



Advancing Flood Resiliency in Canada

# 2017-18 Strategic Plan

May 1, 2017

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# 1 Introduction

Partners for Action (P4A) is an applied research network advancing flood resiliency in Canada in the face of a changing climate and extreme weather. P4A is rooted in a collaborative approach that brings together a diverse set of stakeholders to create and share knowledge, address information needs, and drive action. P4A is based out of the Faculty of Environment, University of Waterloo, with founding support provided by The Co-operators Group Ltd. and Farm Mutual Reinsurance Plan, Inc. Details on our structure and governance are provided in Appendix A.

Flooding is the most frequent and costly natural hazard in Canada and is a major risk for property-owners and municipalities (Sandink 2011; Public Safety Canada 2015a). Flood damages nationally are expected to double to \$12.15 billion over the next 5 years, while the amount anticipated to be covered by the federal Disaster Financial Assistance Arrangements (DFAA) will remain the same (\$3.37 billion) (PBO, 2016). Federal DFAA thresholds have also increased significantly, shifting responsibility to pay for disaster recovery to provincial and municipal governments, and ultimately to residents.

Our climate is changing, with anticipated increases in the frequency and severity of extreme weather events; by the year 2050, 'rare' extreme precipitation events are expected to double in frequency across Canada (Warren and Lemmen 2014). This increase in hazard will be compounded by increasing exposure, as our society places more valuable assets in more vulnerable locations, such as below-grade basements. In light of this change in frequency and severity of flood events, and associated increases in losses, between 2012 and early 2015, researchers from the University of Waterloo worked with the Co-operators to initiate research into the potential for offering flood insurance in Canada.

Our 2016 survey of municipalities, First Nations, and Conservation Authorities highlighted the need for climate science, risk mapping, and communications support for municipal staff to better prioritize adaptation efforts. Communication around government programs and subsidies for personal protective measures is also needed, as these offerings are critically underutilized. Our 2016 survey of 2,300 Canadians showed that 94% were unaware of their flood risk, and the vast majority had not taken advantage of government grants and subsidies or undertaken personal actions to protect their properties from flood. Most are also unaware of the extent of their home insurance coverage, or the role of insurance versus disaster assistance should a flood event impact their home. However, most want to know, and want to take personal responsibility for protecting themselves from flood risk.

This lack of awareness, combined with a lack of understanding of flood insurance options and recent changes in federal government disaster assistance offerings, means Canadians are under-protected from flood risks in a changing climate. Our 2017-18 Strategic Plan identifies steps to inform about risk, and give communities the tools they need to help their residents understand the challenge, and what can be done to create more resilient communities.

## 2 Vision, Goals and Objectives

This Plan sets out the overall vision, objectives, and key activities for P4A for May 2017 - April 2018. Our vision is a **risk-aware Canada** where homeowners take responsibility for protecting themselves and recovering from flood, and decision-makers consider flood risk in planning and preparing our communities.

Our mandate is to facilitate increased risk awareness towards improved decision making to reduce risk. We fulfill our mandate through the following methods:

- **Facilitating collaboration** between the research community, all levels of government, businesses, and non-governmental organizations towards improving flood resiliency in Canadian communities;
- **Identifying innovative, practical research** tied directly to flood resiliency in Canada, and building and leveraging relationships towards such research;
- **Sharing results and best practices**, including measurable activities to reduce risk of flood in Canadian communities; and,
- **Informing Canadians** about their flood risk, actions they can undertake to reduce risk, and opportunities to transfer risk.

Our goals are to help Canadian residents and decision-makers:

1. Understand the risk of flood to their communities
  - flood and risk mapping
  - vulnerability assessment
2. Have access to tools
  - policies, plans and procedures
  - cost-benefit of action versus inaction
  - lot-level personal actions
  - incentives and insurance
3. Become more flood resilient

## 2.1 Strategic Goal 1: Understand Flood Risk

We understand that Canadians do not have a sound knowledge of flood risk, and the potential impacts of flooding on their homes and communities. We believe that information and effective communication will increase awareness towards action to reduce flood risk.

### Objective

To inform Canadian residents and decision-makers on flood risks, using materials and approaches that are community-specific and culturally appropriate.

### Strategies

To accomplish this objective, we will:

1. Promote the need for updated flood hazard mapping throughout Canada, particularly in high-risk areas.
2. Promote methods for flood risk and vulnerability assessment.
3. Undertake research on developing community-specific flood risk mapping that combines hydrological hazard, economic exposure, and vulnerability.
4. Undertake research on effective communications, behavioural change, and how Canadians understand and act on risk.
5. Create materials and maintain our website ([www.floodsmartcanada.ca](http://www.floodsmartcanada.ca)) to inform on risk, easy ways to reduce risk, and methods to transfer risk, such as insurance.
6. Develop and promote visualization tools to assist decision-makers in communicating flood risk to residents.
7. Develop and promote methods and tools to understand local-level vulnerability, and how this contributes to flood risk.
8. Work with community groups towards ownership, collaboration and effective communications methods on flood risk, and methods to reduce or eliminate that risk (See our Communications Plan - Appendix B).
9. Bring together stakeholders to share ideas, identify gaps, and collaborate on research and programming to address information needs.

## 2.2 Strategic Goal 2: Have Access to Tools

We understand that municipalities, provincial, territorial, federal and Indigenous governments need effective, relevant, simple tools to communicate risk, assess vulnerability, and plan towards successful adaptation to a changing climate and increasing disaster risk from flood. Often, decision-makers do not have access to these tools, or are overwhelmed by the wealth of information available to them. We believe that actionable research and investigation of available tools and case studies/pilots will assist decision-makers in effective planning and preparation for future flood events.

### Objective

To curate a repository for tools, case studies, and pilots that communities and individuals can use to better understand and manage flood risk. We will focus on materials, nationally and internationally, including:

- policies, plans and procedures
- cost-benefit of action versus inaction
- lot-level personal actions
- incentives and insurance

### Strategies

To accomplish this objective, we will:

1. Inventory and highlight the effectiveness of municipal, provincial and national policies towards flood risk management.
2. Monetize the economic costs and benefits of climate change adaptation through cost-benefit analysis of flood mitigation (such as planning, forecasting and warning, education, and physical infrastructure) towards community flood risk management. We will share methods for case study communities nationally, and make analysis tools available for use by other municipalities.
3. Provide information on existing lot-level actions (and incentive programs), such as backwater valves, sump pumps, and disconnecting downspouts from municipal drainage systems, and direct residents and municipalities to those research groups and municipalities with existing programs, research, and educational materials.
4. Work with community groups towards creating and implementing tools for municipalities and homeowners on 'green infrastructure' at the property level, such as infiltration beds, rain gardens, permeable pavement, rain barrels and cisterns, etc.
5. Investigate the difference between flood insurance and disaster assistance to better communicate the widening protection gap for residential properties.
6. Connect municipal staff to continue the conversation on what's working, what isn't, and where gaps lie in capacity, research, funding, and understanding.
7. Develop a model that municipalities across Canada can use to drive behavioural change towards personal action to manage rainwater at the property level.

## 2.3 Strategic Goal 3: Become More Disaster Resilient

We understand that Canadians do not tend to think in terms of disaster risk reduction, and that flood risk management has historically been hazard-based, rather than forward-thinking and risk-based. We believe integration of climate change adaptation with disaster risk reduction will make our communities more resilient to any stressor, including a flood event.

### Objective

To better understand the vulnerabilities and strengths of our communities, and implement programming towards making our communities more resilient to any stressor, including flood.

### Strategies

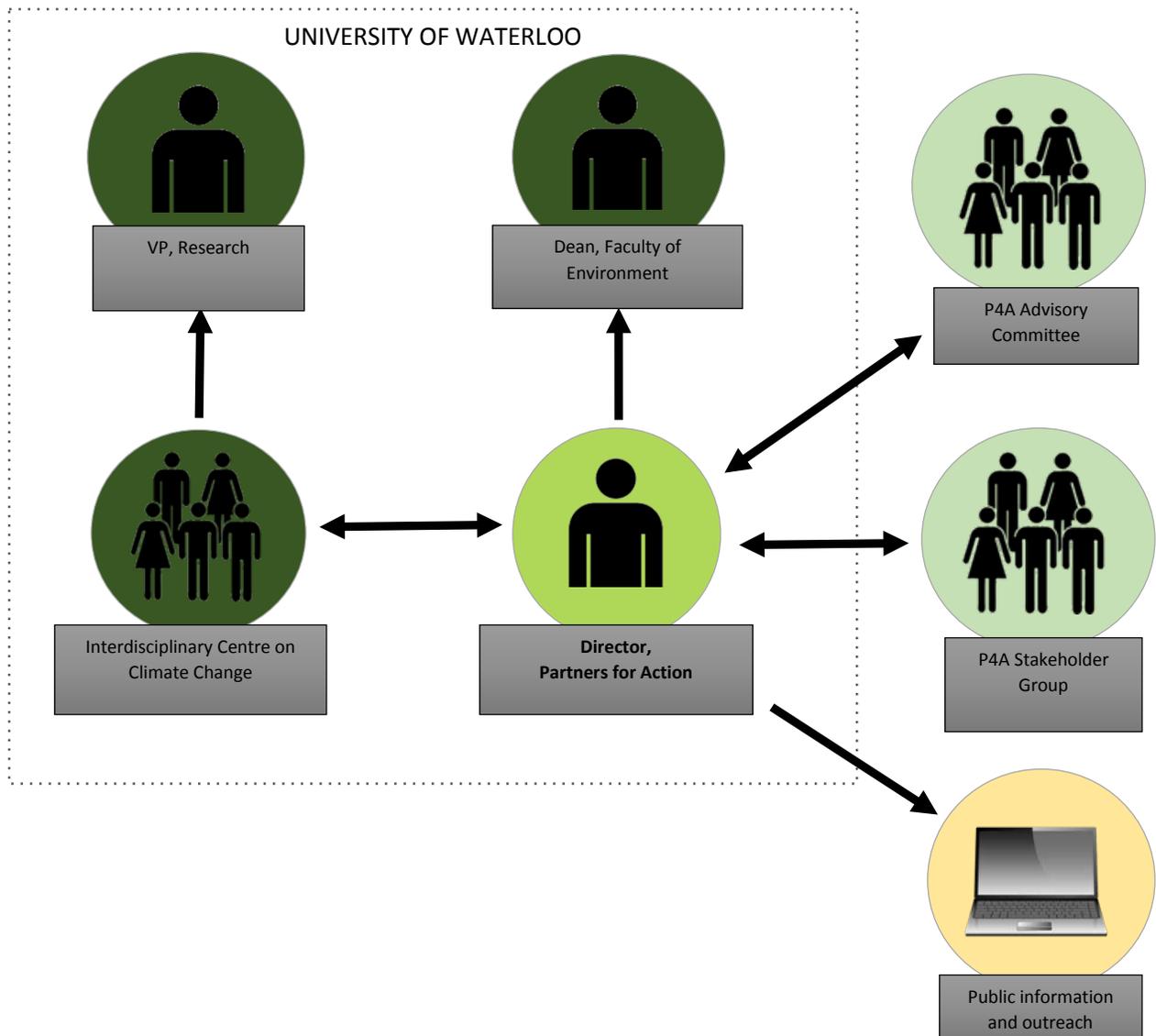
To accomplish this objective, we will:

1. Undertake research on community disaster (flood) resilience, identifying vulnerabilities, strengths and opportunities.
2. Host workshops with communities to identify vulnerabilities, strengths and opportunities.
3. Develop tools to bring communities together to work towards resilience.
4. Ensure work undertaken by P4A fits with the Priorities for Action identified in the UNISDR's Sendai Framework for Disaster Risk Reduction (UNISDR 2016), as follows:
  1. Understanding disaster risk
  2. Strengthening disaster risk governance to manage disaster risk
  3. Investing in disaster risk reduction for resilience
  4. Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction

## Appendix A – Governance Structure

P4A is led by a Director, who is employed by the University of Waterloo, with support from an Advisory Committee and Stakeholder Group. The Advisory Committee provides expertise, advice and feedback related to the achievement of the mandate of P4A. In addition, a broader Stakeholder Group brings technical expertise and provides advice and feedback on the feasibility of project plans and resulting recommendations.

The proposed structure, roles, and reporting relationships are presented below.



## Director

The P4A Director is responsible for strategic planning and execution, governance, budgeting, fundraising, public relations, communications, research liaison, and support for the P4A Advisory Committee and Stakeholder Group. The Director's key responsibilities are as follows:

- Oversee execution of all P4A programs (events, research, reports, etc.);
- Lead strategic planning for P4A, including annual goal-setting;
- Establish effective organizational processes and systems;
- Fundraise and manage relationships with public and private funders and research partners;
- Oversee and report on the budget and deliverables; and,
- Promote the network through high-exposure speaking and writing.

## Advisory Committee

The purpose of the Advisory Committee is to:

- Act in a strategic advisory capacity, providing feedback and advice to the Dean, Faculty of Environment, and the Director, P4A, regarding practical, meaningful and cost-effective means to lower the probability of flood damage for Canadian communities; and,
- Serve as a forum for discussing the changing landscape of adaption research and applied solutions, particularly as it relates to P4A's approaches and strategies to remain on the forefront of reducing risk associated with changing climate and extreme weather in Canadian communities.

Responsibilities of Committee Members are as follows:

1. Sustain an informed understanding of the purpose, research and communication priorities of P4A through participation in meetings and review of materials and informational updates from the Director;
2. Provide feedback and advice to the Director on how to mobilize resources towards research and networking opportunities in relation to the P4A objectives;
3. Promote the activities and value of P4A in the broader community through public speaking, professional work, and outreach to contact networks;
4. Identify individuals and organizations targeted for involvement and partnership, and participate in recruitment and relationship development, as appropriate; and,
5. Engage in a reflective, self-evaluative process to improve Advisory Committee effectiveness.

2016-2017 Advisory Committee Members:

- Jean Andrey (Faculty of Environment, University of Waterloo)
- Barb Turley-McIntyre (The Co-operators Group Limited)
- Steve Smith (Farm Mutual Reinsurance Plan (FMRP))
- Beth Crosbie (Canadian Real Estate Association)
- Dave Murray (Canadian Water Resources Association (CWRA))

- Wolf Keller (City of Calgary)
- Irving Leblanc (Assembly of First Nations)
- Cathy Maniego (Alberta Environment and Parks)
- Matthew Godsoe (Public Safety Canada)
- Toby Heaps (Corporate Knights)
- Cindy Toth (Town of Oakville)

### Stakeholder Group

The P4A Stakeholder Group will include a diverse set of experts including property & casualty (P&C) insurers, government policymakers, flood risk experts, professional associations, businesses and the legal community. The role of the Stakeholder Group will be to provide subject matter expertise and advice to P4A, with responsibilities as follows:

- Attend P4A meetings or events and assist with the discussion, either because of particular expertise and interest, or because of unique appreciation of newly emerging research or partnerships relevant to the work of the P4A;
- Provide individual advice to the Director as requested based on subject matter expertise and especially regarding the cost-effectiveness, technical feasibility and potential impact of proposed P4A actions; and,
- Offer suggestions and advice on opportunities to disseminate and communicate P4A's work (i.e., material distribution, Director speaking opportunities, etc.).

The role of individual stakeholders will vary including, for example, provision of insight and feedback (reality check), technical expertise, access to data, knowledge mobilization.

## Appendix B – Communications Plan

### Purpose

The strategic goals of P4A (Section 2) include facilitating collaboration, identifying innovative, practical research, sharing results and best practices, and educating Canadians. Essential to each of these goals (and the overall mandate of P4A) is a targeted communication plan identifying the audience(s), messages, channels, and methods to spread the word and receive feedback from a diverse range of stakeholders.

Communications should be efficient, effective, and long-lasting. The purpose of this plan is to define our path forward to raise the national profile of P4A, with a continuous goal of self-assessment and flexibility in approach.

The purpose of communications for P4A is:

- Recruit stakeholders
- Disseminate information on the state of urban flood resiliency in Canada, what's working in our communities, what we can do better.
- Request feedback on best practices, data gaps, opportunities for further research and communication
- Educate the public on programs, methods, incentives and subsidies to empower individual flood-resilience.
- Rally support nationally for flood preparedness
- Secure future funding

### Audiences

Communications about the Network will ultimately target the existing participants in P4A (those who were invited and/or participated in the Phase I-III research, and our current Advisory Committee membership), and will also identify and target the following stakeholders:

- Financial Industry – banks, insurance providers, mortgage providers, regulators
- Industry Associations – engineers, real estate associations, construction associations
- Municipal government – municipal elected officials and flood-related staff, in addition to municipal organizations at the provincial and national level
- Federal, provincial and aboriginal governments – elected officials and staff with mandates of flood protection, emergency response, and infrastructure renewal
- Stakeholders in emergency response - community organizations and relief organizations
- Non-governmental organizations and non-profits – groups with a mandate to protect the natural and social environment and sustainability
- Academic and subject-matter experts – individuals and groups involved in flood mitigation, climate change impacts relating to flood, infrastructure, and non-structural measures to improve flood resiliency, such as policy, plans, and procedures.
- General 'public' – homeowners, cottagers

## Messages

The messages relating to P4A, our mandate, and approach, will vary over time.

Our main tag line is “When it comes to protecting ourselves from a disaster, water is the new fire. We want communities and individuals to think about what flood could mean for them, and do something about it.”

Key messages include:

1. We can't stop flooding, and it's only getting worse. We're working now to help communities lower their risk and recover quickly. We want Canadians to think about what flood could mean to you, and do something about it.
2. Canada's climate is warming, but we're also seeing increases in rainfall, extreme weather events, and sea level rise. We have to consider where the water will be 20-30 years from now, not just today, or in the past. We have the science and tools to strengthen our defences against flood in our communities.
3. As a nation, we've spent over \$10 billion dollars since 1998 recovering from floods. More than half of that has been in the last two years. We need to invest in flood protection now to save on disaster relief later.
4. We have the tools and science to reduce our risk from flood. We must come together to share what works and what doesn't. Action now costs far less than reaction later.
5. Flood damages nationally are expected to double to \$12.15 billion over the next 5 years, while the amount anticipated to be covered by the federal Disaster Financial Assistance Arrangements (DFAA) will remain the same (\$3.37 billion) (PBO, 2016).
6. 94% of the 2,400 Canadians, including municipalities, First Nations, and Conservation Authorities, that we surveyed in 2016 indicated that they were unaware of their flood risk. The survey results highlight the need for climate science, risk mapping, and communications support for municipal staff to better prioritize adaptation efforts.
7. Most Canadians don't realize they are at risk, and don't have a plan to protect themselves from flood. Even if you don't live near water, your home or business could be at risk, and preparing now could save you money later.

## Channels

- Websites
  - P4A Website (<https://uwaterloo.ca/partners-for-action/>)
    - The purpose of this website is to inform members, students, researchers stakeholders, and other online users of P4A's mandates, research, events, and projects.
    - The website includes specific details about the research network including staff, contact information, and publications
    - This website is housed on the University of Waterloo's server
  - FloodSmartCanada (<http://floodsmartcanada.ca/>):
    - FloodSmartCanada is a project of Partners for Action
    - The goal of FloodSmartCanada is to provide a hub of information related to floods, flood risks, and emergency preparedness. This information is intended to educate community members, organizations, businesses and municipalities about floods and to share new and existing information that has been created by each of these groups.

- Brochure:
  - The P4A brochure is intended for financial institutions, industry associations, potential funders, etc.
  - A new brochure will be released annually
- Newsletters
  - These are intended for all stakeholders, and will reside on the P4A website, and will be produced once every 3-4 months, with details on urban flood, events, how communities are coping, new research, etc. Information on practical methods for individuals to improve personal flood resilience could also be included (in comic format, graphic and easy to understand).
- Conferences and presentations:
  - Conference presentations will be targeted to industry, financial institutions, academic audiences, etc. Poster submissions will be welcome from UW students, and sponsorship opportunities will be sought to increase visibility at events nationally.
  - Presentations to particular groups (cottagers or residents associations, local real estate associations, etc.) will focus on specific areas of interest and practical solutions, where possible.
  - Attendance at local events will be considered as a venue to discuss urban flood, personal risk, and ways to reduce that risk. Partnerships with local groups such as REEP Green Solutions would be sought-out.
- Media:
  - Letters for the Editor will focus on the problem of flood in Canada, raising awareness of the issue and possible strategies to lower the risk on a personal level.
  - News stories/press releases/columns/reports will focus on urban flood resiliency, and on specific research and networking outcomes, when these are fresh and available.
  - Advertisements in trade journals will focus on the problem of flood in Canada, raising awareness of the issue and possible strategies to lower the risk.
- Posters & Infographics
  - Posters are intended for members of the public that may not be exposed to P4A, in public places where the message that “We can’t stop flooding, but you can act to reduce your risk. Here’s how.”
  - Infographics are used to disseminate flood-related information to the public in an easily accessible and user-friendly way
  - The presentation of the information on the infographics (including the use of tables, photos, numbers) will ensure effective knowledge mobilization between P4A and the target audience
  - The infographics will be shared via newsletters, social media, P4A website, and FloodSmartCanada
- Network:
  - Information and materials will be distributed to members of the P4A network/stakeholder group, with a request to distribute it to their contacts.
- LinkedIn:
  - Print materials and presentations will be posted to the Director’s personal LinkedIn page for distribution to contacts.

- Twitter:
  - P4A's twitter account (@PARTNERS4ACTION) is primarily used to share Canadian flood news and information
  - The account is also used to share events, research and information related to P4A
- National Network on Municipal Flood Resiliency:
  - Information and materials will be distributed to members of the P4A network/stakeholder group, with a request to distribute it to their contacts.

## Resources

Channel	Person	Cost
Websites <a href="https://uwaterloo.ca/partners-for-action/">https://uwaterloo.ca/partners-for-action/</a> <a href="http://www.floodsmartcanada.ca">www.floodsmartcanada.ca</a>	Shawna Peddle Natalie Heldsinger	\$0
Twitter <a href="https://twitter.com/PARTNERS4ACTION">https://twitter.com/PARTNERS4ACTION</a>	Shawna Peddle Natalie Heldsinger	\$0
Brochure	Shawna Peddle UW Creative Services	Printing costs - \$1.75/copy
Newsletters	Shawna Peddle Natalie Heldsinger UW researchers UW research assistant/co-op student	\$0 Part of existing job requirements
Conferences and Presentations	Shawna Peddle UW researchers UW Students	Depending on conference Sponsorship Attendance and speaking arrangements Attendance and poster presentation
Media	Shawna Peddle UW researchers Members of the Advisory Committee	\$0 for articles/interviews/letters to the editor/news releases \$\$ for op-ed pieces and paid advertisements
Posters/infographics	Shawna Peddle Natalie Heldsinger	\$ - Printing \$ - Location rental (buses, mall and community centre spaces)
Stakeholder Group LinkedIn	Shawna Peddle Natalie Heldsinger	\$0