

CLIMATE RESILIENCE EXPRESS

AN ACTION KIT FOR ALBERTA COMMUNITIES



“A resilient [community] is one that has developed capacities to help absorb future shocks and stresses to its social, economic, and technical systems and infrastructures so as to still be able to maintain essentially the same functions, structures, systems, and identity.”

[Working Definition, ResilientCity.org]

This Action Kit has been produced through the **Climate Resilience Express Action Kit—Kick-starting Adaptation in Smaller Alberta Municipalities** (Climate Resilience Express) project with financial support from The Calgary Foundation, Natural Resources Canada, All One Sky Foundation, the Municipal Climate Change Action Centre, and Alberta Ecotrust.

The goal of Climate Resilience Express is to produce a streamlined (“express”) process for developing a climate resilience action plan for smaller communities through a one-day workshop, and to subsequently prepare a ‘self-help’ Action Kit to support these communities in working through the entire process or parts of the process. Four smaller communities from across Alberta were selected to pilot the workshop and aspects of the Action Kit: Banff and Canmore, Black Diamond and Turner Valley, Bruderheim, and McKenzie County. Lessons learned and input from these communities proved invaluable in developing this Action Kit.

Climate Resilience Express is a collaboration between All One Sky Foundation, the Municipal Climate Change Action Centre, the Miistakis Institute and the Alberta Biodiversity Monitoring Institute.

For more information on the Climate Resilience Express visit: <http://allonesky.ca/climate-resilience-express-project/> or <http://mccac/?page=134>.

March 2016

Acknowledgements

This Action Kit was prepared by a project team composed of Dr. Richard Boyd, Jeff Zukiwsky, Dr. Mel Reasoner, Carole Stark and Helen Corbett (All One Sky Foundation), Amy Nixon (Biodiversity Monitoring Institute), Guy Greenaway (Miistakis Institute), and Laura De Carolis and Marc Huot (Municipal Climate Change Action Centre).

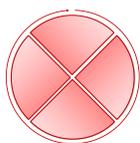
Development of the Action Kit benefited hugely from the contribution of workshop participants from:

- ➔ Town of Bruderheim;
- ➔ Town of Black Diamond;
- ➔ Town of Turner Valley;
- ➔ Town of Banff;
- ➔ Town of Canmore; and
- ➔ Mackenzie County

Table of Contents

	Overview
Unit 1	Key steps in the climate resilience action planning process
Unit 2	Make the case
Unit 3	Prepare for workshop
Unit 4	Open workshop and explore local weather and impacts
Unit 5	Climate science
Unit 6	Assess climate risks and opportunities
Unit 7	Action planning
Unit 8	Action Plan, implement and review

We recommend that you read the Overview below carefully before starting. It will help you determine: if the Action Kit is for you; what you should know already; and what you can expect. It also provides important guidance on how to navigate the Action Kit.



OVERVIEW

A resource for building climate resilience in Alberta

How to use this Action Kit

Introduction

Welcome to the Climate Resilience Express Action Kit (henceforth the “Action Kit”). The purpose of this Action Kit is to support small communities in Alberta to adapt to our changing climate and manage risks and opportunities that may arise.

Climate change is already apparent in Alberta, with observable changes in temperature, precipitation, and extreme weather events over the last century. The average annual temperature change across all regions has increased by about +1.4°C since the early 1900s, with northern regions seeing greater warming than southern regions. Over the same period, the amount and timing of precipitation across the province have also changed.

We are sure to experience further changes to our climate in the decades ahead—the result of past greenhouse gas (GHG) emissions. There is a time lag between GHG emissions and when we see the impacts, as the planet takes a while to respond. How much the climate will change beyond the next few decades depends on how much and how fast global GHG emissions are reduced from current levels.

Mitigation will help avoid the unmanageable ...

Adaptation is essential to manage the unavoidable.

The impacts of climate change on communities across Alberta will be numerous and diverse, giving rise to potentially significant, though uncertain consequences, for municipal infrastructure and services, private property, the local economy and environment, and the health and well-being of citizens—be it through changing patterns of precipitation with increased risk of flooding and drought, increased strain on water resources, rising average temperatures and more common heatwaves, more frequent wildfires, or more intense ice, snow, hail or wind storms. Climate change may also present us with opportunities.

Communities across the province are at the forefront of these impacts—both because extreme weather events can be especially disruptive to urban systems and because they are where much of our population live, work and raise their families. It is therefore essential that they take steps now to anticipate and better prepare for future climate conditions, to ensure they continue to prosper as a desirable place to live and work for generations to come.

Scope of this Action Kit

With the growing need to be better prepared for changing climate conditions, communities in Alberta are looking for practical advice and tools to help them identify, understand and manage potential risks and opportunities. The purpose of this Action Kit is to provide cost-effective support to all those involved with this task. It provides a flexible, workshop-based approach and accompanying resources to help communities answer the following questions:

- ➔ Why do we need to plan now for the impacts of climate change on our community?
- ➔ How is the climate and natural environment in our region projected to change in the future?
- ➔ How will these changes impact our local economy, critical infrastructure and services, property, and the health and lifestyles of residents?
- ➔ How can our community prepare for these changes and ensure important impacts are managed in an effective and timely manner?

The Action Kit provides a road map to address these questions. Following the road map will result in a climate resilience action plan (hereafter, “Action Plan”) for your community.

The guidance contained in this Action Kit is built upon lessons learned over the course of developing Action Plans for four communities in Alberta. The advice and resources represent the most effective collaborative process we found to generate a sound Action Plan and at the same time minimize demands on host communities.

The Action Kit is not designed to help you identify and implement actions to cost-effectively reduce releases of GHGs to the atmosphere. If this is your goal, consult the Greenhouse Gas Action Toolkit for Alberta Communities (available at <http://ghgtoolkit.mccac.ca/>).

Audience

This Action Kit was developed to meet the needs of small communities in Alberta.¹ Smaller communities are particularly vulnerable, since they may lack capacity (e.g., financial and human resources, and access to the right knowledge, skills and technology) to adequately prepare for the increasing challenges of climate change.

It is aimed at a wide audience of practitioners who may be involved in supporting small communities prepare for changing climate conditions in Alberta:

- ➔ Municipal staff and elected officials;
- ➔ Community-based organizations and other organizations in the voluntary sector;
- ➔ Academic and research institutions; and
- ➔ Professional consultants.

The Action Kit will assist any of these practitioners develop an Action Plan for a community, working with municipal staff and other local stakeholders.

Organization of the Action Kit

The remainder of the Action Kit is organized in eight units to reflect key activities in the process of initiating, developing and implementing an Action Plan, through a workshop-based approach:

¹ For the purpose of the Action Kit, a small community is a city, town, village, summer village, municipal district, specialized municipality, First Nation, or rural county in Alberta with a population typically under 50,000.

✓ Before you start

Understand key steps in the action planning process and what it entails	→	Unit 1
---	---	---------------

✓ Before the workshop

Make the case to start the action planning process	→	Unit 2
--	---	---------------

Prepare for the workshop	→	Unit 3
--------------------------	---	---------------

✓ At the workshop

Explore local weather and impacts	→	Unit 4
-----------------------------------	---	---------------

Develop understanding of climate trends and projections	→	Unit 5
---	---	---------------

Assess climate change risks and opportunities	→	Unit 6
---	---	---------------

Formulate climate resilience actions	→	Unit 7
--------------------------------------	---	---------------

✓ After the workshop

Draft the Action Plan, implement priority actions and review	→	Unit 8
--	---	---------------

The Action Kit is designed to take a community through the entire process, using a full day workshop, to draft and implement an Action Plan. However, it is sufficiently flexible to allow practitioners to tailor the guidance to fit current community priorities, available resources, and state-of-knowledge. Options for tailoring the approach are presented in Unit 3.

How to navigate the Action Kit

The Action Kit is designed primarily to support practitioners to take a community through the entire process of developing and implementing an Action Plan. If this is your objective, you should begin with Unit 1, to understand what this entails and see how the workshop supports execution of the process.

At the end of Unit 1, and if you have support from senior staff or elected officials to proceed with developing the Action Plan, you will be directed to Unit 3, skipping Unit 2. If, however, you still need to obtain the necessary support to proceed, you will be directed to Unit 2, where guidance is provided to help you build the case to invest in a climate resilience planning effort. Once you have support from senior staff or elected officials, you should return to the process at Unit 3.

In Unit 3, guidance is provided to design and prepare for a full-day workshop that aims to:

- A. Confirm the context for adaptation planning for your community and explore past weather and associated impacts;
- B. Review historic climate trends, future climate projections, and projected environmental changes for your area;
- C. Assess potential climate change risks and opportunities; and
- D. Formulate actions to manage priority risks and opportunities.

Guidance is also provided in Unit 3 to help practitioners create shorter (half-day) workshops focused on either (C) or (D).

Depending on your community's objectives, or its current state-of-knowledge regarding potential climate change impacts, the Action Kit also affords practitioners the option of entering the process at different points, or using it to address specific objectives—for example:

- ➔ At present, you may only want to develop an understanding of historic climate trends, future climate projections, or projected environmental changes for your region. In this case, you should go straight to Unit 5.
- ➔ You may be very confident that you already know the most important climate change risks and opportunities facing your community. Consequently, your objective may be to develop actions to manage these known risks and opportunities and to select the most promising actions. In this case, you should go straight to Unit 7.

Accompanying resources

To support application of the Action Kit a number of resources are provided as appendices:

Appendix A	Presentation template: make the case
Appendix B	PowerPoint slides for the workshop
Appendix C	Climate science PowerPoint slides for Area 1 of Alberta
Appendix D	Climate science PowerPoint slides for Area 2 of Alberta
Appendix E	Climate science PowerPoint slides for Area 3 of Alberta
Appendix F	Climate science PowerPoint slides for Area 4 of Alberta
Appendix G	Climate impacts and consequences tables from pilot communities
Appendix H	Scale for scoring the consequences of risks
Appendix I	Scale for scoring the consequences of opportunities
Appendix J	Scale for scoring the likelihood of consequences
Appendix K	Template for recording likelihood and consequence scores
Appendix L	Risk and opportunity scoring spreadsheets
Appendix M	Template for recording basic information on resilience actions
Appendix N	Example Action Plan as template

[Intentionally left blank]