Climate Resilience Express

A COMMUNITY CLIMATE ADAPTATION PLANNING GUIDE

All One Sky Foundation

Municipal Climate Change Action Centre

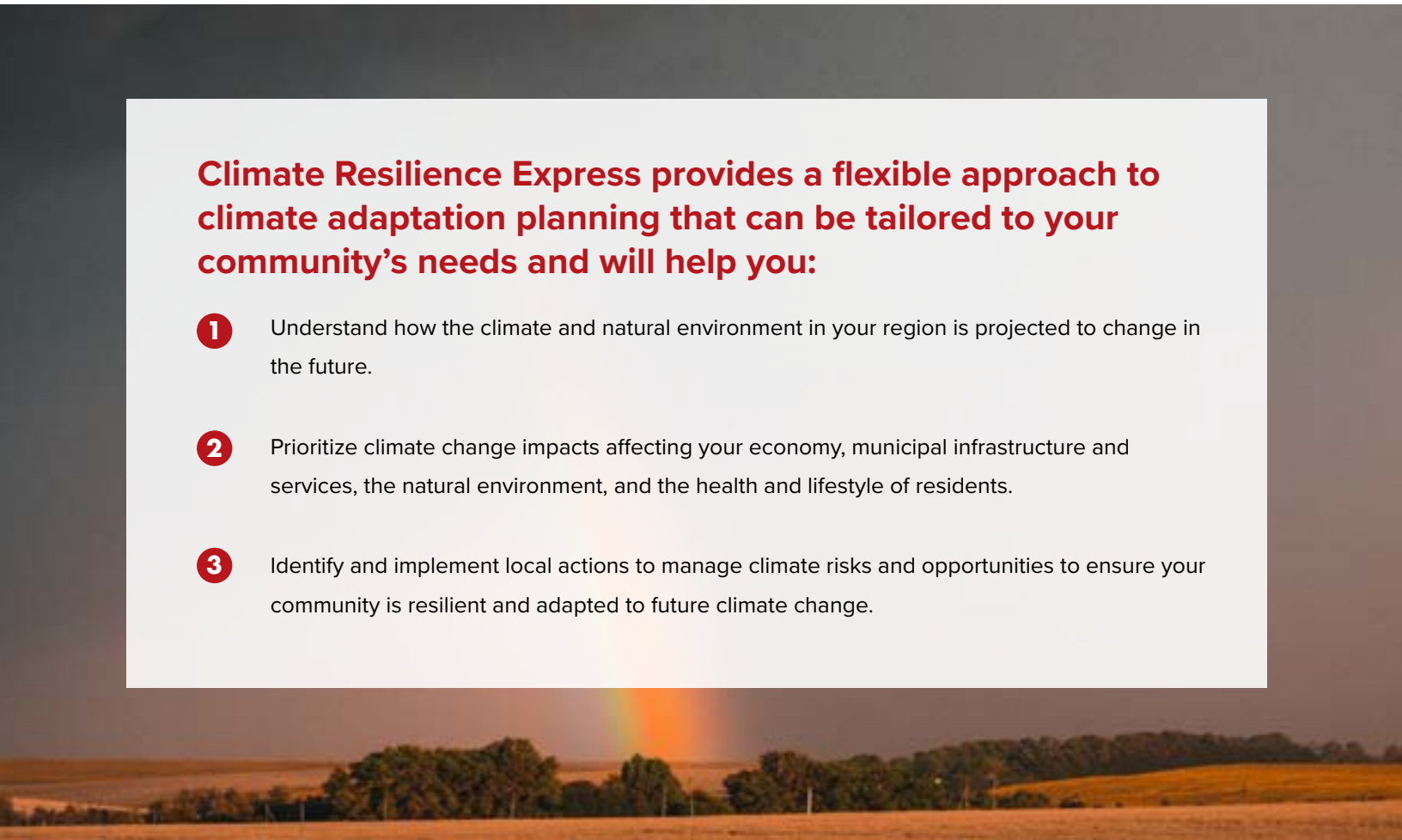
Overview

Why do you need a Climate Adaptation Plan?

The climate is already changing. Alberta's climate has warmed by about 2°C over the past 50 years and is projected to warm by another 4°C by the end of this century.

Communities are experiencing significant negative impacts under current climate conditions. Past climate change influenced the 2016 wildfire in Fort McMurray and 2013 floods in Southern Alberta. Further climate change is inevitable meaning such events will become more common and severe.

Planning for climate change will make your community more resilient — reducing economic, social and environmental impacts, and saving money. There are many simple, cost-effective actions your community can implement today.



Climate Resilience Express provides a flexible approach to climate adaptation planning that can be tailored to your community's needs and will help you:

1. Understand how the climate and natural environment in your region is projected to change in the future.
2. Prioritize climate change impacts affecting your economy, municipal infrastructure and services, the natural environment, and the health and lifestyle of residents.
3. Identify and implement local actions to manage climate risks and opportunities to ensure your community is resilient and adapted to future climate change.

Climate change is one of the greatest challenges we face. Managing climate change involves:

1. Reducing greenhouse gas emissions and enhancing sinks that capture and store carbon **(climate mitigation)**.
2. Preparing for the impacts of a changing climate **(climate adaptation)**.

Mitigation will help avoid the unmanageable. **Adaptation** is essential to manage the unavoidable.

Climate Resilience Express is focused on climate 'adaptation' — actions to efficiently manage the negative impacts of climate change or take advantage of new climate-related opportunities.

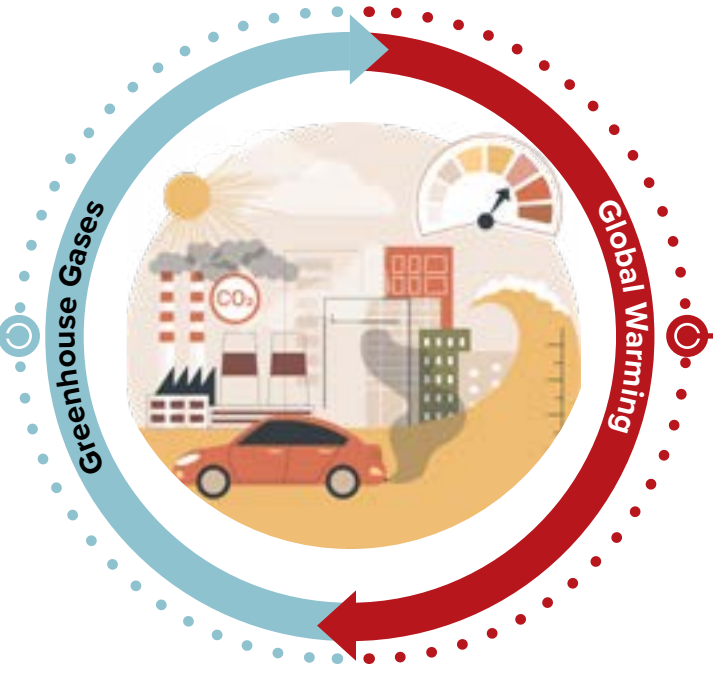
Mitigation actions

reduce or prevent releases of greenhouse gases to the atmosphere or capture and store carbon

Adaptation (or resilience) actions

focus on managing the anticipated impacts of climate change to your community

Greenhouse gases are released to the atmosphere, trapping heat and **causing** global warming



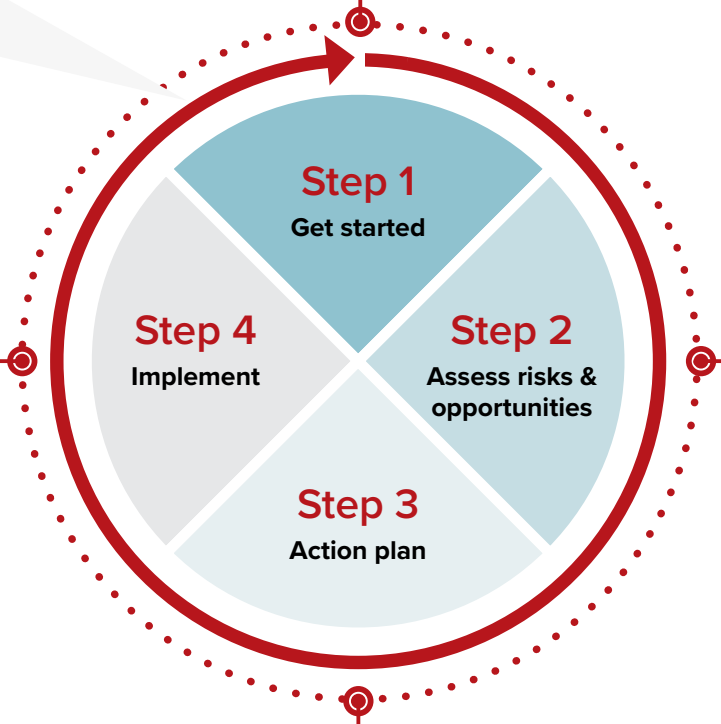
Global warming is changing the regional and local climate which will **impact** your community

Climate Resilience Express is a community-led, participatory approach to climate adaptation planning, that involves four steps:

The purpose of step 1 is to:

- Determine the scope of the planning process [Pages 4 & 5]
- Develop a plan to engage stakeholders and residents
- Compile climate trends and projections for your community [Page 6]

Climate adaptation planning and implementation is an ongoing process. We will always need to adapt!



The purpose of step 2 is to:

- Understand your communities' vulnerabilities
- Develop climate impact statements
- Conduct a climate change risk and opportunity assessment
- Determine priorities for action planning [Pages 7–13]

The purpose of step 3 is to:

- Define actions to manage priority climate impacts and consequences
- Assess and prioritize actions
- Formulate a Climate Adaptation Action Plan [Pages 14–17]

The purpose of step 4 is to:

- Commit funding and staff time to implement actions
- Partner with local and regional organizations
- Monitor impacts and actions
- Repeat the process every 5-10 years [Page 18]

Step 1

Get started: determine the scope of the planning process

Climate Resilience Express is a flexible approach to Climate Adaptation Planning. The approach can be applied at almost any scale, for example:

1. **Single asset:** a specific site, facility, building, or piece of infrastructure
2. **All municipal assets, services and operations:** parks, transportation networks, civic buildings, and infrastructure, etc.
3. **Community-wide:** in addition to 2, all homes, private buildings and infrastructure, the local economy, ecosystem functions and services, the health and well-being of residents, etc., across the entire community or within a region.
4. **Sector-specific:** a specific sector or theme within your community, such as food security and agriculture, public health and safety, water security, ecosystems, recreation, etc.

You may also want to consider critical infrastructure and services **outside your municipal boundaries.** Daily life and economic activity in your community likely relies on water, energy and food sourced from outside the municipality, as well as systems for transportation and distribution.

Across the scoping options outlined on page 4, the Climate Resilience Express process can be tailored to your community's needs, resources, and timelines.

The climate adaptation planning process can be implemented as a simple, high-level screening exercise or as a more detailed, quantitative exercise, with many options in-between!

Simple, high-level screening		Detailed, quantitative
A simple process is likely more suitable for smaller communities with limited staff and resources	**Community size** →	A more detailed, quantitative process may be more suitable to larger communities with more resources and staff
Low	**Cost** →	High
Short; can be completed in a few months	**Duration** →	Lengthy; may take up to a year or more
Minimal; one staff dedicating 1-2 days to process	**Demands of staff** →	High; one or more staff dedicating several hours per week over the duration of the project
Minimal or none	**Stakeholder engagement** →	Intensive stakeholder engagement including workshops, community surveys, open houses, etc.
Qualitative; based more on experience and perceptions of stakeholders	**Climate risk assessment** →	Quantitative; based more on research and analysis of data on the likelihood and consequences of climate risks
Qualitative; based more on stakeholder knowledge and preferences	**Action planning** →	Quantitative; based more on analysis of the costs and benefits of potential actions

To perform the climate risk assessment in Step 2, you need to know how climate in your area is projected to change in the future. The final activity of "getting started" is to compile this information.

The Climate Atlas of Canada (the Atlas) is a great source of local climate data (www.climateatlas.ca). The Atlas provides valuable information for climate risk and vulnerability assessment and adaptation planning, such as:

- Future climate projections for a range of mean temperature and precipitation variables as well as extremes
- Projections for the 2030's (2021-2050) and the 2060's (2051-2080), relative to the historic climate
- Projections for two climate change scenarios – a low emissions scenario (RCP 4.5) and a high emissions scenario (RCP 8.5)
- Downloadable data which can be used to approximate the likelihood of climate impact events occurring in the future [Page 9]

In addition to monthly and seasonal temperature and precipitation projections, information is available for many different indicators of climate change such as:

- The Warmest Maximum Temperature of the year
- The total number of Very Cold Days when the temperature drops to -30°C or below
- The total number of Cooling Degree Days in the year, an indicator of demand for space cooling in homes and buildings
- The length of the Frost-free season

Example output from the Climate Atlas of Canada showing projected changes to the number of very hot (+30°C) days per year in Alberta (to the 2060s under a high emissions scenario). Historically, Alberta had less than 4 days per year above +30°C. By the 2060's, Alberta can expect over 20 per year.

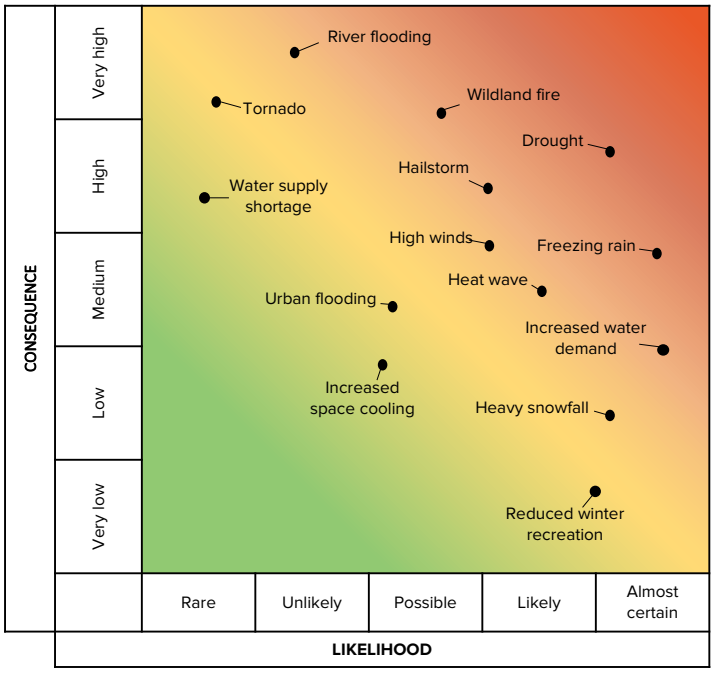
In addition to compiling information on local climate projections, it is also necessary to build an understanding of how these projections could impact assets, services, residents, and economic, cultural, social and natural resources in your community. To help with this, it is necessary to review academic journal articles and other research reports prepared by governments, non-profits, and the private sector.

Step 2

Assess risks & opportunities

Step 2 in the Climate Resilience Express planning process is where climate risks and opportunities are identified, assessed and prioritized. This involves:

1. **Developing climate impact statements** (or scenarios), that describe the links between projected changes in the local climate, a related hazard or opportunity, and potential impacts and consequences for your community.
2. **Defining a threshold or intensity level** for each identified climate hazard or opportunity, and **assessing the likelihood** of it occurring at that level in the future.
3. **Assessing the severity** (or magnitude) of consequences contained in each impact statement.
4. **Generating measures of climate risk** for each impact statement and presenting them in a format - like a risk rating matrix - that allows stakeholders to interpret and evaluate the results, and make decisions about priorities to take forward to action planning.



One way to present the findings of the risk assessment is to use a risk rating matrix (or 'heat map'), where likelihood and consequence scores for all climate hazards and opportunities are combined to determine an overall risk rating. Priorities for further action are then determined based on this combined rating. Climate hazards and opportunities with a higher likelihood and consequence (those in the top right corner of the matrix) are higher priority for action planning.

Developing climate impacts statements

For each climate risk and opportunity, an impact statement should be drafted. An impact statement identifies the “someone” or “something” that may be impacted, the specific way they could be impacted, and links these impacts to changes in the climate, as shown in the example below. Each statement should be specific to a single climate event with a defined threshold or intensity level.

The impact statement could be based on actual past events or on anticipated future scenarios. The important thing is to make them realistic, as they are used throughout the planning process and form the foundation of the risk and opportunity assessment.

CLIMATE CHANGES	CLIMATE RELATED EVENTS	IMPACTS	POTENTIAL CONSEQUENCES
• Hotter, drier summers • Less extreme cold • Increased precipitation • More extreme rainfall • Less precipitation as snow • More intense summer storms	• Drought • Longer growing season • Ecosystem shifts • Heat waves • Stormwater flooding • Wildfire	• Damage to homes and buildings • Water supply shortages • Damage to urban forest • Injuries • Reduced crop yields • Power outages • Loss of winter recreation	• Repair and replacement costs • Loss of ecosystem services • Hospitalizations • Loss of income • Reduced economic output • Stress and anxiety • Disruption to cultural or spiritual practices

When formulating impact statements, it is important to:

- Review historic climate-related events, for example, insurance claims or news articles on past weather events.
- Talk to experts, members of the community and elders to understand their experience with weather and extreme events.

Impact statements should be validated with experts and stakeholders in your community.

Determine the likelihood of climate impacts occurring

Climate risk is a function of the consequences of a climate impact event of a given intensity and the likelihood of it occurring. To assess the risk of an event, it is necessary to determine the likelihood that it will occur. When you generated the climate impact statements you will have defined a suitable threshold or intensity level for each climate event (e.g., number of "very hot days"). By suitable, we mean a level that could result in noteworthy impacts to your community.

If possible, you should generate likelihood estimates for the defined event threshold or intensity level both historically and in the future.

Likelihood estimates can be generated using one or more of the following methods:

1. **Historic event occurrence:** The likelihood of a climate event occurring in the past can be estimated from historic data, if available. Local reports or news articles may also contain estimated likelihoods for events that have affected your community.
2. **Known return intervals:** In some cases, the defined climate impact event will already be associated with a return interval, such as a 1-in-100 year 24-hour rainfall total, or 1-in-200 year low river flows, etc.
3. **Analysis of frequency distribution:** For some climate impact events, frequency distribution data can be downloaded from the Atlas, from which it is possible to approximate the likelihood of the defined threshold or intensity level occurring.
4. **Research from other assessments or studies:** Existing assessments or research studies may contain relevant likelihood estimates, or data from which estimates can be generated or extrapolated.
5. **Professional judgment:** When none of the other approaches are possible, the professional judgment of staff and stakeholders in your community can be used to estimate the likelihood of events occurring today and in the future.

Ultimately, your likelihood estimates will need to be transcribed onto a likelihood scale, like the example shown on page 10.

Below is an example likelihood assessment scale which can be tailored to your community needs and existing risk management systems.

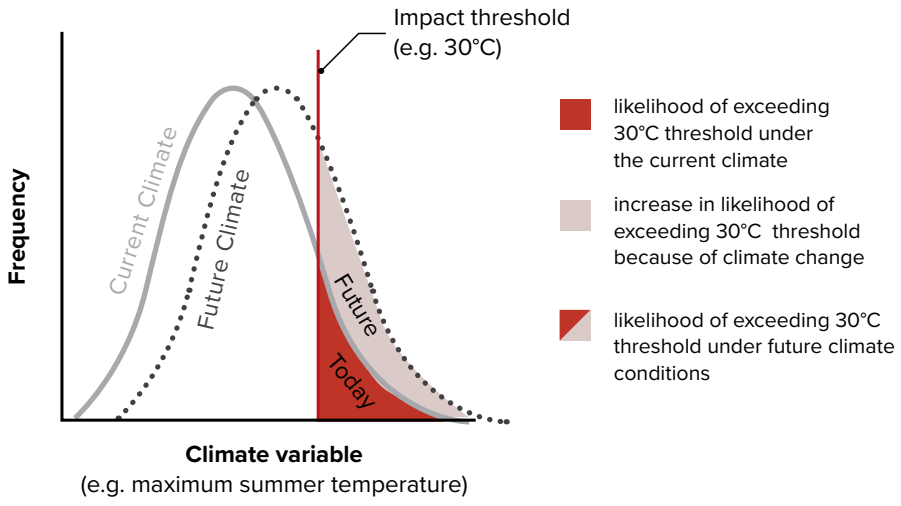
Score	Descriptor	Recurring climate events	Single climate events
1	Rare	Annual probability <1% (Less than 1:100-year event)	Event is almost certain not to occur (probability < 1%)
2	Unlikely	Annual probability 1 – 2% (1:50 to 1:100 year event)	Event is not anticipated to occur (1% - 33% probability)
3	Possible	Annual probability 2 - 10% (1:5 to 1:50 year event)	Event is just as likely as not to occur (33% - 66% probability)
4	Likely	Annual probability 10-50% (1:1 to 1:5 year event or less)	Event is expected to occur (66% - 99% probability)
5	Almost Certain	Annual probability > 50% (once every two years or more)	Event is virtually certain to occur (probability > 99%)

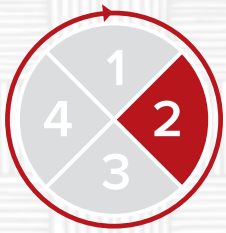
Your climate impact statements will likely include a mix of recurring (or discrete) events and single (or chronic) events. The likelihood scoring scale needs to allow for the assessment of both types of impacts.

Recurring events are those with the potential to happen (return) multiple times over a given time frame, such as severe storms, flooding and heat waves. Climate change may affect the frequency, intensity and duration of these events.

Single events, in contrast, occur when a specific threshold is reached in the future as a result of ongoing, gradual shifts in the climate. For example, the loss of a species, an irreversible shift in an Ecoregion, the permanent loss of a winter recreation opportunity (like outdoor skating), or a change in streamflow timing of the temperature of a water body.

The figure below shows how climate change can increase the likelihood of some climate events, such as extreme heat, occurring in the future.





To continue the risk and opportunity assessment process, the next step is to analyze the severity of potential consequences listed in each impact statement. Similar to likelihood, consequences can be assessed using a five-point rating scale, which differentiates between insignificant and extreme consequences for your community. Ideally, you should assess ('score') the severity of consequences anticipated to result from a climate impact event for each of the following dimensions:

- **Public health & safety:** Fatalities, injuries, disease, and hospitalization, as well as impacts on mental health and emotional well-being.
- **Social function:** Temporary or permanent displacement, disruption to community cohesion, exacerbation of inequalities, impacts to cultural resources.
- **Buildings and infrastructure:** Damage to buildings, equipment, vehicles and infrastructure, and loss of services such as transportation, water, energy, etc.
- **Economic vitality:** Disruption or loss of ability to produce, consume and trade goods and services, and to generate income and support livelihoods.
- **Natural environment:** Impacts to land, water, air, plants and animals, and the provision of ecosystem services.
- **City services and operations:** Impacts to the City's reputation, ability to deliver services without interruption, and operating and capital budgets, including contingency reserves.

An example consequence rating scale for one of these dimensions - "public health and safety - is shown below. Scales used to assess consequences should be tailored to the size of the municipality and existing risk management practices.

Score	Descriptor	Description
1	Insignificant	No directly related deaths, injuries, illnesses, or diseases.
2	Minor	
3	Moderate	No directly related deaths, 5-10 people injured or experiencing illness, some requiring hospital treatment. Moderate, temporary feelings of fear and anxiety.
4	Major	
5	Extreme	5 or more directly related deaths, and/or 100 or more people injured or experiencing illness, many seriously and requiring hospital treatment. Widespread and severe disturbance resulting in chronic psychological effects.

Assess consequences

The assessment of consequences should be conducted using a participatory approach that draws upon the expertise of municipal staff and local stakeholders in your community.

At this point, you may also want to engage community members in the process, possibly through a survey or similar tool, to better understand community priorities.

The goal is to assign a consequence score, usually a numerical value from 1 to 5, to to all consequences listed in the impact statements.

Taking a precautionary approach, the overall consequence score assigned to a climate impact event should be based on the maximum score across all consequences categories.

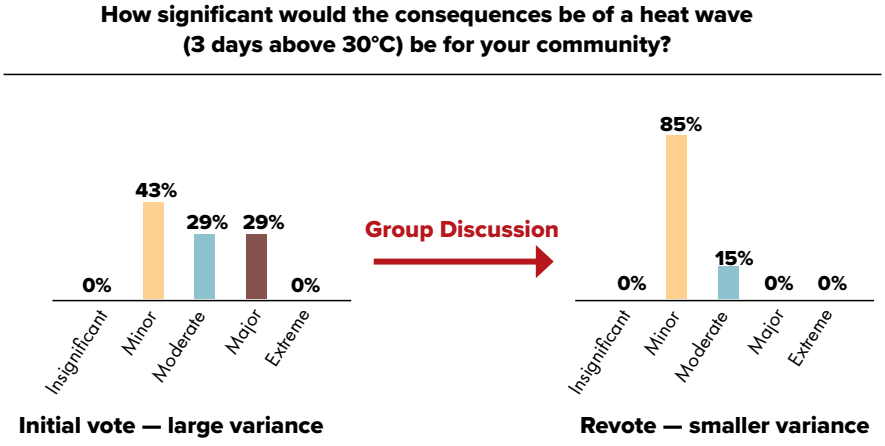
The consequence assessment should consider your community's current vulnerabilities.

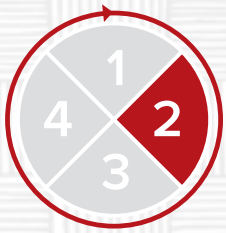
What key assets are exposed to climate hazards? How sensitive are community activities, assets and services to changes in climate and changes in climate hazards? What risk management measures are currently in place? What is your community's ability to adjust, or take advantage of changes in climate and changes in climate hazards?

Assess consequences

The consequence assessment is often completed through a facilitated workshop process with City staff and key stakeholders. There are many techniques available to help staff and stakeholders score the severity of consequences of each climate impact statement. One approach is to use voting software. This method of engagement involves an evaluation exercise (voting) combined with facilitated dialogue that encourages the sharing of expertise and perspectives to stimulate deeper analysis of climate change impacts. Voting software records the scores assigned to each impact statement and allows participants to view the collective results in real-time. In cases where an initial vote produces a large variance in scores, group discussion can be used to help reach consensus. For example, one or more participants may have expertise they can share about severity of historic climate events the vulnerability (sensitivity) of community, assets, or the presence of vulnerable populations in the community. The digital voting approach is effective in both achieving alignment on consequence scores, and more importantly, a shared understanding of local climate risks and priorities.

Example of achieving alignment in a climate change risk assessment through digital voting and discussion:





Evaluate risk and opportunities

Results of the consequence and likelihood assessments are combined at this stage to generate an overall risk rating for each climate impact event. You can present the results in the form of a risk rating matrix, like that shown on page 7, or as a total risk score out of 25 (calculated by multiplying the consequence and likelihood scores). This information can then be used to differentiate between low, medium and high climate risks or opportunities, and hence acceptable and unacceptable risks for your community.

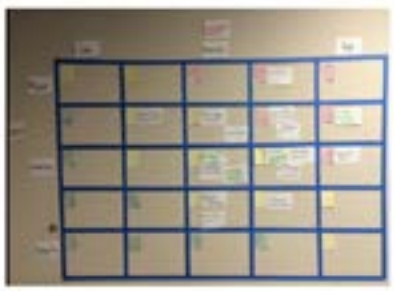
The table below provides an example of action planning thresholds that can be used to determine which risks and opportunities are prioritized for action planning and ultimately to help prioritize where to focus effort during the action planning step.

Example action planning thresholds

Risk matrix	Risk rating score	Action planning
Highest risk	>20	Actions must be developed as part of action planning
Medium risk	15 –20	Actions should be developed as part of action planning
Low risk	10 – 14	Actions could be developed, particularly where low-cost options are available that provide other social, economic or environmental benefits
Acceptable risk	<10	No action required, beyond consideration as part of regular reviews

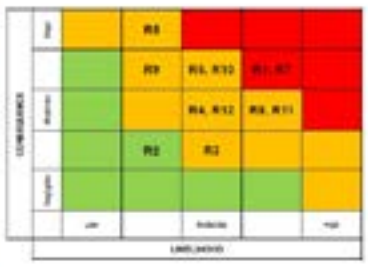
Once you have determined an initial set of priorities for the action planning step, you should evaluate the rankings with staff and stakeholders and make any adjustments as necessary. You might adjust the priority assigned to a specific risk or opportunity because a strong argument is made that it has been either over- or under-estimated, or to align your recommendations for action planning with an upcoming review of a strategic plan or a funding opportunity.

Options for generating a risk or opportunity matrix at a workshop to visualize the results of the consequence and likelihood assessment, and support the evaluation process, are shown below. (examples from the Climate Resilience Express process, 2015-2018).



1. Use tape to draw the matrix on a large wall

2. Draw the matrix on a large sheet of paper or cardboard



3. Draw the matrix digitally and project it on a screen

Step 3

Action plan

Step 3 in the Climate Resilience Express planning process where actions to address priority risks and opportunities are identified, evaluated and prioritized. This involves:

1. **Identifying actions** to reduce or avoid the harmful consequences of priority climate risks or to capture the benefits presented by priority climate opportunities
2. **Evaluating actions** against key decision criteria to help determine priorities for implementation
3. **Characterizing priority actions** and developing implementation plans, including information on estimated costs, timelines, the implementation lead(s) and partners

To provide structure to the action planning process, it is helpful to organize your priority climate impacts around 'themes', with accompanying goals and objectives. Adaptation actions can then be developed around each theme and to achieve your goals and objectives.

What is a climate adaptation action?

Climate adaptation actions take many different shapes and forms, and will include things your community currently does. Here are some examples of actions that could be implemented in your community to address climate risk and opportunities:

- **Conduct research**, if you don't have enough information about the nature of a risk, or the potential costs and benefits of actions to make robust decisions
- **Update or develop new policies, plans, or bylaws** that embed considerations of climate-related risks and opportunities and corresponding actions
- **Modify operations and/or maintenance** schedules, for example, increasing the frequency of storm drain cleanouts, enhanced tree management, or water leak detection
- **Build new or upgrade existing infrastructure,** to provide protection against climate risks, for example, flood prevention, erosion control structures, permeable roads and sidewalks to retain water, or a wetland restoration
- **Increase awareness and education** to help your community better understand (and visualize) risks and adaptation actions
- **Emergency management** measures such as response and evacuation planning, hazard mapping, and early warning or alert systems
- **Human resourcing** options, for example dedicating additional staff time to climate adaptation planning and implementation, establishing a task force or committee, or hiring an expert

An effective climate adaptation action planning process involves collaboration and input from local experts, municipal staff and community stakeholders. When brainstorming actions consider the full list of options outlined on Page 14.

Ask:

- What key actions, completed or underway, currently support management of the climate risk or opportunity?
- How effective are existing actions? Can they be enhanced or improved to more efficiently manage the priority risk or opportunity?
- Are there new actions needed, that your community can lead or support, to enhance community climate resilience?

Examples of actions identified to address priority climate risk and opportunities by communities who participated in the Climate Resilience Express planning process are outlined in the Table below:

Priority impact	Examples from	Proposed actions
Wildfire	Mackenzie County	• Hold tabletop exercises with partnering agencies to plan for large-scale wildfire • Update the Land Use Bylaw with FireSmart planning principles such as vegetation management and construction materials • Purchase additional firefighting equipment specific to wildland firefighting • Enhance the Municipal Emergency Plan to deal with increasing wildfire risk
River flooding	Town of Canmore	• Install backflow prevention valves in vulnerable facilities and buildings • Purchase submersible pumps for vulnerable facilities and buildings • Purchase temporary flood protection equipment • Increase public awareness by installing signage along local trails • Install a water gauge to track real-time local river flows and long-term trends • Conduct a River Flood Risk Assessment
Increase in summer tourism (opportunity)	Towns of Black Diamond and Turner Valley	• Increase the number of cultural and activity-based events offered (e.g. folk festival) • Explore opportunities to enhance summer tourism through local food sales and Agri-tourism • Invest in facilities and infrastructure for tourists such as parking, washrooms and new attractions

Depending on the diversity of identified climate resilience actions, consideration could be given to forming a working group of municipal staff and external stakeholders to oversee implementation of the Action Plan. This group could coordinate the ongoing selection and implementation of actions.

Action plan

It is unlikely that you will be able to implement all potential adaptation actions, due to staff and financial constraints and/or competing priorities. As a result, it is necessary to evaluate and prioritize actions to identify those that will perform best with respect to key decision criteria. This can be done using a simplified analysis of the potential costs and benefits of each action, as shown in the table below, or based on a full quantitative cost-benefit analysis.

On the cost side, in addition to any required capital expenditures and ongoing annual expenses, you should also consider the potential for negative side-effects, for example increasing greenhouse gas emissions or negatively impacting wildlife habitat. Feasibility considers action is possible, given technological, legal and/or economic constraints, and acceptability is about whether the public/City Council would accept and implement the action.

On the benefit side, the effectiveness of the action in achieving your adaptation goals is clearly important. But it is also important to consider equity, and whether the action helps under-served and marginalized groups in the community. To help manage uncertainty about future levels of climate change, a higher priority should be given to actions that offer greater flexibility to modify, or scale-up or down over time. Finally, the potential for the action to generate co-benefits for the community in addition to reducing risk, should be considered.

The performance of each adaptation action with respect to each of these decision criteria can be scored by staff and stakeholders using a 5-point scale like that shown, with the resulting total scores across all criteria used to rank and prioritize actions for inclusion in your climate adaptation action plan.

Costs	**1**	**2**	**3**	**4**	**5**
Lifecycle costs	Low		Moderate		High
Negative side-effects	Negligible		Moderate		Major
Feasibility	High		Moderate		Low
Acceptability	High		Moderate		Low
Benefits					
Effectiveness	Low		Moderate		High
Equity	Poor		Neutral		Good
Flexibility	Low		Moderate		High
Co-benefits	Negligible		Moderate		Major

Examples of co-benefits that may be considered in the evaluation process:

- Reduces inequalities
- Improves water retention
- Improves water and/or energy efficiency
- Improves air and/or water quality
- Improves community livability
- Enhances recreation opportunities
- Increases economic output and supports jobs
- Improves biodiversity

A **Climate Adaptation Action Plan** documents the actions a community plans to implement in order to manage priority risks and opportunities posed by climate change. It also describes the process of arriving at the recommended actions, provides all materials used to support the decision-making process, and outlines how, when and by whom actions will be implemented.

Once priority actions have been identified, you can build your community's climate adaptation plan by compiling information to support implementation. In general, you will find that a number of actions in your Action Plan can be implemented quickly with minimal investment, whereas other actions will have longer-term timelines, require a higher level of investment, and may require a more detailed implementation strategy with dedicated budgets and new funding sources, timelines and milestones for specific activities, and defined roles and responsibilities for specific stakeholders and groups.

An implementation plan can include, for each priority action, information about:

- the **type of action**, for example, whether it is a program, plan, policy, project, partnership, etc.
- the **timeline** to have the action implemented or initiated, whether in the short-, medium-, or long-term
- **total implementation costs**, estimated in dollar values ranging from low to high
- the **lead** agency or organization that will be responsible for ensuring the action is implemented
- other **partners** or stakeholder required to support action implementation, both within your community and externally

Between 2015 and 2018, All One Sky Foundation and the Municipal Climate Change Action Centre partnered to deliver phase 1 and phase 2 of the Climate Resilience Express program. The program developed Climate Resilience Action Plans for 13 communities in Alberta, as well as development of the Climate Resilience Express Action Kit - a detailed how-to guide for municipal climate adaptation planning. Click on the community links below to view their Action Plans.

- Lacombe County
- City of Spruce Grove
- Town of Bruderheim
- Town of Banff
- Brazeau County
- Big Lakes County
- Towns of Black Diamond & Turner Valley
- Town of Canmore
- Town of Sylvan Lake
- Beaver County
- Mackenzie County
- Town of Okotoks
- Beaver Hills Biosphere

Step 4

Implement

Once your climate adaptation plan is complete, the real work begins – implementation! Some key considerations as you prepare for implementation and moving forward with making your community climate resilient are outlined below.

An important aspect of implementation is 'mainstreaming' – integrating climate resilience, as a matter of routine, into your community strategies, plans, policies, programs, projects, and administrative processes. This includes, for example: land use and development decisions; administrative processes such as bids, tendering and contracts for planning and development work; strategic plans (e.g., the Municipal Development Plan) and neighborhood scale plans; and decisions related to the design, maintenance, and upgrading of long-life infrastructure and assets.

Your Climate Adaptation Action Plan should be evaluated regularly—at least every 5 years—to ensure it remains effective and relevant. The evaluation should consider:

- Lessons learned from the implementation of actions, both in terms of whether actions have been implemented as intended and the effectiveness of implemented actions in achieving the intended results.
- New research and scientific information on climate projections and impacts, which may affect the understanding of risks and opportunities facing the community.
- Changes to community goals, or changes to social, economic or environmental conditions, which likewise may affect the understanding of risks and opportunities facing the community.

Keeping your Action Plan relevant may only involve a few minor adjustments, but more than likely will require revisiting some of the steps in the planning process and preparing an updated Action Plan.

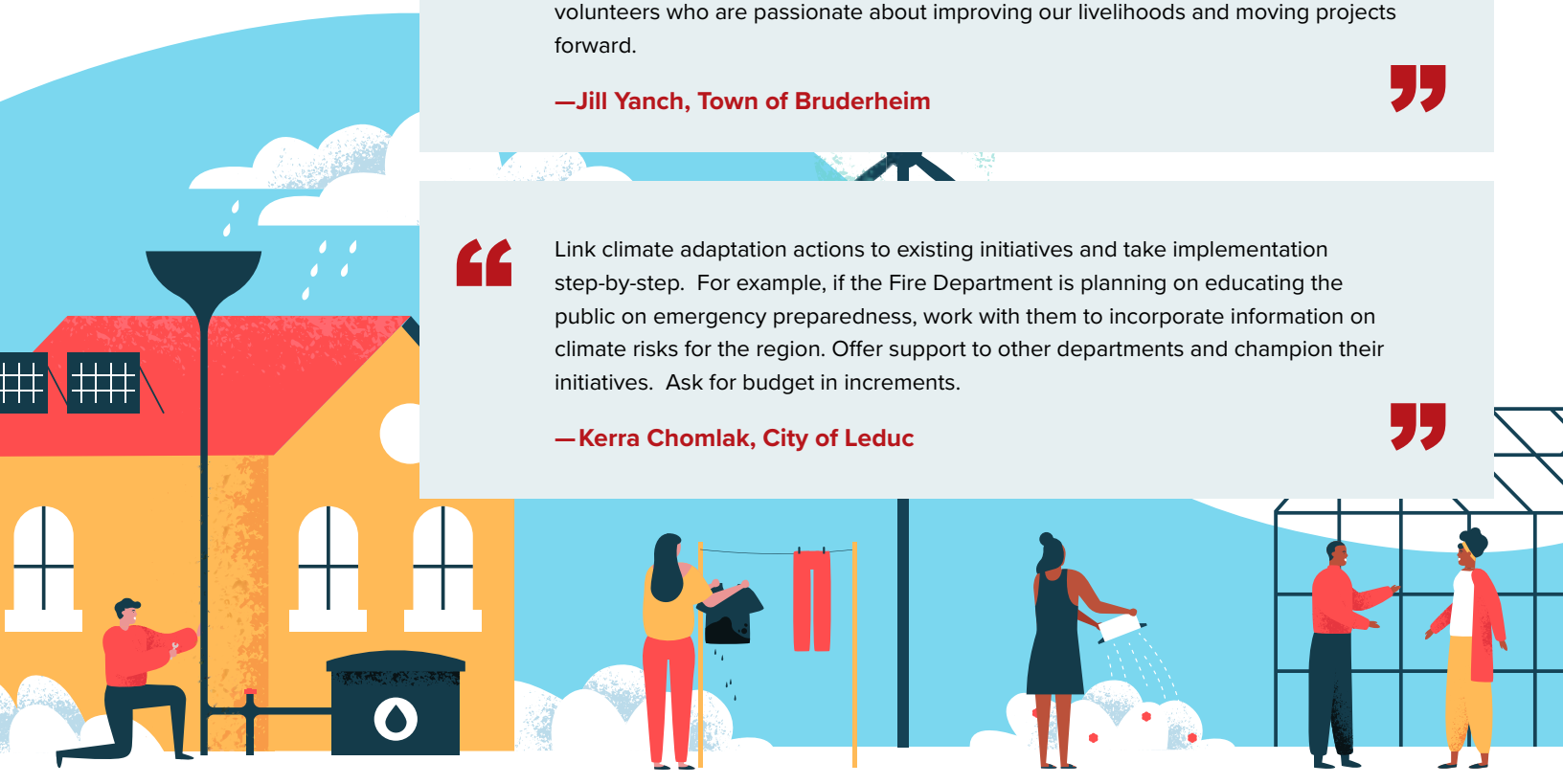
What are the keys to a successful adaptation planning process and implementation? Take some advice from municipal climate resilience leaders across Alberta:

> The climate change risk assessment process gave us a clear understanding of our climate change impact priorities. We used the results to guide our climate adaptation planning and to evaluate and prioritize the most effective climate resilience measures for our community. Since completing the Plan in 2016 we have been working on major steep creek flood hazard mitigation and community FireSmarting.
>
> **—Amy Fournier, Town of Canmore**

> An important priority for us was to ensure our community was engaged and informed throughout the process. We conducted several community surveys, hosted a virtual town hall meeting, and worked with community groups and schools to capture a range of perspectives. Specific efforts were made to connect with youth and our most vulnerable residents to ensure their feedback was taken into account in the development of the action plan. Effective community engagement is key to success and ensuring we develop and implement a just and equitable plan.
>
> **—Caitlin Van Gaal, City of Spruce Grove**

> As a small rural community, we've found success by partnering with other small communities in our region through the Resilient Rurals project. We are sharing resources and collaborating on regional climate adaptation and resilience initiatives. Particularly for rural communities, success requires a strong local champion and volunteers who are passionate about improving our livelihoods and moving projects forward.
>
> **—Jill Yanch, Town of Bruderheim**

> Link climate adaptation actions to existing initiatives and take implementation step-by-step. For example, if the Fire Department is planning on educating the public on emergency preparedness, work with them to incorporate information on climate risks for the region. Offer support to other departments and champion their initiatives. Ask for budget in increments.
>
> **—Kerra Chomlak, City of Leduc**



All One Sky
— FOUNDATION —

ALL ONE SKY FOUNDATION is a not-for-profit, charitable organization established to help vulnerable populations at the crossroads of energy and climate change. We do this through education, research and community-led programs, focusing our efforts on adaptation to climate change and energy poverty. Our vision is a society in which ALL people can afford the energy they require to live in warm, comfortable homes, in communities that are resilient and adaptive to a changing climate.

Our Work

CLIMATE ADAPTATION AND RESILIENCE

Our climate is changing and will continue to do so for the foreseeable future. How do we prepare for impacts on our infrastructure, public services, economic activity, environment and quality of life? We can work with your community or organization to minimize harm from these changes, take advantage of beneficial opportunities, and help you anticipate and prepare for the impacts of climate change.

ENERGY POVERTY

Energy poverty is a cross- cutting policy issue, with implications for general poverty alleviation, health and social well-being, housing and climate change strategies. Our work focuses on researching the extent, causes and impacts of energy poverty, convening stakeholders to discuss barriers to action and solutions, and designing projects and programs to address the issue.

ECONOMICS OF CLIMATE CHANGE

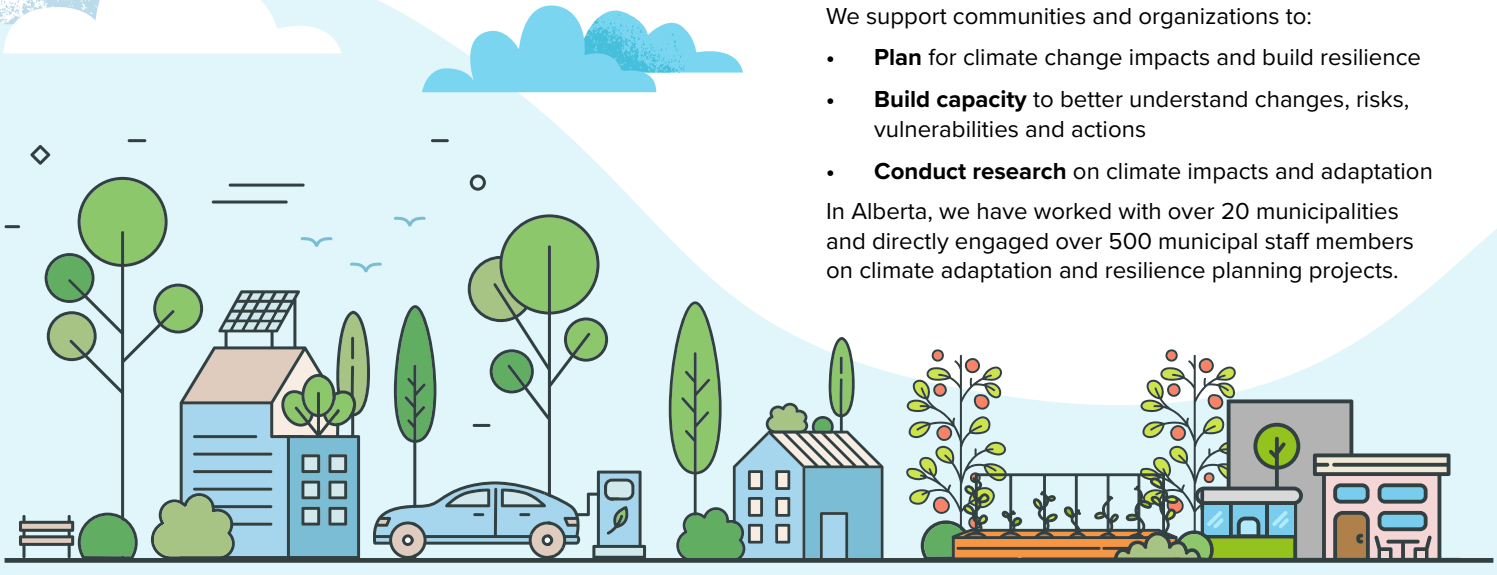
Information on the economic impacts of climate change, and the costs and benefits of alternative courses of action, is increasingly required by decision-makers. Our work focuses on generating economic information and tools to help make the case to invest in climate mitigation and adaptation, and to inform the selection, timing and level of investment in specific actions.

Our Experience

We support communities and organizations to:

- **Plan** for climate change impacts and build resilience
- **Build capacity** to better understand changes, risks, vulnerabilities and actions
- **Conduct research** on climate impacts and adaptation

In Alberta, we have worked with over 20 municipalities and directly engaged over 500 municipal staff members on climate adaptation and resilience planning projects.



EMPOWERING CHANGE.

The Municipal Climate Change Action Centre (Action Centre) was founded in 2009 as a collaborative initiative of Alberta Municipalities, Rural Municipalities of Alberta, and the Government of Alberta.

The Action Centre delivers funding, technical assistance, and education to help Alberta municipalities, school authorities, and community related organizations advance actions that lower energy costs, reduce greenhouse gas emissions, and improve climate resilience.

In October 2020, the Government of Alberta announced the allocation of $4.5 million to the Action Centre to develop and administer the Climate Adaptation Program. The Climate Adaptation Program enhances the ability of Alberta municipalities and Indigenous communities to prepare for and respond to climate-related risks.

Through the Climate Adaptation Program, the Action Centre provided funding for the development of the Climate Resilience Express Planning Guide, in partnership with All One Sky Foundation.

This update to the Climate Resilience Express resources was made to reflect the significant advances in access to climate information now available to support adaptation planning, and new international standards published for climate vulnerability, impacts and risk assessments, and adaptation planning for local governments.

Visit **mccac.ca** to learn more.

Real savings. Real change.

Municipal Climate Change Action Centre

Alberta Municipalities Strength In Members

RMA Rural Municipalities of Alberta

Alberta