Retreating from Risk
Decision-supports for the equitable implementation of retreat to build climate resilience

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RESEARCH BULLETIN

Economic assessment of managed retreat

Fitting a square peg into a round hole or untapped opportunity?

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SUMMARY

Economic assessments, such as Cost-Benefit Analysis (CBA), can play a large role in determining whether and how managed retreat is implemented in response to flooding and other natural hazard risks. However, traditional economic tools may not be a good fit for the complex decision-making context and many intangible impacts of managed retreat. There is little understanding of how economic assessments are implemented when considering managed retreat as a mitigation option and how these processes may influence managed retreat outcomes, for better or worse. This research explores the potential linkages between economic assessments, managed retreat decision-making practices, and retreat outcomes, with the goals of providing better tools for local decision-makers and making recommendations for the design of better managed retreat funding and support programs.



Above: *2018 flooding in Grand Forks, British Columbia that led to managed retreat and floodplain restoration*

WHY IS THIS IMPORTANT?

In high hazard areas, managed retreat – the purposeful, coordinated movement of people and assets out of harm's way [1] – has many potential advantages over other disaster risk reduction strategies, such as avoiding costly loss-rebuild cycles,[2] fully eliminating hazard exposure,[3] and providing an opportunity to address historical inequities.[4] However, maximizing these benefits and avoiding the potential harms of poorly implemented managed retreat is limited by the highly complex nature of retreat planning, decision-making, and implementation.

Economic assessments, like CBA, can be an important factor in the planning and decision-making of disaster risk reduction programs. However, because managed retreat has much wider impacts on community and individual wellbeing compared to traditional protection-based measures (e.g., dikes), the limitations of traditional economic assessments may be contributing to challenges commonly seen in managed retreat planning and implementation, such as long timelines, insufficient monetary and non-monetary supports, and inequitable availability and outcomes.[4] The limitations of CBAs and other assessment tools include difficulty accounting for intangible values like sense of community, accommodating different perspectives and value sets, accounting for deep-uncertainty, and biasing decision-making toward simple metrics.[5]

This research examines how economic assessment practices influence managed retreat decisions and outcomes in Canada and proposes solutions to identified challenges to improve retreat outcomes.

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WHAT DID WE DO?

First, we examined how economic assessments may influence managed retreat outcomes through a targeted literature review and analysis of three bodies of literature:

1) challenges to the implementation and successful outcomes of managed retreat;
2) the use and critiques of cost-benefit analysis for disaster risk reduction; and
3) alternative economic assessment and decision-making tools (e.g., multi-criteria decision analysis, real options analysis, dynamic adaptive policy pathways).

PHASE 1 RESEARCH RESULTS WERE PUBLISHED IN 2025:

Cross, B., Doberstein, B., & Lueck, V. (2025). Improving economic assessment and decision-making for managed retreat through CBA+: A targeted literature review. *Frontiers in Climate, 7*, 1481824. https://doi.org/10.3389/fclim.2025.1481824



Improving economic assessment and decision-making for managed retreat through CBA+: a targeted literature review

Next, we are conducting semi-structured interviews with Canadian managed retreat practitioners, including local, provincial, and federal government staff, consultants, researchers, and non-governmental organizations, with a focus on British Columbia, Canada. Through these interviews we are exploring how managed retreat decision-making occurs in practice, the role economic assessments play in that process, and what opportunities are available to change those processes to improve the consideration and implementation of managed retreat.

WHAT DID WE FIND?

- Economic assessments can be useful sources of information for managed retreat decision-making when designed carefully for the intended use, but they should not be ultimate deciding factor.
- It is unlikely that any single assessment will fulfill the needs of all parties because of differing values, perspectives, and decision-making contexts.
- The economic assessment and decision-making processes can be more important than a final report or metric by increasing participant knowledge and providing community and trust building benefits, but the processes must be open, iterative, and based on community engagement.
- For local governments, economic assessments are typically less important than community support, risk tolerance, political support, funding availability, and engineering feasibility.
- For provincial and federal government funders, economic assessments play a larger role, but the lack of flexible funding programs to support managed retreat means that the exact design of these assessments and how they are used in funding decisions is often still an ad-hoc process.



Above: *2018 flooding in Grand Forks, British Columbia that led to managed retreat and floodplain restoration*

WHAT DOES THIS MEAN?

Deciding whether to pursue managed retreat is highly complex and involves a wide range of actors, values, perspectives, and uncertainties. Economic assessments can help decision-makers better understand these complexities and trade-offs; however, without careful design and community involvement, these assessments may also contribute to common challenges in managed retreat, potentially creating resistance to considering managed retreat as a viable option.

In jurisdictions where there is no established managed retreat program or funding, such as British Columbia, some communities have still implemented managed retreat or built it into future planning documents, but these successes required overcoming significant challenges, including the need for high internal capacity, access to consultants with expertise in the field, political support in the face of long timelines, public concerns, and high uncertainty, insufficient and inflexible funding sources, and typically implementing retreat post-disaster and only where few other options remain.

WHAT'S NEXT?

More interviews with managed retreat practitioners in Canada are planned for the fall of 2026. The analysis of these interviews will focus on identifying common decision-making processes and challenges, the role of economic assessments in these processes, and ideas and opportunities to improve both the use of economic assessments and decision-making processes more broadly to achieve better managed retreat outcomes.

This second phase of the research will likely lead to two future publications. The first publication will focus on the existing decision-making and economic assessment practices, the challenges experiences, and how these processes might be contributing to common managed retreat challenges. The second publication will likely focus on opportunities for improving these assessment and decision-making practices, highlighting the needs of local governments and recommendations for the design of managed retreat programs within British Columbia and Canada more widely.



ABOVE: *2018 flooding in Grand Forks, British Columbia that led to managed retreat and floodplain restoration*

LEARN MORE

Retreating from Risk (RFR): Decision-Supports for the Equitable Implementation of Retreat to Build Climate Resilience is a multi-year international research project jointly funded by the Government of Canada's New Frontiers Research Fund–International and the U.S. National Science Foundation. The project aims to explore how managed retreat–the strategic relocation of housing and infrastructure from high-risk areas–can be used as a proactive strategy to reduce flood risks while enhancing community well-being.

VISIT OUR WEBSITE:
https://uwaterloo.ca/retreating-from-risk/

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[2] Greer, A., & Binder, S. (2017). A historical assessment of home buyout policy: Are we learning or just failing? *Housing Policy Debate*, 27, 372–392. https://doi.org/10.1080/10511482.2016.1245209

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[5] Markanday, A., Galarraga, I.,&Markandya, A. (2019). A critical review of cost-benefit analysis for climate change adaptation in cities. *Climate Change Economics, 10*, 1950014. https://doi.org/10.1142/S2010007819500143

LEARN MORE ABOUT BEN'S RESEARCH:

Cross, B., Doberstein, B., & Lueck, V. (2025). Improving economic assessment and decision-making for managed retreat through CBA+: A targeted literature review. *Frontiers in Climate, 7*, 1481824.

- **Read the journal article**

Cross, B., Doberstein, B., & Lueck, V. (2024). *Community-led managed retreat: Assessment and decision-making.* Living with Water project.

- **Read the 2-pager**

Cross, B., Doberstein, B., & Lueck, V. (2024). *Economic assessment and decision-making for managed retreat in British Columbia: Approaches, challenges, and case studies of cost-benefit analysis and multi-criteria decision analysis.* Living with Water project.

- **Read the research report**

SUGGESTED CITATION

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