

PARTNERS FOR ACTION

P4A

ANNUAL

REPORT 2022



PARTNERS FOR ACTION



UNIVERSITY OF
WATERLOO

FACULTY OF
ENVIRONMENT



P4A



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PARTNERS FOR ACTION



About

LAND ACKNOWLEDGEMENT

Partners for Action is part of the University of Waterloo. We acknowledge that much of our work takes place on the traditional territory of the Neutral, Anishinaabeg and Haudenosaunee peoples.

The University of Waterloo main campus is situated on the Haldimand Tract, the land promised to the Six Nations that includes six miles on each side of the Grand River. The University's active work toward reconciliation takes place across its campuses through research, learning, teaching, and community building, and is centralized within the Office of Indigenous Relations.

Last fall, the University of Waterloo made a commitment to Reconciliation, Indigenization and decolonization, including recognizing Indigenous knowledge and creating space for it in the institution's approach to scholarship, research and teaching.

Partners for Action (P4A) is inspired by the Dish with One Spoon Treaty that governs the shared territory of the Great Lakes Region in Southwestern Ontario. It asks that we take only what we need, leave some for others and keep the dish clean. While we're rooted in Waterloo, honouring this treaty helps promote sustainable practices and mutual respect wherever we are in Canada.

We acknowledge that Indigenous communities across Canada are disproportionately exposed to flood risk and face unique challenges in responding to climate risks and natural hazards. Climate injustice and colonial legacies have contributed to this exposure, and we believe that climate action, climate adaptation and climate justice are necessary as acts of Reconciliation. The work of P4A is aimed at catalyzing these actions in partnership with Indigenous leaders and communities to achieve inclusive resilience where it is most needed.

We also recognize that First Nations communities have long been at the forefront of climate action and sustainability movements and are uniquely positioned to be leaders in resilience. We believe that foregrounding disaster risk reduction in stakeholder-engaged, community-led, and equity-informed approaches is essential for successful flood adaptation.



ADAPTATION

Partnering for adaptation

Managed retreat

Adaptation in place

Nature-based solutions
(Green and natural
infrastructure)

JUSTICE

**Flood resilience
planning and
foresight with
an equity lens**

Hazard exposure and
risk assessments using
a Social Vulnerability
Index (SoVI)

ACTION

**Community-engaged
risk awareness and
preparedness**

Flood Smart Canada
(floodsmartcanada.ca)

Inclusive risk
communications

ADVANCING FLOOD RESILIENCE IN CANADIAN COMMUNITIES

Partners for Action is an applied research initiative based out of the Faculty of Environment at the University of Waterloo.

Our work has been made possible with founding and continued support provided by:



Farm Mutual Re
Collaborate. Empower. Succeed.



About

PARTNERS FOR ACTION

Partners for Action (P4A) empowers Canadians to become flood resilient by promoting awareness and preparedness actions that are inclusive and evidence-based.

Partnership is central to our approach: strategic collaborations allow us to focus on changing the flood response landscape at the ground level and with policy makers.

We value curiosity, collaboration, transparency, and accountability in all our interactions.

As a thought leader and steward of Flood Smart Canada, P4A moves conversation and multi-level action forward by:

- > localizing community-engaged flood risk awareness and preparedness
- > partnering for adaptation, and
- > developing flood resilience planning and foresight.

These priorities will enable communities to access effective resources and innovative research, and ultimately, embrace inclusive resilience.

Message from the

DIRECTOR

The last year was another record setter, with a mid-May derecho and last fall's Hurricane Fiona blowing their way into Canada's top ten most costly extreme weather events. Combined, the two events are estimated at nearly \$2 billion in insured losses. And while property owners work their way through the claims process, repairing roofs and flood damage, many are left asking what's next?

And that's the problem: we don't know. Climate change has created deep uncertainty in our weather systems, forcing a reckoning about our readiness for the future. Our built infrastructure – homes, businesses, bridges, highways, rail lines, ports, farms, and factories – are vulnerable. They were built for another era. They were built *before*.

So, while new phrases like derecho, atmospheric river and bomb cyclone enter our everyday conversation, the tools to address these events have not. The need is urgent and complicated by our existing infrastructure gap, which sits at approximately \$123 billion dollars according to the Federation of Canadian Municipalities.

Federal help is on the way through the new National Adaptation Strategy and its related priorities and funding. However, our definition of infrastructure must also expand. Ecosystems and the services they provide can be added to the municipal balance sheet to help us understand their value and replacement cost. And in the spirit of "Build Back Better," we can factor these ecosystem services into our planning processes as we embark on climate resiliency projects.

At the local level, municipalities are still struggling to make the case for climate resiliency, even though the benefit-cost ratio is estimated to be 12:1 (or a 1,100% return on

investment) for housing. Updated building standards would help, especially in the face of a housing shortage in many areas of the country. Ontario alone aims to build 1.5 million homes by 2031. Without these climate resilient building standards and wetland protections, we could be facing a building boom that is vulnerable to multiple climate shocks – from extreme weather to the affordability and availability of insurance.

Infrastructure is social, too, and has been tested to the breaking point by the pressures of the Covid-19 pandemic. By acknowledging the direct relationship between climate, health and wellbeing and reinvesting in social and community infrastructure, we can help create capacity for climate resiliency. Community-engaged and equity-informed research helps us direct resources where they are most needed at a time when many people are at risk of falling further behind.

At Partners for Action (P4A), we continue to ask, "Who gets flooded and who pays?" because it's at the heart of climate justice in flood resiliency. We aim to help our partners and collaborators explore who and what should be prioritized in our approach to climate action and adaptation, and from whose perspective and knowledge. New projects with the Halifax Regional Municipality and Co-operators will dig deeper into what it means to create climate resiliency at the local level.

We invite you to explore these questions with us in the months ahead.



JULIE WRIGHT

DIRECTOR, PARTNERS FOR ACTION
UNIVERSITY OF WATERLOO



BRUCE FRAYNE

CHAIR, PARTNERS FOR ACTION
DEAN, FACULTY OF ENVIRONMENT

NOTE FROM CHAIR

It's my sincere pleasure to take on the role of Chair at Partners for Action. For over 50 years, the Faculty of Environment at the University of Waterloo has invested in partnerships to create sustainable solutions needed to address the complex challenges facing our world.

We do this by focusing on interdisciplinary research, innovative teaching and meaningful, experiential learning. The impacts of this approach are long-lived and far-reaching – from innovations that have emerged through the many research projects we've undertaken and collaborations we've supported to shifts in public policy.

Consistent with Environment's collaborative way of working, P4A has created an intentional space for industry to come together with community-level practitioners and policymakers to advance flood risk awareness and preparedness in Canada. The approach is grounded in the perspective that the choices we make and solutions we adopt should be based on evidence and consultation with the people and communities most affected. This whole of society approach is complementary to Canada's new National Adaptation Strategy and the United Nations Sustainable Development Goals, giving us all a role to play.

New decision-making supports are available from P4A this year, including policy advice on property buyouts, municipal level guidance on climate resilient retrofits, and new applications of a Social Vulnerability Index that helps us better explore climate hazards through an equity lens. Environment is proud to see how the world-class research of its faculty and students is being mobilized by partners to make a positive impact on the lives of Canadians.

P4A benefits enormously from the scholarship and energy brought to its projects by the many graduate students it attracts, and is especially grateful to the foundational support provided by Co-operators and Farm Mutual Re. Though the challenges around us grow, the combination of youthful energy and committed partners makes the journey easier. We're better together.

Building a Resilient Canada

IMPACT REPORT

Partners for Action experienced a year of tremendous growth and transition, bringing on new team members, hosting focus groups and workshops, publishing journal articles, and contributing to the national dialogue on flood risk preparedness through policy advice and news commentary. In short, we were busy reconnecting with the world!

RESEARCH PUBLICATIONS

This year, research related to Partners for Action projects resulted in six journal articles:

1. Flood risk management and governance: A bibliometric review of the literature in *Journal of Flood Risk Management*
2. Exploring spatial heterogeneity and environmental injustices in exposure to flood hazards using geographically weighted regression in *Environmental Research*
3. Flood risk assessment data access and equity in Metro Vancouver in *Canadian Water Resources Journal/ Revue canadienne des ressources hydriques*
4. Assessing social vulnerability and identifying spatial hotspots of flood risk to inform socially just flood management policy in *Risk Analysis*
5. Managed retreat from high-risk flood areas: exploring public attitudes and expectations about property buyouts in *Environmental Hazards*
6. Managing urban flood risk: An expert assessment of economic policy instruments in *Journal of Urban Affairs*

ONLINE

We continue to respond to changes in the social media environment while maintaining our core Twitter, LinkedIn and Floodsmart Canada platforms.

- > 28K visitors to Floodsmart Canada, with the majority of visitors located in Canada's major cities
- > Over 900 subscribers to our Floodsmart Canada newsletter
- > 900+ followers on Twitter
- > A 79% increase in LinkedIn followers year-over-year

CONFERENCES, WORKSHOPS AND TALKS

MARCH

- > Together | Ensemble – Webinar: Just | Green | Cities – Integrating the SDGs into Municipal Infrastructure Decision Making
- > US Embassy in Canada – Webinar: The State of Canada’s Flood Preparedness
- > Tamarack Institute – Webinar: Emergency Preparedness Community of Practice

SEPTEMBER

- > Waterloo Climate Institute – Sustainable Futures Initiative Launch – Waterloo, ON – Exhibitor

OCTOBER

- > CLIMATlantic – Atlantic Canada Flood Mapping Conference – Halifax, NS – Exhibitor
- > Apolitical – Online Workshop: How to put equity at the heart of Climate Action

NOVEMBER

- > Emergency Planning & Business Continuity Conference (EPBC) – Vancouver, BC – Exhibitor
- > Waterloo Climate Institute – Road to CoP27 Convening – Waterloo, ON – Exhibitor

DECEMBER

- > Society for Risk Analysis – Florida – Presentation: Assessing Exposure of Healthcare Facilities and Emergency Management Critical Infrastructure to Flooding Across Canada
- > Partners for Action – Online workshop: Effective Property Buyouts
- > Centre for International Sustainable Development Law – Biodiversity Law and Governance Day – Experts Roundtable: Nature-Based Legal Solutions for Climate and Biodiversity Emergencies – Waterloo, ON – Panelist / Speaker

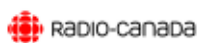
We contributed to Federal policy initiatives and reports:

Member – Canada’s Task Force on Flood Insurance and Relocation, Public Safety Canada

Cited in Report – Adapting to Rising Flood Risk: An Analysis of Insurance Solutions for Canada

POLICY ADVICE

IN THE NEWS





JASON THISTLETHWAITE

ASSOCIATE DIRECTOR, PARTNERS FOR ACTION
UNIVERSITY OF WATERLOO

Issue Focus

THE PROTECTION GAP

Extreme weather cost \$3 billion in insured damages in 2022 according to the Insurance Bureau of Canada but the true cost paid out by property owners and taxpayer is three times higher. This still doesn't capture the associated impacts, including to those made more vulnerable by structural damage to their home, depreciation of property value or long-term evacuation.

The extreme weather wreaking havoc on people's lives and livelihoods isn't going to wait around for us to get our act together. The more we wait to make the tough decisions that are required of us, the more vulnerable people become and the more expensive the solutions.

This is especially the case for flooding – Canada's most common and costly climate hazard. Reducing risk will not be easy as more than 800,000 homes or roughly 8% of all residential properties are located in areas at high risk of flooding. Even more troubling is the fact that only 6% of people living in these areas are aware that their property faces the risk of devaluation in the event that a flood occurs, leading to a stigma that their community is unsafe to live.

Canada faces a "protection gap" where responsibility for risk reduction has quietly been downloaded to local governments and property owners without the awareness or resources to do much about it. For example, in recent years provincial and federal governments have limited access to financial assistance to help people recover from disasters with the expectation that they can buy flood insurance. Unfortunately, insurers know that offering coverage in the areas where flood losses are likely is bad business, so coverage isn't available.

This protection gap is growing in ways that not only threaten property values, but also our economic and social stability. The BC flood in 2021 had the potential to knock a few points off our GDP after it eroded sections of the TransCanada highway and



vital rail links—a critical supply chain connecting the Port of Vancouver to the rest of the country. There is also growing evidence that flooding widens the wealth gap: the Canadians most at risk face increased economic instability while their affluent neighbours can afford to self-retreat out of harm’s way. Flood damage often means taking significant time off work, worsening mental health, and increasingly, relocation and mortgage default.

There has been no shortage of floods to remind our elected officials about our growing protection gap. Floods in Calgary (2013), Quebec (2017, 2019), New Brunswick, Ontario (2019) and most recently BC (2021), have left thousands of households in a precarious situation wondering if they should relocate before the next “big” one or stay put and rebuild.

In the aftermath of the 2013 flood in Calgary the then Conservative government under Stephen Harper committed \$200 million over five years for a National Disaster Mitigation Program along with \$14 billion to support infrastructure like flood defenses. Since then, billions have been invested with taxpayers still covering \$3 for every insured dollar. Coordinating the flow of that money and assigning responsibilities

across multiple government tiers has come under pressure from the sheer pace of the climate emergency and Canada’s vulnerability.

What’s clear now, that was not anticipated in 2013, is that we need an integrated approach to disaster risk-reduction and climate change adaptation—especially when it comes to flooding. And moving people out of harm’s way has to be part of our adaptation toolkit.

Communities like Grand Forks, BC, Gatineau, QC, and High River, AB already know what it’s like to take the drastic step of relocating residents whose homes were impacted. They are profiled in a series of case studies on property buyout programs that Partners for Action will publish this spring.

The Federal government needs to enable provinces and municipalities to take this step proactively by providing multi-year funding for community-level planning that supports property buyouts, investments in watershed-level defenses, and the alignment of policy and services between governments.

It can ensure that Canadians have a softer landing in the years to come.



PARTNERING FOR CLIMATE JUSTICE, ACTION AND ADAPTATION



Current Projects

RESEARCH SPOTLIGHT





Effective Property Buyout Programs to Reduce Flood Risk in a Changing Climate *funded by Max Bell Foundation*

What is Managed Retreat?

Within the coming decades, millions of people around the globe will lose their homes to climate change. Managed retreat is the purposeful, coordinated movement of people and property out of areas vulnerable to flooding – which is achieved primarily through the public acquisition of exposed structures. While managed retreat is institutionalized in other jurisdictions, such as Australia and the United States, it's a relatively nascent policy in Canada.

To implement buyouts effectively, decision makers require evidence-based policy advice about how to design programs that maximize economic efficiency, political feasibility and social acceptability. Together with diverse stakeholders from across Canada, Partners for Action (P4A) is leading an applied research project on managed retreat from high-risk flood areas through property buyouts that move people out of harm's way. With grant funding from the Max Bell Foundation, this project draws lessons from current and past buyout programs and provides the tradeoffs that governments must consider when designing new programs.

To identify enabling conditions that strengthen the economic efficiency, social acceptability, and political feasibility of property buyout programs, P4A convened an online workshop on December 13th to engage representatives from government, private and academic backgrounds across Canada and the United States to receive input and feedback on key topic areas and recommendations.

WHY IT MATTERS

It is becoming an increasingly important option as different regions become uninhabitable due to the impacts of climate change. P4A provides strategic advice to federal, provincial and territorial governments, as well as municipalities, to equip policymakers and practitioners with evidence-based guidance about how to design and implement effective property buyout programs.

Next steps:

- › In Spring 2023, we released the full report and hosted a webinar to share our findings and recommendations.

Inclusive Resilience: Driving Risk Awareness to Action and Building Resiliency for Vulnerable Canadians in High-Risk Areas with Canadian Red Cross Society, funded by Public Safety Canada

The Canadian Red Cross engaged P4A to study how people learn about and prepare for floods, wildfires and earthquakes in their communities, and how to assess and map socioeconomic vulnerability and flood risk. The purpose was to better understand where those who are most impacted by these natural hazards live in order to improve and refine risk communications and outreach.

This study asks the all-important question: how do people learn about and prepare for floods, wildfires and earthquakes in their communities? The end goal is to improve messaging, in all forms, around these emergencies – including planning and recovery. This study is underpinned by the development of P4A's Social Vulnerability Index (SoVI), which enables analysis of the combined impacts of exposure to hazard risk and socio-economic vulnerability.

Five regions were selected for this multi-method, multi-stage research:

- > Richmond, BC
- > Thompson, MB
- > Ottawa / Renfrew County, ON
- > Ottawa-Gatineau, ON
- > Bay St. George, NL

The study involved:

- > literature reviews
- > a survey and seven focus groups in all five geographic regions
- > supplementary interviews in three regions
- > the development of a Social Vulnerability Index (SoVI) for Canada for all five regions, including:
 - analyses of social vulnerability and flood exposure
 - identifying flood risk hotspots using a cutting-edge methodology (BiLISA)
 - web-based maps to visualize the spatial distribution of socio-economic vulnerability, flood exposure, and flood risk hotspots

What is a Social Vulnerability Index (SoVI)?

A SoVI provides a spatial analysis of socio-economic vulnerability based on a combination of variables (Census data, in our case) - which can be combined and mapped with other data sets, like hazard maps, to identify climate risk hotspots and think through climate justice concerns. Maps of SoVI scores can be used to explore gaps in resilience, with risk assessments otherwise limited to hazard extent (i.e., where the water flows) and exposure (i.e., interaction of people and property with water).

A SoVI can support the application of Gender-Based Analysis Plus (GBA+) and equity principles in hazard planning and management by providing a solid foundation and tool for identifying who may be more disproportionately impacted by floods and other climate hazards. Further comparative analyses between neighbourhoods or communities can enable decision makers to prioritize investments for emergency management and disaster risk reduction.



What is Inclusive Resilience?

Resilience is the ability to prepare for, cope with and recover from disasters. To take an inclusive approach, we must recognize that different groups of people need different emergency response measures. Inclusive resilience ensures all people have an opportunity to make meaningful contributions to decision making, planning and response efforts.


For communities to move forward in healthy, proactive, and inclusive ways, they first must understand what information people are paying attention to and how they want to receive it.

WHY IT MATTERS

Populations that are highly vulnerable as a result of economic and social insecurity are disproportionately affected by natural hazard disasters. Understanding and mapping the drivers of this vulnerability is critical in developing inclusive communications and policies that reduce risk and strengthen resilience for all Canadians. P4A's SoVI helps identify specific geographic areas within communities that will most likely need support before, during, and after hazardous events, which are becoming more common and intense with climate change.

Next Steps

- › The research and analysis phases of the study are now complete and the full report from the communications study will be available in Spring 2023.
- › SoVI and flood risk methodologies, case studies, an analysis of implications for Indigenous communities, and applications in relation to environmental justice have been published in a series of journal articles.
- › A guide to assessing and mapping flood risk using a SoVI and a series of associated web-based maps of hotspots are being developed.



Water is our Friend: Flood-Resilience and Climate-Adaptive Amphibious Housing for Indigenous Populations in Canada with the Buoyant Foundation Project, funded by New Frontiers in Research Fund – Exploration

Water is both a resource and a hazard. It sustains life and has the power to create significant damage. Reducing debilitating flood impacts, without causing displacement and while respecting natural water cycles, is especially crucial for Indigenous communities.

In many instances, dominant flood risk reduction (FRR) strategies, such as dikes and dams, have proven unreliable and ineffective for Indigenous communities in Canada. These strategies are often costly, top-down, and rigid; focus on controlling the path of flowing floodwater; and do not acknowledge Indigenous communities' connection to their land or the cultural importance of water.

Amphibious retrofit construction, which allows homes to float during flood events, is a FRR strategy that has the potential to be suitable for Indigenous communities. By lifting homes above the flood, amphibious retrofit construction allows floodwater to follow its natural path, increasing flood resilience without disrupting the land or water, and minimizing damages.

Working together with Indigenous partners, this project aims to integrate Traditional Knowledge (TK) and Western science to answer two important questions:

1. How can TK inform approaches to climate adaptation opportunities for remote Indigenous communities affected by increasing flooding and annual freeze-thaw cycles?
2. How can Western science and engineering be braided with TK to support the design of culturally appropriate structures that are safe, resilient and suitable for Indigenous communities?

WHY IT MATTERS

There are deep inequalities in Canada's current flood context associated with colonization practices, whose legacy has pushed Indigenous communities onto land that is remote and disproportionately exposed to increasing climate-change-induced flooding. Almost 22% of Indigenous communities are at significant risk of a 100-year flood. There is an expressed need for alternative FRR strategies that incorporate socio-ecological frameworks based on ecosystem management, partnerships with affected communities, Traditional Knowledge, and science to generate resilience.

Next Steps

- > Throughout 2023 and 2024, we will work with our First Nation partners to co-design and complete this project.
- > Project deliverables include a workshop, a common set of terms and definitions to reflect understandings, literature and technology reviews, flood mapping simulations, safety guidelines appropriate for use by non-engineers, and presentations for Indigenous communities to generate further discussion about TK, appropriate materials and use cases of amphibious retrofit construction.

FINANCIAL SNAPSHOT

This table shows the revenue and expenses for the 2022 calendar year. The University of Waterloo's fiscal year is May 1-April 30. Individual project grants have their own fiscal deadlines.

	PHILANTHROPIC	GRANTS	SPONSORED	TOTAL
INCOME	115,000	215,000	75,000	405,000
EXPENSES	159,301	176,900	9,741	345,942
TOTAL	-44,301	38,100	65,259	59,058

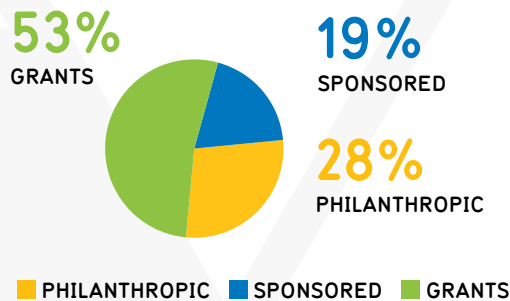
NOTES: Operations expenses began to rebound but are not at full capacity.

> Part of the Director's salary was split with a research account.

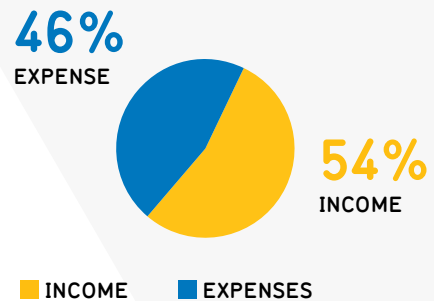
> New full-time positions came online in August but were offset by research funds.

> Travel expenses and conference fees resumed in the second half of the year.

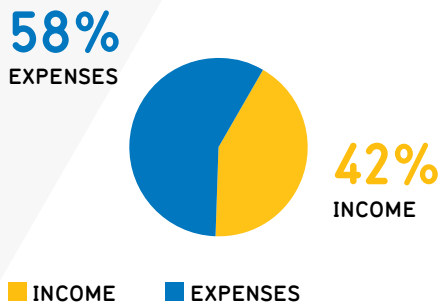
INCOME BREAKDOWN BY SOURCE



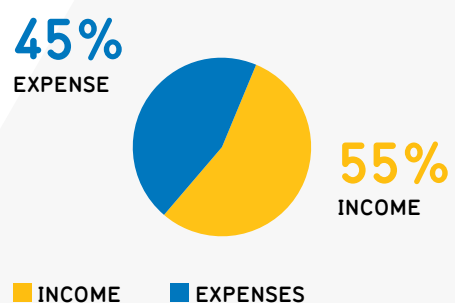
INCOME VS. EXPENSES



PHILANTHROPY: INCOME VS. EXPENSES



GRANTS AND SPONSORED RESEARCH: INCOME VS. EXPENSES



Looking Ahead

NEW PROJECTS IN 2023

Resilient Retrofits: Adapting to Climate Change *funded by Halifax Regional Municipality, Nova Scotia*

The Halifax Regional Municipality (HRM) in Nova Scotia engaged P4A to research climate-resilient retrofits for specific natural hazards of concern. We are exploring what building features can withstand floods (overland, coastal, riverine), extreme precipitation, extreme winds, extreme heat, wildfires, drought, snow, and ice.

Our research team is developing a framework for thinking about the following:

- › Resilient retrofits for adaptation so that municipal, commercial and residential buildings (single-family and multi-residential) can withstand anticipated climate hazards; and
- › Initiatives that enable and encourage the adoption of resilient retrofits, such as programs, outreach, education, policies, and financial incentives.

WHY IT MATTERS

Climate change is contributing to the frequency and severity of extreme weather events across Canada. Making our infrastructure future-ready calls for homes and buildings to be climate-resilient. We need to better understand how to adapt our built environment to withstand climate hazard events. Once we know what improves the resilience of buildings to climate change impacts and risks, we can invest in tailored climate-retrofits as well as grey and natural infrastructure. And, over the longer term, climate-resilient retrofits will save property-owners money as well as result in co-benefits such as improved health and reduced carbon pollution.

Next Steps

- › Conduct a literature review of resilient retrofits and climate change impacts in the HRM
- › Carry out a desktop scan of initiatives
- › Develop HRM-specific building typologies
- › Develop content for an HRM-tailored resilient retrofits guidebook intended for residents

Data for Flood Resilience: Building Evidence for Equity-Informed Investment, Planning and Foresight *Funded by The Co-operators Group Limited*

Co-operators renewed their multi-year funding commitment to P4A to catalyze community-level flood resilience and engaged P4A to explore where and how investments in community-level resilience (e.g., risk reduction and adaptation) could make the most impact.

Building on the Inclusive Resilience study, we will explore how to incorporate equity considerations into flood and disaster risk foresight, planning and management in Canada. This project aims to generate pathways for integrating an equity lens in disaster risk management with the goal of reducing the impacts of flooding (and other hazards) in Canada.

WHY IT MATTERS

Flooding is Canada's most common and costly natural hazard and it is intensifying in frequency and severity with climate change. Without intentionally incorporating equity considerations into flood and disaster risk foresight, planning and management, some people will be more impacted and less able to prepare and respond than others.

Next Steps

- > Project deliverables include a guide for using a Social Vulnerability Index (SoVI), a literature review on who is disproportionately impacted by fluvial, pluvial and coastal flooding, and web-based flood risk maps for three communities with a SoVI layer.
- > P4A will also develop a community engagement strategy for involving local stakeholders in risk assessments and investment opportunities to build resilience.



Leadership

ADVISORY COMMITTEE MEMBERS

BRUCE FRAYNE

Chair

WATERLOO / ON

Professor and Dean,
Faculty of Environment

University of Waterloo

DAVID DIABO

OTTAWA / ON

Senior Special Advisor,
Emergency Management

Assembly of First Nations

TREVOR SMITH DIGGINS

GUELPH / ON

Communication Strategist

JEAN-PIERRE GAGNON

CAMBRIDGE / ON

President and CEO

Farm Mutual Re

SHAWNA PEDDLE

GUELPH / ON

AVP, Citizenship

Co-operators

JASON THISTLETHWAITE

WATERLOO / ON

Associate Professor and
Associate Director, Graduate Studies
School of Environment, Enterprise
and Development

Associate Director,
Partners for Action

University of Waterloo

LEAH WHITTAKER

OTTAWA / ON

Policy Advisor, Policy and
Outreach Directorate

Public Safety Canada

ANDREW WILSON

EDMONTON / AB

Director, Watershed Resilience
and Transboundary Waters,
Environment and Parks

Government of Alberta

Team

ADMINISTRATION

JULIE WRIGHT – Director, Partners for Action

Julie Wright took on the role of Director at Partners for Action in December 2020. Previously, she led Waterloo Global Science Initiative (WGSi) through its start-up phase to successfully launching a decade-long Summit series and catalyzing collaborations related to each event. Prior to working at WGSi, she spent ten years in communications and public affairs roles for companies, clients, and campaigns in the tech, cultural and non-profit sectors at the forefront of sector disruption. Julie is also the Ward 7 Councillor for the City of Waterloo.

SHARMALENE MENDIS-MILLARD – Senior Manager, Research Partnerships and Evaluation

Sharmalene Mendis-Millard is a mixed-methods geographer whose research focused on adaptive capacity in Canadian UNESCO Biosphere Reserves and who worked at Reep Green Solutions to engage people on stormwater management. Sharmalene has worked for several interdisciplinary research centres that aim to advance community well-being, conservation and social justice through community partnerships, program evaluations, and learning opportunities, and now focuses on equity in climate risk reduction and adaptation.

ELENA CHRISTY – Stakeholder Engagement Coordinator

Elena Christy supports Partners for Action's stakeholder engagement, communications, and knowledge mobilization. With a background in community and international development, community-based research, and design, Elena is particularly interested in how transdisciplinary engagement can lead to the innovative solutions needed to address some of the world's most pressing issues and bring about social change.

KALINDI SHAH – Research Project Coordinator

Kalindi Shah graduated with a Masters of Climate Change (MCC) from the Department of Geography and Environmental Management at the University of Waterloo in the Fall 2022. She supports the Director, Manager of Research Partnerships and Stakeholder Engagement Coordinator in creating research project documentation, conducting targeted literature reviews and in all other logistical components of research.

RESEARCH

JASON THISTLETHWAITE – Associate Director Partners for Action

Jason Thistlethwaite is an Associate Professor in the School of Environment, Enterprise and Development (SEED) at the University of Waterloo, Associate Director, Graduate Studies in the Faculty of Environment, and Associate Director for Partners for Action (P4A). His research focuses on innovative strategies designed to reduce the economic impacts of extreme weather and climate change.

EVALYNA BOGDAN – Contract Researcher Inclusive Resilience

Evalyna Bogdan was recently appointed Assistant Professor, Faculty of Liberal Arts and Professional Studies, Disaster and Emergency Management program, at York University. Her research focuses on how diverse and competing priorities are navigated in policies and practices addressing socio-environmental problems, especially related to flood risk governance. To examine these complex challenges, Evalyna applies an interdisciplinary lens and innovative stakeholder engagement approaches.

BRYAN CASTILLO – Research Assistant
Inclusive Resilience

Bryan Castillo is a geographer and a graduate of Pontifical Catholic University of Chile. He has worked with different research teams to apply Geographical Information Systems (GIS) to do analysis in massive spatial datasets. This experience, working with discipline groups across the social sciences, has allowed him to understand how to use a range of computational tools to support policy development and decision making.

LITON CHAKRABORTY – Research Associate
Inclusive Resilience

Liton Chakraborty is a post-doctoral Research Associate at the University of Waterloo and senior policy analyst in the Emergency Management and Programs Branch of Public Safety Canada. As a lead researcher on socioeconomic vulnerability analysis and flood risk assessments at Partners for Action, Liton has contributed to several research initiatives, such as community-engaged inclusive resilience, flood vulnerability mapping, and developing innovative methodologies on climate change risk assessment emphasizing an equity-centered approach.

BRENT DOBERSTEIN – Affiliated Faculty
Water is our Friend

Brent Doberstein is an Associate Professor in the Department of Geography and Environmental Management at the University of Waterloo. Brent's research focuses on environmental and resource management in developing countries, hazard mitigation and disaster risk reduction, climate change/hazards connections, and institutional capacity building.

ELIZABETH ENGLISH – Affiliated Faculty
Water is our Friend

Elizabeth English is a Professor at the University of Waterloo's School of Architecture. She is also the Founder and Director of the Buoyant Foundation Project, a not-for-profit organization based in Breaux Bridge, Louisiana, and Cambridge, Ontario,

that is a leader in the development of amphibious technologies for affordable housing and for retrofitting existing homes. Elizabeth's research focuses on developing amphibious foundation systems as a flood mitigation and climate change adaptation strategy that supports the preservation of traditional housing forms and cultural practices.

MOHAMMAD SINA JAHANGIR – Research Assistant
Inclusive Resilience

Sina Jahangir is a Ph.D. candidate at the University of Waterloo, Department of Civil and Environmental Engineering, working under the supervision of John Quilty. He is using his expertise in mathematical modeling, hydrology, and computer science to tackle pragmatic, and large-scale problems such as smart and effective flood planning.

RACHEL KRUEGER – Research Assistant
Inclusive Resilience

Rachel Krueger holds a Master of Environmental Studies in Sustainability Management (Water, 2022) from the University of Waterloo and researched flood risk communications while also working on P4A's Inclusive Resilience project with the Canadian Red Cross. Rachel has reviewed recent disaster studies literature and previously interned with the City of Mississauga in their stormwater division.

KASRA MOTLAGHZADEH – Research Assistant
Inclusive Resilience

Kasra Motlaghzadeh is a Ph.D. student in System Design Engineering at the University of Waterloo. His research explores complexities around socio-environmental systems, climate change mitigation, and adaptation.

FELICIA WATTERODT – Research Assistant
Inclusive Resilience

Felicia Watterodt is a Master of Environmental Studies student at the University of Waterloo, Department of Geography and Environmental Management. Building on her previous studies in International Relations, Felicia's thesis research focuses on climate resilience, post-disaster recovery, and flood adaptation policies.

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