Building Resiliency to Multi-Year Drought: Tools for Small Urban and Rural Municipalities Project Team Terms of Reference

Approved by the Alberta Water Council on November 2019.

CONTEXT

Multi-year droughts are recurrent events throughout Alberta's history, with significant impacts to our environment, economy, and society. A drought is described as a prolonged period of abnormally dry weather that depletes water resources.[1] Depleted water resources may include natural sources (e.g., rivers, streams, lakes, groundwater) as well as man-made storage (e.g., reservoirs, dugouts). Drought management at the municipal and community level considers the impacts of depleted water resources on environmental, economic and social needs and expectations. The risks and impacts associated with multi-year droughts are greater, requiring advanced and ongoing preparation.

Alberta was among the hardest hit provinces in the 2001-2002 drought, one of Canada's most expensive natural disasters, with wide-ranging impacts to multiple sectors.[2] Evidence indicates that droughts may increase in frequency and severity with climate change.[3] Yet, drought management is often not at the forefront of local priorities until a new event occurs.[4] There is a need to build awareness about the risks associated with multi-year droughts to foster better adoption of existing tools and resources. In October 2017, the Alberta Water Council (AWC) launched a working group to explore a potential project on multi-year drought resiliency, based on a Statement of Opportunity brought forward by the Watershed Planning and Advisory Councils (WPACs).

Various drought-related programs, tools and resources already exist or are in development in Alberta. Examples include ongoing work by the Miistakis Institute to support drought planning,[5]

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[1] Canadian Disaster Database. Available online: https://www.publicsafety.gc.ca/cnt/rsrcs/cndn-dsstr-dtbs/rfrnc-tbl-smbls-dfntns-en.aspx. Accessed February 20, 2018.

[2] Agriculture and Agri-Food Canada. *Lessons learned from the Canadian Drought Years 2001 and 2002*. Available online: http://www.agr.gc.ca/eng/programs-and-services/list-of-programs-and-services/drought-watch/managing-agroclimate-risk/lessons-learned-from-the-canadian-drought-years-2001-and-2002/?id=1463593613430. Accessed January 31, 2018.

[3] Wheaton, E., D. Sauchyn and B. Bonsal. 2016. Future Possible Droughts. In *Vulnerability and Adaptation to Drought: The Canadian Prairies and South America* (pp. 59-76). Available online: http://press.ucalgary.ca/books/9781552388198. Accessed February 28, 2018.

[4] In a survey conducted by the Miistakis Institute in 2017 with 27 municipalities in the South Saskatchewan River Basin, the majority of municipalities indicated that they do not currently have a drought management plan and rated drought mitigation planning as closer to "not a priority", as opposed to a "very high priority".

[5] See http://www.adaptaction.ca/ for a web tool already developed by the Miistakis Institute.

provincial guidance on developing water shortage response plans,[6] and water supply data and other resources on the Government of Alberta website.[7] However, awareness of these resources is lacking. Information is difficult to access and has not been synthesized to support the iterative cycle of multi-year drought management at the municipal and community scale. In addition, most existing tools focus on drought planning, with fewer resources on drought response and recovery. Geographically, efforts in Alberta have mostly targeted water management planning under the *Water Act* in the South Saskatchewan River Basin. Communication on drought management and delivery of tools and resources across the province needs to consider a basin-specific context, including differences in who can be affected by drought and how.

This project proposes to build on existing work and address resource gaps by examining other jurisdictions with proven drought management plans. The final products aim to facilitate the delivery of customizable information by WPACs to support municipalities and communities across the province before, during and after a multi-year drought. Small urban and rural municipalities are WPACs' key target audience for this work, given their capacity challenges, competing local priorities, and potential for impact.

STRATEGIC INTENT (GOAL)

This work will assist WPACs as they engage municipalities and communities within their watershed to better plan for, mitigate, respond to and recover from multi-year droughts.

OBJECTIVES

1) Highlight the importance of multi-year drought management in Alberta by documenting lessons learned from previous droughts and expected changes due to climate change
2) Compile existing drought management information and resources in Alberta and case studies from selected jurisdictions
3) Increase awareness of federal, provincial and municipal water management roles, responsibilities and regulations relevant to drought
4) Provide guidance on management objectives, potential risks and impacts, triggers and suggested actions for small urban and rural municipalities before, during and after a drought
5) Produce a guide and workshop materials to support WPACs in engaging small urban and rural municipalities

KEY TASKS

1) Develop a work plan that includes key tasks, deliverables and timelines

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[6] Government of Alberta. *Preparing Water Shortage Response Plans*. Available online: http://aep.alberta.ca/forms-maps-services/directives/documents/PreparingWaterShortageResponse-Apr23-2014A.pdf. Accessed March 21, 2018.

[7] For examples, see https://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/ppe3883, https://rivers.alberta.ca/, and https://agriculture.alberta.ca/acis/.

2) Compile historical examples of multi-year droughts in Alberta, lessons learned and expected changes due to climate change through literature review and targeted interviews
3) Document drought-related information and resources relevant to Alberta (e.g., decision-making processes, roles and responsibilities, regulations, communication processes, existing tools and programs)
4) Examine case studies of municipal and community drought management from selected drought-impacted jurisdictions outside of Alberta
5) Develop guidance on management objectives, potential risks and impacts (environmental, economic and social), triggers and suggested actions at the municipal level before, during and after a drought
6) Assemble an education and outreach task team to:
    a. Develop a guide that presents information from key tasks 2 to 5
    b. Produce supporting materials for workshop delivery by WPACs (e.g., workshop outline, presentation, workshop and follow-up participant survey)
7) Work with WPACs to test the draft guide and supporting materials via a workshop
8) Develop a process for performance evaluation and review to keep the guide and workshop materials current
9) Provide regular updates to the AWC board during the project and a final guide and supporting workshop materials

TIMELINES and DELIVERABLES

The Project Team will provide the following deliverables to the Alberta Water Council:

- Initial findings ……..……..…….November 2018
- Draft guide and results from workshop……..February 2020
- Final guide and supporting workshop materials...……..……...June 2020

MEMBERSHIP

Open to AWC Members and other relevant groups identified by the project team. The project team will operate in a manner that is consistent with the rules, policies and procedures adopted by the AWC, including the use of consensus to make decisions in a multi-stakeholder process.

BUDGET

No project-specific funding is expected to be required. AWC core funding is available to cover the budget of $65,000 as follows:

Stakeholder support	$ 40,000
Hosting	$ 10,000
Communications (design, layout, printing* and video)	$ 15,000
Total	**$ 65,000**

*AWC will cover the printing costs for a limited number of guides.