THE COST OF DOING NOTHING

MUNICIPAL TEMPLATE INSTRUCTIONS

READ BEFORE USING THE MUNICIPAL TEMPLATE
# TABLE OF CONTENTS

## INTRODUCTION
- A Toolbox For Building A Local Business Case For Adaptation 3
- About This Resource 3

## HOW TO USE THE CODN MUNICIPAL TEMPLATE
- Before Getting Started 4
- Adapting The CODN Municipal Template For Your Municipality 5

## SECTIONS INCLUDED IN THE CODN MUNICIPAL TEMPLATE
- Introduction 6
- Purpose 6
- Climate Change Impacts in a Municipal Context 6
- Re-Defining the Costs of Climate Change 6
- Local Impacts and Risks 7
- Eight National Impact Statement/Risk Sections 7
- Recommendations 9
- References 9

## NATIONAL IMPACT STATEMENTS

## KEY CONSIDERATIONS FOR DATA COLLECTION
- Where to Start 11
- Collaboration 11
- Data Management 12

## KEY NATIONAL AND SUBNATIONAL DATA SOURCES
- Climate Projection Timescales 13
- Dealing with Uncertainty 13
- Climate Indices 13

## OTHER RESOURCES FROM THE CODN TOOLBOX

2
INTRODUCTION

The Cost of Doing Nothing: A toolbox for building a local business case for adaptation

The Cost of Doing Nothing (CODN) toolbox provides municipal decision makers with guidance on collecting locally-relevant data, and weighing the costs of action vs. inaction. Resources included in the toolbox are designed to support municipalities in framing local data within a national and provincial/territorial context and examining the costs and impacts of climate change across a number of climate change hazards and sectors.

The toolbox is made up of a Primer Document (which provides a clear rationale along with background information), an editable Municipal Template which is meant to be used with the instructions provided in this document, a Data Collection Tracking Tool, two Case Studies, and two Appendices. Together, these resources provide municipalities the tools to assess the costs of doing nothing within a local context, and makes building a business case for climate adaptation as easy and simple as possible. All resources within the toolbox can be found on the CODN webpage.

About this resource

This resource provides important information for municipalities who are ready to write their own cost of doing nothing report using the Municipal Template. The goal of this resource is to ensure municipalities have all the information they need to effectively use the template. In this resource, you will find:

- A list of tasks to complete before using the template to build a local business case for adaptation
- The steps to follow in order to use the Municipal Template for your municipality to write a local cost of doing nothing report
- An overview of what content is included in the Municipal Template
- Guidance on collecting national, subnational, and local data
- Recommendations and key considerations to keep in mind as municipalities develop their own CODN reports

The development of this template was guided by local expertise and experience, as well as key learnings from collaboration with municipalities who have already begun to assess the local costs of climate change. Accordingly, a number of important considerations and recommendations are described below for users of these resources to review.
HOW TO USE THE CODN MUNICIPAL TEMPLATE

Before getting started

Prior to using the Municipal Template to build a local business case for adaptation, we recommend completing the following key tasks.

✔ Read the CODN Primer Document

The Primer Document, which can be found on the CODN webpage, sets the foundation and overall context for assessing the cost of doing nothing in response to climate change at the municipal level. It defines what the costs and impacts of climate change look like for municipalities across Canada, why we need to re-define the costs of climate change, and provides an overview of the CODN toolbox and associated resources.

✔ Identify key local impacts and hazards of climate change

The first step in building a business case for adaptation is to review local impacts and hazards of climate change identified in your local vulnerability and risk assessment to ensure it is up-to-date with no gaps. Ideally, this should be a participatory and collaborative process that engages meaningfully with a diversity of partners and stakeholders.

The CODN toolbox refers to eight national impact statements (i.e. a subset of impacts that are likely to be felt by municipalities across Canada) which can be used as a starting point during their local risk and vulnerability assessments. Contact us to learn more about identifying local impacts and hazards of climate change in your community.

✔ Identify what data will be collected for your cost of doing nothing report, and who will be involved in the data collection

While the Municipal Template provides climate impact and cost data for national impact statements, it is important for municipalities to supplement this with local data to truly build a local business case for adaptation. Data collection usually takes time and requires relationship building with data holders.

Municipalities will need to identify what local data to collect based on priorities, staff capacity, available resources, local precedent, supporting policies, etc. as well as who will be involved in the data collection. See the “Key Considerations for Data Collection” section below for more guidance on collecting data to build a local business case for adaptation. Use the Data Collection Tracking Tool to gather as much local data as is feasible to include it in your report, and refer to Appendix B for information on where to source local cost data.

Local cost data is the most compelling part of the business case! Take the time to collect as much as is feasible.
Adapting the CODN municipal template for your municipality

The Municipal Template has been designed to be copied, edited, and customized by municipalities who would like to build a local business case for adaptation. Complete the following steps once you have finished reading the Primer Document, these instructions, and are ready to start writing your own cost of doing nothing report.

✔ Save a copy of the CODN Municipal Template on your computer

In order to edit the template, you will need to download and save a copy on your computer. The Municipal Template is provided as a Word Document in order to make it as simple as possible for municipalities to edit and customize. The template itself includes headings and pre-populated content.

✔ Read content in the comment boxes

Please pay special attention to the comment boxes in the margins of the template document. Comments have been used to provide additional context, key tips, and guidance on the use of the template for specific sections. To view this information in the comment boxes, click on the comment icon and then click on the comment text to expand the box and see additional information. Once you have read the comment, you can delete the comment box by clicking on the check mark in the upper right corner.

✔ Identify which national impact statements are relevant to your municipality and will be used in your report and delete the rest

The Municipal Template includes information for all eight national impact statements included in the CODN toolbox; however, chances are that these will not all be relevant to your municipality. Only keep content for the national impact statements relevant to hazards identified in your local vulnerability and risk assessment and delete the rest including all associated content.

✔ Add local impact and cost data to the template and edit all other content as needed

To complete the report, add available and relevant local impact and cost data that will help build a local business case for adaptation for your municipality. Feel free to include case studies, examples, news articles etc. At this stage, you will likely also want to edit other content throughout the report as needed.

Impact statements

Impact statements are used to understand the effects of projected climatic threats on communities including their socioeconomic, built, and natural systems. Impact statements are intended to capture climatic threats (e.g. increase in extreme rain events), the outcome of this climatic threat (e.g. overland flooding), and consequences associated with this outcome (e.g. damage to buildings and homes).
SECTIONS INCLUDED IN THE CODN MUNICIPAL TEMPLATE

Introduction
A short introduction on the mounting costs incurred by municipalities across Canada as a result of climate change is included in the template in order to provide context to the report. Content should be modified as needed.

Purpose
This section of the template includes content that explains the rationale, goals, and objectives for assessing the costs and impacts of climate change within a local context. Moreover, this section explains how the collection of locally-relevant data can be used to guide decision-making and increase the buy-in for climate adaptation. This section provides an overview of how the report is structured and how readers can use the findings presented in it. Content is included to offer a starting point and should be modified to establish a link between the report and existing municipal priorities.

Climate change impacts in a municipal context
This foundational section of the template includes content that provides a high-level overview of climatic hazards and impacts already affecting communities in Canada. This section includes national and subnational data to provide an overview of cumulative costs and impacts of climate change which can help contextualize the risks to your community. Content is included to provide a starting point and should be modified to reflect the key impacts relevant to your community.

Re-defining the costs of climate change
This section of the template is used to describe how costs are being defined
and assessed in your report. Costs are defined beyond the financial implications of climate change impacts and include non-market costs like impacts to social and natural systems. Content is also included to frame both direct and indirect costs within the climate change context. Content is included as a starting point and should be modified to reflect the costs being examined in your community.

Local impacts and risks

The CODN toolbox has been developed around the eight overarching impact statements (these are listed in the national impact statement box within this document). In order to simplify the language used in the CODN Municipal Template, the impact statements are referred to as risks.

This section of the template introduces these eight risks and lists them. As mentioned previously, chances are that these risks will not all be relevant to your municipality. Only keep those relevant to the key impacts and hazards identified in your local vulnerability and risk assessment, delete the rest including all associated content, and re-number the risks accordingly. A brief description of the local vulnerability and risk assessment process that was used to identify and prioritize the impact statements/risks should also be included along with the appropriate references. Please feel free to contact us to learn more about identifying local impacts and hazards of climate change in your community.

Eight national impact statement/risk sections

National and subnational costing data, as well as recent examples of climate change costs incurred by Canadian municipalities related to each risk are examined in detail in the content provided in the eight risk sections of the Municipal Template. This content forms the backbone of the Municipal Template and provides key information along with recommendations municipalities can use to build their own local business case for adaptation in relation to the risks.

The Municipal Template is designed to allow municipalities to choose which risks are the most relevant in their context, include these in their own cost of doing nothing report, and delete irrelevant risks and associated content. As such, certain subsections and associated content are repeated as necessary.

Information included in each of the eight risk sections of the Municipal Template includes:

- What to know about the risks
- The impacts of the risks
- Costs related to the risks

What to know about the risks

This content provides a high-level overview of each risk and includes national and subnational data. A box is provided for municipalities to add local data (e.g. projections) related to each risk. It is important for municipalities to add as much local data as is feasible here in order to make the link between national and local climate risks, and demonstrate that what is happening nationally is also happening locally.

Local data that municipalities can include in this section can be found on [www.climatedata.ca](http://www.climatedata.ca) and [www.climateatlas.ca](http://www.climateatlas.ca). Climate data and indices (e.g., wind speed, rainfall, maximum temperature, heat wave duration etc.) related to past local experiences and historic events can also be included here to help set the context. More information and guidance on using
climate indices is included in this document.

The impacts of the risks

This section provides an overview of the consequences related to each risk. Once again, national and subnational content is included, and a box provides space for municipalities to add information about the local consequences or impact statements related to each risk.

Local impact statements related to each risk should be added in the box in this section, along with the associated risk rating (i.e. low risk, medium risk, high risk, and very high risk). We recommend using ICLEI Canada’s Building Adaptive and Resilient Communities (BARC) framework in order to identify local impact statements through a collaborative process. The vulnerability and risk assessment is a key step within the BARC framework, and allows municipalities to identify local risks and vulnerabilities to climate change threats.

A second box is provided in this section for municipalities to add examples of local and historic events/impacts related to each risk. Ask yourself: what climate change impacts has your community already experienced? Including examples helps ground climate change risks (e.g., increased frequency of extreme precipitation events) in reality and lived experience (e.g., heavy rains in April 2017 triggered a mudslide and flooded eight streets and a commercial plaza).

Costs related to the risks

This section of the template provides national and subnational cost information for each risk, and provides a box for municipalities to add their own local cost data. Local cost data is the most important content for building a business case for climate adaptation.

Use the Data Collection Tracking Tool and take the time to collect as much local data as is feasible for each risk and include it in this section of the template. We recommend using simple headings or bullet points to list local cost data in a simple and compelling way.

The collection of local cost data related to historic events can provide key insight on how your community has fared in the past regarding a wide range of climate hazards (e.g., extreme precipitation, heat events, extreme weather events etc.).
will be necessary to identify the types of data and identify which municipal departments or external stakeholders are likely to have and share this information.

Data collected from municipal departments, such as the cost of clean-up, 311 calls reporting flooding, and damage to infrastructure or natural assets can be used to establish baseline and ground-truth projections. Public health departments can also provide data on the human physical and mental health costs of climate impacts.

Insurance institutions, such as the Insurance Bureau of Canada, and the Intact Centre on Climate Change can also provide local event-based data on insurance claims following extreme events such as flooding, extreme storms, and other natural disasters. This type of data can assist in the assessment of the cost of previous climactic events and can frame adaptation measures in light of projected climate change.

Refer to the list of potential local data sources provided in Appendix B for more information on potential sources of local cost data for each of the eight risks included in the template.

Also consider using cost examples from other municipalities in this section to support your local data.

**Recommendations**

This section of the template should be adapted to outline the recommendations and conclusions specific to individual communities. Start by reiterating the purpose and intentions of the report and provide specific recommendations for advancing climate adaptation in your community based on the results of the report.

A simple recommendation to investigate the local data sources listed in Appendix B in order to better understand the costs associated with the risks presented in the report is included in the template as a starting point and should be modified as needed. Additional conclusions and recommendations may include:

- How climate change costs are distributed across locations, sectors, and population groups
- The scale and timeframe of climate-related costs
- How the results from your report support the prioritization and allocation of resources towards climate adaptation planning
- The identification of barriers and recommendations for the collection and management of data
- The identification of barriers and recommendation for cross-departmental and multi-stakeholder collaboration and other enabling actions
- The need to urgently invest in climate action to address climate change impacts in your community

**References**

All references listed in the pre-populated template content are included in the reference section. Additional local references (e.g., local reports, local studies, local news articles) will need to be added.

Refer to the CODN Case Studies to see examples of completed “cost of doing nothing” reports.
NATIONAL IMPACT STATEMENTS

1. Increasing frequency of extreme precipitation events leading to overland flooding and damage to buildings and homes.

2. Increasing frequency of extreme weather events leading to damage to homes, infrastructure, power outages, safety and additional clean-up costs.

3. Increasing temperature and precipitation leading to increased replacement and maintenance cost of roads and transportation infrastructure.

4. Increasing frequency of extreme precipitation events leading to overland flooding and loss of local business and public services.

5. Increasing winter precipitation and freezing rain events leading to dangerous road and sidewalk conditions and increased liability for injury and property damage.

6. Increasing frequency of extreme heat resulting in negative health outcomes, particularly to vulnerable populations, from reduced air-quality and increased heat-stress.

7. Increasing temperature and precipitation leading to increased risk for vector borne disease and new infectious disease.

8. Increasing frequency of extreme weather events resulting in loss of ecosystem services.
KEY CONSIDERATIONS FOR DATA COLLECTION

Where to start
Identifying and collecting data can begin by gathering existing information on climate events, impacts, and costs. It can be helpful to start this process by gathering readily accessible information on the impacts of past local climate and weather-related events. First Nations members, elders, and long-time community members also hold invaluable knowledge in this respect. There are many effective ways of gathering information on climate impacts and include in-person interviews, online surveys, focused workshops, reviewing government records, and reviewing media archives (ICLEI Canada, 2010).

As you begin the data collection process, it is important to remember that building a local business case for adaptation is an iterative process – it will take time and require relationship building with municipal departments, community partners, and Indigenous and local knowledge keepers. Furthermore, the type and format of data available will not be known until the data collection process begins. Develop a data collection plan that is feasible and follows the path of least resistance. In time, more data can always be collected, but data collection should not delay the process of adapting to the immediate risks of climate change.

Collaboration
The data collection process will inherently involve deep collaboration between municipal departments, multiple stakeholders and Indigenous Knowledge keepers. It will be important to identify which departments and staff, Indigenous groups, community members, organizations, external partners, and subject-matter experts will be involved early on, and to identify necessary communication pathways and relationship management considerations. A central data repository will be an important tool to support this collaborative process. With each successive year, consider ways to streamline and standardize the data collection process.

Collaborating meaningfully with Indigenous Peoples requires significant and ongoing investment of resources, including sufficient time to build trust and relationships. It is important to consider how your assessment can include culturally appropriate approaches that respect Indigenous Knowledge Systems and worldviews in a way that is not extractive. For more information and guidance on Indigenous Knowledge systems, see the Primer Document.
Data management

As you prepare to collect data that will be used in your own cost of doing nothing report, we recommend the following:

- Identify which local impacts and hazards (identified in your vulnerability and risk assessment) to include in your report and collect data for. Choose local impacts and hazards that are related to one of the eight national impact statements.
- Prioritize the collection of data based on feasibility. It is fine to start with little data knowing that, in time, the breadth of data sources can expand.
- Use the CODN Data Collection Tracking Tool to identify and track local data that will be used in your report.
- Establish a central data repository (e.g., Dropbox, FTP site) to make it easy for data contributors to upload and share relevant data. We also recommend using folders to organize your data repository based on impact statements.
- Give yourself adequate time for the data collection process. Ask for data well in advance of any deadlines as it takes time to accrue, validate, clean up, analyze, and report on data.
- Plan to collect and update impact and cost data on a biannual or annual basis.
- Indigenous Peoples’ have strict protocols on the use and sharing of Indigenous Knowledges with non-Indigenous actors. It will therefore be necessary to work closely with Indigenous Knowledge keepers to ensure that these protocols are maintained. See the Primer Document for more details.
KEY NATIONAL AND SUBNATIONAL DATA SOURCES

Several publicly available national and subnational resources and datasets are available to support municipalities in understanding and evaluating climate change projections, costs and impacts across a number of sectors and climate change hazards. Sources of national and subnational data are provided in Appendix A, and sources of local data are provided in Appendix B. Both of these resources are available on the CODN webpage and are also included in the Primer Document. We recommended using these resources to help contextualize local data. Please note that additional provincial-specific datasets are available and may be quite useful depending on a municipality’s geographic location.

Climate projection timescales

It is important to establish clear and consistent timescales when reporting on projections for future climate impacts. Climatic projections are typically provided within time periods of 30 years. A consistent baseline period should be used so that projections can be accurately compared with historical trends. In the Municipal Template, the time periods of 2021-2050 (immediate future) and 2051-2080 (near future) are most often used, and 1976-2005 is used for the baseline.

Dealing with uncertainty

Uncertainty is inherent to both climate and financial forecasting; however, just because we do not know when the next climatic event may occur or have an exact figure on how much an impact may cost, this does not mean we should not prepare. In order to address the significant threats climate change poses to our communities at the pace required to ensure associated costs do not become insurmountable, it is critical to focus on progress and not perfection. Adaptation process is an iterative, collaborative, and adaptive process that will greatly reduce the risks associated with climate change even in the face of uncertainty (see the “Dealing with Uncertainty” section of the CODN Primer Document for more details).

As you consider the creation of your own cost of doing nothing report and the task of collecting and compiling data, remember to focus on key indicators that demonstrate the need to move forward with adaptation measures. It will also be important to develop a data collection plan that is feasible and follows the path of least resistance. In time, more data can always be collected, but data collection should not delay the process of adapting to the immediate risks of climate change.

Climate indices

The climate indices included in this template are listed and defined in Table 1 below. These indices represent a broad range of important climate variables that impact communities across Canada. More details regarding the definitions for the climate variables can be found at climateatlas.ca/variables and climatedata.ca/variable. Consider using or adapting these indices for your own “cost of doing nothing” report.
Table 1: Summary of climate indices. The costliest weather events over the period of 2016-2021.

<table>
<thead>
<tr>
<th>Climatic driver</th>
<th>Climate indicator</th>
<th>Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot Temperature</td>
<td>Mean Temperature</td>
<td>The average temperature of the season (or annually).</td>
<td>°C</td>
</tr>
<tr>
<td></td>
<td>Mean Monthly Maximum Temperature</td>
<td>The average monthly maximum temperature.</td>
<td>°C</td>
</tr>
<tr>
<td></td>
<td>Mean Monthly Minimum Temperature</td>
<td>The average monthly minimum temperature.</td>
<td>°C</td>
</tr>
<tr>
<td></td>
<td>Very Hot Days (+30°C)</td>
<td>A Very Hot Day is a day when the temperature rises to at least 30 °C. This is the temperature where a Heat Alert is issued by Environment Canada.</td>
<td>Days</td>
</tr>
<tr>
<td></td>
<td>Number of Heat Waves</td>
<td>The average number of heat waves per year. A heat wave occurs when at least three days in a row reach or exceed 30°C.</td>
<td>Number of heatwaves</td>
</tr>
<tr>
<td></td>
<td>Average Length of Heat Waves</td>
<td>The average length of a heat wave. A heat wave occurs when at least three days in a row reach or exceed 30°C.</td>
<td>Days</td>
</tr>
<tr>
<td>Cold Temperature</td>
<td>Freeze-Thaw Cycles</td>
<td>This is a simple count of days when the air temperature fluctuates between freezing and non-freezing temperatures.</td>
<td>Days</td>
</tr>
<tr>
<td></td>
<td>Frost Days</td>
<td>A frost day is one on which the coldest temperature of the day is lower than 0°C.</td>
<td>Days</td>
</tr>
<tr>
<td></td>
<td>Icing Days</td>
<td>An Icing Day is a day on which the air temperature does not go above freezing (0°C).</td>
<td>Days</td>
</tr>
<tr>
<td></td>
<td>Winter Days (-15°C)</td>
<td>A Winter Day is a day when the temperature drops to at least -15°C.</td>
<td>Days</td>
</tr>
<tr>
<td>Climatic driver</td>
<td>Climate indicator</td>
<td>Description</td>
<td>Units</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------------</td>
<td>-------------</td>
<td>-------</td>
</tr>
<tr>
<td>Total Precipitation</td>
<td>The total amount of rain, drizzle, snow, sleet, etc. Frozen precipitation is measured according to its liquid equivalent: 10 cm of snow is usually about 10 mm of precipitation.</td>
<td>mm</td>
<td></td>
</tr>
<tr>
<td>Mean Precipitation</td>
<td>The average precipitation for a given season (or annually)</td>
<td>mm</td>
<td></td>
</tr>
<tr>
<td>Heavy Precipitation Days (20 mm)</td>
<td>A Heavy Precipitation Day (20 mm) is a day on which at least a total of 20 mm of rain or frozen precipitation falls.</td>
<td>Days</td>
<td></td>
</tr>
<tr>
<td>Max. 1-day Precipitation (mm)</td>
<td>The amount of precipitation that falls on the wettest day of the year.</td>
<td>mm</td>
<td></td>
</tr>
<tr>
<td>Max 5-day Precipitation (mm)</td>
<td>The wettest five-day period.</td>
<td>mm</td>
<td></td>
</tr>
<tr>
<td>Precipitation intensity rate</td>
<td>The annual maximum rainfall intensity for specific durations. Common durations for design applications are: 5-min, 10-min, 15-min, 30-min, 1-hr, 2-hr, 6-hr, 12-hr, and 24-hr.</td>
<td>mm/h</td>
<td></td>
</tr>
<tr>
<td>Extreme Weather</td>
<td>Freezing Rain Events</td>
<td>Average percentage change in the number of daily freezing rain events (≥1 hr, ≥4 hr and ≥6 hr).</td>
<td>Days</td>
</tr>
<tr>
<td>Wind</td>
<td>Average percentage change in the number of daily wind gust events.</td>
<td>Km/h</td>
<td></td>
</tr>
<tr>
<td>Rainfall IDF Curves</td>
<td>The annual maximum rainfall intensity for specific durations. Common durations for design applications are: 5-min, 10-min, 15-min, 30-min, 1-hr, 2-hr, 6-hr, 12-hr, and 24-hr.</td>
<td>mm/h</td>
<td></td>
</tr>
</tbody>
</table>
OTHER RESOURCES FROM THE CODN TOOLBOX

The resources in the CODN toolbox have been developed to support municipalities in responding to the risks and impacts they face today and to safeguard against future risks and impacts. These include:

- Primer Document
- Municipal Template Instructions
- Data Collection Tracking Tool
- Municipal Template
- City of Windsor Case Study
- City of Hamilton Case Study
- Appendix A: National and Subnational Data Sources
- Appendix B: Local Data Sources

Together, these resources form the basis for municipalities to assess the costs of doing nothing within their own local context in support of their own climate adaptation planning process. While each of the resources can be used separately, it is recommended that municipalities are familiar with each of the resources before they begin their assessment process. All resources within the toolbox can be found on the CODN webpage.

#CODNToolbox

Share your local business case for adaptation with us! Tag @ICLEI_Canada on Twitter or @ICLEI Canada on LinkedIn and use #CODNToolbox to share your process, updates, pictures, and the final product with us. You can also contact us by email at iclei-canada@iclei.org.