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Enhancing Ontario's Rural Infrastructure Preparedness: Inter-Community Service Sharing in a Changing Climate — Policy Brief

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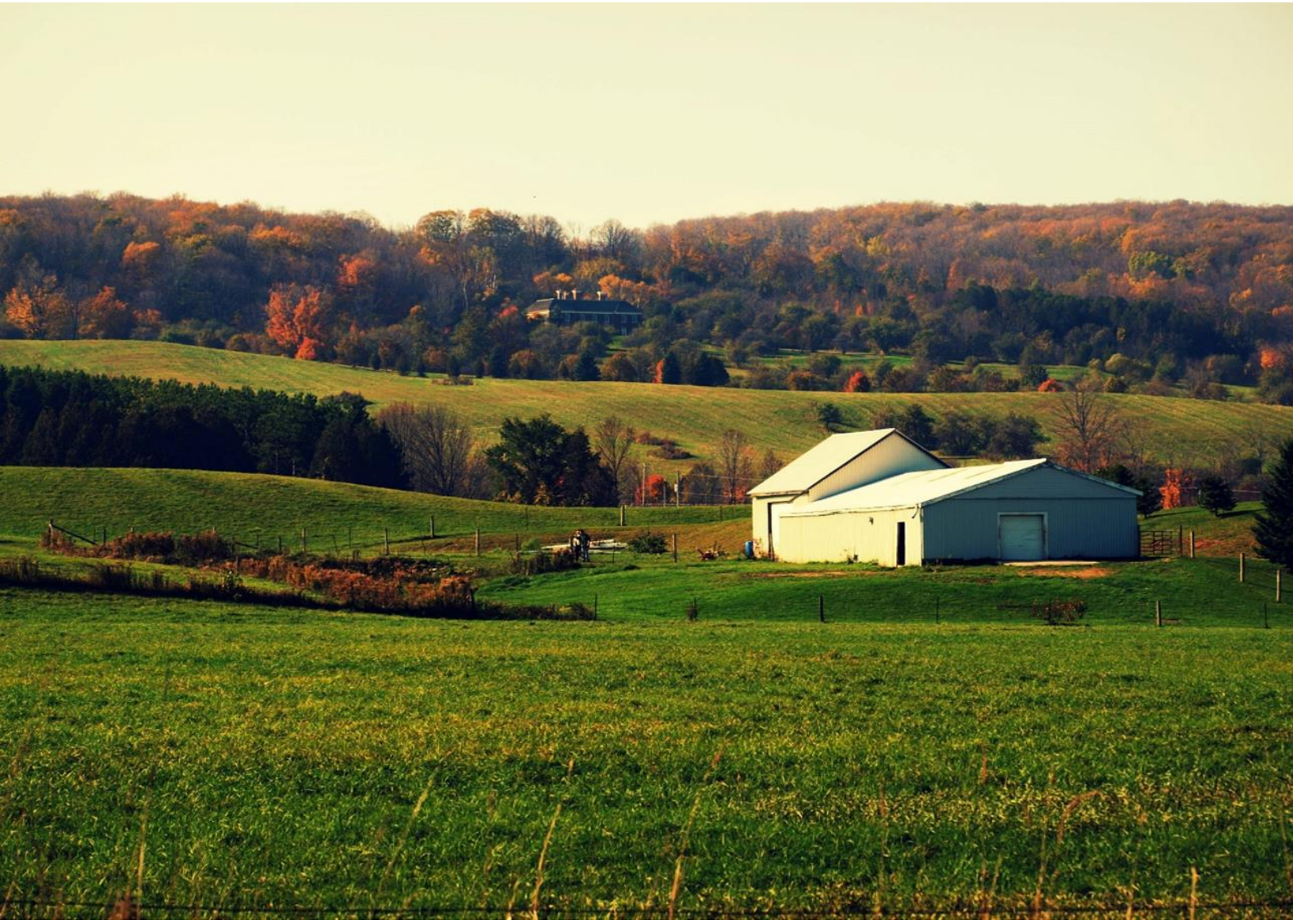
Policy Brief



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1.0 Introduction

This policy brief draws together the insights from a three-year (2016-19) Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) funded research study. The purpose of the research project was to 1) assess the potential of inter-community service cooperation (ICSC) as a possible tool to address the impacts of climate change (CC) in small (500-7500 pop.) Ontario rural communities south of the Sudbury region and 2) understand the extent to which such collaboration and the impacts of CC are, or could be, embedded within the community's infrastructure (asset) management processes (AMP). While the conclusions of policy brief are generalized to represent an overall picture of Ontario rural municipalities, each jurisdiction is distinctive with its own history and geography. Thus, any policy recommendations must take into consideration local circumstances, needs and preferences.

This document is part of a larger suite of documents on rural Ontario inter-community service cooperation. To access the complete rural ICSC toolkit please visit
http://www.resilientresearch.ca/research-publications/

2.0 Key Terms

2.1 Ontario Rural Municipality

Three hundred and thirty-five (75%) of all municipalities in Ontario are either rural or partially rural, as defined through the Rural Ontario Municipal Association. This project undertook key informant interviews, a province-wide survey and targeted case studies to understand rural infrastructure-related service cooperation, asset management planning and the potential to increase CC preparedness.

2.2 Intercommunity Service Cooperation (ICSC)

ICSC is defined as the sharing, procuring or providing of needed infrastructure services with one or more municipalities or other organizations. Research suggests that the careful use of service cooperation can contribute to cost savings and improved local service provision. Types of ICSC agreements include verbal agreements (handshake, informal); memorandums of understanding; bylaw approval; and formal contracts. ICSC can include many different characteristics (e.g. duration, flexibility, costs, breadth) and may be undertaken through a variety of mechanisms (e.g. mutual aid, joint hiring/training, service board/agency).

2.3 Infrastructure

Infrastructure includes the physical structures and human systems, resources and processes that support those structures, including AMP. Municipal controlled infrastructure most likely impacted by CC includes bridges, roads, sanitary and storm water systems, potable water systems (including dams and reservoirs), fire and emergency services (including emergency response, medical services, social services, police and search and rescue). Compared to urban areas, the larger geographic land base and

lower average incomes in rural communities leads to additional challenges in delivering services and supporting infrastructure.

2.4 Asset Management Planning (AMP)

AMP is a municipal-level evaluation process undertaken to make evidence-based decisions regarding the building, operating, maintaining, renewing, replacing and disposing of infrastructure assets. Effective AMP can maximize the life cycle of infrastructure assets and provide cost efficient service delivery through the tracking of current costs, service levels and assets, the early identification of risks (including CC), and deterioration and the projection of future infrastructure needs and costs.

2.5 Climate Change (CC)

In Ontario, CC is already underway and by 2050 an increase in annual average temperature between 2.5-3.7° C is projected. Projections suggest that more frequent and more intense extreme events are likely and that the risk of disruptions to infrastructure is likely to increase. The impacts of CC are already requiring the adaptation of infrastructure designs and plans, such as the retrofit of stormwater infrastructure, and wastewater treatment plants are expected to need significant updates.

2.6 Climate Change Preparedness

Preparedness involves undertaking the necessary measures to reduce risk, avoid damage and adjust to CC variability and extremes; developing a state of readiness to minimize loss of life, injury and property damage; the ability to sustain essential functions during a crisis; and the capacity to take advantage of new opportunities. Municipal preparedness for CC is a function of the range of available options and resources including support from higher levels of government, the organization and characteristics of local infrastructure and the nature of local hazards and vulnerability levels.

3.0 Recommendations

Recommendations are drawn from all phases of the research project including key-informant interviews, a provincial survey, and 10 case studies highlighting innovative ICSC best practises. The key informant interviews and survey results suggest that rural communities in Ontario are dealing with increasing impacts from CC and that they often don't have the resources to cope effectively. While current ICSC and AMP strategies have been somewhat effective, there is a need to identify and showcase innovative strategies that align with community goals/activities, address challenges and capitalize on existing strengths. The extent of experiences about cooperative agreements across the case studies demonstrated that there is a rich range and depth of opportunities and knowledge to use these types of arrangements to address the required and/or desired levels of infrastructure service provision across rural Ontario.

Embed Climate Change Preparedness and the Option for Cooperative Agreements into Asset Management Planning: Older infrastructure will have a i) higher likelihood of failure especially since it was built to the historic, less stringent assumptions about severe weather risks, and ii) wider gap between previous and current building codes, increasing routine replacement or disaster reconstruction costs. Having service cooperation embedded in asset management plans as a potential option when developing strategies to meet service gaps or to address climate change risks would increase the range of cost effective and efficient opportunities available to local decision-makers.

Mitigate Risk and Prepare for Infrastructure Damage Through Local Planning and Funding Initiatives: Since municipalities are expected to self-fund repairs from the more routine impacts of some extreme weather events (i.e. frozen pipes) as well as a portion of the costs from other disasters, sufficient contingency funding should be in place. In addition, funding for needed risk mitigation and preparedness projects should also be considered. Cooperative agreements may be a way to undertake needed work cost effectively.

Enhance Climate Change Preparedness through Multi-Level Collaborative Partnerships: To effectively deal with rural infrastructure risks, there is a need for collaborative multi-level, multi-institutional responses including municipal, provincial and federal governments, conservation authorities and key non-government organizations such as the Rural Ontario Municipal Association and the Ontario Good Roads Association.

Consider the Ontario Rural Context when Developing Provincial and Federal Policies: Rural municipalities need separate policy consideration and a supportive suite of funding sources, rules, regulations and laws that directly address the distinctive strengths and challenges facing smaller and sometimes more remote jurisdictions.

Include Climate Change Preparation When Measuring Infrastructure Service Success: Where services are coordinated with neighboring municipalities or other institutions, 'success' is often measured in terms of cost savings, better efficiency and higher service levels. An additional goal to contemplate is the potential of the cooperative agreement to contribute to extreme weather risk reduction and/or longer-term climate change preparedness.

Ensure Stable Funding and Grant Opportunities: To allow the long-term planning associated with infrastructure life cycles as well as climatic change, provincial and federal infrastructure funding and policies need to be more regularized and predictable.

Incentivize Climate Change Mitigation and Preparedness Through Targeted Funding Initiatives:
It is well documented that municipal government initiatives are Canada's first, and best line of defense against the impacts of climate change as long as adequate funding, pertinent information and a supportive policy structure is in place. Additional, targeted policies and funding should be considered a priority by both provincial and federal authorities.