

PRAC Annual Report (2014-15)

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1. Overview

This report documents outcomes of the Prairies Regional Adaptation Collaborative’s (PRAC) activities between April 1, 2014 and March 31, 2015, as part of its ongoing commitment to advancing adaptation planning in Alberta, Saskatchewan and Manitoba. Consistent with the PRAC’s objectives for its current phase of work, activities during this time period focused primarily on outreach and engagement with targeted stakeholder groups engaged in infrastructure and municipal planning within each province. This report summarizes activities completed in each province and key messages emerging from PRAC sponsored workshops. It concludes by noting objectives for the PRAC’s work in fiscal year 2015-16 agreed upon during its Interprovincial Meeting held in March 2015.

2. Background

The PRAC was first established in 2009 as part of the Regional Adaptation Collaborative Climate Change Program (2009 to 2012) led by Natural Resources Canada (NRCan). Bringing together the provincial governments of Alberta, Manitoba and Saskatchewan, the objective of the PRAC is to increase the capacity of decision-makers to advance the integration of adaptation into policies, programs and planning. Between 2010 and 2012 the PRAC focused its attention on understanding the implications of changes in the Prairies’ hydrological regime.

The current phase of the PRAC began in 2013, with the University of Winnipeg acting as its Secretariat. It aims to advance adaptive capacity within the Prairies by sharing and applying existing and new knowledge, information and tools. Its activities are expected to build strong partnerships with decision-makers in priority sectors, advance a shared understanding of climate risks and emerging opportunities, and work to mainstream climate change adaptation needs into regional adaptation programming, planning and policy.

In 2013-14, the PRAC’s provincial co-leads and the Secretariat focused on finalizing the PRAC’s strategic direction and developing a work plan for its activities between April 2014 and March 2016. A series of provincial workshops and an interprovincial workshop were held to cultivate a shared vision of the role of the PRAC in supporting climate change adaptation action in the Prairies. Emerging from this process

was agreement that the PRAC's priorities should be aligned with the existing mandates of the different provincial governments and future activities flexible enough to accommodate variations in provincial implementation. There was also agreement on the need to engage stakeholders outside of government and focus on an area of common concern—enhancing the resilience of infrastructure to the impacts of climate change, particularly at the municipal level. Leading into fiscal year 2014-15, the objectives of the PRAC were to finalize and implement a detailed work plan built around these areas of agreement.

During the period of April 1, 2014, to March 31, 2015, the PRAC Secretariat and the leads in each of the provinces continued to engage with one another on a regular basis and to undertake activities within each of their jurisdictions that aimed to advance the objectives of the PRAC. Specifically this included hosting one or more workshops in each province as well as an interprovincial meeting. Outcomes of these events are described in the remainder of this report. Presentations and reports from each of these workshops may be accessed at <http://prairiesrac.com/2015-forum-presentations>.

3. Manitoba Workshops

To strengthen the engagement of Manitoba Government employees involved in infrastructure planning on the need to integrate climate change risks into their work, workshops were held in July 2014 and January 2015. Outcomes of these workshops are presented below. Both workshops will inform Manitoba's efforts to advance climate adaptation efforts in 2015.

JULY 2014 WORKSHOP

The half-day workshop held on July 29, 2014, Climate Change Resiliency in Manitoba, aimed to engage decision-makers from across provincial government departments on climate change adaptation, particularly on increasing awareness of the need to enhance infrastructure resiliency. Representatives from a number of different provincial departments participated in the workshop, including Agriculture, Food and Rural Development, Conservation and Water Stewardship, Housing and Community Development, Finance, Municipal Government and Infrastructure and Transportation. Workshop speakers provided updates on Manitoba's new climate change and green economy plan, including a summary of adaptation planning progress in Manitoba. A guest presenter from Stantec Consulting delivered an overview of risks posed by climate change for the built environment and introduced the Public Infrastructure Engineering Vulnerability Committee (PIEVC) framework to assess vulnerability of public infrastructure.

Participants discussed potential implications of climate change on Manitoba's infrastructure, benefits of adaptive planning processes and measures to limit cost and increase resilience. Presentations and discussions explored key challenges, needs and opportunities for increasing infrastructure resiliency, including:

- The need for improved access to climate data by the provincial government, including climate models to integrate into current decision-making rather than relying on historical data
- The challenge for Manitoba of providing necessary climate information single-handedly, and the possible need to explore opportunities to partner with Saskatchewan and Alberta
- The need for common procedures, standards and models in order to provide acceptable guidance for government decision-makers and engineers
- Take into account the full cost associated with accessing climate information and explore opportunities to be cost-efficient by focusing on data necessary to address specifically vulnerable areas/sectors to climate change

- Coordinate with other jurisdictions during the planning process to improve climate resiliency, such as through common codes and standards
- Assemble a review with best management practices from other jurisdictions
- Possibility of undertaking additional pilot applications of the PIEVC tool in Manitoba

The workshop concluded that adaptation planning in the province is hindered by the absence of easy access to climate data and the best available and accepted science needed to inform engineering design. It was also recognized that the province's effort to increase infrastructure resiliency will need to take a balanced approach that considers the significance of infrastructure to communities and the costs required to ensure the length of its service. It was noted as essential to continue to engage government officials, specifically senior management from the Ministry of Infrastructure and Transportation.

JANUARY 2015 WORKSHOP

The full-day workshop, "Enhancing Climate Resiliency into Manitoba Infrastructure: A Dialogue of Current Issues and Opportunities," was held on January 28, 2015. It focused on engaging key infrastructure decision-makers and stakeholders on the need to enhance the resiliency of Manitoba's infrastructure and to provide greater information about specific vulnerability and risk assessments, integrative planning processes and decision support tools for building resilience. Participants came from various government departments, academia and private industry while presentations were made by individuals from Manitoba Conservation and Water Stewardship, Manitoba Infrastructure and Transportation, Risk Sciences International, Engineers Canada, Stantec Consulting (in Winnipeg and Laurel, Maryland) and British Columbia Ministry of Transportation and Infrastructure.

Presentations highlighted how more frequent and severe weather events are already causing economic and personal losses that will increase in the coming decades. It was noted that some existing infrastructure might not be sufficiently resilient to reach its expected service life, creating potential exposures to liabilities with expanded climate risk. Presenters emphasized the importance of risk assessment to determine vulnerability, integrative planning processes, and pointed to decision-support tools and practical examples of climate risk reduction from British Columbia and Maryland. Participants learned about the B.C. Ministry of Transportation and Infrastructure's risk analysis for highways in three different locations and Maryland's efforts to identify infrastructure particularly vulnerable to storm surge changes and sea level rise. In small group discussions participants were provided with an opportunity to discuss what they saw as being the critical climate risk challenges for Manitoba and priority opportunities for strengthening the resiliency of the province's infrastructure to the impacts of climate change.

Throughout the workshop and group discussion participants identified the need to integrate climate risks into decision-making and planning processes and take a more anticipatory approach to infrastructure management. They noted the need to increase awareness of infrastructure practitioners and professionals about climate change and the challenges it poses for the built environment, and to provide detailed guidance to professional engineers on how to respond to this risk. The limited availability of climate data and absence of regional climate models were identified as impediments to planning. Modification of codes and standards to account for increasing climate risks was also noted as a priority.

Emerging from the discussion around tools and best management practices, key messages communicated included:

- The value of using frameworks that are transparent and flexible and can be updated as new information emerges, such as the PIEVC framework
- The array of tools that are available to enable decision-makers to make informed decisions, such as the U.S. Department of Transportation's vulnerability assessment scoring tool
- The need to form multidisciplinary teams composed of experts from different fields, including climate specialists, to enable robust decision-making, but also the challenge of ensuring full understanding of the terminology and information used by different disciplines
- Undertake vulnerability assessments on a regular basis to improve responses to changes over time, and to combine quantitative information with best professional judgement

Emerging from the workshop was a greater understanding by participants of the ways in which the climate resilience of infrastructure can be enhanced and interest in pursuing a potential case study or pilot project as part of the PRAC's work over the coming year. Participants suggested that the pilot project would be an opportunity to increase awareness, educate the public and different levels of government, encourage innovation, and promote the implementation of early adaptation measures.

4. Saskatchewan Workshop

On March 18, 2015, the Saskatchewan Ministry of Environment held a full-day adaptation planning workshop in Regina. The workshop focused on identifying opportunities for reducing communities and key economic sectors' vulnerabilities to a changing climate, particularly the need to protect infrastructure while maintaining high levels of service at a reasonable cost. The workshop's objectives were to: initiate a multi-stakeholder dialogue to identify potential policy initiatives and tools for reducing climate vulnerability; examine best practices and methods for increasing the resilience of municipal infrastructure; promote sustainable service delivery by incorporating climate risks into infrastructure planning and financing; review opportunities to apply similar methods and approaches to advance adaptation planning in other economic activities and organizations; and increase collaboration and information sharing between and within governments and other stakeholders.

During the workshop speakers (either in person or virtually) provided participants with information about how local and provincial governments, as well as the oil and gas sector, are preparing for climate change impacts, the use of asset management planning to address climate risks, and efforts by the Town of Shellbrook to reduce the vulnerability of its municipal infrastructure to extreme weather events. An overview was also provided of an ongoing project looking at how the energy sector in the Souris River Watershed has been affected by and coped with past extreme weather events. These presentations were made by representatives of the Federation of Canadian Municipalities, the Saskatchewan Research Council, Trout Creek Collaborative Solutions, VEMAX Management Inc. and the Mayor of Shellbrook.

Participants primarily raised issues related to investment decision-making at a time of climate change, fluctuating oil prices and fiscal constraints. Interest was expressed in understanding the costs versus savings associated with upgrading infrastructure, so as to better inform justification of expenditures in the context of climatic and economic uncertainty. Participants also questioned who is (or will be) able to provide communities with the information they need to justify making investments that could improve their resiliency, such as guidance on the size of culverts to use. The potential to support infrastructure resilience projects through the New Building Canada Fund, and potentially other existing funds, was also discussed. Participants observed the need for an integrated approach to understand where best to make

investments that build resilience, and for tools such as the new hydrologic map released in 2014 and LIRA (which can help identify culverts at greatest risk) to inform decision-making.

5. Alberta Workshop

The PRAC and the Municipal Climate Change Action Centre held a full-day workshop in the City of Leduc on March 5, 2015, “Practical Adaptation Measures for Alberta Municipalities,” that aimed to provide information around how adaptation can be integrated into municipalities’ infrastructure planning. The event explored successful approaches to adaptation and useful municipal resources and strategies. Participants came from municipalities, government agencies, non-for profits and private industry. Presentations were made by leading organizations engaged in climate change adaptation, namely the Prairie Adaptation Research Collaborative at the University of Regina, Urban Systems Engineering, the Institute for Catastrophic Loss Reduction, the City of Leduc, the City-Region Studies Centre at the University of Alberta, Miistakis Institute and the Federation of Canadian Municipalities. The contributed presentations featured the implications of climate change for infrastructure and the risk assessment and planning tools available to support resilience enhancement. Between presentations, workshop participants had a chance to partake in a group discussion session around adaptation barriers and opportunities for municipalities.

Presentations pointed to a variety of proactive municipal planning tools and examples of municipal resiliency planning, including:

- The PIEVC framework and risk assessment through asset management
- “Adapt-action”, a new web-based tool using a story-telling approach to connect climate change implications and adaptation action at the municipal level
- The IDFCC tool for deriving rainfall intensity-duration-frequency (IDF) curves for future climate scenarios, funded by the Canadian Water Network
- Alberta’s FireSmart program and Quebec City’s downspout disconnection initiative
- The City of Leduc’s Weather and Climate Readiness Plan, the preparation of which offered an opportunity to discuss risk assessment and municipal adaptation planning

The workshop concluded with important lessons learned. Among these was that a combination of hard and soft adaptation actions are needed, and that a multidisciplinary approach is required for developing effective long-term solutions. It was noted that communities can make better financial choices for cost effective adaptation measures by beginning to incorporate climate change into current policy and strategy documents and planning processes. Participants identified a gap in knowledge around adaptation tools and a perceived lack of political will. Nonetheless, the workshop demonstrated that Alberta municipalities are interested in increasing their capacity to prepare for a changing climate.

6. Interprovincial Meeting

The PRAC’s annual interprovincial meeting took place on March 25, 2015, at the University of Winnipeg. The event brought together the PRAC co-leads and other government representatives as well as external guests. It provided an opportunity for the PRAC leadership to reflect on activities completed over the past 12 months and to discuss plans for the upcoming year.

The daylong session was divided into two parts. The morning session focused on providing an informal venue in which the external guests could share their experience, insight and guidance with the PRAC co-

leads. The external guest involved in the morning session represented ICLEI Canada, the Insurance Bureau of Canada, the City of Calgary, Stantec, Eco-West CDEM, VEMAX Management Inc., and the Town of Shellbrook. Discussion within this session focused largely on how to improve engagement, knowledge sharing and communications related to climate change adaptation. During the second half of the day the PRAC co-leads met to discuss plans for the final year of the PRAC.

During the interactive morning session, the discussion began by identifying the most critical needs at present for advancing adaptation action by rural and urban municipalities on the Prairies. Issues raised included uncertainty about the financial cost of taking adaptation measures and the challenge of demonstrating a positive return on investment; continued need to raise awareness about climate change risks and why they need to be considered a concern at this point in time; capacity constraints related to access to funding and knowledge about adaptation appropriate to the users' needs; lack of provincial leadership; and the need to appropriately frame the issue. In the following round table discussion, participants touched upon issues such as the need to make the business case for climate adaptation, developing messages that resonate with the intended audiences, finding enthusiastic champions to communicate messages to target audiences, strengthening the capacity of different actors to communicate climate change issues, modifying procurement processes to incorporate true cost (lifecycle) accounting and development of flood insurance.

In the more informal afternoon session, the PRAC co-leads and PRAC Secretariat reflected on what they had heard earlier in the day and how it might inform the PRAC's work between April 2015 and February 2016. The PRAC co-leads were particularly interested in the development of a business case for adaptation, incorporating engineering, legal and liability issues. In addition, work plans for activities to be completed in each province during the remainder of 2015 were prepared in facilitated small group sessions. Alberta's work plan included preparing a business case for adaptation, potentially building on an existing project being led by the Alberta Biodiversity Monitoring Institute. Manitoba planned to continue to focus its energies on engaging municipalities and government officials responsible for infrastructure planning and integrating climate risk into capital expenditure planning. The representative from Saskatchewan was unable to participate in the afternoon session due to a prior commitment. The day ended by identifying upcoming opportunities and discussing next steps.

7. Other Activities and Next Steps

In addition to the various workshops delivered by the PRAC between April 2014 and March 2015, regular meetings with the PRAC co-leads were organized by the Secretariat and various outreach activities were undertaken. Amongst these was the preparation of three issues of the *Prairies Adaptation Bulletin*, a newsletter established to share knowledge and experiences with adaptation practitioners in the Prairies. The newsletter was circulated to different individuals and organizations across that Prairies and made available on the PRAC web site at <http://prairiesrac.com/newsletters/>.

To ensure completion of the PRAC's plans for the remainder of its current phase of work, the Secretariat and co-leads are developing a detailed work plan and budget for the upcoming fiscal year. Building on outcomes of the interprovincial meeting, the expected focus of this work plan will be continued engagement with municipalities and stakeholders involved in infrastructure planning and development of plans to prepare pilot business cases for climate change adaptation. The PRAC also looks forward to participating in the development of plans for a national meeting of all Regional Adaptation Collaboratives expected to be held in February 2016.

