CLIMATE CHANGE ADAPTATION PLANNING GUIDEBOOKS

FOR INDIGENOUS COMMUNITIES

GUIDEBOOK 4

IDENTIFYING SOLUTIONS

Check out our CIER Ecoversity course for an overview
of how to implement the ICCAP guidebooks.

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CIER
CENTRE FOR INDIGENOUS ENVIRONMENTAL RESOURCES

CLIMATE CHANGE ADAPTATION PLANNING
GUIDEBOOKS

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GLOSSARY

Adaptation: The process of adjustment to actual or expected climate change and its effects.

Ability to Adapt: how easy or difficult it will be for the community to adjust to the resulting changes (before implementing any forms of adaptation).

Climate: The word "climate" refers to a region's long-term weather patterns. The conditions that make up the weather in an area – precipitation, temperature, wind and so on – are measured daily, whereas climate describes what the weather is like over a long period of time (often based on thirty-year averages). Weather can change dramatically day-to-day, but climate is expected to be relatively consistent over time. This is summed up by the old saying, "climate is what you expect, weather is what you get".

Greenhouse Gases (GHGs): Life on Earth is possible because various gases in the atmosphere trap heat and keep the planet at a livable temperature. These gases that keep the Earth warm are called greenhouse gases (GHGs). When the amount of GHGs increase, the Earth gets warmer.

Indigenous Knowledge: For the purpose of this guide, Indigenous Knowledge is defined as: "A holistic system of knowledge acquired over time through experience or observation and is tied to the cultural, linguistic, spiritual and subsistence ways of Indigenous peoples" (CIER and UBC, 2011).

Magnitude: the importance or size of the effect of the climate change impact on the system or community (e.g. an out of control forest fire in the community could have a large effect on the community's infrastructure)

Mitigation: An intervention that either reduces the sources or enhances the sinks of greenhouse gases. This may also include reducing the sources of ozone altering substances (e.g. Carbon monoxide, Nitrogen Oxides, etc.)

Sensitivity: the characteristics of the system or community (e.g. a small drinking water source would be highly sensitive to drying up if climate change caused severe drought)

Sustainability: sustainability can be thought of as the ability of a community to adapt and become more resilient to climate change impacts, allowing the community to continue thriving well into the future.

Vulnerability: In this document we will specifically be using the term vulnerability to describe any predispositions (tendencies) your community may have that could increase its likelihood of being adversely (negatively) affected by climate change (IPCC, 2014).

ABOUT THE GUIDEBOOKS

The Climate Change Adaptation Planning Guidebooks for Indigenous Communities consists of a series of guidebooks. The guidebooks provide an overview of the six-step climate change adaptation planning process

The goal of the six guidebooks is to provide a user-friendly and culturally appropriate climate change and adaptation resource to assist Indigenous communities with adaptation planning in order to avoid, minimize, or adapt to the impacts caused by climate change. The planning process outlined in the guidebooks allow for wide application, local adaptation, and ongoing modifications.

Understanding the Planning Process

Each of the guidebooks focus on one of the six climate change adaptation planning steps. The six guidebooks (and accompanying activities included in each guidebook) focus on the following topics:

GUIDEBOOK 1:
STARTING THE PLANNING PROCESS

Understanding the importance of climate change adaptation and assembling a team of community leaders and members to assist with the climate change adaptation planning process.

Activities:

1. Meet with Community Leadership: create briefing note for your community's leadership that explains the project and the importance of including climate change adaptation in community plans and decisions for the long-term success of the community.

2. Set-up a Working Group: develop a pamphlet that outlines Working Group member roles and responsibilities and recruit potential Working Group members.

3. Hold a Community Event: inform the community about climate change adaptation planning and provide an opportunity for community members to share their ideas and provide suggestions and direction by hosting an outreach activity or event.

GUIDEBOOK 2:
CLIMATE CHANGE IMPACTS IN THE COMMUNITY

Understanding the impacts of climate change and its effects on Indigenous communities, learning about adaptation (adjusting to climate change impacts) versus mitigation (reducing or preventing climate change impacts), and identifying climate change impacts in your own community.

Activities:

1. Gather Background Information: compile information on nature and the environment in your community, including how people currently use and live on the land (e.g. current and past settlements and subsistence, commercial and traditional uses of land, water, wildlife, and plants)

2. Brainstorm Local Observations of Climate Change: generate a list of climate change impacts that have been observed by community members and how these observations have affected the activities people do in the community.

GUIDEBOOK 3:
IDENTIFYING COMMUNITY SUSTAINABILITY AND CLIMATE CHANGE VULNERABILITIES

Developing a community vision for a climate resilient future, understanding the difference between community sustainability and vulnerability to climate change, and developing different community climate change scenarios (e.g. no adaptation versus successful adaptation).

Activities:

1. Community Vision: gain a sense of community members' vision for the future, including what should be preserved, what should be added (that is currently missing), challenges that the community is facing and would like to resolve/remove, and things to keep out of the community to ensure it remains healthy/successful.

2. Sustainability Brainstorm: understand how the community is sustainable in relation to the environment, economy, society, and culture.

3. Vulnerability Brainstorm: understand how the community may be vulnerable to the climate change impacts that were identified in guidebook 2 and during the previous Sustainability Brainstorm activity.

4. Vulnerability Ranking: understand areas where the community may be most vulnerable to the predicted impacts of climate change

5. Identifying Connections: understand if/how vulnerabilities to climate change are related to more than one area of sustainability (environment, economy, society, culture)

6. Influence Diagram: develop a list of final climate change effects on the community (i.e. illustration of the changes that may occur in the community due to predicted climate change impacts)

7. Scenario Building: gain an understanding of what the community could look like if climate change impacts occur and no adaptation is implemented, if climate change and community development occur with no adaptation, and if successful adaptation is implemented.

GUIDEBOOK 4:
IDENTIFYING SOLUTIONS

Identifying and prioritizing solutions for adapting to climate change and determining the feasibility of different solutions.

Activities:

1. Revisiting the Influence Diagram: generate a list of possible adaptation and coping solutions to help community minimize/eliminate negative effects and enhance positive effects

2. Revisiting the Scenarios: alternate method for generating list of possible solutions

3. Determining Feasibility: shortlist of feasible adaptation solutions

4. Setting Priorities for Climate Change Planning: from the list of feasible solutions, a list of priority solutions that community members would like to see implemented first

5. Creating a Comprehensive List of Priorities: a comprehensive list of all the priority solutions that were identified from previous activity working with different groups of community members that are feasible for implementation within your community.

GUIDEBOOK 5:
TAKING ADAPTIVE ACTION

Understanding past successes in your community, developing an action plan to implement your climate change adaptation solutions, ensuring ongoing community participation in the climate change adaptation process, and celebrating your achievements.

Activities:

1. Decision-making in Your Community: learn more about the community's past successes and decision-making processes to learn how it might inform the current climate change adaptation planning process in a positive way

2. Developing an Action Plan: work with leadership and the Working Group members to create a detailed action plan that outlines how each of your adaptation solutions can be implemented in the community, including level of priority, resources required, roles/responsibilities, milestones, budgets, timelines, and measures of success.

3. Challenge Tree: share your action plan with the broader community and identify ways in which community members can support or help implement the different adaptation solutions and actions.

GUIDEBOOK 6:
MONITORING PROGRESS AND CHANGE

Tracking and evaluating the success of your climate change adaptation action plan, adjusting your activities and actions (as needed), and understanding the importance of revisiting the climate change adaptation planning process in the future to ensure it is still useful for your community.

Activities:

1. Evaluating Your Action Plan: evaluate your adaptation action plan and determine if progress has been made in reaching the community's adaptation goal.

UNDERSTANDING THE PLANNING PROCESS

The guidebooks build on one another and are intended to be used in order (from 1-6). Each guidebook provides information, considerations, and activities to walk the user through each step of the planning process and prepare them for the next step of planning. The activities included in the guidebooks are designed to engage community members during the planning process. These activities are suggestions. However, you may decide to change or adapt certain activities to better fit your community's needs.
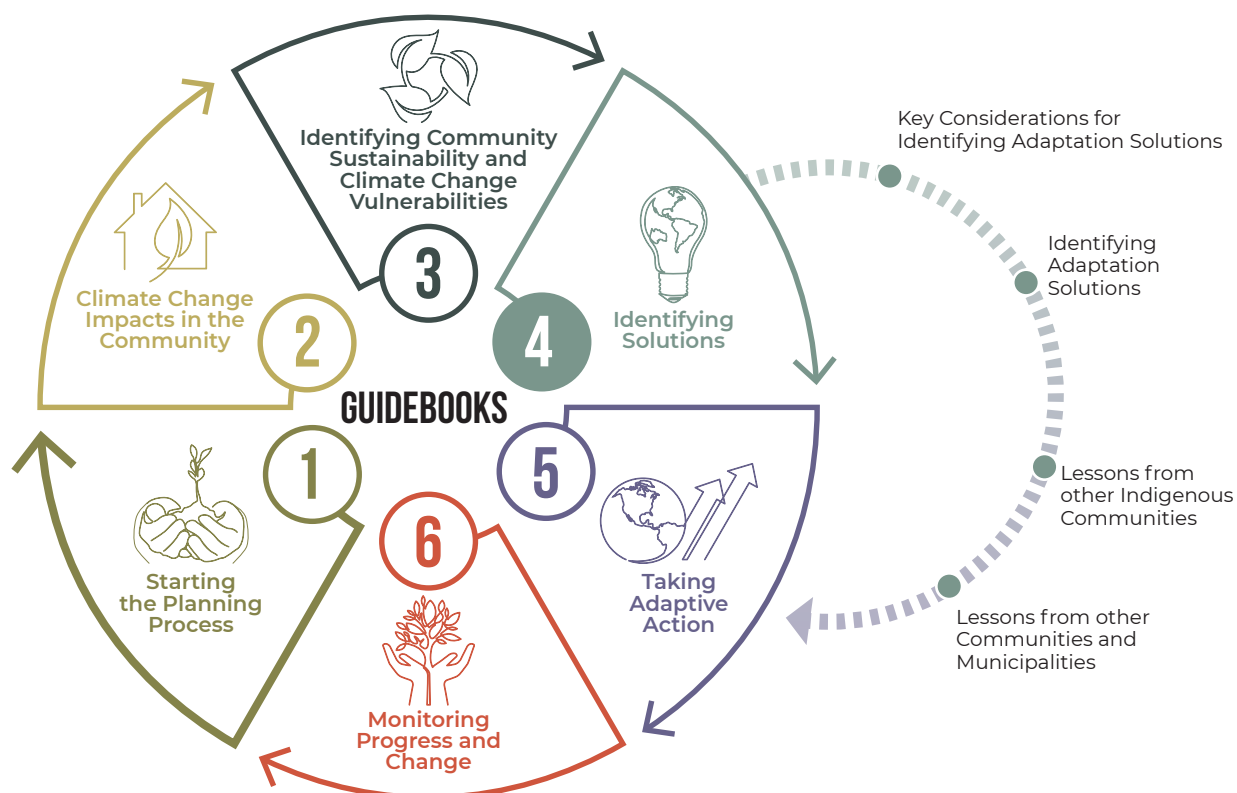
HOW TO USE THE GUIDEBOOKS

In each guidebook, you can expect to find relevant background/introductory information related to the topic and planning step covered in that guidebook and key considerations, tips, and activities to assist you in completing that step of the planning process.

Note: the suggested activities included in the guidebooks are designed to engage community members during the planning process, however, you may decide to change certain activities to better fit your community's needs.

Checklist

In each of the six guidebooks, you'll find a checklist, like the example below, to help you stay on track and work through each of the planning activities that are required to complete that step of the climate change adaptation planning process. The project coordinator can use the checklists as a tool to see how many tasks need to be completed, who is responsible for completing them, and what progress has been made. Checklists are located at the end of each guidebook or you can refer to Annex I for a complete set of checklists from all six guidebooks.

Task	Recommended to complete task	Progress
Designate a Project Coordinator		Complete
Meet with Leadership	Coordinator	Complete
Set up a Working Group	Coordinator	In progress (meeting scheduled)
Inform Community Members	Coordinator	Not completed

Symbols Used in the Guidebooks

Throughout the guidebooks, there are a series of symbols (shown below) to indicate where a particular type of meeting or activity is suggested. The symbols include the following:

Activity	General Meeting	Working Group Meeting	Materials	Checklist
	Note: the "general meeting" symbol suggests a meeting with other groups not specifically listed below: • Elders Meeting • Community Meeting • Youth Meeting			
Important Information	Indigenous Knowledge	Environmental	Economic	Social
Cultural	Winter	Summer	Spring	Fall

Text Boxes

In coloured text boxes throughout the guidebooks, you will find stories and examples of climate change and community planning in Indigenous communities, as well as examples of CIER and community participants working through the activities suggested to engage people in the project.

WHAT WILL YOU LEARN IN THIS GUIDEBOOK?

In guidebook 3, you had a chance to explore potential impacts of climate change, community vulnerabilities, and where your community is already sustainable. Now, you will begin thinking about possible solutions for coping with and adapting to climate change in order to minimize the negative effects of climate change on the community.

In guidebook 4, you will build on the influence diagrams and scenarios that you created in guidebook 3 to identify and list climate change adaptation and coping solutions that are feasible for the community to implement. Once your list of adaptation solutions has been identified, you will work with community members to prioritize the potential solutions and determine which are most urgent or important to focus on implementing first.

You will start by building on the influence diagrams and scenarios developed with the Working Group in Guidebook 3 to generate a list of possible adaptation solutions. The activities outlined in guidebook 4 will help guide you through the process of determining the feasibility of these solutions. This process will require you to conduct research, connect with experts, conduct research, and seek feedback from leadership (e.g. Chief and Council, hereditary Chiefs, family/clan leaders, etc.). Once you have completed this work and have an understanding of which solutions are most feasible for your community, you will collaborate with the Working Group, Elders, youth, and other community members to prioritize the solutions and decide adaptation mechanisms to focus on first. At the end of this guidebook, you should be ready to turn these prioritized solutions into actions.

KEY CONSIDERATIONS FOR IDENTIFYING ADAPTATION SOLUTIONS

Before you begin, there are a few important considerations to keep in mind as you work through the proceeding activities to identify adaptation solutions.

As you work through each activity, think about adaptation solutions that relate directly to climate change. However, keep in mind that because many Indigenous communities in Canada remain connected to their lands - through people's livelihoods, local activities, culture, and spirituality - it may be difficult to identify solutions that relate **only** to climate change. This interconnectedness means that implementing actions to help mitigate or adapt to the effects of climate change (i.e. solutions where the impacts of climate change are the primary driving force) will also have positive effects on community sustainability. When decisions related to climate change also result in benefits to the community they are called "no regret" decisions.

It is important to note that you may also come up with solutions in which climate change is one of the factors, but not necessarily the driving force behind the decision. In these cases, solutions must address community development needs (e.g. more housing or reconnecting youth and Elders), but also result in the improved adaptive capacity of the community (e.g. new housing built to withstand strong winds and on high ground, or maintaining cultural vitality and Indigenous Knowledge to continue to thrive culturally as the climate changes).

Lastly, if your community is making a decision to allocate significant time and resources to implementing a climate change adaptation solution, it is important that the impacts of climate change are well understood. Conducting research to understand the feasibility of different adaptation solutions (e.g. identifying funding sources or professional services that may be required) and talking to climate change experts (e.g. universities, research institutes, stewardship and non-profit organizations, foundations, funders, etc.) could help you and leadership feel more confident in your decision-making.

Now that you have an idea of some key considerations to keep in mind as you work through the following activities, it is time to begin.

IDENTIFYING ADAPTATION SOLUTIONS

What can we do, what is feasible, and what should we do first? The following activities will help you answer these questions as you work with different community members to identify adaptation solutions and determine their feasibility for your community. You will start by organizing a meeting with the Working Group to begin exploring different possible adaptation solutions.

There are two activities that you can conduct with the Working Group members to help facilitate the process of brainstorming and identifying possible solutions.

The first activity includes revisiting the influence diagrams to add possible adaptations to the chain of effects. Consider using call-out shapes to suggest adaptation solutions. These can be placed along the chain of effects where the solution can be implemented in order to help modify the final impacts. An example demonstrating how to incorporate adaptation solutions into your influence diagram is included in the activity below. You will need to rebuild the influence diagrams for this activity.

The second activity includes revisiting the scenarios that you built in guidebook 3. In this activity you will revisit the scenarios that the Working Group previously envisioned and guide people through a discussion around how next steps can be implemented to make the community's desired future a reality.

Both of these activities can be used to generate a list of possible solutions for adapting to and coping with climate change. You can review both activities and determine whether you would like to complete one or both exercises.

Note: you may have already compiled a list of possible adaptations when building your scenarios in Guidebook 3. If so, use those ideas as a starting point, or if you feel you have already compiled an adequate list of possible solutions, you may choose not to complete the following two activities. Review the Revisiting the Influence Diagram and Revisiting the Scenarios activities below to determine whether you have already accomplished the objectives outlined in this activity. If you feel that you have already compiled an extensive list of possible solutions, you can move on to the Determining Feasibility section of the guidebook to begin understanding which solutions may or may not work in your community. We recommend that you work through at least one of the following activities to ensure everyone has a chance to think about possible adaptation solutions.

ACTIVITY   **WORKING GROUP MEETING**
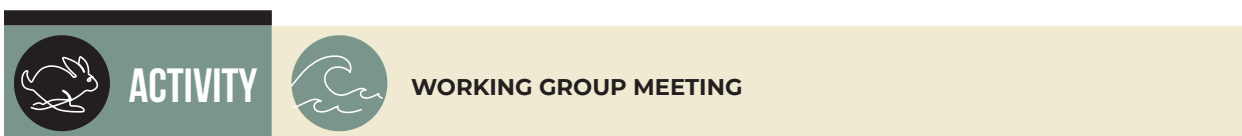
Approach 1: Revisiting the Influence Diagram

MATERIALS
- Influence diagram shapes from Guidebook 3 activity
- Sticky-tack / tape
- Markers
- Note paper

1. Review the influence diagram previously created with the Working Group from Guidebook 3. Put each of the shapes used to create the influence diagram (the ovals and rectangles) on the wall again, reading them out as you go, and ask people to start thinking about ways the community could try to change the final impacts for the better.

2. What possible solutions might minimize or eliminate negative effects and enhance positive effects?

3. Write possible solutions that people come up with on the call-out shapes and place them on the wall so that the call-out points to the place along the chain of effects where that solution should be implemented. See below for an example:

alternative transportation of supplies

education; travel advisory

travel → supply shortage

thinner ice → slush on the lake

safety → ice fishing

snow clearing bylaw

snow clearing

community shuttle

warmer winters → more clouds → more weather disturbance (snow) → safety; harder to walk in the community

protected habitat areas

poor fur quality

hard on small animals

trapping → less money

heating less expensive

*Modified approach from the Sheltair Group (2003).

4. Continue brainstorming solutions and add as many call-out shapes as you need to the diagram.

5. Complete this activity for each of the influence diagram topics. Ask someone to help you by typing up each topic and the solutions that were generated so that you have this information recorded in a document, as well as on the influence diagram.

After the Working Group meeting, you can compile these lists of possible adaptation and coping solutions. See if any of the same solutions were suggested for more than one topic. Solutions that are repeated will help you identify priorities later on, since implementing these particular solutions will result in positive changes in more than one area affected by climate change.

ACTIVITY **WORKING GROUP MEETING**
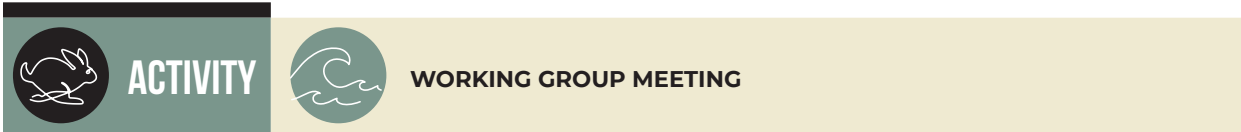
Approach 2: Revisiting the Scenarios

MATERIALS

- Scenario B and C index cards from Guidebook 3 activity (note: we are only revisiting Scenarios B and C. Scenario A from guidebook 3 was intended to help you picture what the community might look like if no adaptation occurred. Our goal here is to identify specific solutions to help ensure adaptation does occur, so we are focusing on Scenarios B and C for this activity.)

- Sticky-tack / tape
- Chart paper
- Markers

Bring the Working Group together for a short meeting, or do this activity during the meeting at which the Revisiting the Influence Diagram activity is conducted.

1. Use the index cards that describe the details of Scenario B (with all of the climate change vulnerability assumptions plus the community development assumptions developed in Guidebook 3) to remind the group what this possible vision of the future could look like.

    a. Place these index cards on the wall under the heading "Scenario B" so that everyone can read them. Discuss the need to consider climate change vulnerability and impacts, in addition to other community development changes, as the community will continue to develop and change regardless of what happens with the climate. For example: Will the population be younger or older? Will there be more or less people? Will the population be healthy or sick? Will land use be different from what it is now?

2. Use the index cards that describe details of Scenario C (successful climate change adaptation strategies as developed in Guidebook 3).

3. Place these index cards on the wall under the heading "Scenario C". Discuss the importance of implementing solutions that will allow the community to adapt to the effects of climate change while also planning for other community development and sustainability needs.

4. Ask people to think about what the community should do to make Scenario C the future reality. Start brainstorming!

5. Include solutions that are specific to the effects of climate change but don't forget to think about solutions that relate to other community development needs that may have come up during discussions related to the community's ideal future scenario (e.g. related to health, education, housing, etc.)

6. What decisions are needed?

7. What actions are needed?

After doing these two activities with the Working Group, you probably have a long list of possible solutions that will help your community cope with and adapt to climate change, while enhancing community sustainability at the same time. Excellent! This list will be the starting point for determining which solutions are feasible (given available time, people, and funding) and which are top priorities for the community (which to implement first). You may find that some of the solutions that were identified in the previous activities are easier to implement than others (these could be considered low hanging fruit). These solutions might be prioritized because they are easier to achieve in the short-term versus more complex solutions. The next steps will involve leadership, Elders, the broader community, and members of the Working Group to help determine feasibility of the solutions that have been identified, and which solution(s) to focus on first.

Determining Feasibility

Before meeting with leadership and community members, it is helpful to determine the general feasibility of the different solutions and options that have been identified and discussed thus far. Consider the following questions to help guide your research:

- Does this solution require any planning?

- What steps or actions are required to implement this solution?

- What funding is required to implement this solution?

- Are there funding sources that the community can apply for to assist with expenses?

- Does this solution involve any specific technological, data, or equipment requirements?

- Does this solution require any additional human resources/capacity?

- Does this solution require external professional services or expertise?

- Are there any training or educational outreach associated with this solution?

Look for examples of similar projects/solutions that have been implemented by other communities and reach out to learn more about their approach and any lessons they learned along the way.

Helpful Resources

The **Indigenous Climate Hub** (**https://indigenousclimatehub.ca**) is a great place to connect with other communities, learn more about the adaptation measures they are implementing, and to learn more about different possible funding programs.

The **Canadian Centre for Climate Services** (**https://www.canada.ca/en/environment-climate-change/services/climate-change/canadian-centre-climate-services.html**) contains useful information about climate risks facing Indigenous Peoples throughout Canada and includes a team of experts, offers supports and services, and contains a comprehensive library of climate resources, information, and data.

Check out the Indigenous Climate Change Adaptation Guidance Document (part of the Indigenous Climate Change Adaptation Planning Toolkit) to learn more about what might be required to implement different adaptation solutions and to access a variety of tools and resources.

Once you have completed your research, you will be able to begin compiling information about the general feasibility of each of the different adaptation solutions (e.g. cost, technological requirements, professional services that are required, etc.). You can use this information in the following activities and in your discussions with leadership to determine which solutions may not be feasible for the community at this time and to gauge which solutions might be best considered priority solutions.

GENERAL MEETING | Now that you have conducted research (and connected with experts) to understand the feasibility of different solutions, it is important to talk to leadership, share the list of possible adaptation solutions, and discuss the activities that generated these ideas. Leadership can provide input to help narrow the list further, based on their knowledge of what is feasible. Ask for a special meeting with your community's leadership (e.g. Chief and Council, Hereditary or Traditional Leadership, or Mayor and Council) or for an hour or two on the agenda of an upcoming meeting.

ACTIVITY

Identifying Feasible Solutions

MATERIALS
- Scenario B and C index cards from Guidebook 3
- Sticky-tack / tape
- Chart paper
- Markers

1. Compile the list of solutions that were generated from Revisiting the Influence Diagram and/or Revisiting Scenarios activities. You could organize these according to short-, medium-, and long-term solutions or you could organize them by climate change impacts or according to the four components of sustainability (environment, economy, society, culture). Whichever way you decide to do it, make sure you are comfortable talking about how the climate change impacts relate to sustainability (or vice versa) for the different possible solutions. Write the solutions on large pieces of paper (e.g. chart paper) and put them up on the walls.

2. Explain to leadership that the next step will be to create a shortlist of possible solutions that can be shared back to the community and Working Group, in order to identify which ideas community members' think should be implemented first, second, third, etc. You will need leadership's input to create this shortlist.

3. Ask leadership to think about the overall needs of the community related to community development and climate change, in comparison to the proposed solutions in the list. Additionally, ask leadership to consider existing (and potential future) availability of funding, time, and people (both the number of people and necessary skills) to implement the various solutions. With this in mind, what solutions are feasible?

4. Give each person a marker and ask them to put a checkmark beside the five solutions they believe are feasible and could be implemented in the next five years. You can also use stickers (e.g. small coloured circles) to identify feasible solutions. If you use stickers, give each person a set of five.

5. When people are finished, read out the solutions that were identified with a checkmark or a sticker. Start with the ones that received the most selections. When you are finished, ask people if there are any that they strongly disagree with (e.g. solutions that received only one selection may be considered unfeasible to some people in the group).

6. If there are disagreements, discuss each of these selections and agree as a group to either mark each particular solution as feasible or eliminate it.

7. Tell the leadership that this shortlist will be shared with community members to begin a dialogue on priorities.

8. After the meeting, rewrite the list of selected solutions on chart paper to share with the community. You should also record these solutions in a notebook (or in the notes section of this Guidebook), so you have a separate copy of the results from your meeting.

Determining Priorities

Now it's time to involve more people in the planning process. When more people are involved in discussing future plans for the community, there is a greater chance of receiving support from community members when these actions are implemented as community members will likely want to be involved in making these actions successful. Implementing these adaptation solutions will affect everyone in the community in some way (either directly or more indirectly through their work or through a family member) so try to involve as many people as possible. This may sound difficult to do, but it doesn't have to be. Below are two ideas to help get people involved in determining priorities for climate change planning in your community. Take these ideas and adapt them to suit your community and context.

ACTIVITY

Setting Priorities for Climate Change Planning

MATERIALS

- Prepared poster or display board
- Refreshments
- Small door prize
- Markers

Additional items for a small group:

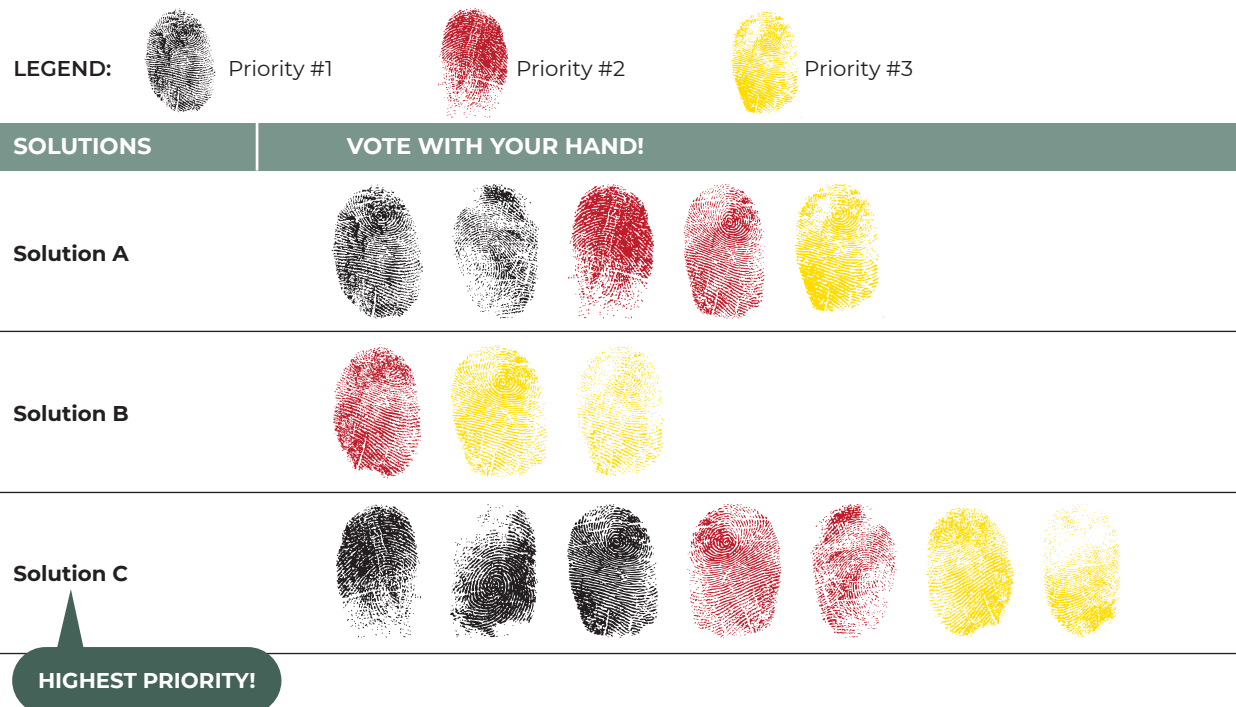- Solutions written out on chart paper
- Sticky tape/tape
- Finger or water-based paint
- Cut up egg cartons

Additional items for a large group:

- Solutions written out on separate index cards
- Enough envelopes for each solution
- Package of 'community money' for each participant (see Template on page 15)

Host a community meeting to bring people together. You could also ask to participate in an existing event (e.g. a bingo or community dinner) to take advantage of a time when people are already coming together as a group. You will need a few people to help you with this activity. Talk to the high school or members of the Working Group to see who is interested and available to work with you to organize and run this activity.

1. Put up information about the project on posters or a display board, including examples of the influence diagrams, the index card information for Scenario C, any photographs you have of the different groups working on this planning process (if you have a laptop and projector you can show these photographs as a slideshow), and the list of feasible solutions. Information can also be shared through email or social media (e.g. a community Facebook page). If you decide to use the activity described in #4 (see below), then you need to write each solution on individual pieces of paper.

2. Plan to have refreshments (coffee, tea, fruit, muffins) to help attract people to your event and as a small thank-you to those who participate. If you have the budget for a small prize (or can get one donated), you could also use a door prize to encourage people to attend. If you have created a social media page (e.g. Facebook) for your climate change adaptation project, you can use this to engage with and invite participants to your event. Be sure to include all of the relevant details (date, time, location, etc.) and contact details for anyone who would like to learn more.

3. If you are working with a small group, you can plan a "vote with your hand" activity to encourage participants to prioritize different solutions. In this activity, each person marks their preferred solution(s) using finger paint by placing a thumb or fingerprint beside the solutions they consider to be priorities. Depending on the number of possible solutions that you have to choose from, you can ask people to use only one hand (and choose five solutions) or both hands (and choose ten solutions) so that you end up with a shortlist of participants' priorities. You can give people the option to select certain priorities more than once (e.g. give one solution two fingerprints) if they feel it is important. You can also assign colours to priorities, so that participants can rank their choices in order from most to least important using different colours.

    a. Cut up an egg container (or something to hold the paint) ahead of time and pour a small amount of paint into each 'cup'. Hand these out to people as they walk around the room and choose their priorities.

    b. When everyone has selected their priorities, count the number of marks beside each solution to identify the top five or ten priorities. You can number the top priorities (#1, #2, etc.) based on the number of marks beside each, for easy reference.

LEGEND: Priority #1   Priority #2   Priority #3

SOLUTIONS	VOTE WITH YOUR HAND!
Solution A	
Solution B	
Solution C	

HIGHEST PRIORITY!

4. If you are working with a larger group, you can prioritize solutions by using pretend 'community money'. Each person is allowed to 'invest' their money in the solutions they think are most important. When you introduce this activity, make sure you are clear that the amount of money is only representative and doesn't mean that the community will spend that quantity of resources on that solution. See below for an example of how this activity was conducted in Deschambault Lake.

   a. Print out "community money" sheets, cut out the strips of money, and package these ahead of time into groups of ten ($10,000 each, for a total of $100,000). Put an open envelope beside or beneath each of the solutions so that participants can invest their "community money" in their preferred solutions.

   b. Encourage people to walk around the room at least once to read all of the possible solutions, and to ask any questions that they may have, before they decide which ones are their top priorities.

   c. Once everybody has invested their money, count the money in each envelope to identify the top five or ten priorities. You can number the top priorities (#1, #2, etc.) based on the amount of money invested in each.

PACKAGE OF COMMUNITY MONEY

Youth Participation in Priority Setting

Three classes at the secondary school in Deschambault Lake participated in a prioritizing activity, using the ideas that had been generated during a community bingo. Each of the community's ideas was written on an envelope and placed around the room under symbols representing the four different areas of sustainability (environment, economy, society, culture). Each student was given $100,000 dollars of pretend "Dechambault Lake money", in $10,000 increments and told to imagine themselves as Chief or Council. The youth spent their money on the ideas they thought were immediate priorities. Everyone had a great time with this activity and the ideas that surfaced as priorities were very interesting. This example serves as a good reminder as to why it is important to include youth in community planning - they have great ideas and want to be involved!

Top Priorities: Youth Participants
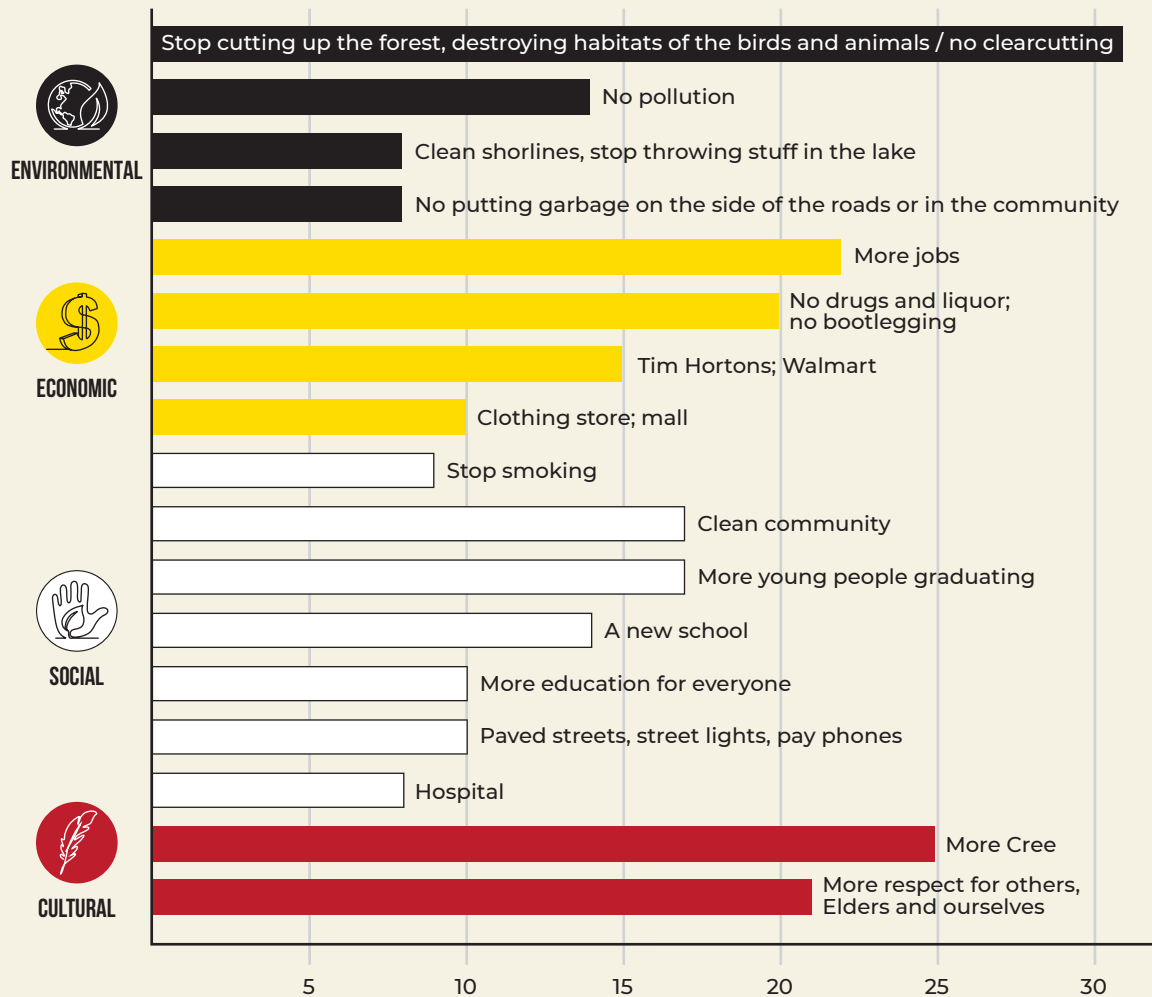
5. Thank people for their time and interest. Let them know that this information, along with input from the Working Group, leadership, Elders, and youth will be used to guide the climate change planning process. Encourage people to stay involved and to keep in touch with you to participate in other activities or just talk about the project. Make sure you have the time to sit and have a discussion with the group about solutions if people are interested. If you have a social media page or website for the project, encourage participants to visit your page to stay updated.

6. If possible, share the information that was generated through the community meeting with other people who could not attend by talking about it on the radio, creating posts on your social media page, or writing about it in a community newsletter.

Community Participation in Priority-Setting in Deschambault Lake

To share information on the project and gather ideas on priorities, the project team set-up a project booth at the Band Office for two days. The booth had a poster board, copies of their newsletter, a short survey for people to fill out (including a chance to win a prize), and refreshments. The team created a simple poster with information about the booth, which was displayed in the Band Office, the Health Centre, the school, and the local store to encourage people to drop by. The survey was used to learn more about community members' awareness of climate change, and to prioritize ideas from the community visioning activity. Forty-six people participated in the survey; their priorities, along with those identified by the students, helped leadership to make decisions about the community's priorities by making them aware of ideas and actions that survey participants believe to be important for the long-term sustainability of the community.

GENERAL MEETING | Elders   **INDIGENOUS KNOWLEDGE**

It is of utmost important to talk to the Elders about what they consider to be priorities for the community. Even if Elders already have participated in the community activity/event, it is still a good idea to sit down over coffee or tea with them, and any other Elder, who may be interested. Share the list of feasible solutions that were created through your discussions with leadership and ask people to share their thoughts and opinions. Based on their experience, Indigenous Knowledge, and what they know about the community's past successes and challenges, which solutions should the community strive to implement first, second, etc.?

Write down the ideas that were shared (after the meeting, perhaps) so you can reflect on these priorities and relate them to the priorities identified by the community and the youth.

GENERAL MEETING | Youth | If few young people participated in the community activity/event, you may want to visit the high school to ask students about their priorities. The youth will be the leaders of the community in the future. Their involvement in the planning process gets them interested at an early age and ensures their opinions and ideas are included. You can do one of the two activities (vote with your hand or community money) with the youth.

1. Ask the school principal if you can host an event in the gym and invite each class to visit you for approximately 30 minutes throughout the day to learn about the project and share their ideas. See if the school office will coordinate the different class visits.

2. If this is not possible, ask the principal if there are specific classes or teachers who may be interested in the project (e.g. climate change could relate to the science curriculum; community planning could relate to the social science curriculum) and arrange to visit these classes individually.

Don't forget to review the input you have received from other youth and children thus far. Ideas and pictures these young people have shared about their vision and what they love about the community will provide an idea of what their priorities are, and help you to include their perspectives in the list of priorities generated by the entire community.

Creating a Comprehensive List of Priorities

Create a comprehensive list of the adaptation solutions (priority solutions that are feasible for your community) that were generated by the activities with leadership, the Working Group, Elders, and youth. You should be in a good position to get started on some of these priorities because they were selected from shortlist of solutions that leadership considered to be feasible.

1. Start by writing down one set of priorities (i.e. from one of the groups) and then build on this list by adding priorities from each group (i.e. leadership, Working Group, Elders, youth, community). When a priority is identified by more than one group, add a check mark (or some type of notation to indicate the number of times selected) next to these.

2. Create a table and list solutions that were selected the most first. Include the number of times each was selected. For example:

Prioritized Solution	Number of Times Selected

Solutions that were priorities for many people in the community offer a good place to start. Experience has shown that initiating new projects and programs that have strong support from a variety of people tend to be more successful. Involving different community groups in the development and implementation of new initiatives gives a wide spectrum of community members a connection to the project and helps ensure the initiatives are successful and sustainable. This doesn't mean that solutions that were a priority for only a few people in the community should not be considered. There may be reasons (e.g. financial, strategic, potentially devastating climate change impacts) that are understood by leadership for implementing some solutions, that may not be well understood by other members of the community. When developing a detailed plan for the next five to ten years, try to include solutions that address both climate change and other community development needs wherever possible.

LESSONS FROM OTHER INDIGENOUS COMMUNITIES

IMPORTANT INFORMATION | Other Indigenous communities are making decisions to begin adapting to climate change, and many are moving forward to implement these decisions successfully. Learning about what other communities are doing is inspiring, could provide a contact to talk to and learn from, and could help you to think about potential adaptation options in your community. Talk to the Indigenous communities in your region to share information on your climate change planning and adaptation solutions. You may even find that there are ways you can collaborate to implement solutions together to be more effective and efficient.

Reducing Flood Risk in Yellow Quill First Nation

Yellow Quill First Nation (a Saulteaux community located on Treaty 4 Territory, Saskatchewan) has experienced many climate change impacts over the years, including flooding, forest fires, and extreme weather events (Indigenous Climate Hub, 2020). In order to mitigate some of these impacts, the community, in partnership with the University of Saskatchewan, decided to create a plan to better prepare for increased flood risks in the future (Indigenous Climate Hub, 2020). The goal of the project was to understand how the community may be susceptible to the impact of flooding and to use this information to inform decision-making and prepare for climate-related challenges in a manner that respects community-held knowledge/experiences while also making use of hydrological modeling science (Indigenous Climate Hub, 2020).

To begin, the community examined where/how they are vulnerable to increased flood events resulting from climate change (Indigenous Climate Hub, 2020). They conducted LiDAR (Light Detection and Ranging) sensing for the watershed in order to capture detailed information about the land surrounding the reserve (Indigenous Climate Hub, 2020). Using this information, University of Saskatchewan computer modelers were able to create risk maps and use modeling to predict future flooding (Indigenous Climate Hub, 2020). The maps that were created help illustrate where the water is likely to go if a flooding event were to occur (Indigenous Climate Hub, 2020).

Next, community members – from youth to Elders - came together to discuss flooding. A variety of techniques were used to share information about flooding and collect feedback from the community, including meetings, interviews, sharing circles, drawings, photos, community tours, and poster sessions (Indigenous Climate Hub, 2020). Using the data that was collected, the project coordinators and university researchers analyzed the data that was provided during the community sessions and created posters and presentations that could be shared back to community members (and other researchers) (Indigenous Climate Hub, 2020).

Following the community outreach, three summer students from the community were hired to review the community's emergency management planning documents and speak with emergency personnel (e.g. firefighters, healthcare workers, etc.). From this, they compiled everyone's ideas on how best to improve the community's emergency plan in the event of a flood (Indigenous Climate Hub, 2020).

Lastly, engineers were invited to the community to conduct an infrastructure assessment to identify important infrastructure that is at risk from ongoing flooding (Indigenous Climate Hub, 2020).

Through this project, the community has been able to build their capacity and learn more about climate change, flooding, and emergency management (Indigenous Climate Hub, 2020).

To learn more about how Yellow Quill First Nation is mitigating the risk of flooding, visit:
https://indigenousclimatehub.ca/2019/08/preparing-for-the-future-how-yellow-quill-first-nation-is-using-indigenous-knowledge-and-science-to-mitigate-the-risk-of-flooding/

Food Sovereignty in Garden Hill First Nation

Garden Hill First Nation (Manitoba) is considered food insecure in that the community is really remote (fly-in only) and there are no healthy food stores/options in the community (Climate Atlas of Canada, 2019).

In order to address this, the community implemented the Meechim Project to create more healthy food options and strengthen their resilience to climate change (Climate Atlas of Canada, 2019). Through the Meechim Project, Garden Hill community members are building a self-sustaining farm that uses both Indigenous Knowledge and farm knowledge, striking a balance between new technology and traditional ways (Climate Atlas of Canada, 2019).

In the past, most homes in Garden Hill had a garden and there were large community gardens (Climate Atlas of Canada, 2019). In fact, this is where the community derives its name. Now, the community is returning to what they used to do, awakening the knowledge that already exists within the community and teaching the next generation how to garden (Climate Atlas of Canada, 2019).

The goal of the farm is to produce and sell food for the community, while also creating employment opportunities and boosting the local economy (Climate Atlas of Canada, 2019). Community members are employed to run the farm and the profits are kept in the community (Climate Atlas of Canada, 2019). Meechim Project employees are cultivating locally grown vegetables and raising chickens, while also building capacity by learning when and how to plant vegetables and how to raise chickens (Climate Atlas of Canada, 2019). As a result, the community is increasing their food sovereignty and strengthening their climate resilience (Climate Atlas of Canada, 2019).

To learn more about the Meechim Project: **https://climateatlas.ca/video/meechim-project**

Solar Energy in T-Sou-ke First Nation

T'Sou-ke Nation (British Columbia) members have been involved in developing a strong vision for the Nation – looking ahead into the future for the many generations to come. The comprehensive community plan that was developed involved active participation by all sections of the T'Sou-ke community: children, youth, families, and elders. One of the pillars of the T'Sou-ke vision is for their community to be autonomous in energy. In 2008 the community installed a solar project that was twice as large as any other in the Province of British Columbia. The Nation sells surplus power to BC Hydro in the summer, and buys it back in the winter. This solar project has resulted in enough power being generated to supply all of the T'Sou-ke administration buildings. The members of T'Sou-ke have learned many lessons from their solar energy project and are now focusing on new ways to conserve energy. Their future plans include building a net zero home that relies on passive building techniques (e.g. a home that is so well-insulated that a family can heat their home through body heat alone). The T'Sou-ke Nation welcomes visitors to learn more about energy conservation or community planning by visiting them through the T'Sou-ke Centre for Sustainability.

To learn more about T'Sou-ke First Nation's solar energy project:
https://www.tsoukenation.com/sun-keeps-shining-on-tsou-ke/

LESSONS FROM OTHER COMMUNITIES AND MUNICIPALITIES

All communities in Canada, from the smallest rural town to the biggest city, are experiencing the effects of climate change. Each has different combinations of vulnerabilities and areas where they are sustainable, but we can learn from what they are doing to minimize negative effects and adapt to climate change. While the adaptation measures taken by a big city may not apply directly to an Indigenous community, you can apply aspects of the solutions that are relevant to your community. Talk to the other communities in your region to learn about what other jurisdictions are doing to adapt to climate change.

STORMWATER MASTER PLAN | Victoria is expecting that climate change will cause more frequent and severe rainstorms (Victoria, 2018). The increase in the amount and severity of precipitation events are expected to cause local flooding and property damage. Some climate change projections suggest that Victoria could see a 30% increase in rain or snow during their very wet days, and a nearly 70% increase in precipitation on their extremely wet days (Victoria, 2018).

Like many cities in Canada, Victoria has an aging stormwater system that would not be able to handle the increase in seasonal precipitation. To mitigate this problem the City of Victoria incorporated 2014 climate change projections into their Stormwater Master Plan (Victoria, 2018). This resulted in designers creating drain pipes, catch basins, and outlets that will be able to handle projected precipitation volumes. The city also created a Stormwater Utility in 2016 that created incentives for residents and businesses to use green infrastructure such as water permeable spaces (e.g. pavement) (Victoria, 2018). This reduces how much water actually reaches stormwater systems and can let the rain reach the ground and recharge aquifers.

SOLAR CITY PROGRAM | Recent unexpected and extreme weather events such as hurricanes and severe winter storms in the Atlantic region have triggered increased concern about the potential impacts of climate change. In Nova Scotia, climate change is expected to cause warmer temperatures, higher sea-levels, more frequent and severe storms, and flooding (Province of Nova Scotia, 2014). The city of Halifax has been taking actions to both mitigate and adapt to climate change. In an effort to mitigate climate change, the Halifax Regional Municipality created an award-winning Solar City Program in an effort to reduce their city's greenhouse gas (GHG) emissions and convert to clean energy sources (HRM, 2020). The Solar City Program offers property owners support, guidance and financing options to install Solar Air Heating, Solar Domestic Water Heating, and Solar photo-voltaic (HRM, 2020). The Solar Program in Halifax is part of the reason why Nova Scotia is well on their way to reaching their goal of sourcing 40% of their electricity from renewable energy sources by 2020 (Province of Nova Scotia, 2019).

Halifax recognizes that they still have more work to do in order to prepare their communities for climate change (HalifACT2050, 2019). As a result, they have launched the HalifACT2050: Acting on Climate Change Together project aimed to create a long-term climate change action plan. The HalifACT2050 plan will guide efforts to continue reducing GHG emissions and help communities adapt by raising awareness of climate change and helping people prepare to and adapt to climate change.

WHAT'S NEXT?

In guidebook 4, you worked with community leaders and members to identify, discuss, and prioritize solutions for adapting to climate change and determining the feasibility of those solutions for your community. You now have a list of priority adaptation solutions that are ready to be implemented.

In guidebook 5, you will work on developing an action plan to implement the climate change adaptation solutions that were identified in guidebook 4. This will include activities and suggestions to ensure ongoing community participation during the implementation process and for celebrating your achievements thus far!

✅ GUIDEBOOK 4 CHECKLIST

The project coordinator is the one responsible for coordinating the following checklist of tasks. It is their responsibility to ensure meetings with the proper groups takes place. The working group should assist the coordinator as much as possible as they are the group driving the project.

The checklist below may be useful in ensuring the tasks outlined in this guidebook are accomplished. Remember, these Guidebooks provide suggestions on how to accomplish tasks but your community may have other methods that work best.

Task	Recommended to complete task	Progress
Revisit the Influence Diagrams	Working Group	
Revisit the Scenarios	Working Group	
Identifying Feasible Solutions	Leadership	
Rewrite the List of Selections (focusing on feasibly solutions)	Coordinator	
Set Priorities for Climate Change Planning	Community	
Set Priorities for Climate Change Planning	Elders	
Set Priorities for Climate Change planning	Youth	
Create comprehensive list of the adaptation solutions priorities	Coordinator	

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