

CLIMATE-RELATED FINANCIAL DISCLOSURES GUIDE



A RESOURCE FROM THE
MUNICIPAL NET-ZERO ACTION
RESEARCH PARTNERSHIP
(N-ZAP)



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Recognizing that our research team and partners come from different traditional territories and treaty lands across Turtle Island, N-ZAP respects and honours the diversity of Indigenous Peoples, Nations, and Communities as the original rights-holders and stewards of the lands and waters on which we have the privilege to live, to work, and to study.

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Definitions

Adaptation: any process or action taken to increase the resilience of people, infrastructure, communities, and ecosystems, allowing them to better adjust to the impacts of a changing climate and prepare for future impacts. The **Intergovernmental Panel on Climate Change** (in the AR6 Report WGI, WGII, and WGIII) defines adaptation in human systems as the process of adjusting to actual or expected climate and its effects in order to moderate harm or exploit beneficial opportunities.

Climate risk: the potential negative effects of climate change on an entity. These risks are categorized as climate-related physical risks and climate-related transition risks (IFRS S2 Appendix A: Defined Terms). Climate risk can be expressed as a function wherein risk = likelihood × consequence. In this case, “likelihood” refers to the probability of a projected impact occurring, and “consequence” refers to the known or estimated outcomes of a particular climate change impact.

Climate-related opportunities: refer to the potential positive effects of climate change for an entity. Efforts to mitigate and adapt to climate change can produce climate-related opportunities for an entity (IFRS S2 Appendix A: Defined Terms).

Climate vulnerability: a system or jurisdiction’s susceptibility to harm arising from climate change impacts (IPCC AR6 Report). Climate vulnerability is a function of a community’s sensitivity to climate change and its capacity to adapt to climate change impacts.

Climate vulnerability and risk assessment: a process used to calculate a system’s (e.g., a community’s) risk regarding climate impacts. A climate vulnerability and risk assessment involves identifying a system’s vulnerability and exposure to climate-change hazards, as well as the likelihood and consequence associated with them. Climate vulnerability and risk assessment is a key stage of risk management, as it ensures projects and related activities are adequately designed to reduce climate-change risks and vulnerabilities in communities.

Double materiality: considers how environmental, social, and governance (ESG) issues affect the organization financially, and how the organization’s activities impact the environment and society. Double materiality combines financial materiality and impact materiality, aligning with a broader user perspective (GRI, 2022).

Financial materiality: is defined within the Canadian Auditing Standards as, “misstatements, including omissions, are considered to be material if they, individually or in the aggregate, could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.” Financial materiality takes a single materiality lens and, for climate-financial disclosure, considers whether the omission or misstatement of an item could influence the economic decisions of users who rely on the annual financial report.

GHG inventories: a summary of greenhouse gas emission sources and outputs, quantified using standardized methods.

Greenhouse gases (GHGs): refers to the seven gases currently required for most national GHG inventory reporting under the Kyoto Protocol. Currently, the Kyoto Protocol requires national GHG reporting to focus on seven key greenhouse gases: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃).

Impact materiality: the significance of an organization’s actual and potential positive and negative impacts on the economy, environment, and people, including human rights, regardless of whether those impacts are financially material for the organization itself. This perspective emphasizes accountability for broader societal and environmental outcomes (GRI 3: Material Topics 2021; GRI 1: Foundation 2021; GRI, 2022).

Materiality: the magnitude of an omission or misstatement that, in light of surrounding circumstances, makes it probable that the judgment of a reasonable person relying on the information would have been changed or influenced by the omission or misstatement. The concept of materiality recognizes that transactions, amounts, or certain errors, either individually or in the aggregate, directly influence the relevance and reliability of information for decision-making purposes. It is the threshold above which missing or incorrect information in annual financial reports are considered to impact the decision-making of users (CPA Canada, 2025).

Mitigation: any action that limits or prevents greenhouse gas emissions from entering the atmosphere. “Mitigation” also refers to any activity aimed at removing these gases from the atmosphere (carbon sequestration).

Physical risk: the potential for damage and disruption to people, property, and productivity as the result of increased exposure to climate hazards driven by climate change. Such risks can result in direct financial costs for organizations, for example, repair and replacement expenses arising due to flood damage to infrastructure or buildings, as well as indirect costs such as supply chain disruptions and business interruptions.

Resilience: the capacity of interconnected social, economic, and ecological systems to cope with a hazardous event, trend, or disturbance, and to respond or reorganize in ways that maintain their essential function, identity, and structure (**IPCC AR6 Report**).

Transition risk: one of the two major categories of climate risk, transition risks arise due to the transition away from fossil fuels and other GHG-emitting activities (**Task Force on Climate-Related Financial Disclosures**). These risks, which are related to the transition to a low-carbon economy, include:

- policy risks (associated with climate policies, carbon pricing, and regulations that restrict negative contributors to climate change and encourage climate-resilient changes to business operations),
- legal risks (climate-related litigation),
- technology risks (wherein disruption is driven by the development of new technology to support a low-carbon economy),
- market risks (driven by economic and social factors influencing the supply and demand of goods and services), and
- reputation risks (wherein an industry or company’s value is negatively impacted by perceptions regarding their commitment to climate change).

Users of annual financial report: any individual or organization that is a reader of the annual financial report with the intention of using the information to inform decisions.

About this guide

This guide was created to support Canadian municipalities and local governments¹ in their climate-related financial disclosures journey. It identifies key steps in the process, current and next practices in this emerging area, and resources that can be leveraged to make climate-related financial disclosures easier, efficient, and more effective. These resources include numerous examples of the varied steps and approaches used by Canadian municipalities.

How this guide was developed

This guide was created as part of the Municipal Net-Zero Action Research Partnership (N-ZAP). N-ZAP is a collaboration between the University of Waterloo, ICLEI Canada, and the Federation of Canadian Municipalities (FCM), as well as 11 external academic partners, nine national organizations, and 15 municipal partners. A full list of N-ZAP partners is available on the [project partners page](#) on the N-ZAP website. N-ZAP's mandate is:

- To support Canadian municipalities in measuring, monitoring, and achieving net-zero GHG-mitigation goals.
- To ensure that emission-reduction projects, policies, and programs are aligned with Canada's national reduction commitments.

This guide relates specifically to the work conducted by N-ZAP's Technical Working Group 3 to enhance Canadian municipal emissions monitoring and disclosure tools.

The information in this guide is based on data collected via six focus groups and 48 interviews conducted by Prof. Jillene Diamond Marlowe. First, focus groups were held with representatives from six leading Canadian municipalities (i.e., Calgary, Edmonton, Mississauga, Montreal, Toronto, and Vancouver) to gather information relating to their current climate-related financial disclosures processes. To ensure maximum breadth of knowledge, all focus groups consisted of participants from each municipality's sustainability and finance departments. Next, 48 individual interviews were conducted with key employees identified during the focus groups as being actively engaged in their municipality's climate-related financial disclosures process. The objective of these interviews was to develop a better understanding of each step of the climate-related financial disclosures process and obtain insights into current practices, key challenges, and successful implementation.

¹ In this guide, "municipality" is used as an inclusive term that encompasses all forms of local governments.



Furthermore, N-ZAP retained a consultant during the development of this guide, which enabled additional insights from the practitioner lens (three interviews) and emerging guidance and standards within the field of accounting on climate-related financial disclosures. As experience with climate-related financial disclosures continues to mature, this guide will likely require updating to reflect the evolution of perspectives and disclosure requirements.

Our deep appreciation to staff at the following municipalities, local governments, and organizations for their time, expertise, and insights to help us build this guide.

- **N-ZAP Working Group 3:** ICLEI Canada, FCM, University of Waterloo, Barrie, ON, Calgary, AB, Edmonton, AB, Mississauga, ON, Montreal, QC, Toronto, ON, Vancouver, BC, Accounting for Sustainability, Athabasca University, and École nationale d'administration publique.
- **Local government interview and focus group participants:** Calgary, AB; Canmore, AB, Edmonton, AB; Mississauga, ON; Montreal, QC; Ottawa, ON, Toronto, ON; and Vancouver, BC.

How this guide is structured

This guide is divided into four main sections.

- 1 **Climate-related financial disclosures overview** defines climate-related financial disclosures within the context of this guide and outlines the business case for local governments.
- 2 **The current landscape** provides an overview of Canadian and international progress on climate-related financial disclosures and summarizes key takeaways from the research, focus groups, and interviews.
- 3 **How to implement** walks through the main steps in establishing climate-related financial disclosures, with a particular emphasis on priorities within each of the four pillars. Each section includes learnings from leading jurisdictions and provides examples and resources.
- 4 **Future directions** discusses plans for the next phase of climate-related financial disclosures in key organizations, as well as the resources needed to adopt climate-related financial disclosures and integrate them into more Canadian jurisdictions.



Part 1. Climate-related financial disclosures overview

What is climate-related financial disclosure?

The process of climate-related financial disclosures have been continually evolving in municipalities, and this progression has been significantly shaped by emerging reporting standards and related resources. Climate-related financial disclosures are municipal reports or statements regarding the financial impacts of climate-related risks and opportunities, as well as the impacts of activities and decisions related to climate, the environment, and communities arising from their policies, services, infrastructure, land-use decisions, and procurement activities. Current climate-related financial disclosures cover four main pillars: governance, strategy, risk management, and metrics and targets.

In the municipal context, climate-related financial disclosures should be understood as one component of a broader climate-reporting landscape that complements impact-based sustainability reporting focusing on how municipal activities affect the environment and society. Frameworks such as the Global Reporting Initiative (GRI) Standards provide guidance for this impact-oriented reporting and can be used alongside financial disclosures to meet the needs of diverse users.

The business case for climate-related financial disclosures

Why climate-related financial disclosures?

Many leading municipalities already have mature and comprehensive climate-action targets, plans, departments, and reporting. So why are they turning to climate-related financial disclosures? How can this process build on existing foundations to drive municipal climate action? A key driver for local governments is to be transparent about their actions and progress towards achieving their climate targets and strategic objectives aligned with their commitments to their community.



Climate-related financial disclosures create transparency that can drive accountability at the pace, scale, and orientation necessary to confront the climate crisis.



Pace: urgent and immediate. Although the acute and chronic risks of climate change have been impacting communities more frequently and severely, most continue to operate with emissions trajectories that are incompatible with a livable future. The next two decades will be critical: we must rapidly transition to a net-zero society while adapting to a climate that differs significantly from the past. Climate-related financial disclosures play a key role in accelerating municipal climate action. In disclosing climate-related governance, strategy, risk management, and metrics and targets, municipalities provide users with clear, actionable insights into their climate response. This transparency increases public trust, drives accountability, and increases the call for action regarding faster and more informed municipal decision-making aligned with the escalating impacts of climate change.



Scale: organization and community-wide. Climate change affects every aspect of community life, from public health and local economies to natural ecosystems and critical infrastructure. It is a complex crisis that cannot be the responsibility of any one individual, department, or organization. It must be distributed and tackled collectively. Climate-related financial disclosures enhance transparency and distributes knowledge of climate action across the organization and community, making it difficult to ignore places where those actions, metrics, and targets fall short. By clearly outlining responsibilities, targets, and progress, disclosures help foster shared accountability and comparability, which encourages the sharing of best practices and creates the conditions for collective, system-wide action.



Orientation: forward-facing and adjustable. Responding to climate change requires more than tracking past emissions: it demands a proactive, flexible approach that anticipates future risks, integrates new information, and adjusts course as conditions evolve. Municipalities must not only be equipped to meet today's challenges, but they must also be ready to lead in a rapidly changing climate landscape. Climate-related financial disclosures promote a forward-facing orientation by embedding scenario planning, risk forecasting, and adaptive strategies into core municipal decision-making and providing the public with transparent information regarding municipal efforts, decisions, and strategies in response to climate change. Disclosures encourage municipalities to think long-term, remain responsive to emerging data, and continuously refine their strategies. By making these processes transparent, municipalities invite public scrutiny and users' input, helping to ensure that climate actions remain relevant, resilient, and responsive over time.

Objectives of climate-related financial disclosures

Climate-related financial disclosures seek to enhance transparency and accountability for all municipal users. From an impact materiality standpoint (as framed in the GRI Standards), disclosures should highlight the municipality's most significant climate-related impacts with respect to people and the environment, including implications for vulnerable populations and users. From a double materiality perspective (as framed in the European Sustainability Standards (ESRS)), municipalities are encouraged to report impacts that have significant financial, service, or governance implications. Enhanced climate-related financial disclosures allow

municipalities to integrate climate into their governance, financial, and strategic decision-making; improve their risk management and resilience planning; support climate goals and targets; foster cross-departmental and community-wide engagement; and support forward-looking and adaptive planning. In achieving these objectives, municipalities are able to demonstrate leadership and build public trust.

Climate-related financial disclosures transform governance around climate objectives to increase the likelihood of achieving stated climate goals and targets.

Table 1. Climate-related financial disclosures transformation potential.

From...	→	To...
Limited visibility of long-term strategic planning and high-level climate targets.	→	Transparent identification of climate-related impacts, financial needs, gaps, and alignment to strategic planning, climate targets, and science-aligned climate action.
Climate action siloes within internal departments and responsibility for climate action.	→	Climate action accountability across the organization with those who contribute to disclosed climate risks, responsibilities, and performance.
Financial disclosures focused strictly on financial impact .	→	Financial disclosures that incorporate climate-related risks, opportunities, and the municipality's material environmental and social impacts including impacts on community health, ecosystems, housing, and infrastructure resilience.
Mitigation and adaptation are considered and managed separately , and adaptation is resourced reactively.	→	The fundamental link between mitigation and adaptation is highlighted through disclosures reflecting their interdependence, thereby supporting integrated and forward-looking action.
Decisions not systematically informed by climate, and impact of decisions and projects based on past activities (e.g., GHG inventories).	→	Explicitly demonstrating the decisions needed to achieve climate targets using forward-facing impact assessments (e.g., scenario analysis, GHG-emission projections).
Unmet climate targets due to a lack of strong financial and governance structures required to achieve them.	→	Leveraging strong governance to ensure climate is systematically embedded into the municipal annual financial reporting process .

Public accountability for climate impacts

Beyond financial stewardship, municipalities have a responsibility to account for how their decisions and activities shape environmental outcomes, social equity, public health, and intergenerational resilience. Therefore, climate-related financial disclosures serve not only to inform financial decision-making, but also to illustrate how municipal actions contribute to—or mitigate—climate-related impacts on communities and ecosystems, particularly for vulnerable populations.

Benefits and opportunities

Climate-related financial disclosures offer a range of potential benefits to municipalities, many of which with positive financial implications.

- **Accountability and decision-making.** By disclosing climate-related strategies and potential financial implications, municipalities can enhance their accountability to users while taking a proactive stance in long-term decision-making. This accountability drives more transparent and responsible governance as municipalities outline their plans to reduce GHG emissions, adapt to changing climate conditions, and build resilience against climate-related risks. The disclosure process inherently fosters a culture of accountability, ensuring that climate commitments are not just made, but actively tracked, reported, and integrated into municipal operations and planning.
- **Enhanced reputation.** Transparent climate-related financial disclosures allow municipalities to demonstrate their commitment to addressing climate change and building resiliency. This can enhance their reputation as leaders in climate action and foster trust amongst users.
- **Lower cost of capital.** Interest in environmental, social, and governance (ESG)-positive investments is growing among investors. Municipalities that exhibit climate resilience may attract a broader range of investors, particularly those interested in ESG factors. Additionally, demonstrating increased resilience could also lower credit risk (i.e., the risk that an entity like a municipality is unable to meet its contractual financial obligations as they come due). Transparent climate-related financial disclosures can influence credit rating agencies' evaluations. As these agencies increasingly assess climate risks, they may assign more favorable credit ratings to municipalities that proactively address these risks and comprehensively disclose their efforts to address them. Improved credit ratings can lower cost of borrowing, as higher-rated entities typically enjoy better interest rates on debt issuances. Thus, there is a financial incentive for municipalities to enhance their climate resilience and transparency, potentially offsetting the incremental costs of adaptation and mitigation measures through long-term savings on borrowing costs.
- **Additional resources.** Climate-related financial disclosures can also pave the way for additional external government funding (regional, provincial, and federal). By clearly communicating a municipality's status regarding the generation of information, planning, and actions related to climate risks and opportunities (CR&Os), climate-related financial disclosures make valuable information readily and publicly available to potential funders.
- **Collective learning and improvement.** Maintaining year-to-year consistency and comparability in climate-related financial disclosures is essential. This consistency promotes collective learning and drives continuous improvement in climate action. It also enables accurate progress tracking and effective future planning. Climate-related financial disclosures facilitate knowledge sharing, allowing users, including other municipalities, to identify trends, recognize shortcomings, and adopt best practices. Publishing these disclosures fosters continuous improvement and enables municipalities to leverage best practices.

Barriers and challenges

While climate-related financial disclosures hold significant potential, it is a new process with barriers and implementation challenges that need to be understood and addressed. Many barriers and concerns can discourage disclosures or hamper municipal climate-related reporting efforts.

- **Standardization.** There is no mandatory, standardized reporting framework that Canadian municipalities are directed to follow. This can lead to inconsistencies in reporting and make it difficult for users to compare and analyze data. International Financial Reporting Standards (IFRS) S1 and S2 focus on the private sector, with an especially heavy focus on the needs of profit-oriented users within the disclosure requirements. Notably, in October of 2024, the International Public Sector Accounting Standards Board (IPSASB) released an exposure draft outlining a public sector climate disclosures standard; this standard was approved in December 2025 and will come into effect January 1, 2028. However, it is not clear how Canadian municipalities will be directed to apply it—for example, what type of materiality will be required and whether it will result in transparent disclosures that are comparable across the sector.
- **Resources.** Municipalities often lack resources to undertake climate-related financial disclosure. Many municipalities, particularly smaller ones, may not have the necessary staff or financial resources to collect, analyze, and report on climate-related data. Unless regulated, much municipal staff activity is based on council direction. This could be a significant barrier in cases characterized by voluntary disclosure and a lack of council direction or resources to support climate-related data collection, interpretation, and disclosure.
- **Knowledge gap.** A lack of awareness and understanding about the importance of climate-related financial disclosures can pose a barrier. Municipal staff, especially those working for larger municipalities with complex and large numbers of complex data sets, may not understand how to disclose or obtain the information needed in a disclosure. As a quickly evolving field, disclosure requires a lot of knowledge and the capacity to stay up to date on reporting trends and practices.
- **Buy-in.** Decision makers may not see the value in climate-related financial disclosures because they are not directing efforts towards climate actions, the disclosures are not yet required by the Public Sector Accounting Board (PSAB), or they want all climate-related resources to go towards actions instead of disclosure.
- **Security.** Municipalities must be careful in balancing transparency, as they must provide adequate information but remove the risk of security concerns. For example, while disclosing information regarding increased insurance premiums resulting from heightened flood risks, municipalities must avoid detailing the specific vulnerabilities of critical infrastructure that could be exploited by malicious entities.
- **Financial implications.** Municipalities should also consider whether sharing information about climate risks will have negative long-term financial implications, such as potentially decreasing property values in high-risk areas. Such an outcome would affect tax revenues and, thus, the municipality's ability to provide services.
- **Concern with causing alarm with the public.** Climate-related financial disclosures by municipalities can cause public alarm by emphasizing potential risks to the community, such as flooding and wildfires. This focus on vulnerabilities may heighten residents' anxiety about the safety and reliability of essential services.
- **Legal.** Municipalities must consider the legal ramifications of underreporting or misrepresenting critical infrastructure-related risks, for example, litigation or loss of public trust. A robust vetting process is required to review all disclosed information, ensuring accuracy, completeness, timeliness, and relevance, while also ensuring it does not provide a roadmap for those intending to cause disruption or harm. Municipalities might also be cautious, understanding that users could express concerns if no action is taken or plans are put in place to address key vulnerabilities. This concern could be particularly significant if an event produces substantial consequences and it is found out that the risks were previously known but not addressed. Regular updates and ongoing risk assessments are crucial to maintaining the relevance and usefulness of the disclosed information.

- **Greenwashing.** Municipalities undertaking disclosures should work to ensure a high level of accuracy in their disclosures to avoid accusations of greenwashing. Awareness of greenwashing has increased due to the introduction of Bill C-59, which includes key amendments to Section 74.01 of the Competition Act (Canada). These amendments address greenwashing, which can be defined as false, misleading, or deceptive environmental claims made to promote a product or business interest. Municipalities are likely to be indirectly affected by these amendments, as they have made society more sensitive to greenwashing.
- **Competing priorities.** Municipalities operate within complex environments and must balance numerous priorities to meet organizational goals and community needs. Even when climate action is designated as an important objective, it must compete with a wide range of other urgent demands that are often difficult to compare or rank. As a result, climate initiatives are frequently categorized as “nice to have,” but not essential, especially when budgets and staffing are constrained. Resource limitations force municipalities to make difficult trade-offs, which can result in some priorities, climate included, not receiving the level of support required for meaningful progress.

Foundational concept: Materiality in climate disclosure

For municipalities, one of the most important concepts in climate-related financial disclosures is materiality—what information should be reported because it matters for decision-making of the users of the annual financial report. A good practice is to begin with impact materiality – identifying the most significant climate-related impacts on people and the environment – and then assess which of these impacts translate into financial risks or opportunities for the municipality.

Defining materiality

Different reporting standards define materiality in distinct ways. Under the International Sustainability Standards Board (ISSB), materiality is framed as *financial materiality*: information is material if leaving it out could reasonably influence decisions of the users (e.g., investors, lenders, and creditors). In contrast, the Global Reporting Initiative (GRI) uses *impact materiality*: information is material if it reflects the organization’s most significant effects on the economy, environment, or people, including human rights². A growing approach, known as *double materiality*, combines both views³. It recognizes that disclosures should capture not only how climate and sustainability issues affect an organization’s financial health, but also how the organization’s actions impact society and the environment. Municipalities, which must balance financial accountability with community well-being, may choose to adopt a double materiality perspective.

- ² Under the GRI 2021 Standards, municipalities would identify material topics by assessing the significance of their actual and potential positive and negative impacts on the economy, environment, and people, including human rights. This includes impacts municipalities cause, contribute to, or are directly linked to their operations and services through business relationships. Examples of impact-material topics include urban development that drives land-use change and emissions, transit decisions that affect air quality and accessibility, and flood-protection infrastructure that shapes community safety and property losses.
- ³ Under the European Union’s CSRD/ESRS framework, double materiality assessments require organizations to screen topics for both impact and financial materiality, recognizing that many issues will be material under both lenses. Canadian municipalities can adapt this framework by, for example, identifying increased flood risk as (a) an impact-material topic due to the potential harm to residents, ecosystems, and cultural sites, and (b) a financially material topic due to rising capital and operating costs, insurance implications, and potential credit-rating effects.

Two stages in municipal materiality assessment

Stage 1: Identifying the users of the annual financial report

While climate-related financial disclosures support informed decision-making by municipal leadership, they do not on their own provide a complete picture of a municipality's climate-related impacts on people, communities, and the environment. As such, the first step in a municipal double materiality assessment is to determine who the key users are in relation to climate-related financial disclosures. Unlike corporations, municipalities must serve a broad and diverse audience. Users include Indigenous Communities, whose inherent rights and relationships with land, water, and ecosystems must be recognized and respected in municipal decision-making.

Primary users typically include residents, local businesses, community groups, media, council members, and municipal staff and often require impact-focused information on emissions, adaptation outcomes, equity, and environmental effects. As such, climate-related financial disclosures are most effective when complemented by sustainability or impact reporting frameworks, such as the GRI Standards, that explicitly address these information needs.

Secondary users may include provincial and federal governments, insurers, and bond investors (especially where municipalities issue debt or green bonds) for whom climate-related financial disclosures are specifically designed to assess financial risk exposure and long-term fiscal resilience.

Clearly identifying these audiences helps the municipality determine whose decisions the disclosure should inform.

Stage 2: Identification of material aspects

Once the primary users have been identified, the next step is to determine which information is material to them. Municipalities can conduct double materiality assessments to highlight which risks and opportunities matter most. The first step in this process is to assess impact materiality by identifying climate-related topics where municipal activities that have significant actual or potential impacts on people, the environment, and local economies, using criteria such as scale, scope, and likelihood. Next, financial materiality is assessed by identifying climate-related topics that could reasonably be expected to influence the municipality's financial position, performance, or ability to deliver services. For example, flood risk to local infrastructure, wildfire threats to community safety, or regulatory changes affecting local industries may all emerge as issues that are both impact and financially material. These assessments combine the severity and likelihood of impacts, provide a structured way to identifying what local users value and what could significantly affect municipal operations or financial health.

Implications for municipalities

Ultimately, material climate information for municipalities is that which could reasonably be expected to influence users' decisions—or materially affect the municipality's financial condition and long-term sustainability. By following these two stages, municipalities can make climate disclosures both decision-useful and aligned with international standards, while still reflecting the public-service realities of municipal governance.

Who is involved?

Climate-related financial disclosures increase transparency and distributes ownership, knowledge, and accountability for climate action across the organization.



Led by finance and sustainability. Climate-related financial disclosures are the responsibility of the finance department, with strong support from the sustainability team, or is co-led by members of the finance and sustainability departments. Ideally, the chief financial officer (CFO) will take a leadership role in cross-corporate collaboration on climate-related financial disclosure—a role that becomes more important for municipalities with limited central climate resources. Strong leadership and engagement from the CFO also ensure that department heads are supported and held accountable.



Strengthened by political and senior administrative champions. A common contributor to success is identifying political and senior administrative champions. Our research and discussions emphasize that supportive and active political leadership is one of the most important factors in establishing climate-related financial disclosures and overcoming institutional challenges to implementation. Presenting and publication of the climate-related financial disclosures within the annual financial report provides an opportunity for users to obtain information and engage with political leadership regarding climate action.



Cross-departmental collaboration is key. Department heads and staff across the organization are partners in this work. They provide data and information relating to their department's project plans, costs, and impacts. Establishing cross-departmental working groups or task forces on climate change facilitates internal change management and communications. Department heads and their staff should be well-supported by finance and sustainability staff, especially throughout the first few climate-related financial disclosures cycles as processes are developed, piloted, and refined. Based on their projects and roles, key departments could include risk management, asset management, public works, procurement, planning and development, and parks and recreation.



There is a growing call for collaboration and knowledge-sharing on climate-related financial disclosure. Municipalities will benefit immensely from joining climate-related financial disclosures cohorts and communities of practice. Many early leaders are already collaborating including the Canadian Municipal Network's Task Force on Climate-Related Financial Disclosures (TCFD) and Accounting for Sustainability's Circles of Practice. Knowledge-sharing cohorts such as N-ZAP are also disseminating best practices and supporting efforts. Cohort members can easily share templates (e.g., disclosure language, climate sections of annual financial reports) and resources (e.g., departmental training materials, project impact evaluation matrices and tools) to make the process more efficient and allow municipalities with less capacity to work more efficiently.



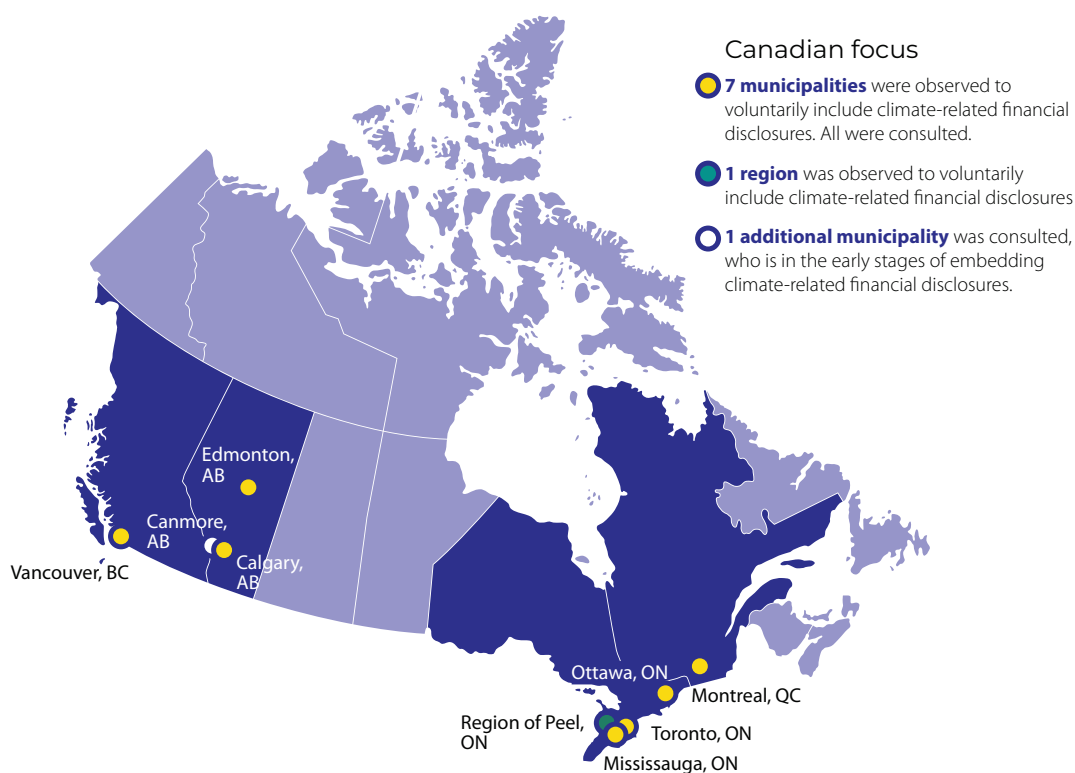
Engagement with users. Identifying and assessing climate-related impacts requires meaningful engagement with communities affected by municipal decisions, including Indigenous Peoples, equity-deserving groups, residents in climate-vulnerable areas, and local businesses. User input strengthens impact materiality assessments and aligns disclosures with community priorities and lived experience.

Part 2. The current landscape

Climate-related financial disclosures are progressing at different levels globally. This guide considers the current Canadian and international landscape regarding climate-related financial disclosures in annual financial reports. Understanding Canadian and international perspectives, initiatives, and guidance is critical to developing best practices for implementing climate-related financial disclosures (Part 3) and informing future directions (Part 4).

This guide is informed by the processes, insights, and plans of leading climate-related financial disclosures practitioners. We employed a Canadian lens, and, in late 2023, 2024, and 2025, we engaged six leading municipalities in discussions regarding their awareness, actions, and plans pertaining to climate-related financial disclosure.

Figure 1. Geographic locations of municipalities consulted for this study.



We conducted six focus groups and 51 interviews with eight leading municipalities on the topic of climate-related financial disclosure. These municipalities included Calgary, Canmore, Edmonton, Mississauga, Montreal, Ottawa, Toronto, and Vancouver. In addition, we performed an in-depth analysis of their current approaches and learnings, implementation plans, and goals and challenges associated with integrating climate-related financial disclosure into their published annual financial reports.

Canadian initiatives and perspectives

A brief overview of standards on climate-related financial disclosures

In 2017, the TCFD, which was established by the Financial Stability Board in 2015, released an initial framework designed to enhance guidance on climate-related financial disclosure. The TCFD's recommendations aimed to enhance transparency for users of annual financial reports. The proposed framework recommended that disclosures be organized into four thematic areas: governance, strategy, risk management, and metrics and targets. Many public sector entities have adopted the TCFD's recommendation to strengthen transparency, accountability, and strategic decision-making around climate risk. Notably, in 2019, Chartered Professional Accountants (CPA) Canada issued guidance for municipalities titled "Enhancing Climate-related Disclosure by Cities: A Guide to Adopting the Recommendations of the Task Force on Climate-related Financial Disclosures," which provided municipalities and local governments with guidance in aligning their reporting practices with the TCFD framework.

When the TCFD officially disbanded in 2023, its responsibilities and guidance were effectively handed over to the ISSB. In June 2023, the ISSB issued the IFRS S1 and S2 standards for sustainable and climate-related disclosures; these standards took effect on January 1, 2024. The ISSB incorporates the TCFD framework within the IFRS S2 standard, which was developed with a focus on organizations that are required to comply with IFRS. Thus, standard S2 specifically applies to large public companies that are profit oriented. In October 2024, the IPSASB⁴ published an exposure draft on climate-related disclosures for the public sector. Canada's PSAB issued a response to IPSASB providing feedback, insights, and praise for the IPSAB's leadership in the development of the first public sector standard related to climate disclosures. The Canadian municipal network also prepared and submitted a **joint response** to the IPSASB to emphasize the importance of considering implementation-related challenges and the scalability of disclosure-related requirements.

The Canadian Sustainability Standards Board (CSSB), which was established in 2023, introduced the Canadian Sustainability Disclosure Standards (CSDS): CSDS1—General Requirements for Disclosure of Sustainability-related Financial Information and CSDS2—Climate-related Disclosures. These standards are aligned with IFRS S1 and IFRS S2.

While ISSB- and IPSAS-based initiatives primarily emphasize financial materiality, the GRI Standards remain the leading global framework for impact-based sustainability reporting. Some municipalities around the world (e.g., European cities complying with the Corporate Sustainability Directive (CSRD)) are beginning to align climate and sustainability disclosures with both GRI and ESRS, using GRI to structure impact materiality assessments and ESRS to implement double materiality and detailed climate- and social-related datapoints.

⁴ IPSASB, (December 8, 2022), *IPSASB Confirms It's Role in Advancing Public Sector Sustainability Reporting*, **the International Public Sector Accounting Standards Board (IPSASB) confirmed its role in advancing public sector sustainability reporting**

Overview of progress on climate-related financial disclosures

Leading municipalities began voluntarily adopting the TCFD framework’s recommendations to enhance transparency regarding climate-related risks, opportunities, strategies, and governance. In publishing disclosures, municipalities showcase their ongoing commitment to transparency and accountability with respect to reducing emissions and building climate resiliency. We identified six leaders in, and early adopters of, climate-related financial disclosures across Canada: Calgary, Edmonton, Mississauga, Montreal, Toronto, and Vancouver. Table 2 provides an overview of these municipalities’ actions and approaches to incorporating climate-related financial disclosures into their published annual financial reports.

Table 2. Current climate-related financial disclosures implemented by Canadian municipalities.

Municipality	Climate-related financial disclosures	Disclosure <i>governance, strategy, risk management, and metrics and targets</i>	Next steps
Calgary 2025 Annual Report	Unaudited Inception: 2021 Annual report Status: ongoing TCFD: 2021–2023 IFRS S2: 2024–2025	Governance: board and council oversight, executive and management’s role and responsibility. Strategy: material impacts of risks on organizations’ businesses, strategy, and financial planning. Integration and resilience of strategy. ERM framework integration of climate-related risks into strategic and operating levels. Risk management: corporate, physical, and transition risk review and assessment process. Metrics and targets: tracking and progress towards adaptation and mitigation actions and goals (e.g., community and corporate GHG emissions progress, tracking adaptation ensuring development (TAMD) core, community climate risk index (CCRI), flood risk assessments, and water management).	Continue to enhance climate-related financial disclosures and the climate accounting framework (e.g., advance transition risk assessment and embed climate considerations into decision-making processes).



Municipality	Climate-related financial disclosures	Disclosure <i>governance, strategy, risk management, and metrics and targets</i>	Next steps
Edmonton 2025 Annual Report	Unaudited Inception: 2020 Annual report Status: ongoing TCFD: 2020–2025	Governance: mayor and council oversight, executive, and management’s role regarding climate-related risks and opportunities. This includes commitments, reporting, and details on the city’s climate task force. Strategy: climate-related risks and opportunities, and how they have been integrated into strategic planning for the city and community to aid in financial planning and climate modelling. How climate scenarios guide its adaptation and emissions-reduction strategies, aligning with global targets. Risk management: ERM framework integration on climate risks into strategic, operating, and service risk levels, informed by vulnerability assessments and ongoing evaluations. Metrics and targets: tracking and progress towards mitigation goals and environmental performance (e.g., GHG emissions progress, how planning and development actions aid climate targets, carbon budget, and emission forecasts).	Continue to use the TCFD framework and is actively assessing the impact of adopting CSDS1 and CSDS2 for future reporting.
Mississauga 2025 Annual Report	Unaudited Inception: 2020 Annual report Status: ongoing TCFD: 2020–2025	Governance: council oversight, executive, and management’s role regarding climate-related risks and opportunities. This includes commitments, reporting, and details on how the CAP actions are assigned to divisions for accountability. Strategy: climate change risk and vulnerability assessment process and how it is integrated within asset management services to identify and prioritize climate-related hazards. Risk management: corporate and community risk assessments including details relating to the risk calculation process. Climate risk and vulnerability process, including scenario analysis. Metrics and targets: tracking and progress towards adaptation targets and mitigation goals (e.g., GHG emissions progress).	Continue to use the TCFD framework and anticipating upcoming IPSASB public sector disclosure standards.

Municipality	Climate-related financial disclosures	Disclosure <i>governance, strategy, risk management, and metrics and targets</i>	Next steps
Montreal <u>2024 Annual Report</u>	Unaudited Inception: 2019 Annual report Status: ongoing TCFD: 2019–2024	Governance: council and committee oversight, executive, and management’s role regarding climate-related risks and opportunities. This includes: commitments; reporting; climate training; enhancing decision processes by support of consultation work and tools (e.g., Montreal 2030 analysis grid and climate budget framework); and regional plans and climate-related agreements with provincial government. Strategy: climate-related risks and opportunities and how they have been integrated into strategic planning for climate, nature, and social environment that aid in financial planning. How climate budget modelling and climate scenarios guide its adaptation and emissions reduction strategies, aligning with global targets. Risk management: initiated work on identifying and evaluating climate risks related to emergency response. Finalized work on a climate-related financial impact assessment on construction. Metrics and targets: tracking and progress towards mitigation and adaptation targets and environmental performance (e.g., GHG emissions and performance indicator progress toward achieving emissions-reduction objectives).	Continue to use the TCFD framework and anticipating upcoming IPSASB public sector disclosure standards. The city’s fire department, in collaboration with the office of resilience and ecological transition, has undertaken a joint climate and disaster risk analysis approach. This initiative will enable the standardization of methods and the updating of previous results. The city has also finalized work on a climate-related financial impact assessment on building. The next step will be to implement this tool within the building department to evaluate the financial implications of climate impacts and support informed decision-making and financial planning.
Toronto <u>2024 Annual Report</u>	Unaudited Inception: 2018 Annual report Status: ongoing Climate metrics and targets: 2018 TCFD: 2019–2024	Governance: mayor and council oversight, infrastructure and environment committee, executive, and management’s role regarding climate-related risks and opportunities. This includes commitments, reporting, and details on the city’s physical climate risk around planning, growing, strengthening, and sustaining. Strategy: climate-related risks and opportunities and how they have been integrated into strategic planning. How climate scenarios guide its business and financial planning strategies to better align with a changing climate. Risk management: climate-related physical risk management framework integration on climate risks into operating and service risk levels. An overall enterprise risk management model that considers climate-related risks is currently in development. Metrics and targets: tracking and progress towards mitigation goals and environmental performance (e.g., GHG emissions progress towards 2025, 2030, and 2040 reduction goals; tree canopy).	Continue to use the TCFD framework and is actively assessing the impact of adopting nature-related disclosures, CSDS1 and CSDS2, for future reporting.

Municipality	Climate-related financial disclosures	Disclosure <i>governance, strategy, risk management, and metrics and targets</i>	Next steps
Vancouver <u>2025 Annual Report</u>	Unaudited Inception: 2018 Annual report Status: ongoing TCFD: 2018–2025	Governance: mayor and council oversight, committee, executive, and management’s role regarding climate-related risks and opportunities. This includes commitments, reporting, and details relating to the enterprise risk management processes. Strategy: climate-related risks and opportunities and how they have been integrated into strategic planning for the city and community in order to aid in financial planning and climate modelling. How climate scenarios guide its adaptation and emissions reduction strategies, aligning with global targets. Risk management: ERM framework integration on climate risks into strategic, operating, and service risk levels, informed by vulnerability assessments and ongoing evaluations. Metrics and targets: tracking and progress towards mitigation goals, adaptation targets, indicators, and environmental performance (e.g., GHG emissions progress, canopy cover, how planning and development actions aid climate targets, and emission forecasts).	Continue to use the TCFD framework in anticipation of forthcoming IPSASB public sector disclosure standards.

Generalized findings reflecting the current state of the reviewed municipalities are presented below. The case study review process entailed the examination of climate-related financial disclosure documents.



Current state of climate-related financial disclosures

Integration of CR&Os in municipalities' overall governance structures is considered and explicitly referenced in disclosures. Generally, city councils are responsible for extending oversight over CR&Os, while receiving periodic updates from management teams and committees. Although not formally outlined in a standalone section, the examined municipalities described how CR&Os influence the city's broader strategy, risk management, and decision-making (e.g., approach to asset management).

Climate risks are identified, with a distinction between physical and transition risks. These risks are referenced within the context of assets and/or services impacted within the city.

Disclosures on climate-related physical risks and opportunities are presented at a higher level with less actionable outcomes and links to the city's operational model and/or value chain impacts.

Disclosures predominantly emphasize financial risk management and emissions metrics across municipalities reviewed, while systematic reporting on social and environmental impacts—such as equity outcomes, health impacts, or ecosystem effects—remains limited and uneven.

Results of climate risk assessments and separate economic impact studies, disclosing the anticipated short-, medium, and long-term economic impacts of physical climate. In some cases, this information was specific to certain climate-related hazards and climate-sensitive systems within municipal boundaries.

Expenditures to support adaptation and mitigation activities are disclosed by some municipalities, alongside information relating to their approved operating and capital budgets. In some cases, municipalities disclose separate short-term implementation plans providing details relating to these expenditures.

Quantitative and qualitative climate-related objectives are provided. More detailed information is predominantly available for targets related to the reduction of GHG emissions. These targets, which are often long-term, are based on international agreements or broader national objectives, such as the Paris net zero initiative or carbon neutrality. Discourse on these targets is generally linked and tied back to CR&Os identified by the municipality.

International initiatives and perspectives

Leading guidance for climate-related financial disclosures has largely focused on private sector profit-oriented organizations. However, the next phases will include a focus on public sector organizations.

The United Kingdom published new mandatory climate-related financial disclosure requirements for publicly quoted companies, large private companies, and LLPs in 2022, requiring these entities to report for any years on or after April 6, 2022. Public sector entities, including cities, are encouraged to include climate-related financial disclosures. In 2021, the city of London published its first report, which aligned with the TCFD framework and outlined the city's commitment to managing climate risk.

Australia introduced a climate-related financial disclosure requirements for annual reporting periods as early as January 1, 2025, for those meeting the definition criteria for large private entities. Some cities are voluntary including climate disclosures.

The European Union currently requires large private companies to report on climate risks subject to Corporate Sustainability Reporting Directive (CSRD) for reports published in 2025. All companies meeting the criteria outlined by CSRD must report according to European Sustainability Reporting Standards (ESRS). Public sector entities, including cities, are encouraged to include climate-related financial disclosures. Under the CSRD, organizations must perform a double materiality assessment that evaluates: (1) the impacts of their activities on people and the environment, and (2) sustainability-related risks and opportunities affecting financial performance. While municipalities are not directly within scope, ESRS provide a robust reference model for structuring impact-based climate disclosures in the public sector.



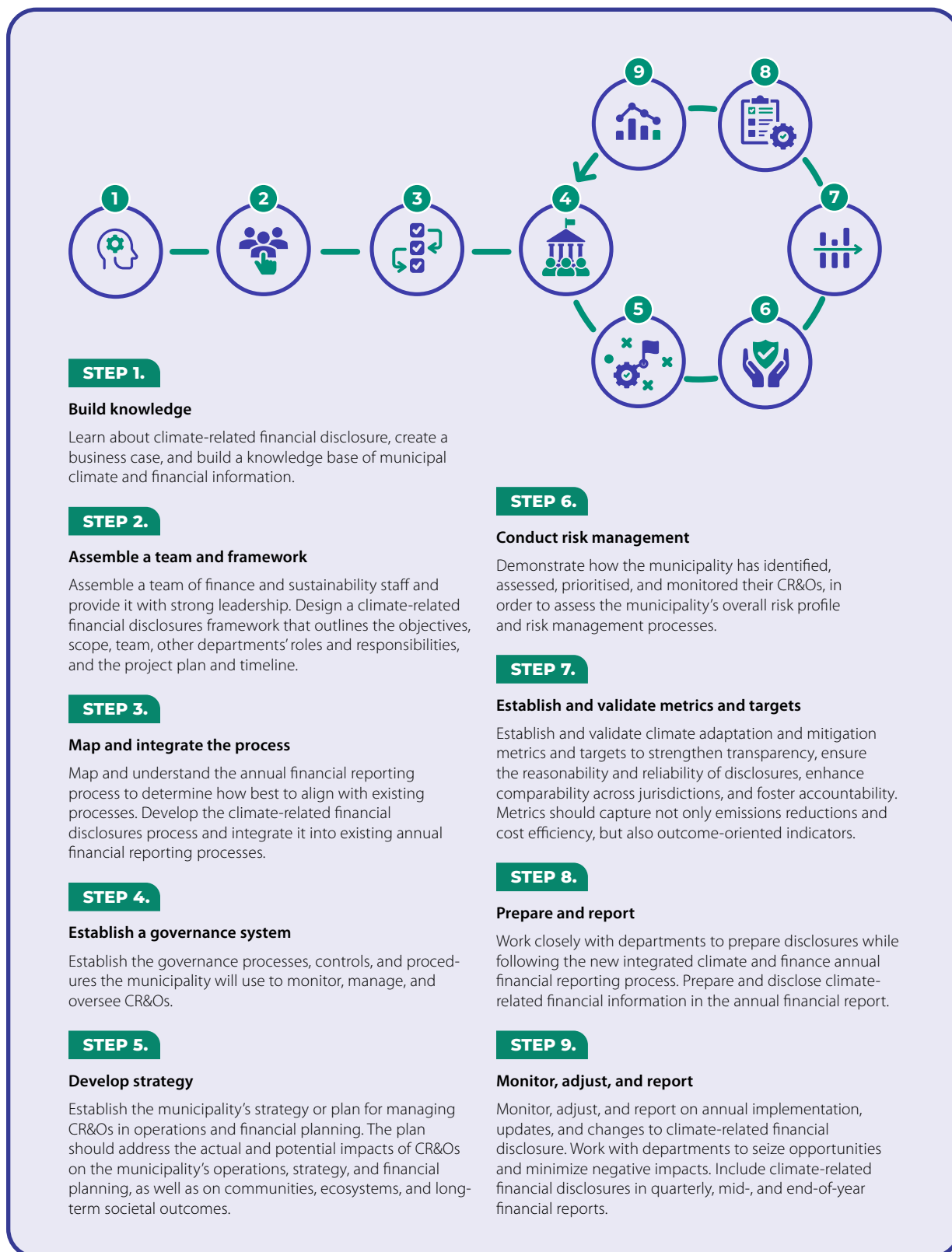
Part 3. How to implement

Climate-related financial disclosures process

The process map shown below provides an overview of the climate-related financial disclosures process for supporting municipalities in starting or advancing their climate-related financial disclosures work. This process was developed based on the different applications of climate-related financial disclosures we observed in Canada and other countries. Each step is detailed in more depth in the following pages, including tips, examples, and resources from leading municipalities and international cohorts. It is important to note that, since climate-related financial disclosures are an iterative process, municipalities should expect to refine their disclosure efforts from year to year, advancing in maturity and implementation as more supporting resources become available.



Figure 2. Climate-related financial disclosures step-by-step process.





STEP 1. Build knowledge

What: Learn about climate-related financial disclosure and create a business case for using it to advance climate objectives. Gather municipal climate and financial strategies, reports, and data into a centralized knowledge base.

Who: Finance and sustainability departments.

Key tasks:

- 1 Learn about the basics of climate-related financial disclosures,** such as how they can be used to advance the municipality's climate objectives and understand the general process. It is also important to review current guidance and frameworks to understand what should be disclosed and the types of materiality that can be applied.
- 2 Create a municipal finance and sustainability knowledge base.** For finance, this could include the financial plan, annual financial reporting process documents, and relevant policies and/or procedures. On the sustainability side, this could include climate actions plans (CAPs) and/or other strategic plans, GHG inventories, community energy and emissions plans (CEEPs), climate-risk analyses, project-level impact calculations, and business as usual (BAU) trajectories.
- 3 Create a business case** to present to council and senior leadership. Where possible, connect climate-related financial disclosures to current political priorities.
- 4 Build understanding between key departments.** Finance and sustainability teams have very different objectives, roles, workplans, and languages. Most teams will benefit from presentations and peer-to-peer discussion.
- 5 Leverage external supports.** Consider joining a cohort or knowledge-sharing network. Research and apply for grants that could help support early climate-related financial disclosures work, particularly for hiring additional staff and/or consultants.

Reach out to leaders and stay current on news from international cohorts to remain informed on best practices for integrating climate adaptation.

Resources: Guidance on building knowledge

- + **Accounting for Sustainability's** [Navigating the Reporting Landscape](#) (2025)
- + **Bill C-59:** [Anti-Greenwashing Guidance](#)
- + **Canadian Sustainability Standards Board's** [Guide on Adopting a Climate-first Approach in Sustainability Reporting](#) (2025)
- + **Chartered Professional Accountants Canada's** [Enhancing Climate-related Disclosure by Cities: A Guide to Adopting the Recommendations of the Task Force on Climate-related Financial Disclosures \(TCFD\)](#) (2019)
- + **Chartered Institute of Public Finance and Accountancy** (CIPFA)'s [Sustainability reporting in the public sector](#)
- + **CSRD Institute's** [European Sustainability Reporting Standards](#)
- + **GRI:** [Standards](#)
- + **GRI 1:** [Foundation](#)
- + **GRI 2:** [General Disclosures](#)
- + **GRI 3:** [Material Topics](#)
- + **GRI Academy's** [courses and certification](#) (2025)
- + **GRI reporting examples:** [City of Porto](#); [City of Stirling](#); [Municipality of Dubai](#)
- + **IFRS Foundation's** [Comparison: IFRS S2 Climate-related Disclosures with the TCFD recommendations](#) (2023)
- + **IFRS Foundation's** [FSA credential](#) (2025)
- + **IFRS Foundation's** [ISSB and TCFD](#) (2025)
- + **IFRS Foundation's** [Progress on Corporate Climate-related Disclosures—2024 Report](#) (2024)
- + **IPSASB's** [Sustainability Reporting Standards](#)
- + **ISSB's S1:** [General Requirements for Disclosure of Sustainability-related Financial Information](#) (2023)
- + **ISSB's S2:** [Climate-related Disclosures](#) (2023)
- + **KPMG's** [Getting ready for CSSB sustainability disclosures](#) (2025)
- + **TCFD's** [Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures](#) (2017)



STEP 2. Assemble a team and framework

- What:** Assemble a cross-departmental team consisting of finance and sustainability staff, and establish strong senior leadership—ideally, from the CFO. Design a climate-related financial disclosures framework that outlines the objectives, scope, team, other departments' roles and responsibilities, and the project plan and timeline. This cross-departmental team should have an explicit mandate to identify and disclose climate-related matters that are material from both an impact (significant effects on community and environment) and a financial (significant effects on budgets, cash flows, and service delivery) perspective. Anticipate and plan for phased implementation.
- Who:** Finance and sustainability departments, mayor and/or council champion(s), senior leadership, management, and department heads.

Key tasks:

- 1 Assemble a climate-related financial disclosures team that includes members from finance and sustainability and establish strong leadership.** This team will be responsible for developing climate-related financial disclosures and incorporating them into the annual financial report. Ideally, the CFO will take a leadership role, as climate-related financial disclosures are most easily and efficiently managed by the team responsible for the annual financial reporting process. The CFO's strong leadership and engagement with the process will also ensure that department heads are supported and accountable.
- 2 Secure high-level political support—for example, obtain a mayoral commitment or identifying a council champion.** This step is highly valuable to securing the buy-in needed to establish strong governance structures quickly. If possible, make this commitment publicly (e.g., via a statement or a letter in the first public council meeting calling for the inclusion of climate-related financial disclosures within the annual financial report).
- 3 Establish the initial objectives, scope, and focus of the climate-related financial disclosure.** Use the CAP or other strategic plans to identify key goals, targets, and actions aligning with the climate-related financial disclosures framework. Where possible, connect climate-related financial disclosures to current political priorities. Solidify the climate-related financial disclosure's objectives and use them to define its scope, including a high-level outline of what climate-related financial information will be included and where/how it will be obtained.
- 4 Develop a project plan.** Decide, at a high-level, whether disclosures will be quantitative or qualitative, or create a combined approach using defined criteria (which will be refined in future steps). Based on the scope and focus, identify key internal departments and staff (e.g., risk will be more involved for adaptation and resilience, while procurement will play a significant role in Scope 3 measures). Assess the level of internal expertise and capacity, and decide whether and how external expertise may be required (e.g., GHG-impact calculations, climate vulnerability, and risk assessment).
- 5 Plan for phased implementation.** The most important outcome is to mainstream climate impact as a decision-making priority in governance and the annual financial reporting processes. Teams can start small and expand the scope as the process matures. Decide what can be reasonably tackled in the first annual financial report and draft a plan to expand the scope and dimensions over the next few cycles.

Tips for smaller municipalities and teams

Strong leadership by the CFO or another senior finance member, and their role in supporting department heads and collaborating across the organization, is more important for municipalities with limited central sustainability resources and staff. The key goal is to break down the silos between the finance team and those responsible, to whatever degree, for climate action.

Resources: Guidance on assembling the team and framework

- + **FCM's** [Guide for Municipal Climate Change Staff](#)
- + **FCM's** [Talking it through: Guide for local government staff on climate adaptation](#) (2020)
- + **ICLEI's** [Leadership and Legacy: Handbook for Local Elected Officials on Climate Change](#) (2012)





STEP 3. Map and integrate the process

What: Develop a deeper understanding of the climate-related financial disclosures process and map the annual financial reporting process to determine how best to align with existing processes. Develop and integrate the climate-related financial disclosures process into existing annual financial reporting processes.

Who: Finance and sustainability personnel, the CFO, department heads, and project managers.

Key tasks:

- 1 Map the existing annual financial reporting process.** Under leadership from finance staff, create a map of the annual financial reporting process. Understand how and when key staff, documents, and tools factor into it and note who is responsible for key steps. Consult with staff and committees to understand differences in the process across units and/or departments. Try to pinpoint informal “grey areas” (i.e., undocumented processes or procedures) in decision-making, and use this detailed review and mapping process to assess and improve existing annual financial reporting processes.
- 2 Integrate climate-related financial disclosures into the existing process.** Understand how existing climate reporting timelines (e.g., GHG inventories, measure evaluation, CAP progress updates) align with annual financial reporting processes. Institutionalize the climate-related financial disclosures process by assigning ownership based on roles and departments, rather than to specific people. Climate vulnerability and risk assessments, community climate risk indices, and GHG inventories can serve as starting points for identifying impact-material topics likely to be important for double materiality disclosures. Be sure to establish clearly when and how departments will identify, evaluate, and report on climate-related financial elements.
- 3 Update existing annual financial disclosure policies, procedures, tools, and templates.** Decide where, how, and when climate-related financial disclosures will be integrated into each existing policy, procedure, tool, and template. Include general examples of climate-related financial disclosure elements (e.g., qualitative and quantitative climate impacts) and highlight any elements or processes specific to individual units or departments.
- 4 Onboard and train staff on the new process.** Key staff include the annual financial reporting team and other finance and sustainability staff, department heads, project and account managers, and/or committees. Involving an internal or external person with expertise in change management could be beneficial in facilitating the rollout.
- 5 Determine whether council, committee, or municipal approval is needed** to adapt the annual financial disclosures process to include climate-related financial disclosure. Update relevant policies and/or pass amendments.

Tips for smaller municipalities and teams

A smaller organizational structure with potentially fewer departments and specialized units can be a benefit during this phase, as annual financial reporting processes may be less specialized and involve fewer committees. Smaller organizations with smaller teams also tend to contain fewer silos, which enables greater agility in introducing climate-related financial disclosures processes across the organization. While larger organizations might engage and train staff via “cohorts” of three to six departments over a period of a few years, smaller teams need less time, especially with strong leadership.

Phased implementation

Leading municipalities agree that the climate-related financial disclosure process will evolve over time. Pilot phases will reveal gaps, challenges, and opportunities to strengthen the process and templates. Any changes to the scope will be reviewed to ensure these new dimensions are properly explained, integrated, and institutionalized.

Municipalities may adopt internal and external-facing bodies, such as climate advisory groups and working committees, as their governance and accountability frameworks and related processes mature.

Resources: Guidance on mapping and integrating the process

- + **C.D. Howe Institute's** [Could Do Better: Grading the Fiscal Accountability of Canada's Municipalities, 2024](#) (2024)
- + **C.D. Howe Institute's** [Solving the Municipal Budget Mystery: Fiscal Accountability in Canada's Cities, 2021](#) (2021)
- + **Institute for Municipal Finance and Governance's** [The Politics of Local Budgeting in Canada: Three Case Studies](#) (2024)
- + **Deloitte's** [Unpacking the Double Materiality Assessment Under the CSRD](#) (2024)
- + **Institute for Municipal Finance and Governance's** [Eco-Fiscal Tools and Municipal Finance: Current Practices and Opportunities](#) (2025)
- + **Municipal Finance Officers Association of Ontario's (MFOA)** [Municipal Finance Orientation Package](#) (2021)
- + **Sunhat's** [Practical Guide to Implementing the Double Materiality Analysis According to CSRD](#) (2025)



STEP 4. Establish a governance system

What: Disclosures should convey the governance processes, controls, and procedures a municipality uses to monitor, manage, and oversee CR&Os. Municipalities are not expected to change their existing governance structures; rather, they are expected to incorporate CR&Os into their existing structures. However, leadership may choose to change their governance system to accommodate their CR&Os, should they deem it necessary.

Who: Council, CAO, and CFO with support from finance and sustainability personnel.

Key tasks:

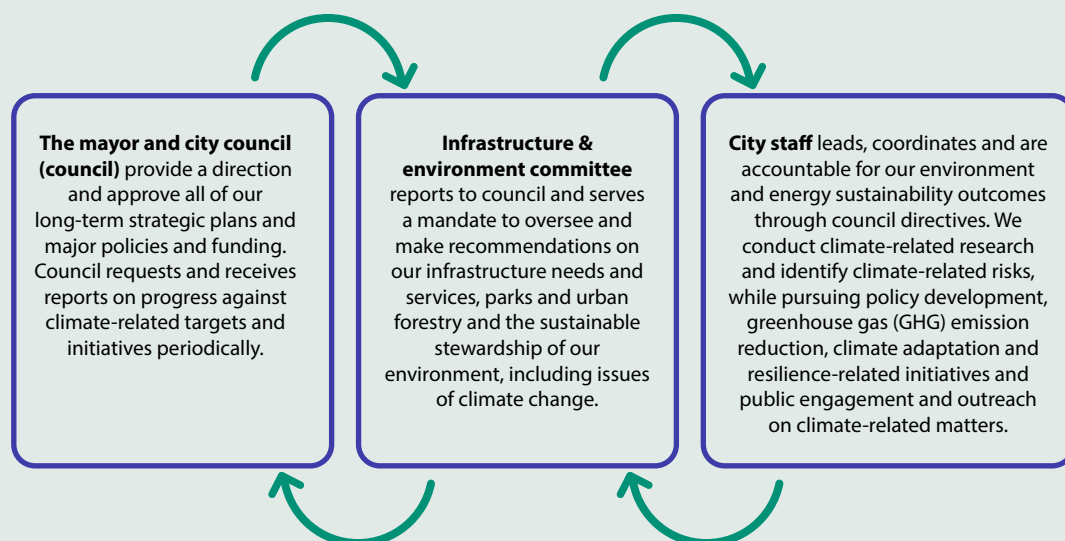
- 1 Assign responsibilities** to the entities or positions ultimately responsible for climate action. These parties could include the mayor, council, committees of council, management, or other oversight bodies. Explain how their responsibilities are documented in terms of reference, mandates, job descriptions, etc. This step includes, but is not limited to, a set of specific assigned tasks, such as passing climate-related motions and/or monitoring progress across climate-related metrics and targets. The presence or absence of climate adaptation and mitigation plans will often be critical in defining the council's responsibilities. The mayor and council should be responsible for approving the plan, overseeing progress on climate-related goals/targets, and scrutinizing outcomes as necessary.
- 2 Enhance skills and competency** to ensure leadership can oversee municipal strategies for addressing climate-related matters. In general, municipalities cannot guarantee their leadership will possess the necessary skills and expertise to oversee CR&Os, as these are elected positions. However, the city administration can help build the council's skills and expertise by arranging educational workshops, seminars, and/or training sessions. These sessions can be conducted periodically to ensure leadership continues to develop the necessary skills and competencies required for effective climate change governance in a changing climate.
- 3 Establish schedule** to outline when and how leadership will be informed about climate-related risks and opportunities. These updates may take the form of annual updates on the progress of climate strategies, goals, and targets. Municipalities should leverage existing systems and/or develop new reporting systems to effectively integrate CR&Os into their work—for example, mandating regular updates on climate-related efforts (adaptation and mitigation activities) during council meetings.
- 4 Establish a day-to-day oversight structure** to ensure leadership has a system for managing climate actions. The oversight structure can be managed by a dedicated body or an individual, such as a climate-action committee, department, and/or officer. This person or group is responsible for overseeing the day-to-day climate work and reporting to leadership.

Municipalities should describe management's role in monitoring, managing, and overseeing CR&Os, including whether specific roles have been delegated and, if so, how oversight is maintained. The processes and controls supporting oversight should be explained, including how they are integrated with other municipal functions. One effective method is to link management's role in assessing and managing CR&Os directly to specific targets in the municipality's CAP. These targets can be designed to address CR&Os directly or indirectly.

Current practices: How leading municipalities are addressing governance

Toronto has established a governance system for climate-related risks and opportunities involving the mayor and council, infrastructure and environment committee, and city staff leads. This system is illustrated in the figure below.

Figure 3. Toronto's governance system for climate-related risks and opportunities.



Source: City of Toronto's [2023 Annual Financial Report \(2024\)](#)

Toronto's 2023 Annual Financial Report also details how management and staff have actively addressed issues relating to physical climate risks over the years, from starting the planning phase in 2007, to growing their efforts from 2015–2023, to strengthening and sustaining these efforts from 2024 onward.

Toronto established a **Carbon Accountability system**, which institutionalizes the “what, when, who, and how of TransformTO Net Zero Strategy implementation.” This system establishes the framework and processes, and links climate budget planning to key groups, including the net zero climate leadership table (city leadership) and the climate advisory group (26 diverse community members). This system consists of four main elements:

- Part 1. Establishing a carbon budget.
- Part 2. Codifying the climate budgeting system, processes, and reporting within the financial budget process and across city divisions through the new “Climate Change Goals and Governance” chapter in the *Municipal Code*.
- Part 3. Creating protocols for identifying and prioritizing impactful GHG-reduction actions in the annual financial process and for reporting on progress to the public and council. This step includes creating or adopting tools and methods for estimating the GHG impacts of annual budget measures.
- Part 4. Developing a corporate “Offset Credits Policy” that defines the city’s policy regarding the role of carbon offsets in the pursuit of its net zero goals.

Vancouver's 2024 Annual Financial Report describes the city's overall risk governance structure as follows:

- "City council approves all the city's long-term service strategic plans, including climate-related strategies, and prioritizes the implementation of those plans through budget funding approval. Council receives reports on progress against climate targets annually and at stated intervals.
- The risk management committee (RMC) comprises the city manager, deputy city manager, city solicitor, chief financial officer, and the chief risk officer. The RMC oversees the city's management of acute and chronic risks, with climate impacts appearing in both categories. The RMC oversees risk governance and the general risk framework to ensure standard methods of risk evaluation and process are used. The RMC sets limits within which risks should be managed, and ensures the treatments meet the risk tolerance for the city. The RMC appoints risk owners for risks that cross multiple departments.
- The chief risk officer and the risk management team lead the enterprise risk management (ERM) program, under direction of the RMC. They are responsible for monitoring and facilitating the implementation through operational management of ERM processes, tools and reporting to achieve effective risk treatment. The risk team also sits on key steering committees related to climate risk.
- General managers (GMs) act as the risk owners, responsible for ensuring appropriate risk management practices are in place and operating effectively for their area of responsibility. GMs retain the ultimate responsibility for effective risk management in their departments, which includes identifying and treating risks related to their area of responsibility. Risks that may significantly impact the city are escalated through the ERM process for guidance from the RMC. The risk team provides support and workshops to aid the departments in identifying risks and developing mitigation plans."

Following the publication of its **2022–2027 Strategic Plan**, Victoriaville, QC, developed a governance structure for implementing its GHG Reduction and Climate Adaptation plan. It embeds the sustainable development office (BDD) directly within the general management of the municipality, alongside the director general and the deputy director general. This strategy has allowed Victoriaville to entrench sustainability across all municipal operations. The BDD team includes a chief scientist and four strategic advisors whose sole mission is to identify, explore, and disseminate innovative practices that can be deployed across municipal departments. Victoriaville also established a **Strategic Committee on Sustainable Development (CSDD)** composed exclusively of elected officials and executive directors from key local organizations and businesses in strategic or decision-making positions. Furthermore, the city has established a citizen network, VictODD (Objectifs de développement durable), which is a participatory panel comprising 100–200 residents who help shape and communicate public policies aligned with the city's sustainable development goals (SDGs). Additionally, Victoriaville's LabODD program brings on four master's level students each year for professional residencies. These "Municipal Residents in Climate Adaptation and Resilience" immerse themselves in the political, social, and operational realities of the city, making their lab an incubator of ideas at the interface of science and local governance that enables knowledge acquisition, production, and transfer within a real-world context. Since this governance structure's implementation in 2023, early signs of an organizational shift have become observable, indicating promise for accelerated climate action in the coming years.

Resources: Guidance on establishing governance systems

- + **Canada Climate Law Initiative and Real Property Association of Canada's** [Guide to Effective Climate Governance in the Canadian Commercial Real Estate Sector: Building for the Net-Zero Future](#) (2022)
- + **Ceres'** [View From the Top: How Corporate Boards Engage on Sustainability Performance](#) (2015)
- + **Climate Disclosure Standards Board's** [Directors' duties & liabilities around climate risk](#) (2017)
- + **Chapter Zero's** [Board Toolkit](#) (2022)
- + **Commonwealth Climate and Law Initiative's** [Concerns misplaced: Will compliance with the TCFD recommendations really expose companies and directors to liability risk?](#) (2017)
- + **ESRS 2**—General Disclosures
- + **GRI 102:** Climate Change (2025)
- + **TCFD's** [Workshop in a Box: Governance Workshop](#) (2022)
- + **Trottier Family Foundation's** [City Level Partnerships for Climate Action](#) (2023)
- + **World Economic Forum's** [How to Set Up Effective Climate Governance on Corporate Boards: Guiding principles and questions](#) (2019)





STEP 5. Develop strategy

What: Disclosures help municipalities develop their strategy or plan for managing CR&O. Here, climate-related financial disclosures should address the actual and potential impacts of CR&Os on the municipality's operations, communities, ecosystems, long-term societal outcomes, strategies, and financial planning. These impacts are heavily informed by the work done in the risk management pillar, while the strategy can be viewed as the output of the risk management work.

Who: CFO with support from finance and sustainability personnel.

Key tasks:

- 1 **Identify and describe** CR&Os that can reasonably be expected to affect municipal prospects (e.g., operational models, cash flows, supply chains, and financial performance). Report the municipality's short-, medium-, and long-term CR&Os. These are typically described in three steps.
 - a. **Identify CR&Os:** identify CR&Os and conduct climate risk and adaptation assessments to determine their impact materiality (i.e., significant effects on people, environment, and the local economy) and financial materiality (i.e., significant effects on municipal finances and service capacity). Municipality-wide or narrow risk assessments can be used if they capture both dimensions of materiality and are selected based on cost, time restraints, or other factors. CR&Os that have been identified, analyzed, and evaluated via narrow scoped climate risk assessments (e.g., an assessment of municipal water systems or roads) should still be considered for their materiality. To identify CR&Os for reporting, municipalities must consider all reasonable and supportable information available to them at the reporting date, without undue cost or effort. In cases where information is incomplete, municipalities can still disclose high-level information on significant impact material topics, while explaining limitations and plans to improve data over time. As such, municipalities knowingly exposed to a risk or an opportunity that could materially affect their future financial performance and position (and vice-versa) would likely need to disclose any related information available to them. However, the caveat of, "without undue cost or effort," also allows municipalities to weigh the costs and benefits of obtaining the required information against their level of exposure to risks and opportunities, the skills, capabilities and resources available to them, and the resulting information's benefits for the primary users of the climate-related disclosures report. This caveat is intended to provide relief for municipalities that report imperfect information despite their best efforts.
 - b. **Define time horizons:** define the time horizon (i.e., short-, medium-, and long-term) over which these risks and opportunities could reasonably impact the municipality. These horizons should then be integrated into and reflected in the municipality's strategic/financial planning horizon. Short-, medium-, and long-term time horizons may vary from one municipality to another depending on several factors, including the internal planning horizons used for strategic decision-making (e.g., planning for infrastructure upgrades). Time horizons may also differ between the identification, assessment, and planning in relation to physical and transitional risk and opportunity CR&Os.
 - c. **Describe the nature of CR&Os:** explain whether the climate-related risk is a physical risk arising from climate change or a transition risk associated with the shift to a lower-carbon economy. This explanation should also indicate if there are climate-related opportunities. Opportunities can arise from the implementation of adaptation or mitigation actions and their associated co-benefits.

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- 2 **Determine the effects on supply chains.** Municipalities should assess and disclose the current and anticipated effects of their CR&Os on their operational model and supply chain, including where these CR&Os are concentrated (e.g., geographical areas, types of services, or types of assets). This assessment will be largely informed by the analysis of the CR&Os described in the risk management section.
- 3 **Determine how CR&Os impact strategy and decision-making.** Describe how CR&Os are integrated within municipal strategy and decision-making. What is the transition plan? Municipalities possessing a climate adaptation and/or mitigation plan may have already directly or indirectly integrated climate-related issues into some of their strategies and work plans. Key areas to consider include:
- a. **Strategic response:** the municipality's response to CR&Os, covering relevant past and future planned activities.
 - b. **Changes to operations:** information about current and anticipated changes to municipalities' operational models, including changes in resource allocation (e.g., plans for carbon-, energy- and water-intensive assets or operations, acquisitions or divestments, or plans for development spending).
 - c. **Adaptation and mitigation efforts:** information about current and anticipated direct and indirect adaptation and mitigation efforts.
 - d. **Nature of the CR&Os** (i.e., physical risk, transition risk, or opportunity): how do these CR&Os impact operations and services (value chain) over time?
- 4 **Determine effects on financing.** Describe how CR&Os impact the municipality's financial position (e.g., assets and liabilities), financial performance, and cash flows. This information should cover the effects identified within the annual financial report for the current period, as well as those anticipated over the short-, medium-, and long-term. In addition, this information should also help primary users understand how the identified CR&Os impact financial planning. Key considerations include:
- a. **Linkage with municipalities' most recent annual financial report:** how have CR&Os affected the municipality's financial position, financial performance, and cash flows for the reporting period. The disclosure should also include information about CR&Os likely to incur material adjustments to the carrying amounts of assets and liabilities reported in the related annual financial report within the next annual reporting period. The bar for CR&Os to be recognized directly in these annual financial reports is fairly high.
 - b. **Changes in financial position:** expected changes in the municipality's financial position over the short-, medium-, and long-term, given its (adaptation, mitigation, or combined) strategy for managing CR&Os.
 - c. **Investment and disposal plans:** these encompass planned investments in sustainable infrastructure and the disposal of assets that may no longer align with climate goals. Municipalities should disclose plans even if they are not contractually obligated, as these intentions can signal future financial commitments and strategic direction.
 - d. **Planned funding sources:** municipalities should outline potential funding sources for actions addressing priority CR&Os. These funding sources could include climate-linked financing arrangements, grants, or public-private partnerships aimed at supporting sustainability initiatives.
 - e. **Changes in financial performance and cash flows:** how municipalities expect their financial performance and cash flows to change over time due to their strategy or CR&Os. This assessment may involve modelling financial performance indicators under a BAU (or "costs of inaction") scenario(s) and a scenario commensurate with the concurrent and planned implementation of actions contained in the municipality's strategy.

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- f. Consideration of climate risks in the context of broader enterprise risks:** municipalities must consider climate risks within the context of all other risks and pressures. Climate change is largely a “risk multiplier.” An enterprise risk management system that incorporates climate information can help prioritize risks and identify interdependencies between their sources and their cascading effects, while extending analysis across short-, medium-, and long-term time horizons to capture both immediate and emerging climate-related challenges.
- g. Assess resilience:** describe the strategy’s resilience to the identified risks. What impacts do climate-related scenarios bring? Municipalities should disclose information that enables primary users of municipal climate-related reports to understand the resilience of their strategies (e.g., the flexibility to adjust to changing circumstances, such as the increase in wildfires and smoke). This entails municipalities’ ability to deliver public services in response to climate-related changes, developments, and uncertainties within their jurisdictions. This disclosure should consider the municipality’s identified CR&Os, as well as the evolving service needs of those in the community.

Municipalities should employ climate-related scenario analysis to assess their climate resilience. This approach should take into consideration the municipality’s exposure to CR&Os, as well as its available skills, capabilities, and resources. Climate-related scenarios allow a municipality to understand how climate-related events (and their associated risks and opportunities) may impact its operations, strategy, and financial performance over time.

The scenario analysis should be tailored to the municipality’s specific circumstances and should consider its exposure to CR&Os and its internal capabilities, including skills, resources, and its capacity to conduct such analysis. The scenario analysis should include:

- i. Assessment implications:** the assessment’s implications, if any, for the municipality’s strategy, own operations, and ability to provide public services and manage its own operations, including how it would respond to the effects identified in the climate-related scenario analysis.
- ii. Areas of uncertainties:** significant areas of uncertainty considered in the municipality’s assessment of its climate resilience. These include uncertainties relating to the extent to which climate variables of concern will change in the future; for example, down-scaled, local projections for wind speeds and direction are much more uncertain and associated with lower confidence levels compared to projections for daily temperatures.
- iii. Ability to adapt:** the municipality’s capacity to adjust or adapt its strategy, own operations, and ability to provide climate-change-related public services over the short-, medium-, and long-term (including the availability of, and flexibility in, existing financial resources to respond to the effects identified in the climate-related scenario analysis—for example, addressing climate-related risks and taking advantage of climate-related opportunities; the ability to redeploy, repurpose, upgrade, or decommission existing assets; and the impact of current and planned investments in climate-related adaptation, mitigation, and opportunities on climate resilience).

Current practices: How leading municipalities are addressing strategy

Calgary's 2025 Annual Financial Report drew from the city's past experience with TCFD reporting and aimed to align with ISSB's IFRS S2, with an acknowledgement that future reports will aim to align with IPSASB or CPSAB once public-sector-focused climate-related disclosure standards become available. One chapter of the disclosure, which focused on risk management and strategy, detailed the city's development of tools and processes to identify, assess, prioritize, and monitor CR&Os, and its integration of climate-related risks into its risk management framework. These actions established climate-related risks as key inputs into the city's overall strategy.

The city's corporate risk-review process is a systematic approach to collecting, analyzing, and reporting on risks that ultimately produces a corporate risk profile. The profile is updated semi-annually based on information received about the nine principle corporate risks (PCRs). The PCR that addresses physical climate risk and GHG risk is known as "the sustainable city PCR." In 2024, the sustainable city PCR was rated as "high" with a "stable" trend. The city's risk response is currently in progress, and the risk will continue to be closely monitored and assessed.

The risk management and strategy pillar also highlights processes for assessing climate-related physical risks and opportunities, their implications, and responses, as well as economic analysis tools that have been applied to this end or are currently in development. A methodology for assessing transition risks and opportunities is in development, which will enable (but is not limited to) regulatory changes, carbon credit, and offset markets.

The city also reports on the various strategies, plans, and policies it has put in place to manage its CR&Os, such as the **Calgary Climate Strategy: Pathways to 2050**, the **2023–2026 Climate Implementation Plan**, the **Sustainable Building Policy**, the **Green Fleet Strategy**, and the **Flood Resilience Plan**. At present, the city is developing additional tools and processes for integrating climate considerations into financing decisions and the broader planning and policy framework—including a climate budget, accounting process outputs, and a carbon budget—to identify the cumulative GHG emissions that can be produced while still complying with the city's climate targets.

The risk management and strategy reporting closes with a reflection on the strategy's resilience, including future efforts to include scenario analysis to identify CR&Os that could further enhance its resilience.

Mississauga's 2023 Financial and Sustainability Report draws upon four major reporting frameworks to shape its disclosures: the TCFD, the United Nations SDG, IFRS, and the Task Force on Nature-related Financial Disclosures (TNFD). Mississauga's reporting on strategy elements aligns with the TCFD's recommendations.

Strategy 1: Describe the CR&Os identified by the city over the short-, medium-, and long-term. The municipality disclosed that, in developing their CAP, they completed a Climate Change Risk Assessment (CCRA) identifying and prioritizing the climate-related hazards that posed the greatest risk to the city. The CCRA focused on four asset management service areas: facilities and property management; roads; stormwater; and parks, forestry, and the environment. A high-level summary of the study was included in the disclosure and will be incorporated into asset management procedures and decision-making.

Strategy 2: Describe how CR&Os impact the strategy and financial planning of the city's businesses. The city disclosed that, "many city divisions take into account climate risk into their day-to-day operations and planning. From an asset management perspective, divisions that operate and manage core assets have integrated climate-related risks into the future demand section of their individual asset management plan in order to deliver effective and timely services to the community in the short-, medium-, and long-term. The city's 2024 Corporate Asset Management Plan includes both core and non-core assets and identifies any relevant climate-related risks and/or opportunities in the future demand section and in the lifecycle management section (if possible). One challenge that many of the service areas have marked as continuous improvement for future asset management plans is being able to quantify the cost of mitigating or adapting to climate-related issues and how it impacts each service area's established levels of service."

Strategy 3: Describe the organizational strategy's resilience, taking into consideration different climate-related scenarios, including a 2°C or lower scenario. The city disclosed that a CR&Os assessment was undertaken for municipal assets. This assessment considered two main projection horizons: a 2050 scenario and a 2080 scenario. Both scenarios included high-level climate trends including warmer and hotter weather, heavy rainfall and droughts, winters with less snow and more rain, seasonal shifts, and more extreme storms and events. The implications of these trends are reported in the city's risk management reporting.

Canmore's 2024 **Climate Emergency Action Plan (CEAP)** is a comprehensive strategic-level plan that addresses adaptation and mitigation, outlining the necessary steps to achieve a resilient and low-carbon future. While Canmore has not done a climate-related financial disclosure, their CEAP and **Implementation Risk Assessment** contain good examples of elements of the strategy pillar. The CEAP's climate hazard projections, along with its climate risk and vulnerability assessment, provide a risk score for each hazard and outline each hazard's impact on the municipality and community. In addition, the city developed an Implementation Risk Assessment Plan that outlines how uncertainty affects its objectives and describes the likelihood and impact of events or trends with the potential to impact the organization's objectives. A risk matrix is employed to describe the potential risk to the implementation of Canmore's CEAP, as well as its contingency strategies, including the risks associated with doing nothing, labour-related risks, energy system risks, and governance and policy risks.

Resources: Guidance on developing a strategy

- + **Accounting 4 Sustainability's** [Aligning Financial Planning and Transition Planning Guide](#) (2025)
- + **ESRS E1** [Climate Change](#)
- + **Government of Canada's** [Climate-related resources for local governments](#) (2022)
- + **GMF's** [Guide for integrating climate change considerations into municipal asset management](#) (2022)
- + **GRI 102** [Climate Change](#) (2025)
- + **TCFD's** [The Use of Scenario Analysis in Disclosure of Climate-Related Risks and Opportunities](#) (2017)
- + **TCFD's** [Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures](#) (2021)
- + **TCFD's** [Workshop in a Box: Strategy Workshop](#) (2022)
- + **TCFD's** [Guidance on Scenario Analysis for Non-Financial Companies](#) (2020)





STEP 6. Conduct risk management

What: The objective of risk management disclosures is to demonstrate how the municipality has identified, assessed, prioritised, and monitored their CR&Os in order to assess its overall risk profile and risk management processes. Disclosures also convey whether and how these processes are integrated into the municipality's overall risk management processes. Municipalities should also file disclosures relating to their integration of processes—more specifically, the extent to which their CR&Os management processes are integrated into and inform their management processes.

Who: CFO with support from finance and sustainability personnel.

Key tasks:

- 1 **Process.** Describe the process by which the municipality identified their CR&Os. There are many well-established CR&Os identification methods for municipalities to draw from. Best practice suggests the selected process should be participatory and integrative, clear and easy to use, contextual and localizable, scalable and transferable, replicable, and based on the best available information. Explain the process used, as well as the rationale for using it.
- 2 **Inputs.** Explain the inputs and parameters used in the risk assessment. The climate scenario analysis should utilize all “reasonable and supportive” information available to the municipality, without incurring undue cost and effort. For example, what is the scope of operations covered by the disclosed processes, what are the data sources, and which users contributed?
- 3 **Scenarios.** Explain how future climate scenarios informed the risk management process. All CR&Os assessment processes rely on the use of future climate scenarios. These are not random predictions of future climate; they are scientifically informed climate scenarios constructed for explicit use in investigating potential consequences. Canada has a growing network of climate service organizations that provides regionally specific information and expertise to help in the selection of climate scenarios, including the Pacific Climate Impacts Consortium (PCIC), Ouranos, ClimateWest, the Ontario Resource Centre for Climate Adaptation (ORCCA) and CLIMAtlantic.
- 4 **Consequences.** When disclosing information about the process used for climate scenario analysis, explain how the nature, likelihood, and magnitude of CR&Os consequences are assessed. Risk assessment involves analyzing the likelihood of an event occurring and its negative consequences. Risk can be expressed as a function, where $\text{risk} = \text{likelihood} \times \text{consequence}$. Conversely, “likelihood” refers to the probability of a projected impact occurring, and “consequence” refers to the known or estimated outcomes of a particular climate change impact.
- 5 **Prioritization.** Describe how the municipality has prioritized their CR&Os. Consider climate risks within the context of all other risks and pressures. Climate change is largely a risk multiplier, meaning it makes existing problems and vulnerabilities more severe and complex. An enterprise risk management system that incorporates climate information can help prioritize risks and identify interdependencies between sources of risk and their cascading effects, while extending this analysis across short-, medium-, and long-term time horizons to capture both immediate and emerging climate-related challenges.

- 6 **Sensitivities and practicalities.** When disclosing CR&Os information, the municipality may decide to work with legal advisors or subject matter experts. As some information may be sensitive in nature, consideration should be given to how best to share it with annual financial report users.
- 7 **Monitoring and upkeep.** Describe the process through which the CR&Os are monitored and kept up to date. Is the CR&Os identification process repeated or reassessed to track changes over time? Have best practices changed, resulting in suggested changes to the process or process inputs? If there are changes in inputs, scenarios, risks, and/or prioritization, how are they monitored, tracked, and reported on?

Current practices: How leading municipalities are managing risk

Ottawa's 2023 Annual Report explains how city council approved the **Climate Change Master Plan**, which provides an overarching framework for reducing GHG emissions and responding to current and future effects of climate change in the city. The plan details how the city identified, assessed, prioritised, and monitored CR&Os through its Climate Vulnerability and Risk Assessment and Energy Evolution. The city has an ERM program that is directed by a council-approved policy and framework.

The ERM allows departments to identify, assess, mitigate, monitor, and report on risks. This ability enables the city to review and evaluate cross-departmental trends, and risks can be escalated to ensure they receive attention and action from senior leadership.

The Climate Change Master Plan addressees each of the risk management priority areas, including the processes followed for the adaptation and mitigation analyses, the inputs applied, the scenarios drawn from, the consequences of the CR&Os, the priorities from 2020–2025, and the plans for the ongoing monitoring of and reporting on individual projects and the plan as a whole.

In 2024, the Capital Region District (CRD) completed detailed climate model projections with the support of the Pacific Climate Impacts Consortium. While the CRD has not completed any climate-related financial disclosures, their **Climate Projections document** provides a comprehensive breakdown of their scenario modeling methodology, which was based on the three GHG emission scenarios (shared socioeconomic pathways), as well as an explanation of key indicators for winter temperatures, summer temperatures, and precipitation. Regional impacts resulting from these projections are included for a wide range of sectors, including climate equity, health and wellbeing, water supply and demand, rainwater management and sewers, ecosystems and species, buildings, energy systems, transportation, food, agriculture, and recreation and tourism. The CRD's study provides a strong basis for disclosure in the risk management pillar and is a good example of the types of methodological information needed to disclose on the CR&Os identification process, such as how scenarios have informed the CR&Os process and the inputs used in the climate scenario analysis.

Resources: Guidance for risk management

- + **Canadian Council of Ministers of the Environment's** [Guidance on Good Practice in Climate Risk Assessment](#) (2021)
- + **Engineer's Canada's** [PIEVC \(Public Infrastructure Engineering Vulnerability Committee\) Protocol](#)
- + **Deloitte's** [Unpacking the Double Materiality Assessment Under the CSRD](#) (2024)
- + **ESRS E1** [Climate Change](#)
- + **FAO's** [Costing Climate Change Impacts to Public Infrastructure Project](#) (various reports and case studies), including the [Project Backgrounder and Methodology](#) (2021/22)
- + **GRI 102:** [Climate Change](#) (2025)
- + **ICLEI Canada's** [Building Adaptive and Resilient Communities \(BARC\) Guide](#) (2025)
- + **TCFD's** [Workshop in a Box: Risk Management Workshop](#) (2022)
- + **TCFD's** [Guidance on Risk Management Integration and Disclosure](#) (2020)

Resources: Guidance for tagging, qualifying, and quantifying climate impacts and costs

- + **C40's** [Action Selection and Prioritization \(ASAP\) tool, user manual and process guide](#)
- + **C40 and Cicero's** [Handbook on GHG emissions quantification for climate budgeting](#) (2024)
- + **C40 Cities'** [Estimating Climate Impacts: Overview of the Impacts Tool and *Estimating Climate Impacts: A Guidebook on GHG Emissions Impact Analysis*](#) (2021)
- + **Canadian Climate Institute's** [Counting the Cost of Climate Change](#) (map)
- + **Canadian Institute for Climate Choices'** [Under Water: The Costs of Climate Change for Canada's Infrastructure](#) (2021)
- + **Endrava's** [Data and tools for climate budgeting: Gap analysis and recommendations for further C40 action](#) (2022)
- + **IBC and FCM's** [Investing in Canada's Future: The Cost of Climate Adaptation at the Local Level](#) (2020)
- + **ICLEI Canada's** [Getting Ready to Finance Toolkit](#) (2023)
- + **ICLEI Canada's** [The Cost of Doing Nothing Toolbox](#) (2022)
- + **ICLEI Canada and FCM's** [Partners for Climate Protection Milestone resource *Guidebook on Quantifying Greenhouse Gas Reductions at the Project Levels*](#) (2020)
- + **United Nation Environment Programme's** [Physical Climate Risk Assessment and Management: An Investor Playbook](#) (2024)



STEP 7.

Establish and validate metrics and targets

What: Metrics and targets disclosures aim to help users of climate-related financial disclosures understand how well a municipality is managing its CR&Os. Metrics can be used to assess CR&Os in line with strategies and risk management processes. Metrics can also relate to GHG emissions (scopes 1, 2, and 3) indicators that highlight enhancements in resilience and adaptation. These disclosures can strengthen transparency, ensure that disclosures remain reasonable and reliable, enhance comparability across jurisdictions, and foster accountability in sustainability efforts.

Metrics and targets should capture the financial implications of climate risks and opportunities (e.g., capital expenditures, operating costs, revenue impacts) and the municipality's most significant climate-related impacts (e.g., community emissions trajectories, vulnerable populations' exposure to heat and flooding, ecosystem health indicators).

Who: CFO with support from finance and sustainability personnel.

Key tasks:

- 1 Metrics.** Describe the metrics used to assess and manage CR&Os relevant to the municipality. The seven cross-industry climate-related metrics included in the IFRS S2 requirements provide industries with a common core for reporting. These metrics include GHG emissions, transition risks, physical risks, opportunities, capital deployment, internal carbon price, and remuneration (see Appendix A). However, these metrics, which cover 11 sectors and 68 industries, do not specifically include the public sector. Until further guidance for the public sector is published, municipalities should focus on developing metrics defined at the municipal level, tailor them to measure, and monitor their CR&Os. (see Appendix A)

Municipalities will often use a combination of process-based and outcome-based indicators to track climate action. Process-based indicators monitor the activities and steps taken to achieve a goal, while outcome-based indicators measure the actual results of those activities. For instance, the number of established cooling stations is an example of a process-based indicator that help measure a community's progress towards developing stronger adaptive capacity. While the reduction of tonnes of GHG emissions is an outcome-based indicator, this metric measures progress towards a GHG target.
- 2 Process.** Describe what progress has been made toward established climate-related targets, and how this progress is monitored and reported (qualitatively and quantitatively). Tracking the above-discussed metrics over time will lend a quantitative lens to progress and outcome tracking. These metrics can be monitored via annual climate budget reports, updates to GHG inventories, and/or tracking the impact of climate action measures implemented by the municipality.
- 3 Materiality.** Describe the materially significant metrics for identified CR&Os that could impact the municipality's future prospects. Material climate-related financial information can include, but is not limited to, climate change's potential financial impact on the organization's business model, operations, and strategy. This information can encompass a wide range of factors, such as regulatory risks (e.g., potential costs of complying with new environmental regulations), physical risks (e.g., potential costs of extreme weather events or long-term shifts in climate patterns), and transition risks (e.g., potential costs of transitioning to a lower-carbon economy).

- 4 **Scopes.** Describe what GHG emissions are disclosed across different scopes and what relevant risks are associated with these emissions. Scope 1 GHG emissions are from the sources within the municipal boundary. Scope 2 GHG emissions are produced by the use of grid-supplied electricity, heat, steam, and/or cooling within the municipal boundary. Scope 3 GHG emissions comprise all other emissions that are from outside the municipal boundary but are generated from the activities taking place within it. An example of Scope 3 emissions is international business travel ([Global Protocol for Community-Scale Greenhouse Gas Inventories](#)).
- 5 **Alignment.** Describe how the metrics align with cross-industry standards. Do the selected metrics support voluntary or involuntary regional, provincial, national, or international municipally focused reporting? How does your municipality align with others? Why might your municipality differ? Many important geographic and socio-economic factors will affect how your municipality compares to others.
- 6 **Challenges.** Reflect upon the challenges in tracking the metrics and targets. Access to data and data limitations are common problems in tracking climate progress, as is the ability to attribute changes to specific causes. The growing volume of misinformation about climate change has emerged as a serious problem for municipalities and highlighted the need for more effective climate communications.
- 7 **Effectiveness.** Describe the processes in place to assess the effectiveness of current methods of collecting data used to monitor progress toward targets, and what gaps need to be addressed. Can the effectiveness of these methods be improved over time? What strategies can be used to increase effectiveness?
- 8 **Integration.** Describe the ways in which metrics and targets have been integrated into the municipality's broader strategic planning and decision-making processes. Have climate metrics been embedded into the municipality's official community plan, asset management strategy, secondary plan, or other official planning processes?
- 9 **Targets.** Describe the quantitative or qualitative climate-related targets that have been set by the municipality, including those required by law or regulation, along with the metrics used to measure progress toward them. Typically, a municipality will have separate climate adaptation targets and climate mitigation targets, with interim targets that help ensure progress along the way.
- 10 **Insights.** With more experience in climate-related financial disclosures comes more insights. What insights have been learned through tracking metrics and targets, and how have they influenced course correction. Have these insights affected the municipality's financial planning and operational strategy?



Current practices: How leading municipalities are addressing metrics and targets

Edmonton's 2024 Annual Report describes the various metrics and targets it employs to measure progress towards its climate resilience goals and strategies. Edmonton's metrics and targets framework approach takes into account operations and corporate reporting on activities, as well as indicators associated with strategic plans that make an impact at the community level. Key components of Edmonton's metrics and targets reporting include:

- **Enviso** – the city's corporate ISO environmental management system. This system has been used to establish key performance indicators across different environmental aspects, including energy and climate resilience.
- **Official plan** – long-term targets and metrics, including those related to climate change, have been embedded with the city plan.
- **GHG inventories** – annual corporate and community GHG inventories, including Scope 1, 2, and 3 assessments, provide insight for energy transition and emissions-reduction planning and tracking.
- **Key accomplishments** – the city reflects on their major accomplishments throughout the year, which are established through various metrics and targets, such as GHG reductions and the uptake of renewables, capital budget allocations to climate projects, and recognition from international agencies for their climate reporting.
- **Upcoming priorities** – the city reflects on their priorities for the upcoming year, including third party verification to add additional assurance to their data and analysis, refining their carbon budgeting process to enable greater quantification of budget profiles, and developing new corporate climate resilience targets.

Edmonton's annual financial report is a great example of an iterative approach to climate-related financial disclosure. The city has taken a phased approach to its work, improving and evolving it over time as their experience grows.

Although the **Cowichan Valley Regional District** (CVRD) has not completed a climate-related financial disclosure, its 2018 Corporate Strategic Asset Management Plan included a Climate Risk Assessment that contains much of the information needed to disclose across the four pillars.

A time horizon is provided for each climate hazard, and a risk assessment is completed for each of the district's assets, including how each asset's functionality will be affected and its sensitivity to impacts. The risk assessment process is thoroughly documented as well, including how the magnitude of the consequences was assessed and how risks were prioritized. Regarding the governance pillar, the CVRD provides next steps for updating the asset management policy, integrating results into the Asset Management Plan, and operations and planning. To date, the CVRD has already incorporated a risk tolerance policy to ensure new developments do not increase risk from hazards. On metrics and targets, the CVRD climate change adaptation and risk management strategy outlines the process for developing a sustainable evaluation framework that measures progress relating to implementation using outcome-based indicators, as well as a schedule and process for annual reporting and strategy review. In 2019, the Region conducted more detailed **Natural Hazard Risk Assessments** that provide information and mapping for hazards in specific study areas.

Resources: Guidance for establishing metrics and targets

- + **CDP-ICLEI** Track
- + **GRI 102:** Climate Change (2025)
- + **GRI 103:** Energy (2025)
- + **GRI-IFRS S2** Interoperability Guidance
- + **ESRS E1** Climate Change
- + **ICLEI Canada and FCM's** Partners for Climate Protection Milestone resources, including:
 - *PCP Milestone 1: Creating a Greenhouse Gas Emissions Inventory and Forecast*
 - *PCP Milestone 2: Setting Emission Reduction Targets*
 - *Reaching Milestone 2: How to set emissions reductions targets*
 - *Quantifying greenhouse gas reductions at the project level*
- + **Science Based Targets Network's** *Science-Based Climate Targets* (2021)
- + **ICLEI Canada's** Climate Change Adaptation Indicators in OECD Countries: Lessons for Canada
- + **ICLEI Canada's** *Are we there yet? Applying Sustainability Indicators to Measure Progress*
- + **ICLEI Canada's** *Introducing Indicators: A First Look at Using Indicators to Measure Adaptation Success*
- + **ICLEI Canada's** *Tracking Climate Action: How Canadian Municipalities Approach Local Climate Action Monitoring, Evaluating and Progress Communication*
- + **TCFD's** *Guidance on Metrics, Targets and Transition Plans* (2021)
- + **TCFD's** *Workshop in a Box: Metrics and Targets Workshop* (2022)
- + **WRI, C40 Cities, and ICLEI's** *Global Protocol for Community-Scale Greenhouse Gas Emission Inventories*, including examples of data and tools (2022), and the *City Inventory Reporting and Information System (CIRIS) Excel-based GHG inventory tool*





STEP 8. Prepare and report

- What:** Work closely with departments to prepare disclosures following the new integrated climate and finance annual financial reporting process. Prepare and disclose the climate-related financial information in the annual financial report.
- Who:** Finance department and CFO, sustainability team, department heads, annual financial report reviewed and approved by staff from each municipality (e.g., city manager, CAO, audit committee, and staff), relevant finance, audit, communications and/or community/climate committees, and council.

Key tasks:

- 1 Provide all relevant climate-related financial disclosures instructions, templates, and supporting data.** The finance department will lead this task as part of the annual financial reporting process using the procedures, documents, and examples created in Step 3 (Establish a governance system). Special consideration should be given to information that may be sensitive in nature, (see sensitivities and practicalities, as outlined in Step 6 (Conduct risk management)). The sustainability team can support departments by providing recent departmental and/or sector-specific plans, actions, inventories and assessments, and analyses.
- 2 Work with teams to prepare climate-related financial disclosure.** Plan for staff and resources to support teams throughout the process, especially during the first few cycles. Review priority areas from key policy, guidance, climate, and strategic plans to link them to relevant sections of the climate-related financial disclosure. Staff from each department should identify information gaps and recommend measures for filling them (e.g., quantitative and qualitative data gaps).
- 3 Assemble and present the climate-related financial disclosure.** The annual climate-related financial disclosures will include some or all of the information outlined in Steps 4 (Establish a governance system) and 5 (Develop strategy), depending on the available choices, information, and processes established in each of the preceding steps. Municipalities may choose to present the climate-related financial disclosures separately or to embed it within the annual financial report.
- 4 Discussion and adoption of the climate-related financial disclosures by the council and/or audit committee.** Council should review and discuss climate-related financial information as part of the annual financial report review and approval process. Staff should ensure that the climate-related financial disclosures are explicitly included on any council and/or audit committee agenda related to the annual financial report. Ultimately, council and/or the audit committee will adopt the climate-related financial disclosures alongside the annual financial report.

5

Communicate the climate-related financial disclosure. Communicating the climate-related financial disclosures is an important step that entails initial and ongoing communication between the council, staff, public committees, the community, and, potentially, peers, partners, and other users (e.g., regional governments, climate cohorts, climate-action networks, utilities, transit agencies). Climate-related financial disclosures reporting will likely overlap with existing periodic reporting regarding the municipality's CAP. As such, municipalities also may want to develop a communication plan. Municipal leaders recommend using clear language that minimizes technical jargon and providing specific examples of how climate has been integrated into annual financial reporting processes and what it has achieved. Some municipalities note that internal communications led by finance are more effective.

Most municipalities are releasing public communications alongside their annual financial reports. These communications can take the form of climate-related financial disclosures specific summary documents, press releases, public dashboards, council or staff statements, and/or media interviews. To further cement cross-departmental cohesion, the financial and sustainability teams can release joint communications. In addition to raising awareness and sharing progress, such communications will clarify the objectives, scope, and results of climate work and mitigate the risk of misinterpretation.

Phased implementation

Climate-related financial disclosures reporting is likely to evolve over time as best and promising practices emerge. Municipalities should be clear about if, when, and how the framework and dimensions of their climate-related financial disclosures change—for example, by documenting any new climate-related information in relevant parts of the management discussion and analysis. Information withheld due to sensitivities or practicalities should be revisited each year to ensure these decisions align with current standards and guidance.

Resources: Current practices for preparing and reporting

- + [Calgary's 2025 Annual Financial Report](#)
- + [Edmonton's 2025 Annual Financial Report](#)
- + [Mississauga's 2025 Annual Financial Report](#)
- + [Montreal's 2024 Annual Financial Report](#)
- + [Ottawa's 2024 Annual Financial Report](#)
- + [Toronto's 2024 Annual Financial Report](#)
- + [Vancouver's 2025 Annual Financial Report](#)



STEP 9. Monitor, adjust, and report

- What:** Monitor, adjust, and report on annual implementation, updates, and changes to climate-related financial disclosure. Work with departments to seize opportunities and minimize negative impacts. Include climate-related financial disclosures in quarterly, mid-, and end-of-year financial reports.
- Who:** Finance department and CFO, sustainability team, communications team, council, and/or audit committee.

Key tasks:

- 1 Continuous monitoring and evaluation.** Once approved, the climate-related financial disclosures should be subject to the same annual monitoring and evaluation as the annual financial report (e.g., quarterly and mid-year review). The climate-related financial disclosures team should provide departments with reporting requirements and support. The core climate-related financial disclosures team should also establish processes for updating the knowledge base (e.g., policy, standards, GHG inventories, climate risk and vulnerability assessments, scenario analysis, CAP progress reports, targets, metrics, and trajectories) and ensure ongoing updates and evaluation, where relevant.
- 2 Align organizational climate reporting with climate-related financial disclosures reporting** to increase efficiencies and provide staff, council, and the community with a comprehensive overview.
- 3 Incorporate climate-related financial disclosures performance metrics into the annual work plans and objectives of key staff,** including the CFO, sustainability team, and department heads. This can further incentivize staff and strengthen accountability for delivering the needed information within the annual reporting.
- 4 Commit to enhancing disclosure quality** by reviewing leading climate-related disclosures guidance and assessing the frameworks and materiality approaches most relevant to municipalities. Based on the review, implement changes as needed. This process can help ensure that reporting reflects appropriate priorities and strengthens accountability for providing clear, decision-useful information aligned to user needs.
- 5 Report regularly on progress.** Whenever possible, departments should include updates about climate-related financial disclosures as part of annual financial reporting updates. At a minimum, these updates should identify climate-related financial disclosures that have been implemented as planned, provide context for non-implemented climate-related financial disclosures, highlight any anticipated or new disclosure requirements, and outline the likelihood of realizing estimated risks and/or opportunities (e.g., none, some, all). The climate-related financial disclosures team should work with staff responsible for public communications on public updates. Municipalities should also report back to climate cohorts or collaboratives and peer networks.

Aligning other organizational climate and financial reporting

Vancouver. Starting in 2024, Vancouver harmonized its existing climate reporting (the *Climate Emergency Action Plan* and *Climate Change Adaptation Strategy Annual Reports*, and the annual TCFD disclosure) with financial information as presented in the climate budget. Staff will continue developing climate budget information for other long-term financial-planning processes and disclosures.

Resources: Guidance for monitoring, adjusting, and reporting

- + **Canadian Climate Institute's** [Assessing Progress on Climate Adaptation in Canada](#)
- + **ESRS 2 – General Disclosures**
- + **FCM's** [Climate Adaptation Maturity Scale](#)
- + **FCM's** [Maturity Scale for GHG Emission Reduction](#)
- + **GRI 102: Climate Change (2025)**
- + **GRI** ["Integrity Matters" Checklist](#)
- + **ICLEI Canada and FCM's Partners for Climate Protection Milestone resource PCP's** [Reaching Milestone 5: Monitoring and Reporting Guidelines](#)
- + **ICLEI Canada's** [Introducing Indicators](#)



Part 4. Future directions

While municipal climate action is not new, the intentional financial disclosure of climate data in accordance with international standards is a relatively recent development. As illustrated in this guide, leading municipalities are including voluntary climate-related financial disclosures in their annual financial reports. This signifies a new era in climate action wherein transparency and standardization are prioritized.

Looking ahead, the landscape of climate-related financial disclosures for Canadian municipalities is expected to evolve further. The accounting profession is working with a variety of sustainability specialists to develop meaningful and practical guidance for municipalities. As a result, IPSASB SRS 1 climate-related disclosures were approved in December 2025 and will be effective January 1, 2028. This new standard will enhance municipalities' knowledge of and access to climate-related financial disclosures that are more aligned with their context and needs. Furthermore, the ISSB is expected to release further guidance regarding the interpretation of materiality for corporate entities. Further clarification and guidance relating to these concepts will allow the field to evolve, and municipalities will be better equipped to navigate the complexities of climate-related financial disclosure.

A key limitation of the current climate-related financial disclosures work highlighted in this guide is its reliance on a narrowly defined, single-materiality monologic perspective that aligns closely with the ISSB's investor-oriented standards. While this approach provides structure, it does not adequately reflect the broader impact-materiality considerations that are essential in a municipal context, particularly those focused on the breadth of needs required by municipal users. By privileging financial risk to the reporting entity, current disclosure frameworks overlook aspects of the environmental, social, and systemic dimensions of climate impacts that municipalities are uniquely responsible for addressing. This constraint not only narrows the scope of what is considered "material," but it also limits the ability of disclosures to meaningfully support long-term climate objectives, including progress toward net zero commitments. This guide acknowledges that climate-related financial disclosures are not only about protecting municipal balance sheets: it is about transparently accounting for how municipal decisions shape climate outcomes, social equity, environmental resilience, and long-term community well-being. Future work is therefore needed to integrate dialogic perspectives that go beyond the monologic lens of investor-centric logic, and to develop methodologies capable of capturing the full spectrum of climate-related risks and impacts relevant to municipal decision-making.





In addition, the physical impacts of climate change are expected to exert significant pressure on municipalities' annual financial reports. To address this, climate-related financial disclosures that incorporate the costs of climate action—such as expenditures for repairing extreme weather damage and investments in proactive resilience measures—will become increasingly important in guiding and supporting sound financial decision-making.

Estimating climate-related costs remains one of the most technically challenging areas of municipal finance. Among the largest drivers of future cost increases will be the management of municipal infrastructure. Asset management is expected to play a critical role in identifying, quantifying, and planning for the substantial expenses associated with climate change. At the same time, infrastructure costs represent only one major category of climate-related expenditures. Future research and practice must also consider broader financial implications, including operational costs, service delivery impacts, and long-term liabilities, to ensure municipalities are fully equipped to navigate the fiscal realities of a changing climate.

Canadian municipalities can look to federal sustainability reporting under the Sustainable Development Act as a model for impact disclosures that complement climate-related financial disclosures. Federal departments report *both* their environmental/societal impacts *and* their financial/performance implications, thus creating a double materiality approach that municipalities could adapt by:

- Using GRI Standards (impact materiality) for community-facing climate/sustainability reports.
- Using TCFD/ISSB/IPSASB (financial materiality) for annual financial report disclosures.
- Linking both through shared data sources (climate risk assessments, GHG inventories, adaptation plans).

In addition, future efforts will also focus on developing Canada's sustainable investment guidelines, commonly referred to as a sustainable finance taxonomy. The Canadian Climate Institute and Business Future Pathways are establishing a new independent Taxonomy Council to review and ultimately approve investment guidelines, which will help create a common language for capital markets regarding the types of projects and activities that align with Canada's climate and economic goals. As municipalities define their scope and develop climate-related infrastructure projects, they should stay up to date on Canada's emerging sustainable investment guidelines to ensure their projects present a strong business case for investment.

This guide is designed to be a living document, evolving in tandem with the rapidly changing landscape of climate-related financial disclosure. As new standards and guidance emerge, the guide will be updated to reflect these changes, ensuring that it remains a relevant and useful resource for municipalities in their climate action journey.

Resources: Guidance for future directions on climate-related financial disclosures

- + **Canadian Climate Institute's** [Developing Canada's Sustainable Investment Guidelines](#)
- + **GRI - Standards**
- + **GRI 102: Climate Change (2025)**
- + **GRI 103: Energy (2025)**
- + **GRI "Integrity Matters" Checklist**
- + **Government of Canada** [Advances Sustainable Investment Rules and Mandatory Climate Reporting](#)

Appendices

Appendix A. Municipal climate risks and opportunities

Municipalities face unique challenges from climate change, and understanding **CR&Os** is essential for effective planning and disclosure. This guide focuses on **physical risks** (impacts from climate change itself) and **transition risks** (impacts from the shift to a low-carbon economy). By recognizing how these risks and opportunities affect assets, revenues, and service delivery, municipalities can apply this framework to their own operations in a way that helps them anticipate financial impacts, design adaptive strategies, and strengthen resilience.

Municipalities face two broad types of climate-related risks

- 1 **Physical risks:** Risks resulting from the biological, ecological, or physical impacts of climate change that are event-driven (acute physical risks), or that arise from longer-term shifts in climatic patterns. There are two categories of physical risks:
 - a. **Acute risks** are typically associated with short-duration events that last from minutes to weeks. While these events can occur independently of climate change, their frequency, intensity, or distribution may be altered due to climate change. Examples include windstorms, heavy rainfall, freezing precipitation, wildfires, and temperature extremes. These events can damage property and infrastructure, cause injuries and fatalities, and disrupt economic activity and daily life.
 - b. **Chronic risks** (or slow-onset stresses) are directly caused by climate change and unfold gradually over extended time frames—often decades or more. Examples of chronic impacts include warming trends in air and surface water temperatures, ecosystem shifts, sea level rise, reduced water availability, habitat and biodiversity loss, and changes in soil productivity. These risks can carry financial implications for an entity, such as costs resulting from direct damage to assets or indirect effects related to supply-chain disruption. The entity's financial performance could also be affected by changes in water availability, sourcing, and quality, as well as by extreme temperature changes affecting its premises, operations, transportation needs, and employee health and safety.

Table 3 lists a selection of generic examples of potential financial impacts for municipal governments due to climate-related physical risks.

Table 3. Examples of financial implications of climate-related physical risks for municipalities.

 Impacts to assets:	 Impacts to operational expenses—new capital costs and liabilities:	 Impacts to revenues:
• Write down of (damaged or stranded) asset value (including unvalued natural capital). • Reduced expected useful service life.	• Additional maintenance and repair costs to ensure service continuity of service and meet operational and environmental standards of municipal infrastructure assets experiencing accelerated degradation and sooner-than-planned replacement costs. • Increased or new capital investment in risk mitigation, such as upgrades, retrofits, and new infrastructure. • Reduced operational capacity of assets and technologies adversely impacted by weather extremes or changing weather patterns. • Emergency provision of critical services (e.g., emergency response, waste clean-up). • Cost to support residents affected during a weather induced emergency. • Higher cooling costs for buildings. • Reduced employee productivity. • Higher costs to safeguard employees from harsher weather conditions. • Additional costs associated with grant writing for disaster recovery. • Costs to relocate facilities and public services. • Increasing borrowing costs or liquidity thresholds to access debt financing. • Changing insurance liabilities and premiums due to increased weather-related payouts, in addition to reduced coverage or possibly no coverage.	• Reduced tax base, especially if property values are degraded due to climate impacts and perceived risks. • Insufficient service revenues.

Source: Adapted from Bailey et al. (2023)

Transition risks: For municipalities, transition risks are particularly relevant because they influence long-term infrastructure investments, local economic development, and fiscal stability. Shifts in energy policy or market preferences can affect the viability of municipal utilities, building standards, and transportation systems. In turn, these changes may require new capital expenditures, staff training, and community engagement to ensure services remain resilient and affordable. Hence, transition risks refer to the risks resulting from efforts to transition to a lower-carbon economy.

Limiting further climate change will require changes to energy systems and other GHG-emitting activities globally, with municipalities doing their part. Municipal governments, businesses, and households will need to adjust their day-to-day decisions. The risks that accompany an uncertain adjustment to a low-carbon future are transition risks. These risks can arise through a variety of channels, including:

- Changes in public sector policies (e.g., carbon taxes, standards and regulations, and incentives).
- Innovation and changes in the affordability of existing technologies (e.g., that make renewable energies less expensive or allow for the removal of atmospheric GHG emissions).
- Changes in business and consumer sentiment towards lower carbon places to invest, work, and live.

Transition risks can be defined by applying the PESTEL (political, economic, social, technological, environmental, and legal) framework.

Table 4 outlines some generic examples of how the transition to a low-carbon future might create financial risks for municipal assets, expenses, and revenue streams.



Table 4. Examples of financial implications of climate-related transitional risks for municipalities.

 Impacts to assets:	 Impacts to operational and capital expenditures:	 Impacts to revenues:
• The transition to a low-carbon future may result in assets becoming “stranded.” Stranded assets are durable assets that may become unusable or prematurely retired before the end of their expected useful service life due to policy or market changes after the initial investment was made. This risk can apply to, for example, fleet vehicles or government buildings with aging or inefficient heating, ventilation, and air conditioning (HVAC) systems.	• As local governments enable and respond to the shift to a low-carbon future, transition risks may arise from changing public policies and programs that result in increasing or new costs. For example, expenditures may be impacted by: • Policy and/or program development and enforcement needed to respond to market changes and to establish the appropriate policy conditions for decarbonization in the community (e.g., developing an electric vehicle strategy). • Procurement of and investment in low-carbon assets, technologies, and products – e.g., investing in building energy retrofits, electric fleet vehicles, etc., as well as purchasing lower-carbon products. These decisions carry a risk of being unsuccessful or may come at a cost premium relative to the status quo. • Hiring new staff or (re)training existing staff may be necessary to address changing operational requirements due to transition risks. By way of example, this could include ensuring that fleet auto mechanics are prepared to maintain electric vehicles or building operators are able to manage increasingly electrified building systems. It may also be necessary to hire staff dedicated to climate-related issues, especially if existing staff are at maximum capacity and work responsibilities cannot be expanded or shifted. • For municipalities that own utilities (energy generation assets) reliant of fossil fuels, operational costs, capital expenditure, or both will rise if markets or provincial or federal policies directly or indirectly place costs on carbon, which might require retrofitting equipment or investment in renewable energy generation options.	• Like climate-related physical risks, the transition to a low-carbon future may put tax revenues at risk, if it results in diminished property values. This is particularly relevant to communities with economies reliant on fossil fuel based or carbon-intensive sectors that will see decreased demand. Economic competitiveness may also suffer, depending on the response of private-sector investment decisions. In addition, provincial disbursements tied to fossil fuel extraction or related leases are at risk of a long-term decline as the economy shifts away from fossil fuels over time.

Source: Adapted from Bailey et al. (2023)

Climate-related opportunities: For municipalities, climate-related opportunities are potential positive outcomes that may arise from both physical change (e.g., warmer average temperatures may allow new and more profitable crops to be grown) and transition changes (e.g., operating cost savings through improved resource efficiency) and can lead to potentially significant financial impacts. Unlike TCFD, IFRS S2 does not categorize climate-related opportunities.

Table 5 presents examples of opportunities, along with their associated financial implications, that are more specific to the public sector.

Table 5. Examples of potential financial impacts of climate-related opportunities.

 Climate-related opportunity	 Potential financial impacts
Resource efficiency	
• Use of more efficient modes of transport	• Reduced operating costs (e.g., through efficiency gains and cost reductions)
• Use of recycling	• Increased value of fixed assets (e.g., highly rated energy-efficient buildings)
• Move to more efficient buildings	• Benefits to workforce management and planning (e.g., improved health and safety, employee satisfaction) resulting in lower costs
Energy sources	
• Use of lower-emission energy sources	• Reduced operational costs (e.g., through use of lowest cost abatement)
• Use of supportive policy incentives	• Reduced exposure to future fossil fuel price increases
• Use of new technologies	• Reduced exposure to GHG emissions and, therefore, less sensitivity to changes in the cost of carbon returns on investment in low-emission technology
• Participation in the carbon market	• Increased capital availability (e.g., as more investors favour lower-emissions producers)
• Shift toward decentralised energy generation	• Reputational benefits resulting in increased demand for goods/services
Products and services	
• Development of climate adaptation and insurance risk solutions	• Increased revenue through new solutions to adaptation needs (e.g., insurance risk transfer products and services)
Markets	
• Use of public-sector incentives	• Increased diversification of financial assets (e.g., green bonds and infrastructure)
Resilience	
• Participation in renewable energy programs and adoption of energy- efficiency measures	• Increased market valuation through resilience planning (e.g., infrastructure, land, buildings)
• Resource substitutes/diversification	• Increased reliability of supply chain and ability to operate under various conditions

HM Treasury, 2024: TCFD – Aligned Disclosure Application Guidance – Phase 1 and Phase 2, HM Treasury, London, UK.



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