

## Barriers and Enablers to Climate and Health Adaptation Planning in Small Urban Areas in the Great Lakes Region

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**Abstract :** This research expands the resilience planning literature by exploring the barriers and enablers to climate and health adaptation planning for small urban, coastal Great Lakes communities. With funding from the United States Centers for Disease Control and Prevention (CDC) Climate Ready City and States Initiative, this research took place during a 3-year pilot intervention project which integrates urban planning and public health. The project used the CDC's Building Resilience Against Climate Effects (BRACE) framework to prevent or reduce the human health impacts from climate change in Marquette County, Michigan. Using a deliberation with the analysis planning process, interviews, focus groups, and community meetings with over 25 stakeholder groups and over 100 participants identified the area's climate-related health concerns and adaptation interventions to address those concerns. Marquette County, on the shores of Lake Superior, the largest of the Great Lakes, was selected for the project based on their existing adaptive capacity and proactive approach to climate adaptation planning. With Marquette County as the context, this study fills a gap in the adaptation literature, which currently heavily emphasizes large-urban or agriculturally-based rural areas, and largely neglects small urban areas. This research builds on the qualitative case-study, survey, and interview approach established by previous researchers on contextual barriers and enablers for adaptation planning. This research uses a case study approach, including surveys and interviews of public officials, to identify the barriers and enablers for climate and health adaptation planning for small-urban areas within a large, non-agricultural, Great Lakes county. The researchers hypothesize that the barriers and enablers will, in some cases, overlap those found in other contexts, but in many cases, will be unique to a rural setting. The study reveals that funding, staff capacity, and communication across a large, rural geography act as the main barriers, while strong networks and collaboration, interested leaders, and community interest through a strong human-land connection act as the primary enablers. Challenges unique to rural areas are revealed, including weak opportunities for grant funding, large geographical distances, communication challenges with an aging and remote population, and the out-migration of education residents. Enablers that may be unique to rural contexts include strong collaborative relationships across jurisdictions for regional work and strong connections between residents and the land. As the factors that enable and prevent climate change planning are highly contextual, understanding, and appropriately addressing the unique factors at play for small-urban communities is key for effective planning in those areas. By identifying and addressing the barriers and enablers to climate and health adaptation planning for small-urban, coastal areas, this study can help Great Lakes communities appropriately build resilience to the adverse impacts of climate change. In addition, this research expands the breadth of research and understanding of the challenges and opportunities planners confront in the face of climate change.

**Keywords :** climate adaptation and resilience, climate change adaptation, climate change and urban resilience, governance and urban resilience

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