

Guide to Writing Community Climate Change Adaptation Case Studies



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About the Clean Air Partnership

The Clean Air Partnership (CAP) is a registered charity that works in partnership to promote and coordinate actions to improve local air quality and reduce greenhouse gases for healthy communities. Our applied research on municipal policies strives to broaden and improve access to public policy debate on air pollution and climate change issues. Our social marketing programs focus on energy conservation activities that motivate individuals, government, schools, utilities, businesses and communities to take action to clean the air.

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About this Guide

This guide is for people who are writing or planning to write community climate change adaptation case studies.

The writers of these case studies are likely to be staff of non-governmental organizations or local governments, university- or government-based researchers, or others. Some will have been involved directly in the adaptation process about which they are writing; others will be new to the community and the process.

The audience for community adaptation case studies may be elected officials, local government staff, community activists, or others who want information about how communities elsewhere are tackling climate change (referred to as “practitioners” in this guide). Practitioners need practical information that can help them make decisions about how to develop their own adaptation processes.

This guide is intended to help writers produce case studies that meet these needs. The guide provides a detailed overview of different types of community adaptation case studies, including introductory (“gateway”) case studies, worked examples, process case studies, learning histories and comparative case studies. The guide also outlines key considerations for scoping a case study, steps for writing a case study, and challenges and benefits associated with case study writing.

Writing community adaptation and other case studies requires many of the same organizational, investigative and communication skills as other types of writing. We assume that those looking to write community adaptation case studies have many of these skills already. However, there are several publications available that provide guidance to case study writing for newer writers. A few of these publications are referenced in the resource list in Appendix A.

Some writers of community adaptation case studies will already be knowledgeable about climate change impacts and adaptation. Others will be new to the field. This guide cannot provide an introduction to the field of adaptation, but Appendix A also includes some resources that will help writers become more knowledgeable about this area.

Introduction

Most Canadians are aware that climate change is underway and that we are already beginning to feel its effects. We realize that in addition to reducing greenhouse gas emissions, we need to better understand impacts of more severe storms, sea level rise, heat waves, more frequent droughts, thawing permafrost and other climate variables on our communities. Local governments and community leaders also want to know what practical actions they can take to adapt to climate change – to reduce the risks and impacts and create more resilient communities.

There are a growing number of resources to help in this process. These include: national, regional, local and sectoral assessments of the likely impacts of climate change; manuals for climate change risk assessment; and guides for local community adaptation. Many of these resources include short case studies to illustrate adaptation measures being implemented in practice. Case studies are also being produced as stand-alone reports, made available electronically, in print, or in presentations at workshops and conferences.

In case studies of community climate change adaptation, writers describe and analyze the real-life experiences of community members and local governments and agencies that have begun to adapt to climate change. Case studies provide observations and reflections on these experiences to help readers understand the real life processes of taking action to adapt to climate change (as opposed to theories about how it should happen).

These case studies have many benefits. They can:

- Motivate communities and local governments that have not yet committed to action with examples of others who have shown such leadership
- Demonstrate a variety of possible approaches to assessing community vulnerabilities and adapting to climate change
- Help identify barriers to climate change adaptation and sometimes demonstrate innovative ways to get around these barriers
- Increase our ability to use a variety of tools that have recently become available for assessing risk and vulnerability and undertaking adaptation planning.

Community adaptation case studies can make a major contribution to the knowledge needed to move the adaptation agenda and create more resilient communities.

Types of Community Adaptation Case Studies

There are five main types of case studies of community climate change adaptation, as summarized in the table on the page 7. Each type serves a somewhat different purpose and each has benefits and limitations, described below.

1. Introductory ("Gateway") Case Studies

Gateway studies introduce readers to new information about communities taking action on adaptation, meant to encourage them to undertake a similar journey. Many of the case studies produced in the last decade are gateway studies. They offer relatively short descriptions of individual community processes and are often found within a larger report.

Example: Natural Resources Canada included eleven short case studies, such as the one shown below, in [Adapting to Climate Change: An Introduction for Canadian Municipalities](#). The case studies illustrate adaptation actions in six regions of the country. Some of the case studies outline general community and municipality adaptation planning while others focus on efforts to reduce specific climate change impacts.



Clyde River's Community Climate Change Adaptation Plan
 Planning in remote northern communities presents unique challenges

Canada's North is experiencing rapid changes in climate. Northern residents have noticed thinner sea ice, melting of ground ice, rising sea levels, increases in the frequency and intensity of storm events, and a change in coastal erosion rates due to reduced ice cover. The impact of these changes on communities spurred intergovernmental cooperation and engagement of a professional organization to undertake climate change adaptation planning in Nunavut.

In 2006, a three-day workshop was held in Iqaluit, the territorial capital, to launch a new intergovernmental / interagency climate change adaptation planning initiative for Nunavut. One key recommendation of the workshop was to pilot small-scale, integrated adaptation planning processes in two Nunavut communities. Representatives from the hamlets of Clyde River and Hall Beach offered to be part of the initiative. These pilot projects were designed to be iterative, collaborative processes involving community members (including school students and local decision-makers), scientists and professional planners. Local and traditional knowledge and expertise were recognized to be of paramount importance.

One outcome of the Clyde River pilot project was an action-oriented climate change community adaptation plan. Its development involved the Canadian Institute of Planners, which provided two volunteer professionals to help coordinate the planning process, a science team led by Natural Resources Canada (NRC) researchers, Itaq Heritage and Research Centre (an Inuit-run research centre in Clyde River) and the Government of Nunavut. As with all new collaborations, there were a number of challenges to be overcome in achieving an effective working process.

CLIMATE CHANGE IMPACTS
 Clyde River is a hamlet of 900 people on the north coast of Clyde Inlet on northeast Baffin Island, Nunavut. The community is surrounded by mountains, dramatic cliffs, deep fjords and rolling tundra. The rapidly warming arctic climate has residents concerned about their safety. Two impacts of particular concern are melting permafrost, which is threatening the integrity of the town's roads, buildings and other critical infrastructure, and unpredictable sea ice, which is making traditional hunting and travelling routes more dangerous.

The planning involved community workshops and in-person interviews, with the Itaq Heritage and Research Centre playing a key coordination role. The final product was a concrete plan listing 38 distinct actions for adapting to specific risks identified by the community. The actions were organized on the basis of which partner (e.g. Hamlet Council, Itaq Heritage and Research Centre, the Hunters and Trappers Association or other organizations) would be best positioned to implement the action.

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CHAPTER 3 — CASE STUDIES



ADAPTATION ACTION PLAN
 A succinct community adaptation plan identified 38 actions, the climate change issue that each addresses, the intended result of the action, and the resources the community could utilize to complete each action. The following is one example.

ACTION	RESULTS
Provide broader coverage of communication equipment outside of town for FRS, CB and HF radio.	Residents able to obtain and pass on information on travel and/or conditions in well as emergency situations. Need for quieter and better sharing of information.
Monitor ice and travel conditions. Increased risk to personal safety. Need for quieter and better sharing of information.	Residents able to obtain and pass on information on travel and/or conditions in well as emergency situations. Need for quieter and better sharing of information.

SCIENTIFIC FIELDWORK
 NRC is undertaking scientific research in Nunavut that is relevant at the regional and local levels. It includes work on permafrost degradation, landscape hazards, sea level rise, coastal erosion and freshwater supply. The findings are being integrated with traditional knowledge to improve community planning capacity in Nunavut. This research is being conducted in collaboration with several Canadian universities, the Itaq Heritage and Research Centre and the Nunavut Research Institute.

The lessons learned from the Clyde River pilot project, combined with similar work in Hall Beach, helped lead to the establishment of the Nunavut Climate Change Partnership. This multi-year collaborative effort, funded by Indian and Northern Affairs Canada, will develop community-based adaptation action plans in five additional communities (Iqaluit, Arviut, Whale Cove, Kugluktuk and Cambridge Bay), prepare a planning workbook for use by other Nunavut communities, produce new scientific information on sea-level change, permafrost landscape hazards and freshwater supply, and create tools to collect, publish, share and communicate knowledge about climate change adaptation.

The Clyde River Adaptation Action Plan, the first of its kind in the Canadian Arctic, provides a useful starting point. The Clyde River Council supports continued efforts for working together to address climate change issues.

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Uses: Gateway case studies are valuable for illustrating the range of community adaptation processes. They can motivate community leaders to work on adaptation themselves. They can alert practitioners to new approaches that might benefit their communities and provide contact information and references for more information.

Limitations: Lack of detail and information about barriers to action limits the usefulness of these case studies for replicating adaptation strategies.

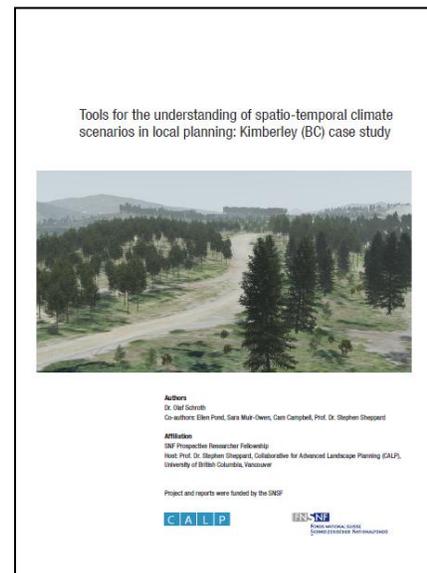
2. Worked Examples

Worked examples are used to demonstrate the experience of communities in using tools which have been developed to aid in impacts assessment and adaptation planning, including:

- Web-based tools for analyzing local climate trends and projections
- Climate change risk assessment and risk management tools
- Visualization tools, such as maps, to support community engagement
- Step-by-step guides for community and municipal adaptation processes.

Example: The [Public Infrastructure Engineering Vulnerability Committee](#) of Engineers Canada has posted on their website several case studies of the application of their risk assessment tool for evaluating the potential impacts of climate change on different types of public infrastructure (water treatment, sewage treatment, roads, bridges, buildings).

Example: UBC's Collaborative for Advanced Landscape Planning recently published the guide [Local Climate Change Visioning and Landscape Visualizations](#), which included a short case study of how the visioning process was used in the City of Kimberley. (The 2-page case study was based on a longer version published in 2009 and shown on the right.)



Uses: Worked examples illustrate concretely how others have interpreted and used a generic tool and how it contributed to adaptation processes. This can improve practitioner insight into how to use the tool as well as its different applications.

Limitations: The value of worked examples that are written by creators of a tool may be limited by the reluctance of the tool's creators to admit difficulties or ambiguities in its use.

3. Process Case Studies

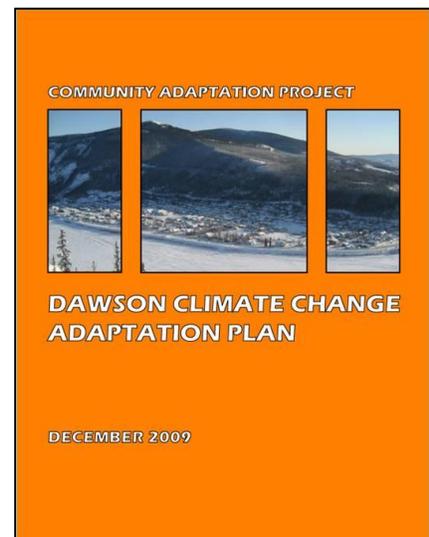
These case studies focus on the processes that communities and local governments use to assess their vulnerability to climate change and/or develop adaptation plans and programs. There is a gradual increase in the number of process case studies as more communities and organizations undertake vulnerability assessments and adaptation planning. Typically, these case studies describe:

- Community context
- Climate changes expected in the region
- Ways in which the community is vulnerable
- How the adaptation project developed and who was involved
- What results or recommendations stemmed from the process
- Actions taken to date, and future plans.

More detailed process case studies may also include information on:

- Circumstances that led to development of the adaptation project
- Strategies used to engage stakeholders and community members
- Challenges and barriers to the process and how they were dealt with
- Resources of various kinds that were mobilized
- Limitations of the project.

Example: Northern Climate Exchange (NCE) has worked on adaptation planning with several communities in Canada's North. The NCE website includes adaptation plans for three of these communities as well as a description of one adaptation planning process which has not yet resulted in a plan. The completed plans incorporate good descriptions of the adaptation planning process in each community.



Uses: Process case studies can help practitioners understand the ways in which different communities have prepared to tackle climate change and become more resilient. These studies provide enough information that the processes they describe can be replicated at least in part by other communities.

Limitations: It is not easy to achieve a balance between enough and too much detail in these case studies, making some too superficial and others indiscriminately detailed and cumbersome.

4. Learning Histories

A learning history (or “lessons learned”) case study discusses the strengths and weaknesses of a community assessment and planning process, what went right, what did not, and why. It will try to draw clear lessons from the experience for anticipated readers. An emphasis on what was learned from the community adaptation process being studied differentiates learning histories from process case studies.

Ideally, a learning history will invite the participants in an adaptation process to reflect on what they have learned from the experience, and what they would do differently or advise others to do differently.

Example: The Clean Air Partnership recently produced [Climate Change Adaptation in the City of Toronto: Lessons for Great Lakes Communities](#), a case study of the adaptation process in the City of Toronto. The case study had as its goal producing “Lessons for Great Lakes Communities” from the experience of the City. Consequently, the report described and highlighted a number of specific lessons from the adaptation process, including the following:

LESSONS
<ul style="list-style-type: none">▪ It takes time and a concerted “inreach” effort to have the key departments understand what adaptation is, why it is necessary, and to get them to incorporate climate change into their thinking and planning. An explicit strategy of communications and engagement with staff is advisable.▪ Take advantage of the growing number of external conferences, workshops, seminars and webinars to introduce staff to issues related to climate change impacts and adaptation.▪ Organize internal workshops and learning events to get staff familiar with the concept of climate change impacts and adaptation.▪ Ensure availability of on-line resource/reference collections to become more informed about existing knowledge and best practices (See Toronto’s Climate Change Adaptation Reference Collection.)

Uses: Learning histories are potentially valuable resources because they *evaluate* real adaptation processes, describing their strengths and limitations, and drawing explicit lessons for practitioners who may, after reading a case study, be better able to reproduce successful aspects of an adaptation process and avoid the pitfalls.

Limitations: The challenges of learning histories include the difficulty bringing participants together to reflect on the process and the nature of the analysis. An added challenge is that many participants are happy to say what went well, but may be more reluctant to discuss problems or limitations of an adaptation process in a case study meant for publication.

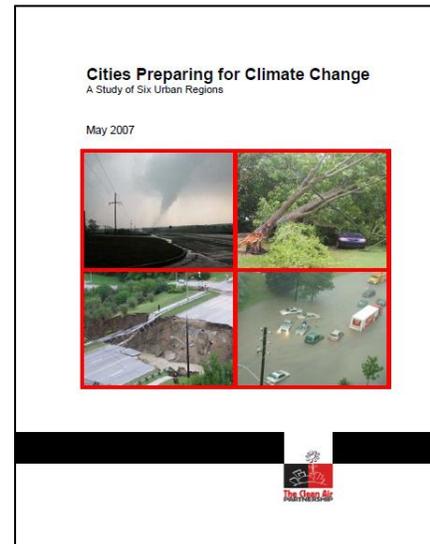
5. Comparative Case Studies

Comparative case studies compare and contrast processes in two or more communities and usually draw some generalizations about characteristics of effective adaptation processes that are harder to make from a single case.

Example: In 2007, the Clean Air Partnership produced **Cities Preparing for Climate Change: A Study of Six Urban Regions**, a comparative case study of six urban regions – in Canada, the US and the UK – that had embarked on climate change vulnerability assessment and adaptation planning. Based on the detailed information gathered, the study made a number of generalizations about what contributes to both successful and unsuccessful adaptation processes in large, predominantly urban regions.

Uses: Comparative case studies provide practitioners with a variety of different experiences with adaptation in a single report. The comparison that is part of such a case study can be very helpful to practitioners in identifying alternative strategies that might be most useful for their own communities.

Limitations: To date, there have been relatively few comparative case studies of community adaptation aimed at practitioners. The time and resources required to research and write such case studies are onerous. Academics have produced some comparative case studies, especially about adaptation in developing countries, but tend to write for peer reviewed journals in a style and language that may be inaccessible to practitioners.



Summary Table: Five Types of Community Adaptation Case Studies

Type	Description	Purposes/Uses	Examples
Introductory ("Gateway") case studies	Short descriptions (usually 1½ - 2 pages) of adaptation processes typically found in a longer report, such as a national or regional assessment or an adaptation guide	Motivates practitioners by showing that others have taken action Provides examples that alert practitioners to different adaptation processes	Case studies in: <u><i>From Impacts to Adaptation: Canada in a Changing Climate</i></u> <u><i>Adapting to Climate Change: An Introduction for Canadian Municipalities</i></u>
Worked examples	Step-by-step descriptions of how a community / local government used a particular tool for impact assessment and/or adaptation planning	Practical detail can help practitioners in their own application of the tool	<u><i>Adapting to Climate Change: A Risk-based Guide for Local Governments in British Columbia</i></u> Climate change risk assessments of public infrastructure on the <u>Engineers Canada</u> website
Process case studies	Detailed descriptions of how a community is undertaking impact assessment, adaptation planning and/or implementation	Can help practitioners understand and potentially replicate adaptation approaches taken by others May save practitioners time and effort "reinventing the wheel"	Reports from the <u>Columbia Basin Trust</u> and <u>Northern Climate Exchange</u> about adaptation processes in several communities Case studies of collaborative climate change impacts research projects on the <u>Canadian Institute of Planners</u> website
Learning histories ("Lessons learned" case studies)	Evaluations of what participants learned in an adaptation process, and recommendations for others	Helps practitioners understand how they might reproduce the strengths of specific adaptation processes, and avoid the pitfalls	<u><i>Climate Change Adaptation in the City of Toronto: Lessons for Great Lakes Communities</i></u>
Comparative or multiple case studies	Case studies that compare adaptation processes in two or more communities, and generalize about successful (and not-so-successful) approaches	Provides practitioners with a suite of examples that can be helpful for identifying strategies that will be most useful in their own communities	<u><i>Cities Preparing for Climate Change: A Study of Six Urban Regions</i></u> <u><i>Planning Climate Resilient Cities: Early Lessons from Early Adopters</i></u> (a more academic example)

Scoping the Case Study

1. Defining the Type of Case Study to Write

The type of case study that will be most useful will depend on the specific audience of practitioners that the study is intended to reach. For example:

- If the case study is intended to show decision-makers such as elected officials or department heads that it is important and possible to protect against climate change impacts, then brief gateway case studies of what is being done by leading communities are likely to be the most appropriate option.
- If the case study is meant for staff in local government or other community organizations that are responsible for implementing adaptation processes, then a more detailed level of description and analysis will be needed and in-depth process case studies or learning histories may be of greatest value.
- If practitioners need to be encouraged to use specific tools for climate change risk assessment and risk management, then worked examples may be the most appropriate type of case study.
- If the case study is meant to help communities understand options for conducting a vulnerability assessment, then a comparative case study of several communities who have conducted such assessments may prove to be most useful.

2. Choosing Cases to Study

If the case study writer has several possible cases to choose from, then he or she may wish to consider the following to guide the selection:

- Uniqueness of the adaptation process
- Outstanding leadership
- Location, size or economic characteristics of candidate communities
- Climate change impacts of concern
- Level of public/community involvement
- Successes achieved
- Duration (longer duration processes may provide more useful information)
- Whether other studies have been done of the same adaptation process.

3. Identifying a Focus

Many adaptation processes are too complex to describe in their entirety. It may be easier to gather information, analyze and write a case study if the writer focuses more narrowly. The writer might choose to focus on one or more of the following:

- The stages and timeline of a community adaptation process
- Processes that communities have established to assess and avoid impacts of specific hazards such as sea level rise, flooding, heat or drought
- Steps that municipalities have taken to integrate climate change into infrastructure planning and the results
- How science has been used and scientists participated in a community adaptation process
- Ways in which adaptation leaders communicate with and engage members of the community.

It will be particularly important for the authors of a series of case studies, or a comparative case study to clearly articulate the focus of their work in advance, and establish a set of common themes, questions or headings to guide the research and writing. Appendix B contains a sample case study outline used by Natural Resources Canada for its municipal gateway case studies. Appendix C provides a list of potential questions that a case study might address.

4. Identifying Authors and Other Contributors to the Case Study

Case studies can be written by participants in (insiders), or by outsiders to an adaptation process.

The knowledge of insiders who have participated in an adaptation process is crucial for a case study. Insiders will have a wealth of information that is available nowhere else.

Outsiders can also add value to a case study. They may be able to bring a wider perspective to a case study, especially if they have investigated adaptation processes in other communities. They may be better situated than insiders to write about barriers that arise as a result of organizational structures and culture, or historic conflicts within a community.

Writers who are insiders might take advantage of the insights of knowledgeable outsiders by consulting them when planning and drafting a case study. Outsiders will have to identify and interview key insiders as part of the research process, and should provide them with opportunities to review drafts of the case study to ensure its accuracy and as a check on interpretation.

What Practitioners Look For in Adaptation Case Studies

Several common themes emerged in a recent informal survey to ask practitioners what information they look for in a community adaptation case study. These were further articulated during a webinar on [Community Adaptation Case Studies](#) for Canada's six Regional Adaptation Collaboratives and are outlined below:

<i>Where does the case study take place?</i>	<ul style="list-style-type: none"> ▪ Location ▪ Social and economic context ▪ Natural features
<i>Why did the community start working on adaptation?</i>	<ul style="list-style-type: none"> ▪ Champion(s) ▪ High level of awareness ▪ Extreme weather event ▪ Legal requirements ▪ Long-term investment decisions ▪ Availability of funding
<i>Who was involved and how?</i>	<ul style="list-style-type: none"> ▪ Initiators ▪ Leaders ▪ Participants ▪ Funders ▪ Climate experts ▪ Contacts for more information
<i>How did the process develop?</i>	<ul style="list-style-type: none"> ▪ Organizational structures ▪ Learning and engagement activities and materials ▪ Climate information and impact resources used ▪ Processes to assess climate change vulnerabilities and risks ▪ Decision processes and criteria used to select actions ▪ Workplan, timetable and cost
<i>What were the initial results?</i>	<p>What?</p> <ul style="list-style-type: none"> ▪ Worked in the process (and what could be improved) ▪ Enabled actions ▪ Barriers to action arose ▪ Goals and actions were selected ▪ Plans and timetables were developed ▪ Actions have already been implemented ▪ Further actions are planned for the future ▪ Is the monitoring process for implementation
<i>For longer term processes ...</i>	<ul style="list-style-type: none"> ▪ Did climate scenarios project actual changes? ▪ Were impacts accurately predicted? ▪ Were actions effective in reducing vulnerabilities/risks? ▪ Were actions adjusted in response to changing circumstances?

Steps for Writing an Adaptation Case Study

1. Identifying Sources of Information

There are a variety of potential sources of information that case study writers should consider, including:

- Documents
- Interviews
- Visual materials such as maps, charts, videos, photos
- Knowledge derived from participation by the author(s) in the process
- Conferences, workshops, and other events held as part of the adaptation process
- Questionnaires or surveys of participants in an adaptation process to gather information such as their views about the process.

The main sources of information are likely to be documents and interviews.

2. Collecting and Reviewing Documents

Although interviews will be very important for the case study, most authors will collect and review relevant documents first. The documents that are likely to be most relevant include:

- Descriptions of the adaptation process written by participating organizations
- Climate change information used by participants in the process
- Background reports, white papers, fact sheets or other materials used or developed in the process
- Vulnerability or risk assessments
- Minutes of Council or other meetings that discussed the issues
- Materials used in workshops or public meetings
- Reports of workshops or meetings
- Adaptation plans, if any, that resulted from the process.

Depending on the depth of the case study, the writer may also want to review scientific reports and academic articles relevant to the impacts and adaptation issues of concern to the community. These may help in evaluating the adaptation process being written about.

A process case study, learning history or comparative case study may involve the collection of a large amount of information that will require a well-organized system for cataloguing and retrieving materials.

3. Developing an Outline and Preparing a Preliminary Description

The document review should provide the writer with enough information to allow him or her to develop a preliminary outline or to revise one that was prepared previously. It will also be useful to write brief descriptions of what has been learned so far. The outline and descriptions will likely contain information on:

- The context of the case (community in which it is set; impacts of concern)
- When the adaptation process started and how long it has been going on
- Who is involved
- What's been done so far
- What more is planned for the future
- What appears to be unique about the case
- Who the key contacts appear to be.

Writing up a preliminary description will help the writer see the gaps in information in the available documents, and help formulate questions for key contacts.

4. Developing Interview Questions

Interview questions should not be about factual information that is publically available and that the writer should know before interviewing begins. (Though sometimes there is not much available documentation and the interviewer will have no choice but to ask basic factual questions.) If the interviewer already has a good grasp of the facts, then the interview questions can focus on:

- **What happened behind the scenes:** to get the project off the ground, to get decision-makers interested in the project, to develop the capacity of participants, and so on; and
- **The perceptions of participants** about how the process unfolded, barriers that arose, assessments of what went well and what didn't, and other information that is important, but unlikely to be included in available documents.

Because informants will have taken different roles in the adaptation process, some questions will vary. However, it can be useful to have some common questions for different informants, to gauge the extent to which perceptions of the process are shared or different.

The interviewer should hone questions to a manageable number that can be answered in an interview of an hour or so – maybe 10 to 12 main questions, with follow-up questions that might be needed to tease out important details.

Most questions will be open-ended and non-judgemental, inviting the informant to reflect on the process. For example:

- What motivated you to become and to stay involved?
- Who played key roles in the process, and how did they make a difference?
- How knowledgeable were participants in the process about climate change and its impacts at the beginning and how did this change over time? What more could be done to build the knowledge and capacity of participants?

5. Interviewing

Interviews can provide important information and perspectives for a case study that are available nowhere else. Even insiders writing a case study about in which they have participated can benefit from interviewing other participants. Some practical issues to consider when preparing to interview include:

Relationship Building: The interview often establishes – or reinforces – relationships that will continue by virtue of a common interest in community adaptation. This relationship will be off to a good start if the questions demonstrate that the interviewer has done their homework, and if he or she is clearly interested in the knowledge and views of informants. This doesn't mean avoiding challenging questions. But these should be put respectfully.

Meeting Face-to-Face: If possible, the interview should take place face-to-face, on the informant's turf. This can increase the comfort and openness of the informant. It is not a good idea to interview in coffee shops or other public places where there are too many potential distractions and interruptions, though sometimes this is unavoidable.

Recording the Interview: Some informants are uncomfortable and may be more reticent to speak openly when being recorded. Consequently most experienced case study writers settle for handwritten notes, though it is possible that they will fail to capture something that turns out to be important.

Individual vs. Group Interviews: An hour's interview with each of two people will usually give the interviewer more information than an hour's interview with two people together. However, interviews with more than one informant may provide an enhanced opportunity for discussion and new insights. Often the interviewer doesn't have a choice, particularly when interviewing local government staff, who may bring several people to an interview.

Questions in Advance: Sometimes informants will ask for the questions in advance. This could be a time-saver – the informant can reflect on the questions and gather necessary information ahead of time. But it may also indicate that there are some touchy issues that the informant is concerned about discussing. In this case, the interviewer may want to revisit potentially sensitive questions that could set off alarms.

At the End of the Interview:

- Ask the informant who else they think should be interviewed
- Ask for documents that are mentioned in the interview but that you haven't seen previously (and offer to keep the contents confidential if that is an issue)
- Ask the respondent if you can call or email with further questions of clarification if need be
- Offer to send a draft case study for informants to review and correct.

After Interviewing: It is good practice to find somewhere quiet and fill in notes that you didn't have time to complete during the interview. This is also a good time to identify questions that didn't get answered or new questions that occur to you and that you might ask in later interviews.

6. Analyzing and Writing the Case Study

The worked example may be the easiest case study to analyze and write, because it will logically follow the process suggested by the tool being used.

Although the analysis and writing of other types of community adaptation case studies can be more challenging, the task is much easier if the writer started the research with a specific focus and questions and has a clear sense of what the practitioner audience for the case study wants or needs to know.

Some writers find during their research, and especially during interviews, that important issues came up that they didn't expect, and that don't fit in a preconceived outline. The writer should be open to incorporating new themes and insights.

The academic literature describes several approaches to writing case studies, but the main approaches for community adaptation case studies are:

- Chronological narratives, or
- Description and analysis of themes (e.g. drivers of adaptation, characteristics of leadership, use and interpretation of science, barriers...).

Whichever approach is taken, the case study author will have to trawl back and forth between documents, interview notes and other materials to identify issues and answer key questions, gradually building up the evidence for each section of a narrative or each theme.

The case study author will also have to verify or "triangulate" key facts and interpretations by cross-checking materials. Several activities will contribute to this:

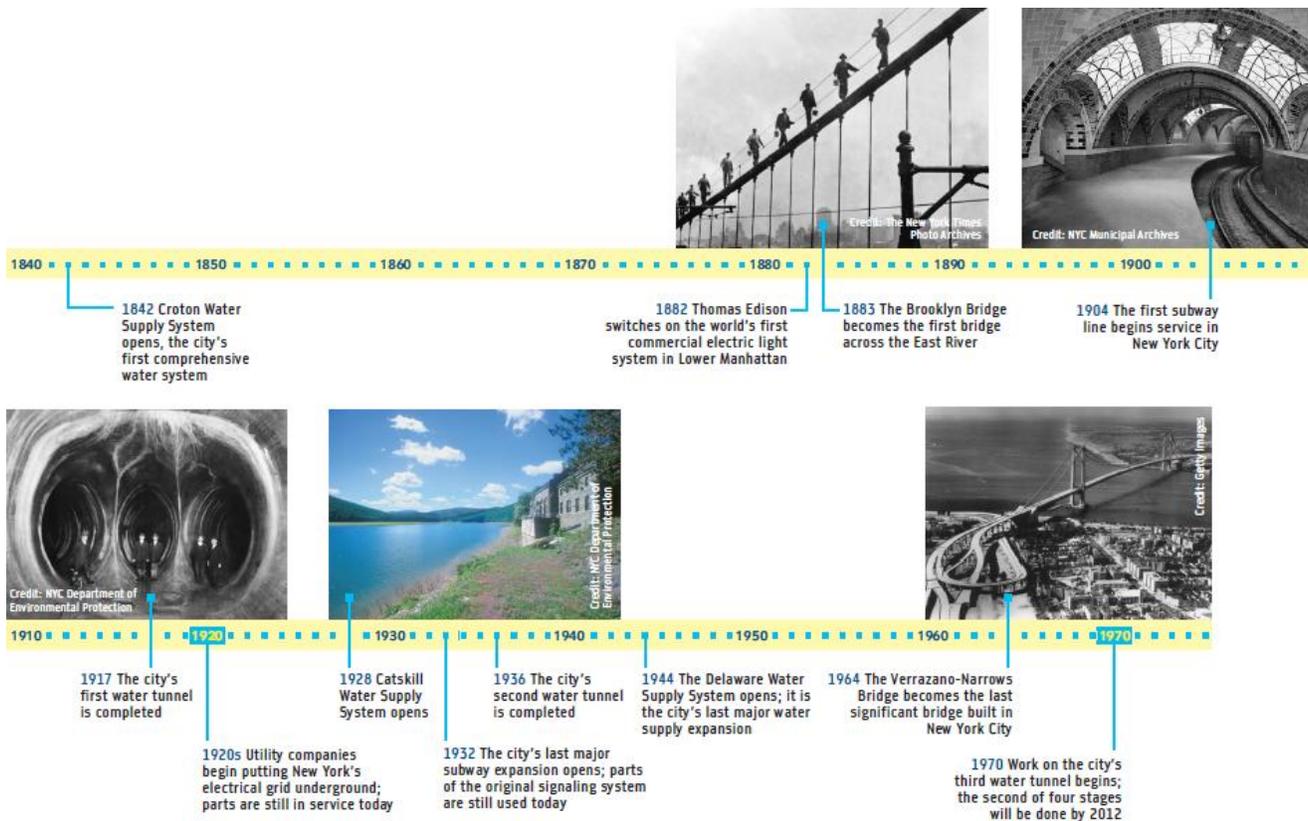
"There are few fixed formulas or cookbook recipes for analyzing and writing case studies."

Robert Yin, 2009

- Visiting the community where the adaptation work is taking place and meeting with people there
- Using a variety of information sources rather than relying on a single avenue of information
- Corroborating key statements made by interviewees and other commentators.

The following practical activities may help in solidifying an analysis, as well as providing good visuals to help the reader of the report:

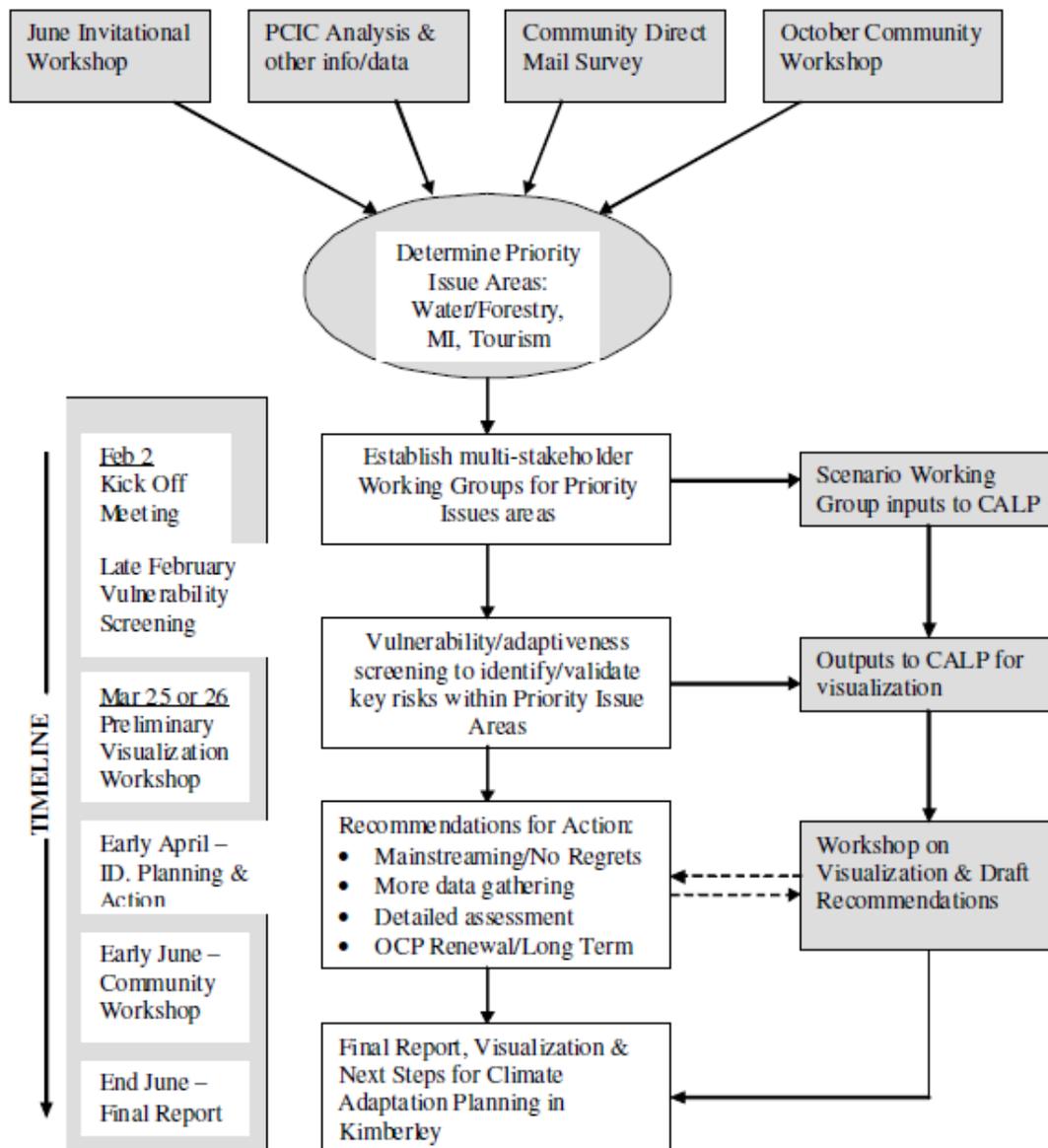
- Creating a **visual timeline** of activities and events in the community through to the creation and implementation of an adaptation plan. The following example doesn't provide the timeline for an adaptation process, although it was included in a report that addressed adaptation in New York City:



New York City Infrastructure Timeline

Source: *The City of New York (2007). PlaNYC: A Greener, Greater New York, p. 7.*

- Creating a **flowchart** or **influence diagram** which shows the development of various aspects of a case from the initial awareness of the potential impacts of climate change and the influences and activities that contributed at different points in the process. See an example on the next page:



Process for Screening of Climate Impacts and Identifying Recommendations for Adaptation

Source: Liepa, I. (2009). *Adapting to Climate Change in Kimberley, BC: Report and Recommendations* June 2009, p. 37.

7. Presentation

Just as with other types of publications, a case study will be more effective if it is written in accessible language and packaged in an attractive format. Some of the features that practitioners look for include:

- **Plain language:** avoidance of technical terms unlikely to be understood by the intended audience, and plain language explanation of terms that can't be avoided
- **A summary at the beginning of longer case studies:** to help decision-makers and other readers decide if they need to delve into the in-depth report
- **Informative heads and sub-heads:** to guide the reader to the content and to break up text
- **Use of tables:** to present and summarize information
- **Judicious use of bullet points:** to present information quickly
- **Attractive format:** including use of white space, colour, and callout boxes
- **Use of graphics** such as maps, charts and photos which appeal to visual learners and help all readers understand the context.

It takes more time and effort to prepare a case study with these features, but the end result will be a valuable contribution.

Challenges for Adaptation Case Study Writing

The writers of community adaptation case studies face some of the same challenges that arise for others who do other forms of practical research, including:

Time and Resources Needed: It takes considerable time and effort to write a good case study. It can also be costly, if the writer has to travel some distance to visit the community involved and do interviews. Researchers often have difficulty getting the time and/or the funding to do an in-depth case study.

Keeping the Case Study Current: Most adaptation case studies are written about ongoing processes. By the time some reports are released, some case studies are already outdated. Organizations that have a mandate and resources to support community adaptation should consider providing periodic updates to their case studies (as the Columbia Basin Trust has done).

Difficulty Balancing Depth of Information and Length of the Report: There is no doubt that practitioners and other readers prefer shorter, succinct reports. The challenge for the case study writer who has investigated and done a careful analysis of a complex community adaptation process is to keep the report short enough to keep readers engaged but not to oversimplify what happened.

Difficulty in Providing a Critical Perspective that is Helpful to Communities: The case study writer needs to be able to evaluate adaptation processes without being overly critical of communities that are the subject of the case study. The best way to accomplish this is to invite critical reflection on the process by its participants, and to convey it in their own words. This may not always be possible.

Benefits of Community Adaptation Case Studies

Community adaptation case studies have many benefits. They show that communities can tackle climate change adaptation in a variety of ways, often with creativity and aplomb. Community case studies value leaders and doers.

Case studies document real-life experiences. They can enrich and broaden an understanding of adaptation processes that often differ from those suggested by adaptation guides and other tools. They help identify barriers to climate change adaptation and sometimes demonstrate innovative ways to get around these barriers.

Case studies make a major contribution to the knowledge needed to move the adaptation agenda and create more resilient communities.

Appendix A: A Short List of Resources

For General Information on Adaptation:

Those case study writers who are new to climate change impacts and adaptation may want to familiarize themselves with the following resources:

- ***From Impacts to Adaptation: Canada in a Changing Climate*** (Lemmen, Warren and Lacroix, 2007)
- ***Adapting to Climate Change: An Introduction for Canadian Municipalities*** (Richardson, 2011)
- ***Changing Climate, Changing Communities: Guide and Workbook for Municipal Climate Adaptation*** (ICLEI, 2010)
- ***Cities Preparing for Climate Change: A Study of Six Urban Regions*** (Penney, 2007)
- The website for the ***Climate Change Impacts and Adaptation Division of Natural Resources Canada*** (<http://adaptation.nrcan.gc.ca>).

For More Information on Case Study Research and Writing:

Most of the existing guides for case study research and writing have been written by academic researchers and have limited relevance for the writer of community adaptation case studies meant for practitioners. However, the following resources may provide helpful information and examples:

- ***What do you want from a case study?*** (UKCIP, 2010) UKCIP also has a number of short case studies and worked examples on their website.
- ***Writing Guide: Case Studies*** (Colorado State University, no date)
- ***Preparing a Case Study: A Guide for Designing and Conducting a Case Study for Evaluation Input*** (Neale, Thapa and Boyce, 2006)
- The webpage ***Learning through Case Studies*** for LEAD International provides guidance intended for case study writers about sustainability processes.

Appendix B: Sample Case Study Outline

Natural Resources Canada uses the following Climate Change Adaptation Case Study Outline for its municipal gateway case studies.

- I. **Geographic context**
 - a. Briefly explain the nature and location of where the project was implemented (i.e. location, climate, geography, population, area in sq km, etc)
- II. **The threat**
 - a. What was the impetus for the adaptation project?
 - i. Was there a past extreme climatic event(s) that spurred the municipality to act? If so, what was the impact, cost and/or potential loss?
 - ii. Was a national or provincial report/policy published that instigated local action before a potentially catastrophic event?
- III. **Overview of the adaptation issue**
 - a. Why is the adaptation issue significant or important to the community?
 - b. Very briefly, what are the documented future climatic risks?
- IV. **The adopted approach**
 - a. What is the goal of the project? What are some of the main objectives?
 - b. What approach does the project take? (i.e. regulation, voluntary guidelines, subsidy, financial incentive, etc)
- V. **Preparing the project**
 - a. Explain how the project (plan, policy or action) was developed
 - b. Who was involved (local, provincial and national) in preparing the plan?
 - c. Was the community consulted? If so, how and at what stages in the process? Did their involvement influence implementation of the project?
 - d. What were the major challenges in developing the project?
 - e. What is the timeline for implementation/deliverables?
- VI. **Measuring the impact**
 - a. Is the impact of the plan/policy being measured?
 - b. What are the results on the ground to date?
 - c. What changes have been made, if any, based on results and feedback?
 - d. Is the project considered a success? By whom?
 - e. What does the project hope to accomplish in the future?
 - f. Has the project had any spinoffs (other communities adopting similar plans, etc)?
 - g. What are/were the major obstacles encountered?
- VII. **Lessons learned**
 - a. What lessons can be learned from this project?
 - b. What is the **single most important** lesson learned from this project?

Contact

The project lead's contact information, including name, title, phone, and email.

Appendix C: Questions a Case Study Could Address

- **What is the context in which the case takes place?** Background about the community itself; how climate change impact concerns arose... Photos and maps can be valuable aids in describing context.
- **What were drivers that led to work on adaptation?** Who provided leadership and how? Did a specific event or events precipitate the activity and if so how?
- **What were the objectives of the leaders of the process?** Were these clearly articulated?
- **How was the process organized?** Was it a community-based process or did it take place mostly within municipal government? Did it involve a workshop process; an ad hoc committee or dedicated task force; or some other form or organization?
- **Who did it include and how?** Did it involve community groups, environmental organizations, social service agencies, conservation authorities, representatives from provincial, territorial or federal government, academic researchers, consultants, others? How did participants come into the process and to what extent were they involved? Were there people or organizations with a stake in the process who didn't get involved and if not why not? Did anyone receive training to help in the process? If so what was it and was it helpful?
- **What kinds of communication and /or engagement strategies were employed?** Who were they targeted at? Were they effective?
- **What was done to assess vulnerability/impacts/risk?** Who was involved and how were they engaged in the process? Did they use information about climate trends and/or regional projections as part of the process and if so how did they get this information? What tools and other resources were used? Were there barriers to getting and using this information? How much time did the assessment process take? What were the strengths and shortcomings? Is the process of assessing vulnerability/impacts/risks ongoing, and if so, what more is planned?
- **How did participants in the process prioritize risks of concern** in order to begin planning adaptation?
- **How were adaptation options identified?** What criteria went into choosing options to pursue? To what extent were adaptation choices made because they provide other benefits to the community? What potentially appropriate options never made it on to the table and why not?

- **What has been done to implement adaptation to date?** Has there been any assessment / evaluation of the benefits of the adaptation process and if so, what were the results?
- **What further actions are planned?**
- **How long did various steps in the process take?**
- **How much did the process cost?**
- **What happened in the process that wasn't expected?** (Good or bad)
- **What kinds of barriers came up?** e.g. Who helped and who got in the way? How did they affect the process and to what extent were they overcome?
- **What did the participants in the process learn, and what would they do differently?** What additional lessons can the case study writer(s) suggest about the process? What advice would participants or the case study writer give to other communities from the experience?
- **Where can readers get further information?**