  
0

**Mean annual temperature**  
+1.9°C

**Mean annual precipitation**  
+5%  
but summer precipitation is expected to decline by 5%

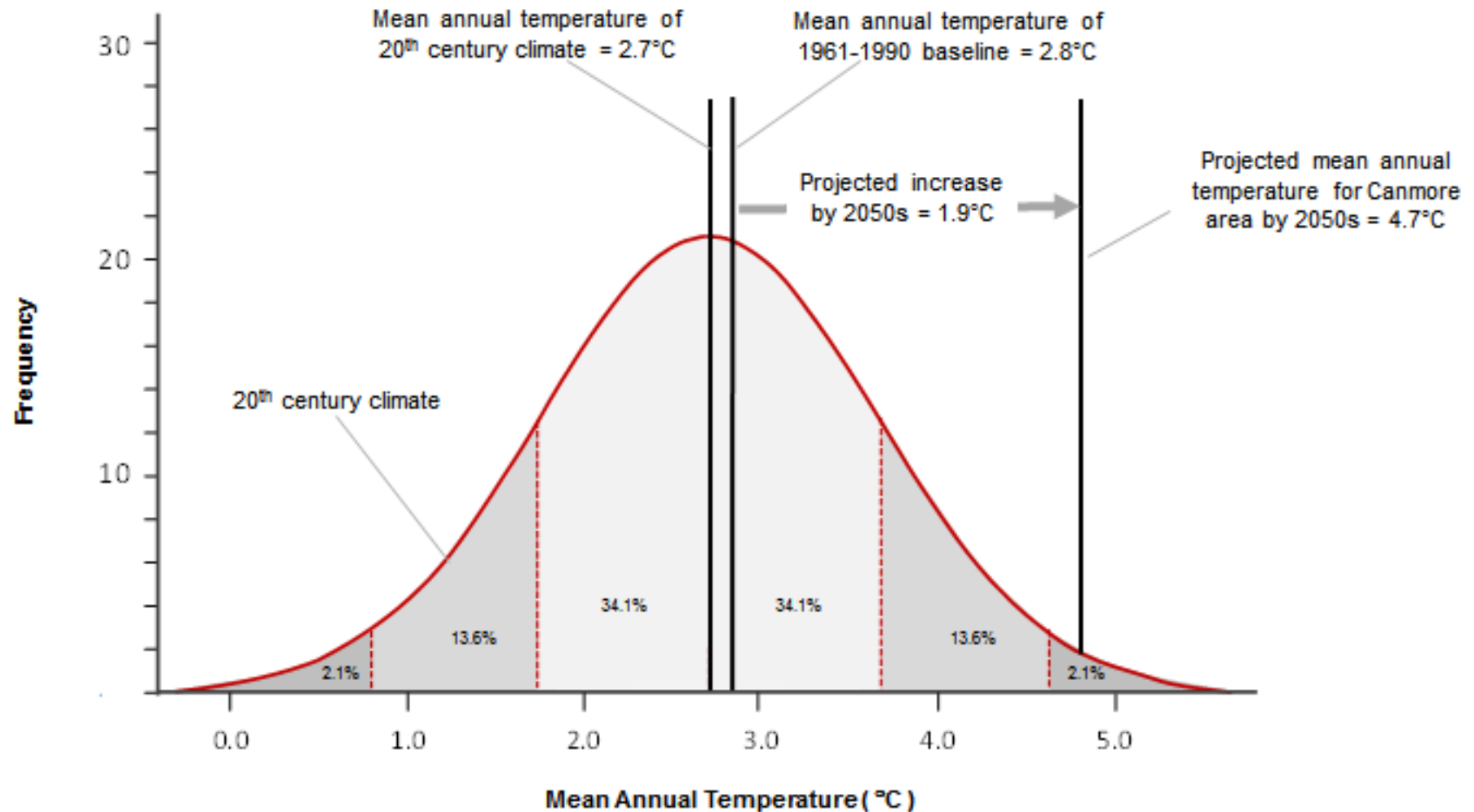
**These changes in temperature and precipitation will have impacts to the natural environment**

Extent of glaciers, winter snowpack, streamflow, wildfires, regional ecosystems

### **Extremes**

Increased precipitation extremes, particularly extreme rainfall intensity, but also dryer periods with conditions favourable for wildfires and longer fire seasons

# Temperature increase





# Impacts to our natural environment

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## Glaciers

Continued warming combined with reduced winter precipitation falling as snow are projected to result in an approximate 50% additional decline in ice area in the Canadian Rockies between 2005 and 2050.

## Wildfires

The warmer and drier climate projected for the Bow Valley Corridor by the 2050s will create conditions more favourable for wildfires. A longer fire season with more severe fire weather conditions in the future is likely to result in fires that are more difficult to control and to an increase in the average area burned.

## Regional ecosystems

Projected climate will be more favourable for grassland ecosystems at lower elevations in the valley bottoms and on south- and west-facing slopes and the expansion of lower-elevation forested ecosystems upslope as trees are increasingly able to establish and grow at higher elevations.

These ecosystem changes will have consequences for the wide variety of wildlife species that occupy the Bow Valley corridor and subalpine and alpine habitats, including habitat loss, range shifts, and changes to migration patterns and timing.

## Streamflow

Projected to increase in winter, peak earlier in the spring, and decrease in summer.

Meltwater from glaciers will become increasingly less reliable as glaciers in the eastern Rockies continue to melt.

Stream temperatures in the region are projected to increase during the summer months, as a result of projected warming, with potential consequences for aquatic wildlife habitats and recreation opportunities.

## Winter snowpack

Average daily snow depth at 1,600m is projected to decline by up to 50%.

3.

## Risks and Opportunities

22 risks and  
opportunities  
identified



# Priority risks and opportunities

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## High priority risks

Forest fires

Bow River flooding



# Priority risks and opportunities

## Medium priority risks

Creek flooding  
Stormwater flooding  
Water supply shortage (drought)  
Heavy snowfall event (blizzard)  
Extreme wind  
Freeze thaw cycles





# 4. Actions

51 actions were identified to increase resilience and build capacity

# Forest fires

- Reduce the impacts of forest fire on buildings, property and public safety; and
- Respond to and recover from forest fires in a timely and efficient manner.

Action	Investment Cost	Timeframe
Update the FireSmart mitigation strategy to reflect the current state of the forest and high risk areas, and the vulnerability of, and mitigation options for, public buildings and facilities	\$	Short term
Host additional emergency preparedness or fire prevention campaign during the year	\$	Short term
Develop and implement education campaign to raise awareness of forest fire risk in high risk areas of town, and mitigation, preparedness and response options for private property	\$	Short term
Hire a part-time Municipal Emergency Plan Coordinator (or full time shared across the region)	\$	Medium term



# Bow River flooding

- Reduce the impacts of river flooding on people, infrastructure, property and the natural environment; and
- Ensure response to and recovery from river flooding is timely and efficient.

Action	Investment Cost	Timeframe
Install backflow prevention valves in vulnerable civic facilities and buildings	\$\$	Medium term
Study the need for improved management of stormwater in the valley bottom	\$\$	Short term
Purchase submersible pumps for vulnerable civic facilities and buildings	\$\$\$	Medium term
Purchase additional temporary flood protection equipment such as tiger dams, sand bags and HESCO barriers	\$\$\$	Medium term

5.

Implementation

# Implementation and Next Steps

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- Act
- Mainstream
- Review and update





# Thank you

Lori Rissling Wynn | [lrisslingwynn@canmore.ca](mailto:lrisslingwynn@canmore.ca) | 403.678-1527