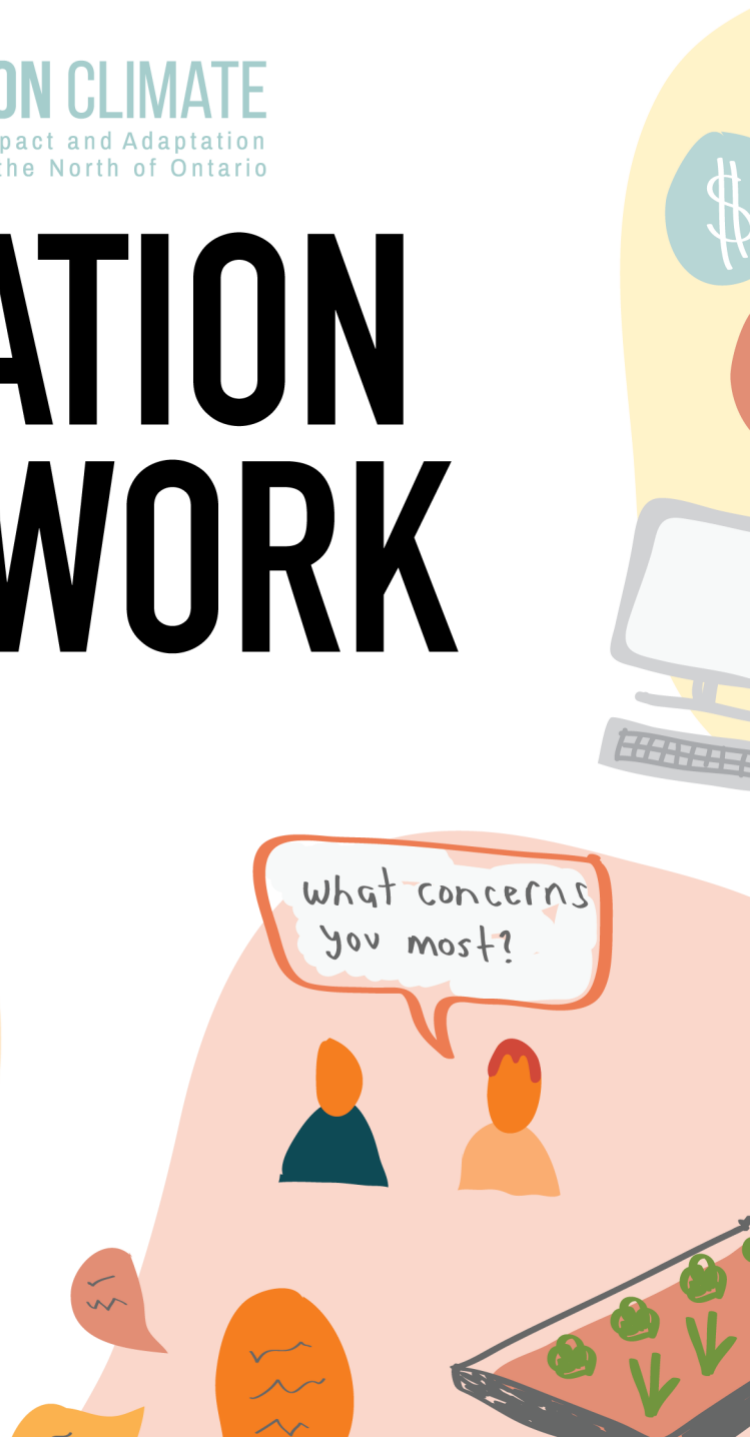
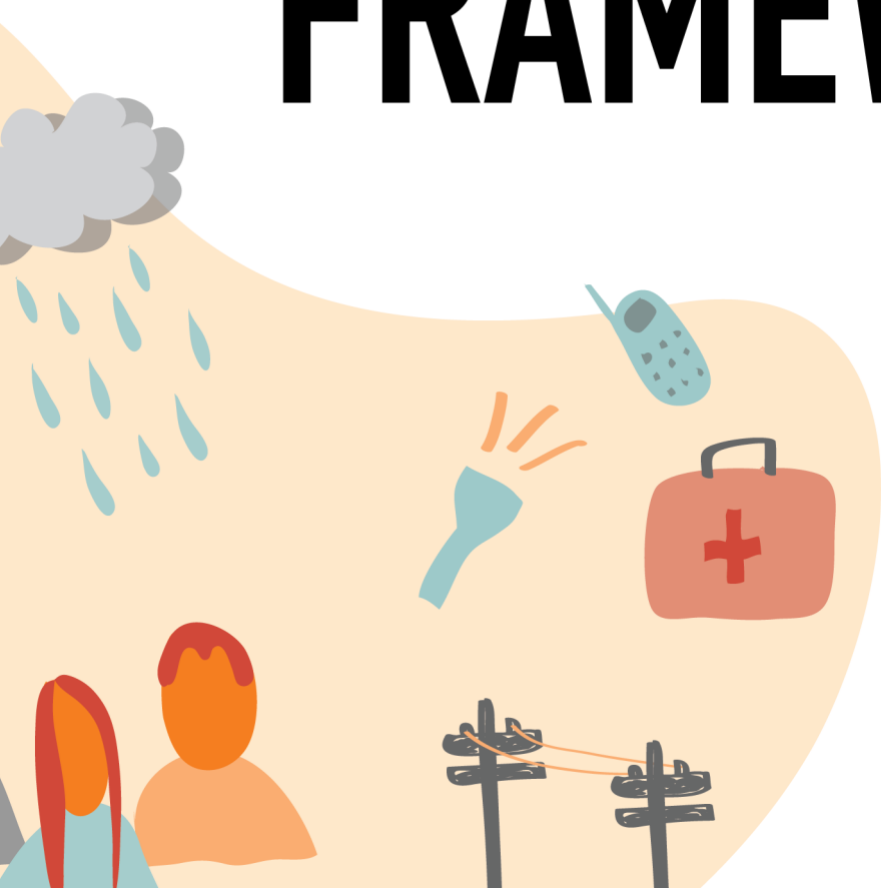


**UP NORTH ON CLIMATE**  
Climate Change Impact and Adaptation  
Study for the North of Ontario

# ADAPTATION FRAMEWORK



This Adaptation Framework was created by Up North on Climate (Laurentian University) in collaboration with



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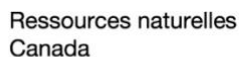
Up North on Climate. 2021. *Adaptation Framework*. Laurentian University, Ontario.

<https://www.upnorthonclimate.ca/adaptation-planning>

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## OVERVIEW

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# INTRODUCTION

First Nation peoples have always had to adapt, whether it be to changing weather from year to year, changes in where to find animals and plants for wild food and medicine, or changes on the land affecting travel and personal safety. However, human-caused greenhouse gas emissions are causing the Earth's atmosphere and climate to change toward a warmer world at a faster and faster rate, with temperatures in the north rising at twice the rate of other regions. These changes, coupled with the close ties First Nation communities have with the land, make the need to prepare and adapt to the impacts of climate change increasingly important.

As part of a Building Regional Adaptation Capacity and Expertise (BRACE) project co-led by First Nations and Laurentian University, the Tribal Councils of Keewaytinook Okimakanak, Matawa, Mushkegowuk, Nookiwini and Shishogama, as well as Grand Council Treaty #3, each appointed a Climate Change Specialist with the role of advancing climate change adaptation in their member communities. The goal of this document is to provide a framework that the Climate Change Specialists (or those who fulfill a similar role) can use to move towards successful adaptations for the communities they serve. The aim is to help implement adaptations that are in line with a community's needs, mesh with the community's values and goals, and incorporate Traditional Knowledge as well as science.

This Adaptation Framework is organized into 5 major steps:

## **1. SET THE GROUNDWORK**

Solidify your knowledge of climate change science, local knowledge of impacts in the north, and possible ways of adapting. Foster a relationship with the community or communities you hope to work with.

## **2. CLIMATE CHANGE IN THE COMMUNITY**

Learn how climate change is impacting the community you're working with.

## **3. ADAPTATION WORKSHOP**

Together with community members, decide what climate change impact or impacts will be addressed and what adaptation or adaptations the community would like to use.

## **4. MOVING INTO ACTION**

Finalize adaptation choice and create a plan to put the chosen adaptation(s) into practice.

## **5. IS IT WORKING?**

Evaluate the success of the adaptation and the adaptation process.

Because each situation and each community is unique, flexibility is important. With this in mind, this Adaptation Framework suggests a variety of options and resources that could be used to work through the steps outlined in the adaptation process. As an example, the framework suggests the possibility of combining steps **2. CLIMATE CHANGE IN THE COMMUNITY** and **3. ADAPTATION WORKSHOP** into a single workshop event, an adjustment which may be necessary due to circumstances of time, money, travel, etc.

How exactly the Climate Change Specialist (or whoever who is facilitating the adaptation process) decides to accomplish the steps within the framework is ultimately up to them. This flexible approach also allows the Climate Change Specialist as the facilitator to incorporate the Indigenous practices and traditions appropriate to the community they are working with.

There isn't one "right way" to adapt to climate change and every community will have its own goals and face its own challenges. By incorporating flexibility while still providing a clear path towards adaptation, this framework aims to be a useful tool for climate change adaptation projects in First Nation communities across the north.



## LEARN ABOUT CLIMATE CHANGE SCIENCE



## LEARN ABOUT FUTURE CLIMATE PROJECTIONS FOR YOUR REGION



YEAR 2050

YEAR 2100

# 1. SET THE GROUNDWORK

## LEARN ABOUT CLIMATE CHANGE IMPACTS FOR YOUR REGION



## LEARN ABOUT ADAPTATION OPTIONS



## BEGIN TO MAKE CONNECTIONS IN THE COMMUNITY



# 1. SET THE GROUNDWORK

The process of adapting to climate change has to be based on an understanding of climate change. Recognizing, at least in broad strokes, what is causing climate change, what changes we will see as a result, and what impacts those changes will have on the land, communities and people is fundamental to adaptation planning. Learning about these topics, especially impacts and adaptations, will likely be ongoing throughout the adaptation planning process.

## LEARNING ABOUT CLIMATE CHANGE SCIENCE

During the course of adaptation planning, it will be necessary to speak about why and how climate change is happening. A good knowledge base on the topic can help when presenting information to community members or answering any questions. A collection of trusted resources can also be useful for finding answers to climate change questions you may be unfamiliar with.

### *Learn about climate change science with:*

*Resources from Up North on Climate:*

- [Science Climate Story](#)
- [Climate Change Infosheets](#)
- [Climate Change Quick Guide](#)
- Up North on Climate [Facebook page](#)
- Up North on Climate [Website](#)

*Other resources like:*

- “Global Warming: The Complete Briefing”, 5<sup>th</sup> edition by John Houghton
- [The Royal Society – Climate Change: Evidence and Causes](#)
- [Skeptical Science](#)

*\*Find web addresses and resource descriptions in the Resources Table*



## LEARNING ABOUT PROBABLE FUTURE CLIMATE

Knowing how global climate change is likely to change local temperature, rainfall, snow amounts, growing season, severe weather events and more, is important for adaptation planning. These predictions of future climate (called climate change projections) can be found online at several user-friendly sites like:

- [Climate Atlas of Canada](#)
- [Climate Data Canada](#)
- [Canadian Climate Data and Scenarios](#)



Climate change will impact different regions in different ways, so knowing the projections for the area you are working in is important. Projections include many different variables such as “very hot days” that are stressful for Elders, “growing degree days” useful to know for growing vegetables, and the number of “very cold days” important for winter road building. Exploring the projections for your community is a good way to become familiar with projections.

Climate projections are usually given for three different scenarios (also called Pathways): a future where there is little to no reduction in greenhouse gas emissions (Representative Concentration Pathway 8.5), a future where greenhouse gas emissions start to decline after the year 2050 (RCP 4.5), or a future in which greenhouse gas emissions are dramatically reduced now (RCP 2.6). Currently, emissions are most closely following RCP 8.5 and planning for this possibility might be the most practical option as adaptations designed for RCP 8.5 will also be valuable under lower greenhouse gas emissions. Plans designed for lower concentration pathways, however, will likely be ineffective if we stay on the 8.5 pathway.

When working with a community on an adaptation plan, it will be important to share local climate projections with community members and leaders.

**Learn about climate change models with:**

Resources from Up North on Climate:

- [Climate Modelling & RCP Infosheet](#)

Other resources like:

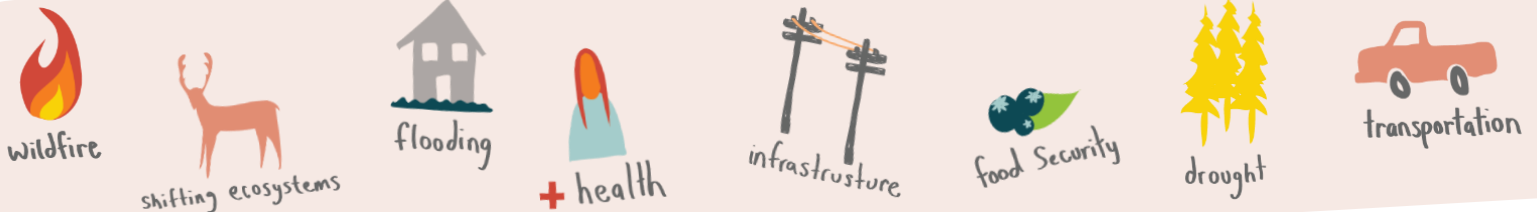
- [Carbon Brief's Series on Climate Modelling](#)
- [Skeptical Science - How do Climate Models Work?](#)
- [A Guidebook on Climate Scenarios](#)

*\*Find web addresses and resource descriptions in the Resources Table*

### CLIMATE PROJECTIONS

Climate depends on many **complex processes** happening in the **atmosphere, the oceans, and on the land**. To predict future climate, a computer model can be created that mimics these processes.

It is important to understand that climate projections **may vary from model to model** because each is based on a slightly different understanding of climate processes. **Most mapped projections (like [climatedata.ca](#)) are, therefore, based on the average of many models.**





## BECOMING FAMILIAR WITH THE IMPACTS OF CLIMATE CHANGE

Start to become familiar with what climate change means for people and communities in the north and how it has and will impact the land and resources they rely on. For example, what exactly are the results of having warmer winters? What happens when seasonal amounts of rainfall and snowfall (precipitation) change?

Although the specifics of how a community is being affected may vary from place to place (gathering these specific observations is the focus of step **2. CLIMATE CHANGE IN THE COMMUNITY**), building a knowledge base for climate change impacts in the broader area like northeastern Ontario or northwestern Ontario, or along the coast will be helpful as a starting point.

### **Learn about climate change impacts with:**

Resources from Up North on Climate:

- [Fictional Community Climate Adaptation Report](#)

Other resources like:

- [Canada's Changing Climate Report](#)
- [The Indigenous Climate Change Observation Network \(Alberta\)](#)
- [Climate Atlas of Canada - Topics](#)

\*Find web addresses and resource descriptions in the Resources Table

*This report is an example based on reports created for more than 20 northern Ontario communities by the Up North on Climate project.*

*Community reports were based on Traditional Knowledge related to climate change and are the property of the communities.*

*If a community you are working with has a report, Up North on Climate may be able to guide you to an appropriate community contact for access to the report.*

## LEARNING ABOUT CLIMATE CHANGE ADAPTATIONS

The goal of an adaptation plan is to prepare ways of reducing the harmful and dangerous impacts of a changing climate on people, life on the land, and on homes and infrastructure. Putting adaptations into practice will help people and communities deal with the changes that are happening now and will likely continue into the future.

Begin to discover the adaptation options that are out there. Look to other communities that are preparing for climate change for examples. In the north and around the world, a wide range of adaptation options are being put into action, from small to large scale, low to high cost, and individual to community initiatives. Start thinking about what options could be feasible for the area you're working in and the communities you're working with. Keep in mind that you may have to describe and present potential adaptation options to community members.

New ways of reducing climate impacts in communities are always coming up, so learning about adaptation options will likely continue throughout the adaptation planning process. Keep an eye out for articles, news reports, or social media posts that might outline adaptations taking place in other communities. Good descriptions and photos of successful adaptations can encourage action if people are feeling uncertain about trying something.



**Learn about climate change adaptation options with:**

Resources from Up North on Climate:

- [Adapting to a Changing Climate Report](#)
- [Impact and Adaptation Infosheets](#)
- [Up North on Climate Website](#)
- [Climate Change Adaptation Quick Guide](#)

Other resources like:

- [Climate Atlas of Canada – Take Action](#)
- [Climate Adaptation Knowledge Exchange \(USA\)](#)
- [Climate Change Adaptation Planning Guidebooks for Indigenous Communities – Resources for Winter Roads, Wildfires, Flooding, & Coastal Erosion](#)

*\*Find web addresses and resource descriptions in the Resources Table*



## BEGINNING TO MAKE CONNECTIONS IN THE COMMUNITY

Creating an adaptation plan for a community will depend on the participation of community members, especially Elders, who remember the weather of the past and ways that it has changed. Reach out to communities and begin to build relationships. Ways to do this might include:

- Reaching out to any contacts you already have in the community
- Introducing yourself to community leadership and community professionals
- Seeking out hunters, trappers, or other land-users in the community who might have observations to share

Connecting with community members who have an interest in addressing the impacts of climate change may go a long way towards moving adaptation planning forward. Putting adaptation ideas into practice in the community will likely require a team of people working together.

Be on the look-out for people who may be able to fulfill these roles. Having a project “champion” in the community (a person or group of people dedicated to seeing the project through) will be especially important. The role of a project champion is outlined in more detail in step **4. MOVING INTO ACTION**.



community professionals,  
leadership + groups



community members,  
Elders + champion(s)

# 2. CLIMATE CHANGE IN THE COMMUNITY

**A**ssessing risks,  
**P**rioritizing action,  
**P**reparing for climate change  
**tool**



Observations by:  
Elders  
Hunters/Trappers  
Community Members

Survey questions  
1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_  
4. \_\_\_\_\_  
5. \_\_\_\_\_

What has changed over time?



workshops



meetings

How has climate change impacted:  
people  
infrastructure  
land

Let the community take the lead

what concerns you most?  
1-on-1  
or small groups

# 2. CLIMATE CHANGE IN THE COMMUNITY

Adaptation planning must be guided by the needs, concerns, and observations of the community you're working with. As such, it is important to learn how climate change is being experienced by people in the community and what impacts it is having on their lives.

## WHAT KIND OF KNOWLEDGE?

### *How the climate in the area has changed over time*

Elders in the community, and perhaps even younger members, will have observations about how seasons and weather have changed since they were children. Long term records from Environment Canada weather stations are also available for a handful of northern communities. Historical climate for the rest of the north has been modeled based on these few weather stations and can be found on [Climate Atlas](#) and [Climate Data](#).

### *How climate change is impacting community infrastructure*

How are roads, buildings, and homes being affected? What about community services like electricity, water, and sewage? Could climate change make these issues worse?

### *How climate change is impacting the land*

What changes are happening to forests, lakes, rivers, and wetlands? How are traditional plants, animals, and other resources that people rely on being affected?

### *How climate change is impacting people*

How has climate change impacted the lives of people in the community? For example, has their health and safety been impacted? Is travel over the land more difficult? Are berries harder to find?

### *What community members are most concerned about*

What issues have widespread agreement among community members? Are there any issues that could pose serious risk to human health or safety? What do community members identify as priorities?



## WAYS TO GATHER KNOWLEDGE

Learning about climate change in a community could happen in several ways. You are not limited to one approach and can choose whichever option or options work best for your situation. Time frame, financial considerations, or your ability to travel to communities may all play a role in determining how this information is collected.

### Speak to community members 1-on-1 or in small groups

Learn about climate change directly from community members by asking questions about what they've observed, how things have changed, and what impacts they are noticing. This could be done in person, or over telephone or video chat if appropriate. A trusted contact or project champion in the community could also be the one to speak to community members. Conversations could be guided by your own set of questions or by using resources provided by Up North on Climate such as the [APP rapid risk assessment](#) or [Questions for interviewing First Nations Elders and community members](#).

Reach out to any contacts you have in the community to start looking for people who may be interested in participating. Meeting with community members this way could also be a good way to foster interest in the project and help keep it moving forward.

### Sharing circle

Community members may be open to sharing their experiences of climate change as part of a sharing circle or talking circle. Sharing circles can allow people to voice their thoughts in a comfortable environment that respects Indigenous oral tradition and the spirit of reciprocal learning. Reach out to any contacts you have in the community to start looking for people who may be interested in participating. A sharing circle could also be organized and led by a trusted community contact or project champion. Connecting with community members this way may also help to foster interest in the project and keep it moving forward.

### Community meeting or workshop

Speaking as part of a community meeting or hosting your own workshop could be a good way of gathering information from community members in a shorter amount of time. Discussion could be



### Assessing risks, Prioritizing action, Preparing for climate change (APP) Rapid Risk Assessment

The [APP Rapid Risk Assessment](#) is a tool created by Up North on Climate to help gather information on climate change observations, risks, and impacts in northern Ontario communities.

Climate change impacts are divided into 8 categories (wildfire, infrastructure, ecosystems, health, food security, drought, transportation, flood) and a series of questions are provided for each category to start the discussion process.

A planning table is also included to help link climate change observations to possible adaptation actions.

Example table for FIRE Assess•Prioritize•Prepare: Some ideas of how to fill out your planning table. You may especially interested in the projections

Assess the risk		Prioritize		Adapt		
Observations What changes/issues have you noticed on the land or in your community?	Projections What conditions are predicted with future climate change?	Risk What effects are these changes having? What effects could they have in the future?	Objectives What specific concerns/issues/problems need attention or action?	Priority Assign a priority from high to low	Adaptation Ideas What are the options for addressing the problem?	Selected Actions Which action ideas will be put into practice now and which will be followed up on in the future?
More fires	Hotter weather Could have more dry periods Longer fire season	Wildfires could impact community and/or community members	Protect community and community members	High	-Create a community fire plan -Promote safe fire practices	Short term - Promote safe fire practices Long term -
Wildfires close enough to community to threaten	Hotter weather	Community buildings				

Example

guided by your own set of questions or by using resources provided by Up North on Climate such as our [APP rapid risk assessment](#). To begin this sort of discussion, it may be helpful to first outline aspects of climate change science such as the greenhouse effect, carbon emissions, and recorded changes.

If you're hosting your own workshop, it might be appropriate or necessary to combine gathering knowledge about climate change in the community (current step **2. CLIMATE CHANGE IN THE COMMUNITY**) and discussing and choosing adaptation options (next step **3. ADAPTATION WORKSHOP**) into one workshop event.



## How should I ask about climate change?

### *Tips for learning from community members*

Talking to community members can be a great way to learn about the climate change impacts they're seeing and feeling. Here are some tips that could help you guide those conversations.

**Use friendly words** – Always use common words, instead of technical ones, whenever possible. The word 'infrastructure', for example, might be replaced with 'roads', 'buildings' or 'power lines'. Instead of asking if the 'climate' has changed, try using the word 'weather'.

**Ask people for their observations** – A question like "What have you noticed about climate change?" can feel technical and intimidating. Instead, try asking questions that let people speak to their own observations and experience, like "How has snowfall changed since you were a child?" or "Have you noticed changes in how hot or cold the summer is?"

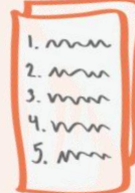
**Different people can speak to different experiences** – Not all community members will actively hunt, fish, or use the land, and they may not feel comfortable answering questions about impacts in those areas. If that's the case, you can gear your questions towards changes they may have noticed in the community (like flooded crawl spaces or damage to roads) or with weather (like changes in storms, snow, or heat). If you feel you're missing information about impacts in specific areas (like hunting and gathering, for example), you might consider approaching community members who can fill those gaps and asking if they'd like to be interviewed.

**Practice your interview skills** – Conducting a good interview can take practice. Consider brushing up on your interviewing skills by learning some tips and tricks and practicing on friends or coworkers.

Check out the [APP rapid risk assessment](#) or [Questions for interviewing First Nations Elders and community members](#) for questions you can use to talk to community members about climate change or use them as inspiration to create your own!







### Self-directed surveys or questionnaires

It may be possible to engage community members with surveys or questionnaires either filled out online or delivered to households. This option might be appropriate if circumstances prevent you from meeting with community members in person before a planned meeting or workshop to discuss the issue further. Do some research or inquire with your community contacts to determine how well received this option might be in the community. It should also be noted that the response rate to these kinds of initiatives can be low.

### Let the community take the lead

Community leadership may want to take the lead in collecting information about current, and possible future, climate impacts in the community. Chief and Council could establish a group or task force to look at ways their community is likely to be affected by climate change. Their work could be supported by a team of young people whose task would be to collect memories and evidence of the ways the community and community members have been affected by weather events in the past.

### Do your research

It may be possible to find information through other sources, like past reports, news articles, or available data, to help add to your knowledge of the community. This could include:

- Adapting to a Changing Climate community reports (compiled by Up North on Climate from in-community collected Traditional Knowledge related to climate change impacts) \*
- Vulnerability or infrastructure assessments that have already been conducted by the community
- Any adaptation projects that have already been planned or carried out in the community
- Long-term temperature/precipitation data from [Environment Canada weather stations](#) (however weather stations across the north are sparse)
- Estimates of historical weather data can be found at [Climate Atlas](#) and [Climate Data](#)
- News reports detailing events like floods, wildfire, winter road conditions, etc.

**\*NOTE:** Adapting to a Changing Climate community reports belong to the community. Sharing of the report is at the discretion of the community. Reach out to the Up North on Climate team to see if a report was compiled for the community you're working with and to help find a community contact who can share the report with you.

### Resources

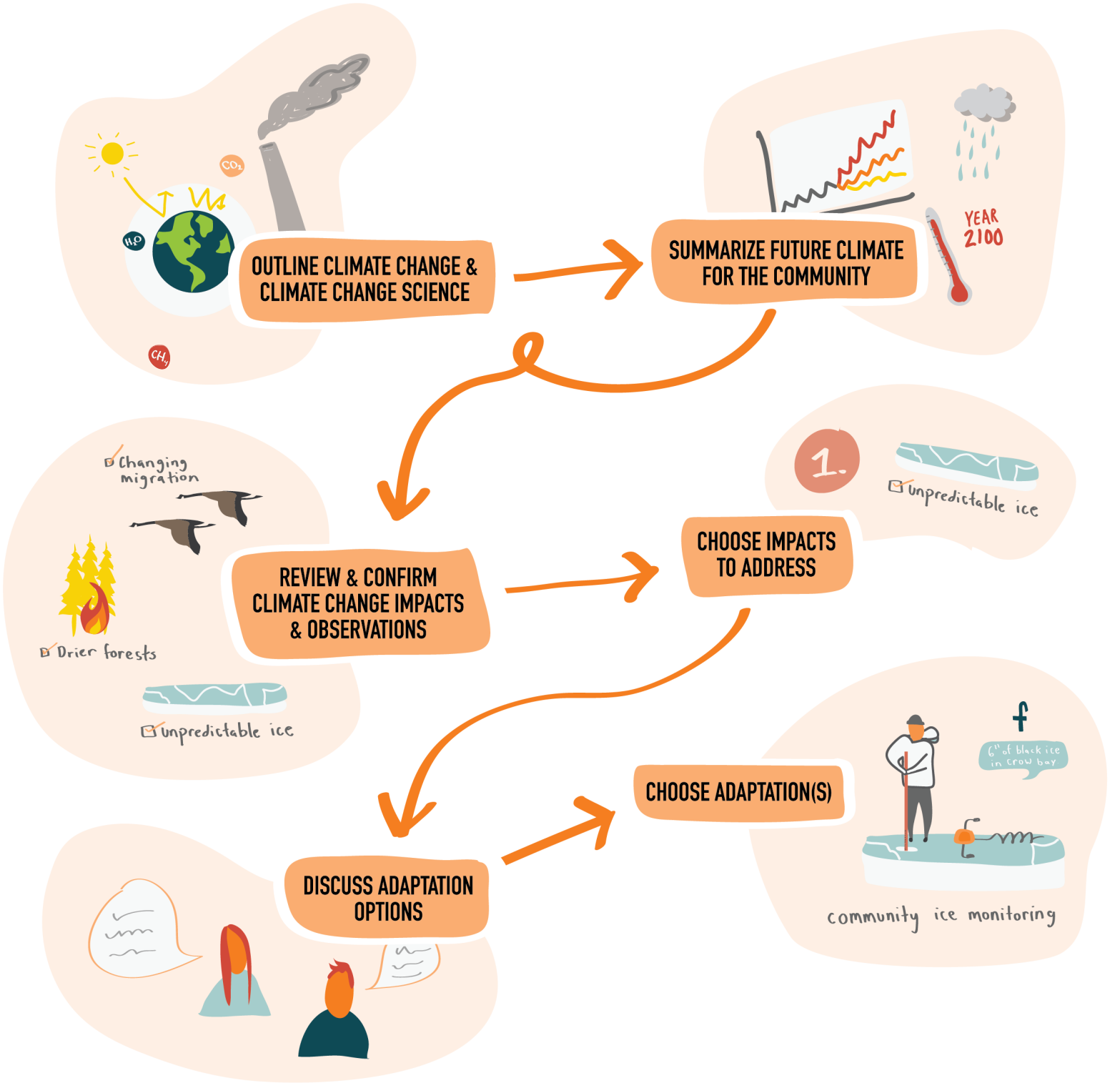
Available from Up North on Climate:

- [The Assessing risks, Prioritizing action, Preparing for climate change \(APP\): Adapting to climate change in northern Ontario, rapid risk assessment](#)
- [Questions for interviewing First Nations Elders and community members](#)

\*Find web addresses and resource descriptions in the Resources Table



# 3. ADAPTATION WORKSHOP





# 3. ADAPTATION WORKSHOP

Once it's clear how the community is being impacted by climate change, the community can begin to discuss possible adaptation options. This could be done with community members in a workshop setting. Having community leadership (Chief, Council members, decision makers) involved in the workshop could be helpful since they may need to be involved in the implementation of adaptations in the community.

As discussed in the past step, it may be necessary or appropriate to use one workshop that combines both step **2. CLIMATE CHANGE IN THE COMMUNITY** and step **3. ADAPTATION WORKSHOP**. If steps are combined into a single workshop, make sure that adequate time is allotted to cover both topics.

## AN ADAPTATION WORKSHOP COULD COVER:

### *A brief review/introduction of climate change and climate change science*

Outline what climate change is and why it's happening. This information should be presented with plain language and friendly graphics to be accessible to all community members.

### *A summary of climate change projections for the community*

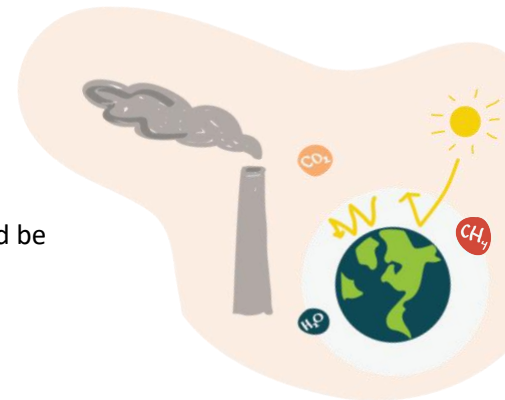
What might the future climate of the community look like as a result of climate change? How will things like temperature, rain, and snow change in each season? What about weather events like heavy rains, extreme storms, or drought? Again, this information should be presented in a way that's accessible to all community members.

### *A review of the climate change impacts/observations/concerns expressed by community members*

The focus of step **2. CLIMATE CHANGE IN THE COMMUNITY** was to learn from the community how climate change impacts were being seen and felt and to get an idea of what impacts seemed to be priorities to address. Briefly outline those findings and try to determine:

- If the group, in general, agrees with the findings
- If any impacts have been missed
- Which impacts are of greatest concern or are the highest priority to address

(If steps **2. CLIMATE CHANGE IN THE COMMUNITY** and **3. ADAPTATION WORKSHOP** have been combined into a single workshop and priority impacts have already been identified, this review is not necessary.)



## Determining what impacts to address

The community has likely created a long list of climate change impacts and addressing them all may not be possible. Focus instead on a “short-list” of priority impacts. How many items are included in the short-list can be discussed with the community. Perhaps the decision is to focus on one issue, or maybe you have the time to discuss three issues. Through dialogue and conversation, the group can decide what impacts to include on the short-list. Short-listed impacts might be ones that:

- The majority of community members find important
- Affect the greatest number of people
- Can most effectively be addressed
- Pose the greatest threat to human safety

## Discussion of adaptation options for selected impacts

Once the community has determined what climate change impacts it would like to address, they can begin to consider adaptation options. Focus on one impact from your short-list at a time. Adaptation options can be discussed with the group as a whole or, if your workshop has enough participants, by breaking into smaller groups.

Up North on Climate has created an [Adaptation Options Worksheet](#) (included in the Resources section) that you may find helpful when discussing the adaptation options for an impact. You can also take the general idea and adapt it to suit your needs. Encourage participants to share their thoughts in whatever way makes them feel comfortable.

Beginning a discussion around adaptation options might be difficult. Community members participating in the workshop may not be familiar with the adaptation options available to address a particular problem. Discussing how cultural or traditional practices can guide adaptation (how the issue might have been dealt with in the past, for example) could be a good way to begin an adaptation conversation. You could also present adaptation options for the community to consider. Presenting some options may help spark discussion and lead to other ideas.

Up North on Climate has created a guide to adaptation options (the [Climate Change Adaptation Quick Guide](#)) that could be useful as part of the adaptation workshop or similar community meetings. The guide is designed for a community audience and uses a visual approach to outline adaptation options in a northern community.

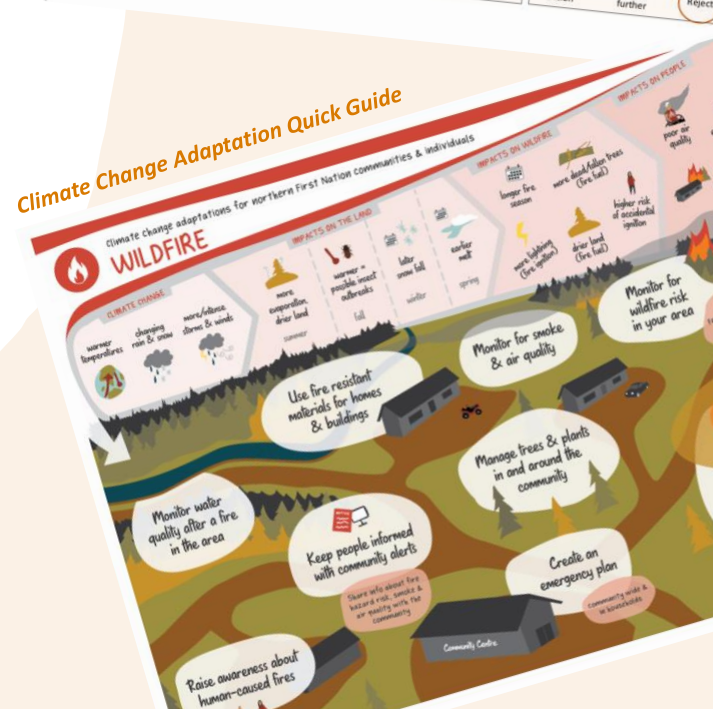


**ADAPTATION OPTIONS WORKSHEET**

Impact – What issue are we concerned about? What effect is it having?  
*Spring melt floods basements and crawlspaces in some areas of town.*

Objective – What would we like to change?  
*Keep basements from flooding.*

Adaptation Option	Adaptation Option	Adaptation Option
<i>Assess the town drainage system and improve it.</i>	<i>Better drainage for homes – sloping the ground, trenches to direct water, sump pumps, etc.</i>	<i>Move people out of areas that often and build new homes there on higher ground.</i>
<b>Pros:</b> <i>benefits the whole community</i>	<b>Pros:</b> <i>some steps, like digging trenches, can happen quickly and be done by residents</i>	<b>Pros:</b> <i>gets people out of water damaged houses</i> <i>new houses will be less likely to flood</i>
<b>Cons:</b> <i>could be expensive</i> <i>will take time</i>	<b>Cons:</b> <i>may work better at some homes than others</i>	<b>Cons:</b> <i>will be expensive</i> <i>will take time</i> <i>people may not want to leave their homes</i>
Put into action <input type="radio"/> Investigate further <input checked="" type="radio"/> Reject <input type="radio"/>	Put into action <input type="radio"/> Investigate further <input checked="" type="radio"/> Reject <input type="radio"/>	Put into action <input type="radio"/> Investigate further <input type="radio"/> Reject <input checked="" type="radio"/>



1.

unpredictable ice

### Choosing adaptation options

There isn't one "right way" to address a climate change impact. It's up to the community to decide which adaptation option or options would be best for their unique situation. Even when focusing on one impact, discussing adaptation options will likely lead to a range of possible actions.

Deciding which options to put into practice can be challenging. Here are some points to consider when trying to choose an adaptation option:

- How long will this adaptation take to put in place? How long will it last?
- Will this adaptation help all people who are impacted?
- Will this adaptation still work under future climate conditions?
- Is this adaptation in line with social and cultural values?
- What is the cost of this adaptation? What funding sources could be used?

The [Adaptation Options Worksheet](#) could be helpful when discussing adaptation options with the community. It provides space to list what the community feels are the pros and cons of each adaptation being considered and allows you to classify options as either an adaptation the community would like to put into action, an adaptation the community would like to investigate further, or an adaptation the community would like to reject. Encourage dialogue and discussion around these topics. The adaptations chosen from this workshop will be the basis of the next steps of this Adaptation Framework.

### Resources

Available from *Up North on Climate*:

- [Climate Change Adaptation Quick Guide](#)  
(check out the Resources section for a sample page)
- [Adaptation Options Worksheet](#)

*\*Find web addresses and resource descriptions in the Resources Table*



# 4. MOVING INTO ACTION

Find a champion(s) in the community



## FINALIZE ADAPTATION OPTION

Gather feedback

Get leadership involved

Is this possible based on time + money?

Quick win?



## CREATE DETAILED IMPLEMENTATION PLAN

Define timelines

Need approval?

Seek funding

Create project team + assign responsibilities

How will we measure success?

Connect with other adapters

# 4. MOVING INTO ACTION

The ultimate goal of the Adaptation Framework is to see adaptations put in place in communities. Once the community has chosen the adaptations they would like to pursue, planning can begin. This step involves two main components: **finalizing the adaptation choice(s)** and **creating a detailed implementation plan**.

Turning adaptation plans into adaptation actions will take time and dedication. It will be important to **find a “champion” or “champions”** in the community. A champion could be a person or a group of people who are dedicated to moving the adaptation plan forward. These may be community members who have taken a particular interest in the adaptation process, community groups or associations, a community professional, or someone in community leadership. Ideally, champions will be able to dedicate the time necessary to put the project into action and remain in the role until the project is complete.

The community champion(s) may want to work together with you to move through the final stages of the adaptation process, or it might be the champion or the community’s wish to work through the final steps independently.

## FINALIZING THE ADAPTATION CHOICE(S)

From the adaptation workshop (step **3. ADAPTATION WORKSHOP**), you know what adaptation options community members would like to put into practice, but further research, conversations, and decisions may still be required. This could include:



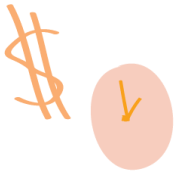
### *Gathering feedback from community members who were not part of the adaptation workshop*

This might include those who hold appropriate Traditional Knowledge, those in key positions in the community, or those most impacted by the issues being addressed. Continuing to speak about adaptation and sharing the results of the adaptation workshop may also grow community support for adaptation actions.



### *Connecting with community leadership*

Putting adaptations into practice in the community may require the involvement of community leadership (Chief, Council members, decision makers). If leadership was not involved in the adaptation workshop, share the results with them and discuss the desire community members have to work towards adaptation strategies.



### *Determining which adaptations are most possible*

Constraints of time, money, or circumstance may mean that some adaptations just aren't feasible or practical for the community. It may take some research or consultations with professionals to determine if and how a given adaptation could work in your community.



### *Connecting with other adapters*

If an adaptation project has already been attempted or carried out in the community, reach out to those who were involved and ask about their experience. If other communities have done similar adaptations, consider connecting with them and learning about their projects.



### *Looking for "quick wins"*

Adaptations that are relatively easy and can be done relatively quickly could be considered "quick wins" for the community. Quick win projects can get the ball rolling on the adaptation process and help build community support for adaptation.



## **I've done the adaptation workshop, but I can't take it any further. What now?**

### *Exiting the process at step 3. ADAPTATION WORKSHOP*

Limits of time or money, a lack of community interest, the absence of a community champion, or other circumstances may mean that you can't take the adaptation process for the community further than step 3. **ADAPTATION WORKSHOP**. If this is the case, you can still promote the findings of the adaptation workshop in the community.

You can:

- **Create a report** summarizing the findings of the adaptation workshop, including the adaptations chosen by community members. **Share this report** with community leadership, community departments, community professionals, etc. and reinforce the idea that community members want to adapt.
- **Create a presentation** that outlines the adaptation workshop and its findings. The presentation could be used to communicate with community leadership, community professionals, given at community meetings, etc.
- **Consider inviting a guest who can speak to the community** about successful adaptation and provide encouragement.
- **Continue your search** for a **community champion** to put the chosen adaptations into action or consider turning the community champion role into a paid part-time or honorarium supported position.
- **Continue to look for funders/funding streams** that can help to carry out the adaptation.
- **Keep the conversation** about adaptation **active** in the community.





## CREATING A DETAILED IMPLEMENTATION PLAN

Putting an adaptation into practice will require a detailed plan that includes budgeting, timelines, assigning responsibilities, approvals, etc. Each adaptation you wish to put into practice should have its own implementation plan. Keep in mind that adaptation projects can range in scope and scale. The planning process for a project aimed at individual or household adaptation, for example, may look completely different from the planning process required for a large infrastructure project. The planning stage is also when you should begin to think about how you might evaluate the effectiveness of the adaptation after it is complete.

To create an implementation plan for the adaptation project, you may have to:



### *Create a budget and seek out funding*

Breaking down the expected costs and creating a budget is an important part of any project. Having a good idea of total project cost will also be helpful when looking for project money. Funding for the adaptation project could come from grants, partnerships, or internal community sources.



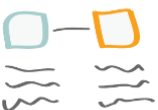
### *Create a project team and assign responsibilities*

Depending on the scope of the project, a team of people may be needed to implement it. This could mean working with other community members, with professionals from inside or outside the community, or working with departments within the community.



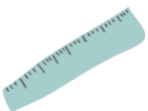
### *Get necessary approvals*

Depending on the scope of the project, it may be necessary to get approval or permits from government agencies, Chief and Council, Band staff, etc.



### *Define timelines and set targets along the way*

Having a reasonable timeline can help move a project along. Timelines are especially important in projects that have multiple steps or seasonal constraints (for example, items that need to arrive on the winter road). Setting targets along the way can provide a good opportunity to update the community on the progress of the adaptation and create enthusiasm for the project.



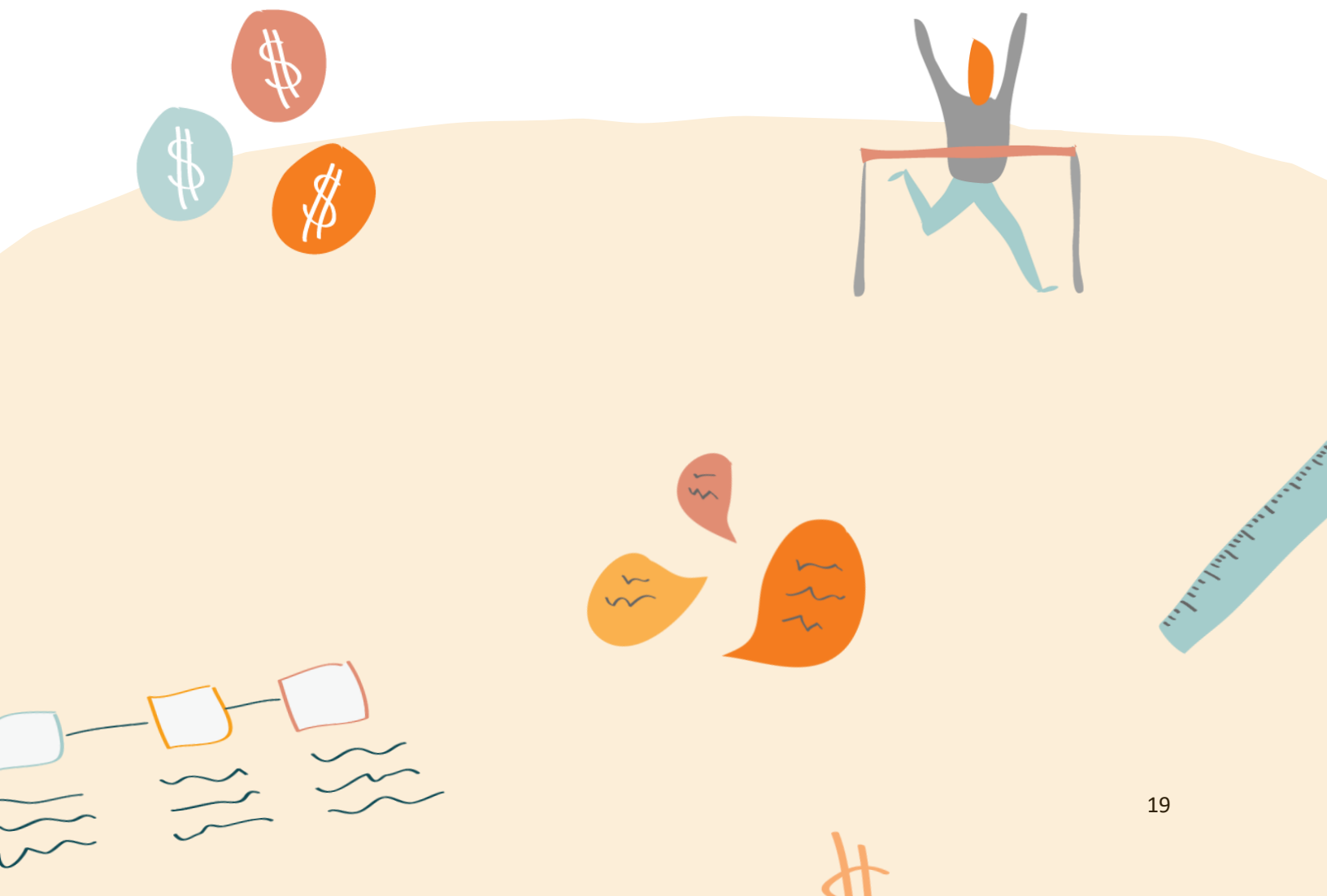
### *Outline the criteria that will measure success*

Step 5. **IS IT WORKING?** will involve evaluating how well the completed adaptation is working. Start to define what a successful project will look like and what criteria you might use to measure it. For example, you may want to know how many more people have access to local food now than before the project began, or how often hunters are using the safety equipment that is now available in the community. Some information that will be used for evaluation may have to be gathered before the project begins to compare to after the project has been

completed, so planning for evaluation now can be important. For more guidance on evaluating your project, see step **5. IS IT WORKING?**

When planning your project, it may be helpful to look to other successful community projects and learn from their experience. This might include learning about successful funding applications, getting an idea of realistic timelines, learning what approaches worked well (or didn't work well) in the community, etc.

Considering ways to include youth in the adaptation process might also be a priority for some communities. Some projects might provide the opportunity to involve youth directly in activities like tree planting, community monitoring, or habitat restoration. In other cases, it could mean using the project as an opportunity to talk to youth about climate change and the importance of adaptation.





# 5. IS IT WORKING?

## EVALUATE ALONG THE WAY

Are we on track to meet our budget?

Is it still in line with climate projections?

Is it on track?

Any new information?

## EVALUATE THE SUCCESS

Did it meet the criteria for success?

Did it reach everyone it was intended for?

Did it affect anyone negatively?

Will it still work in the future?

## WHAT IF THE ADAPTATION IS NOT SUCCESSFUL?

Why did the adaptation not meet expectations?

What areas did the adaptation miss?

Do we need to start again?

Was the scale of the adaptation too small to address the problem?

## LEARN FROM THE ADAPTATION PROCESS

Was the timeline realistic?

Have there been any barriers?

Were there aspects you wish you did differently?

# 5. IS IT WORKING?

Once an adaptation has been put into place, it's important to ask, "Is it working?". Checking in during the adaptation implementation process and learning from it afterward can also be helpful steps towards ensuring successful adaptations now and in the future. Here, general guidance is provided for program evaluation and gauging adaptation success.

## EVALUATING THE SUCCESS OF THE ADAPTATION

To gauge the success of your adaptation, you can begin by asking questions like:

### *Does the adaptation meet your criteria for success?*

As discussed in step 4. **MOVING INTO ACTION**, part of planning an adaptation is outlining what success would mean for your community. Does the completed adaptation meet those criteria?

### *Is the adaptation reaching everyone it was intended to?*

Are there people or groups who are not experiencing the benefits of this adaptation? Are people utilizing the adaptation as expected? Why or why not?

### *Is the adaptation affecting anyone negatively?*

Did the adaptation have any unexpected consequences? For example, did attempting to stop flooding in one area cause flooding in another?

### *Will this adaptation still work into the future?*

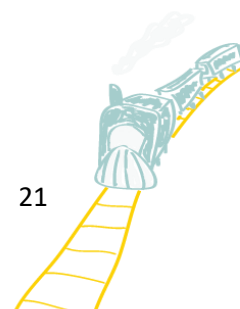
Given the projections for future climate, is it likely this adaptation will continue to work into the future? Will maintenance or updates for the adaptation be required to keep it working? Could this adaptation work even for extreme events?



## EVALUATING THE ADAPTATION PROCESS ALONG THE WAY

It is also important, especially for projects that take months or years to complete, that the project be monitored and evaluated along the way. Questions to ask could include:

- Is this adaptation still on track to accomplish our goal?
- Has any new information come to light that could change how effective this adaptation will be?
- Is this adaptation still in line with climate change projections? With our community goals?
- Are we on track to meet our timeline? Are we on track to meet our budget?





## CHOOSING CRITERIA FOR SUCCESS – POINTS TO CONSIDER

Every community wants their adaptations to be successful, but what does success look like for your community? For some adaptations, success may be obvious. If the goal of the adaptation is to stop a section of local road from flooding during heavy rains, for example, then success would be that the road no longer floods during heavy rain. But in other instances, measures of success may be more difficult to define. Here are some points that may be helpful to keep in mind:

**It's hard to know what would have happened in the absence of the adaptation.** It can be hard to judge an adaptation against what might have happened without the adaptation in place. If a community starts an ice-thickness monitoring program, for example, it's impossible to know how many people would have fallen through the ice without it. Focus instead on what the adaptation contributes to the community. In this example, maybe success can be measured by the number of people who use the ice-thickness information to plan their travel.



**Before and after comparisons may be possible.** It may be possible to compare numbers from before the adaptation to numbers from after the adaptation. For example, if your adaptation is aimed at increasing the number of blueberry plants in an area, then the number of blueberry plants in the area before the adaptation was put in place can be compared to the number of blueberry plants in the area after. In some cases, historical data (like weather records) or data from monitoring programs in the area may be able to contribute to the “before” data. In other cases, baseline data for the “before” will have to be collected prior to putting the adaptation in place. It might also be possible for the memories of Elders to provide a “before” narrative.

**Be realistic about how long it is going to take to see results.** Some adaptations are going to take longer to show results than others. If a community plants trees to provide shade or as a wind break, for example, the full effects of the adaptation might not be seen until the trees have grown for 10 years. Long term projects may require long term monitoring for success to be shown. Measuring the success of long term projects in steps may also be helpful (see below).

**Success can be measured in steps.** For long term or complex projects, it may be beneficial to define success for different steps along the way. For example, in our shade tree adaptation from above, success might first be measured as the number of trees planted. Then, as time goes on, success could be measured in the number of trees that survive or their rate of growth. Once trees are large enough, it may then be possible to measure the effect of their shading.

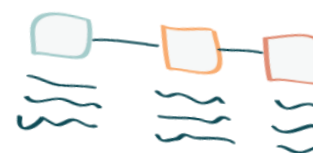




## LEARNING FROM THE ADAPTATION PROCESS

Learning from the implementation process can help future projects run more smoothly and effectively. Once the project has been completed, or when targets have been reached along the way, it may be helpful to ask questions like:

- Have there been any barriers to putting this adaptation in place? What solutions were found?
- Were there any aspects of this project that you wish you had done differently? How would you change them?
- What aspects of the project went well? What was the reason for their success?
- Have there been any co-benefits we hadn't anticipated? This could include things like improved air quality, reduced reliance on winter roads, youth engagement, etc.
- Were there other stakeholders or people who should have been involved?
- Was the project timeline realistic? Did the project follow the expected timeline?
- Was the project budget realistic? Did the project stay on budget?



## WHAT IF THE ADAPTATION HAS NOT BEEN SUCCESSFUL?

Despite the best laid plans, it's possible that an adaptation won't perform as expected. If this is the case, the first course of action is to examine why the adaptation failed to meet expectations. You may want to explore questions like:

- Were we missing some information about the impact or adaptation?
- What areas did the adaptation miss?
- Was the scale of the adaptation too small to address the problem?
- Was the design of the adaptation satisfactory?
- Did the adaptation fail as the result of an extreme or unexpected event?
- Have people been using the adaptation as expected?
- Were our expectations for the adaptation realistic?



Once the cause has been identified, it may be possible to adjust the adaptation to yield better results. If not, the adaptation process can start again. Identify the vulnerability that needs to be addressed, choose an adaptation to use, and put a plan in place to implement it. The lessons learned during the course of the previous adaptation, including why it may have failed to meet expectations, can help inform the new project. Once the new adaptation has been completed, measure its success.

### Resources

- [AdaptME toolkit](#) – Adaptation monitoring and evaluation

*\*Find web addresses and resource descriptions in the Resources Table*



# OVERVIEW

Climate change is making adaptation necessary for many northern First Nation communities. This framework outlines a path for pursuing climate change adaptations that are driven by a community's needs, goals, and values. By breaking the adaptation process down into manageable pieces and offering flexible approaches, the Up North on Climate Adaptation Framework aims to be a useful tool for First Nation communities in the north of Ontario and beyond.

Find the **FRAMEWORK CHECKLIST** on the next page for a visual flow chart of the adaptation process. Use the check boxes to track your progress and see your next step.

In the **RESOURCES** section you can find the Resources Table which houses a summary of the resources listed throughout the Framework, organized by step, with web addresses and hyperlinks. There is also a sample of the Climate Change Adaptation Quick Guide to give you an idea of the visuals and information that the Guide provides. Finally, both a blank and an example Adaptation Options Worksheet is included. Use the worksheet as is or take the idea and modify it to suit your needs.

# FRAMEWORK CHECKLIST

## 1. SET THE GROUNDWORK

- LEARN ABOUT CLIMATE CHANGE SCIENCE
- LEARN ABOUT PROBABLE FUTURE CLIMATE FOR YOUR REGION
- LEARN ABOUT CLIMATE CHANGE IMPACTS IN YOUR REGION 
- LEARN ABOUT CLIMATE CHANGE ADAPTATION OPTIONS 
- BEGIN TO MAKE CONNECTIONS IN THE COMMUNITIES & BE ON THE LOOKOUT FOR A PROJECT CHAMPION 

## 2. CLIMATE CHANGE IN THE COMMUNITY

- FIND OUT HOW CLIMATE HAS CHANGED OVER TIME
- FIND OUT HOW CLIMATE CHANGE IS IMPACTING INFRASTRUCTURE
- FIND OUT HOW CLIMATE CHANGE IS IMPACTING THE LAND
- FIND OUT HOW CLIMATE CHANGE IS IMPACTING PEOPLE
- FIND OUT WHAT COMMUNITY MEMBERS ARE MOST CONCERNED ABOUT 

## 3. ADAPTATION WORKSHOP

- OUTLINE CLIMATE CHANGE SCIENCE
- SUMMARIZE PROBABLE FUTURE CLIMATE FOR THE COMMUNITY
- CONFIRM CLIMATE CHANGE IMPACTS & OBSERVATIONS
- CHOOSE IMPACTS TO ADDRESS
- DISCUSS ADAPTATION OPTIONS
- CHOOSE ADAPTATION(S)


## 4. MOVING INTO ACTION

- FINALIZE ADAPTATION CHOICE(S) 
  - Gather feedback
  - Get leadership involved
  - Which is most possible?
  - Connect with other adapters
  - Look for quick win
- CREATE DETAILED IMPLEMENTATION PLAN 
  - Seek out/secure funding
  - Create project team including a champion
  - Get necessary approvals
  - Define timeline/targets
  - Outline evaluation criteria

### WE CAN'T MOVE FORWARD RIGHT NOW

- Create a report
- Create a presentation
- Have guest speakers talk about a successful adaptation
- Continue search for community champion
- Continue search for funding
- Keep the conversation active

## 5. IS IT WORKING?

- EVALUATE ADAPTATION PROCESS ALONG THE WAY
- EVALUATE THE SUCCESS OF THE ADAPTATION 
- LEARN FROM THE ADAPTATION PROCESS
- EVALUATE WHAT DID NOT WORK AS EXPECTED



May be lengthy process depending on scope of project







Likely to continue throughout entire process

Could be combined into one workshop event




# RESOURCES

## 1. SET THE GROUNDWORK




RESOURCES FOR LEARNING ABOUT CLIMATE CHANGE			
	Science Climate Story	This document discusses past climate, current climate warming, the greenhouse effect, and what the climate of northern Ontario might be like in 2050 and beyond (24 pages).	<a href="http://www.upnorthonclimate.ca/what-is-climate-change">www.upnorthonclimate.ca/what-is-climate-change</a>
	Climate Change Infosheets	2-page information sheets covering 9 topics related to the science of climate change.	<a href="http://www.upnorthonclimate.ca/what-is-climate-change">www.upnorthonclimate.ca/what-is-climate-change</a>
	Climate Change Quick Guide	A series of graphics covering climate change science topics.	<a href="http://www.upnorthonclimate.ca/what-is-climate-change">www.upnorthonclimate.ca/what-is-climate-change</a>
	Up North on Climate Facebook page	Conversations about climate change impacts and adaptation in northern Ontario.	<a href="https://facebook.com/upnorthonclimate1">https://facebook.com/upnorthonclimate1</a>
	Up North on Climate website	Information about climate change science, climate change impacts, and climate change adaptation with a focus on northern Ontario First Nations. Also find all the resources created by UNOC.	<a href="http://www.upnorthonclimate.ca">www.upnorthonclimate.ca</a>
	Global Warming: The Complete Briefing, 5 <sup>th</sup> Edition	A textbook style guide to climate change science and its physical and human impacts. The author was instrumental in forming and shaping the International Panel on Climate Change (IPCC) and a distinguished physicist.	Author: John Houghton
	The Royal Society - Climate change: evidence and causes	Questions and answers about climate change with documents available for download. A collaboration between The Royal Society (UK) and the US National Academy of Sciences.	<a href="https://royalsociety.org/to-pics-policy/projects/climate-change-evidence-causes/">https://royalsociety.org/to-pics-policy/projects/climate-change-evidence-causes/</a>
	Skeptical Science	Addresses misinformation about climate change and refutes the arguments made by climate change deniers. Created and maintained by John Cook, research fellow at the Climate Change Communication Research Hub at Monash University.	<a href="https://www.skepticalscience.com">https://www.skepticalscience.com</a>

RESOURCES FOR LEARNING ABOUT PROBABLE FUTURE CLIMATE			
Climate change projections for your community			
	Climate Atlas of Canada	Learn about climate change in your area with an interactive map. Explore videos, articles, or other materials to learn more about climate change impacts and actions.	<a href="https://climateatlas.ca/">https://climateatlas.ca/</a>
	Climate Data Canada	Find and download local or regional climate data in easy-to-use formats. Includes training modules to help you find and use the data.	<a href="https://climatedata.ca/">https://climatedata.ca/</a>
	Canadian Climate Data and Scenarios	Find historical climate data, climate scenarios, guidebooks, resources, and more.	<a href="http://climate-scenarios.canada.ca/">http://climate-scenarios.canada.ca/</a>
Resources for learning about climate change models			




	Up North on Climate Modelling and RCP Infosheet	2-page information sheet explaining the basics of climate models and RCPs.	<a href="http://www.upnorthandonclimate.ca/what-is-climate-change">www.upnorthandonclimate.ca/what-is-climate-change</a>
	Carbon Brief's series on climate modelling	A question-and-answer series about how climate models work from Carbon Brief, an award-winning website about climate change science and policy.	<a href="https://www.carbonbrief.org/qa-how-do-climate-models-work">https://www.carbonbrief.org/qa-how-do-climate-models-work</a>
	Skeptical Science - How do climate models work?	An explanation of climate models from Skeptical Science, a website that addresses climate change misinformation and refutes the arguments made by climate change deniers.	<a href="https://www.skepticalscience.com/how-do-climate-models-work.html">https://www.skepticalscience.com/how-do-climate-models-work.html</a>
	A Guidebook on Climate Scenarios	A guidebook for understanding and using climate data and climate projections from OURANOS: Consortium on regional climatology and adaptation to climate change (100 pages).	<a href="https://www.ouranos.ca/publication-scientifique/Guidebook-2016.pdf">https://www.ouranos.ca/publication-scientifique/Guidebook-2016.pdf</a>



### RESOURCES FOR LEARNING ABOUT IMPACTS OF CLIMATE CHANGE

	Fictional Community Climate Adaptation Report	The Fictional Community Report is a way to illustrate the sort of information northern Ontario First Nation communities have been able to gather about climate change on their lands without sharing any confidential information. Climate change science, climate projections and adaptation options are also discussed (100 pages).	<a href="http://www.upnorthandonclimate.ca/community-report">www.upnorthandonclimate.ca/community-report</a>
	Canada's Changing Climate Report	From Environment and Climate Change Canada, this 2019 report talks about how and why Canada's climate has changed and what changes are projected for the future (440 pages, but summaries, key messages, and breakdown by section is offered).	<a href="https://www.nrcan.gc.ca/maps-tools-publications/publications/climate-change-publications/canada-changing-climate-reports/canadas-changing-climate-report/21177">https://www.nrcan.gc.ca/maps-tools-publications/publications/climate-change-publications/canada-changing-climate-reports/canadas-changing-climate-report/21177</a>
	The Indigenous Climate Change Observation Network (Alberta)	Videos that "document and communicate community-specific climate change-related impacts and identify culturally relevant indicators of change." This pilot project included participants from Kainai First Nation and Samson Cree Nation.	<a href="https://climateatlas.ca/focusing-climate-change">https://climateatlas.ca/focusing-climate-change</a>
	Climate Atlas of Canada - Topics	Climate Atlas is organized into some key topics to help you explore various aspects of climate change and how to take action.	<a href="https://climateatlas.ca/topics">https://climateatlas.ca/topics</a>



### RESOURCES FOR LEARNING ABOUT CLIMATE CHANGE ADAPTATION

	Adapting to a Changing Climate	Explores climate change impacts in northern Ontario First Nation communities and discusses possible adaptation options (100 pages).	<a href="http://www.upnorthandonclimate.ca/impacts-and-adaptations">www.upnorthandonclimate.ca/impacts-and-adaptations</a>
	Impact and Adaptation Infosheets	2-page information sheets about climate change impacts and adaptation options. Presented under 8 themes: drought,	<a href="http://www.upnorthandonclimate.ca/impacts-and-adaptations">www.upnorthandonclimate.ca/impacts-and-adaptations</a>




		ecosystems, flooding, food security, health, infrastructure, transportation, and wildfire.	
	Up North on Climate website	Information about climate change science, climate change impacts, and climate change adaptation with focus on northern Ontario First Nations. Also find all the resources created by UNOC.	<a href="http://www.upnorthonclimate.ca">www.upnorthonclimate.ca</a>
	Climate Atlas of Canada – Take Action	Find out how groups and communities are taking action on climate change with videos and articles from Climate Atlas.	<a href="https://climateatlas.ca/topic/take-action">https://climateatlas.ca/topic/take-action</a>
	Climate Adaptation Knowledge Exchange (CAKE) (USA)	Explore climate change adaptation projects in the United States.	<a href="https://www.cakex.org/">https://www.cakex.org/</a>
	Climate Change Adaptation Planning Guidebooks for Indigenous Communities – Resources for Winter Roads, Wildfires, Flooding, & Coastal Erosion	From the Centre for Indigenous Environmental Resources, this document is designed to support Indigenous communities in climate adaptation for key climate risks (68 pages). Part of the Indigenous Climate Change Adaptation Planning Toolkit.	<a href="http://www.yourcier.org/climate-change-adaptation-planning-toolkit-for-indigenous-communities.html">http://www.yourcier.org/climate-change-adaptation-planning-toolkit-for-indigenous-communities.html</a>


## 2. CLIMATE CHANGE IN THE COMMUNITY

	Climate Atlas of Canada	Learn about climate change in your area with an interactive map. Explore videos, articles, or other materials to learn more about climate change impacts and actions.	<a href="http://www.climateatlas.ca">www.climateatlas.ca</a>
	Climate Data Canada	Find and download local or regional climate data in easy-to-use formats. Includes training modules to help you find and use the data.	<a href="http://www.climatedata.ca">www.climatedata.ca</a>
	Environment Canada Historical Weather Station Data	Access historical data from Environment Canada weather stations.	<a href="https://climate.weather.gc.ca/historical_data/search_historic_data_e.html">https://climate.weather.gc.ca/historical_data/search_historic_data_e.html</a>
	The Assessing risks, Prioritizing action, Preparing for climate change (APP)	Tool for gathering climate change observations, risks and impacts. Includes questions to spark discussion and a planning table to help link climate change observations to adaptation actions.	<a href="http://www.upnorthonclimate.ca/adaptation-planning">www.upnorthonclimate.ca/adaptation-planning</a>
	Questions for interviewing First Nations Elders and community members	Set of interview questions for learning about climate change impacts and observations in northern communities.	<a href="http://www.upnorthonclimate.ca/adaptation-planning">www.upnorthonclimate.ca/adaptation-planning</a>

### 3. ADAPTATION WORKSHOP

	Climate Change Adaptation Quick Guide	A series of illustrations that present possible adaptation options for 8 climate impact themes relevant to northern First Nation communities.	<a href="http://www.upnorthandonclimate.ca/impacts-and-adaptations">www.upnorthandonclimate.ca/impacts-and-adaptations</a>
	Adaptation Options Worksheet	Worksheet for discussing and comparing adaptation options. Available as part of this Framework.	<a href="http://www.upnorthandonclimate.ca/adaptation-planning">www.upnorthandonclimate.ca/adaptation-planning</a>

### 5. IS IT WORKING?

	AdaptME toolkit – Adaptation monitoring and evaluation	A guide to monitoring and evaluating climate adaptation projects from UKCIP (a UK- based group focusing on climate change adaptation at the Environmental Change Institute, University of Oxford) (37 pages).	<a href="https://www.ukcip.org.uk/wp-content/PDFs/UKCIP-AdaptME.pdf">https://www.ukcip.org.uk/wp-content/PDFs/UKCIP-AdaptME.pdf</a>
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\* This Adaptation Framework can be found online at: [www.upnorthandonclimate.ca/adaptation-planning](http://www.upnorthandonclimate.ca/adaptation-planning)

# Climate Change Adaptation Quick Guide Sample

Also available are: Food Security, Drought and Dry Periods, Health, Winter Road Travel, Travel on Land, Water and Ice, Flooding, and Infrastructure. You can find them here: <http://www.upnorthclimate.ca/impacts-and-adaptations>



## WILDFIRE - ADAPTATION OPTIONS

### Emergency planning

- Emergency planning can help keep people safe in the event of a wildfire.
- Community emergency plans could include: evacuation plans, the roles and responsibilities of community members, plans to protect infrastructure, etc.
- Households can prepare for emergencies by: having emergency supplies, knowing what to pack for evacuation, knowing the community emergency plan, etc.
- Communities can also inventory any fire equipment they have and keep it in working order.

### Community alerts

- Share information about fire hazard risk, smoke and air quality with the community. Social media, community websites, local television and radio, and posted notices can all be good ways to do this.
- Communities may want to have a special alert or warning alarm to tell residents when there is a wildfire emergency.

### Monitor for smoke & air quality

- Knowing when smoke is predicted to reach your community (smoke forecasting) can allow time to put health actions in place.
- Track wildfire smoke with online tools like FireSmoke Canada or Canada's Wildfire Smoke Prediction System (FireWork).
- Identify those in the community most vulnerable to poor air quality (Elders, those with asthma, etc.).
- When air quality is poor or predicted to become poor, communities can: inform community members, set up clean air spaces, evacuate vulnerable people, etc.

### Monitor water quality

- Wildfires can impact water when ash, sediment, or other debris is washed into lakes and rivers.
- When fires happen near or upstream of a community, drinking water could be affected.
- Monitor lakes/streams that supply drinking water after wildfire events and have a plan if water is not safe to drink.

### FireSmart community

- FireSmart Canada offers programs and information to help households and communities be better prepared for wildfire.
- Managing trees and plants, priority zones around homes and communities, fire-resistant materials, community fireguards, and more, are all part of FireSmart.
- The program also provides support for a community Fire Officer.

### Prevent human-caused fires

- Raise awareness of human-caused fires and how they can be prevented on the land and in the community.

### Fire-resistant materials

- Some materials are more fire resistant than others. Use more fire-resistant materials when building new homes or updating existing ones.

### Monitor wildfire risk

- Hot, dry conditions can make it easier for fires to start and spread.
- Communities can monitor the fire hazard risk in their area with online tools like Ontario's Forest Fire Info Map or the Canadian Wildland Fire Information System, or create their own program.

### Manage trees & plants

- Working with trees and plants can help keep wildfires from spreading. This could include things like: fireguards, thinning trees near the community, encouraging growth of deciduous trees, clearing dead material and controlled burning.

**UP NORTH ON CLIMATE**  
Climate Change Impact and Adaptation Study for the North of Ontario

**Laurentian University**  
Université Laurentienne

[www.upnorthclimate.ca](http://www.upnorthclimate.ca)

\*Adaptations vary in scale (small to large), focus (individual to community) & cost (low to high). Find what works for you and your community.

# ADAPTATION OPTIONS WORKSHEET

**Impact** – What issue are we concerned about? What effect is it having?

**Objective** – What would we like to change?

**Adaptation Option**

**Pros:**

**Cons:**

**Adaptation Option**

**Pros:**

**Cons:**

**Adaptation Option**

**Pros:**

**Cons:**

**Decision (circle one)**

Put into  
action

Investigate  
further

Reject

**Decision (circle one)**

Put into  
action

Investigate  
further

Reject

**Decision (circle one)**

Put into  
action

Investigate  
further

Reject

# ADAPTATION OPTIONS WORKSHEET EXAMPLE

**Impact** – What issue are we concerned about? What effect is it having?

Spring melt floods basements and crawlspaces in some areas of the community

**Objective** – What would we like to change?

Prevent crawl spaces from flooding

**Adaptation Option**

Assess the community's drainage system and improve it

**Pros:**

-benefits the whole community

**Cons:**

-could be expensive

-will take time

**Adaptation Option**

Better drainage for homes – sloping the ground, trenches to direct water, sump pumps, etc.

**Pros:**

-some steps, like digging trenches, can happen quickly and be done by residents

**Cons:**

-may work better at some homes than others

**Adaptation Option**

Raise and move homes onto gravel pads or move people out of homes that flood often

**Pros:**

-gets people out of water damaged houses  
-new houses will be less likely to flood

**Cons:**

-will be expensive  
-will take time  
-people may not want to leave their homes

**Decision (circle one)**

Put into action

Investigate further

Reject

**Decision (circle one)**

Put into action

Investigate further

Reject

**Decision (circle one)**

Put into action

Investigate further

Reject



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