



**COMMUNICATING TO INCREASE FLOOD AWARENESS
AND INCITE PERSONAL ACTION AMONG CANADIANS:**
RESOURCES FOR COMMUNICATING AND DEVELOPING
TOOLS TO ENCOURAGE PROPERTY-LEVEL FLOOD RISK
REDUCTION AND PREPAREDNESS

2020

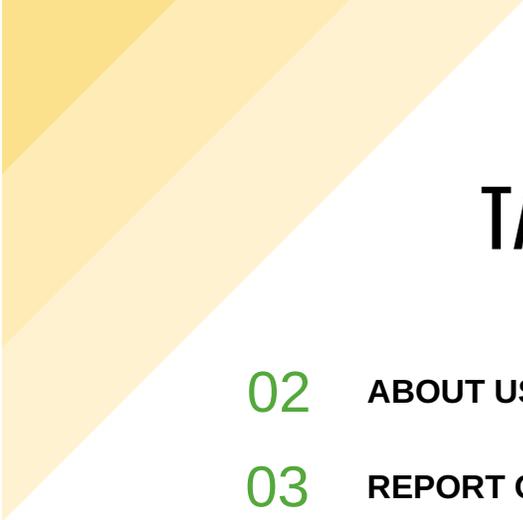


TABLE OF CONTENTS

02	ABOUT US & ACKNOWLEDGEMENT
03	REPORT OVERVIEW
04	IMPORTANCE OF FLOOD RISK REDUCTION AND PREPAREDNESS MESSAGING
05	RELEVANT CHALLENGES
06	RESOURCES USED TO DEVELOP THIS GUIDE
07	COMMUNICATION MATERIALS
08	I. SEASONAL FLOOD PREVENTION
09	II. SOCIAL MEDIA TOOLKIT
13	III. ENGAGING AND EMPOWERING YOUTH WITH EDUCATIONAL MATERIALS ON FLOODING
14	IV. FLOOD PREVENTION MESSAGES
17	GUIDANCE FOR DEVELOPING FLOOD PREVENTION MESSAGING
24	RECOMMENDATIONS FOR COMMUNICATIONS METHODS
30	CONCLUSION
31	RERFERENCES



About Partners for Action

Partners for Action (P4A) is an applied research network advancing food resiliency in Canada in the face of climate change and extreme weather. P4A's collaborative approach brings together diverse stakeholders to create and share knowledge, address information needs and drive action. P4A is based in the Faculty of Environment at the University of Waterloo, with founding support provided by The Co-operators Group Ltd. and Farm Mutual Re. For more information, visit: <https://uwaterloo.ca/partners-for-action>

Acknowledgement

Partners for Action would like to acknowledge the support of the Province of Ontario and the Government of Canada through the National Disaster Mitigation Program. Please note that the views expressed in this document are the views of Partners for Action and do not necessarily reflect those of the Province of Ontario or Government of Canada.

REPORT OVERVIEW

This report provides guidance on awareness-to-action communication about reducing flood risk at the property level. It includes standalone communications messages, social media resources, and educational materials, as well as guidance on developing and delivering these messages. Suggestions presented here are not intended to be prescriptive because the challenges and needs of each community and target audience vary. The report's objective is to offer readers a high-level overview of best practices for flood prevention communication, which readers can apply to their local context. The information is relevant to those responsible for developing communications plans and materials related to flood risk reduction, flood preparedness and climate change adaptation, and for those involved in community outreach, particularly at the community level.



IMPORTANCE OF FLOOD RISK REDUCTION AND PREPAREDNESS MESSAGING

Flood risk reduction and preparedness communication aims to inform audiences about actions they can take at the property level to reduce the impacts of flooding. There is an urgent need for effective flood risk reduction and preparedness communication, because Canadians have very low awareness of flood risk. For instance, only 6% of Canadians living in designated flood risk areas know they are at high risk and, due to this lack of awareness few have adopted actions to reduce flood risks to their personal safety and property.[1] Fewer than 30% of Canadian homeowners undertake property-level flood protection measures like installing sump pumps, back-water valves, rain barrels or water resistant materials in basements.[2]



RELEVANT CHALLENGES

In order to develop effective flood risk reduction and preparedness communication, it is important to understand several challenges associated with this information transfer. First, Canadians are inundated with information, particularly online, which tends to dilute or drown out flood risk reduction information. Second, organizations that are expected to distribute flood risk reduction and preparedness information, such as municipalities, often lack the capacity and resources to design and deliver tailored communications materials and messages. Third, reducing property-level flood risk typically requires multiple and repeated actions. For example, ensuring that water flows away from the home, a key action to reduce property-level flood risk requires regular monitoring and adjustment. As such, a generic or standard communications approach is insufficient to capture attention and spur property-level adaptation measures. Finally, flood risk reduction measures, such as installing and maintaining a sump pump, require technical knowledge that homeowners typically lack, so they fail to prioritize these actions.



RESOURCES USED TO DEVELOP THIS GUIDE

The guidance presented in this document is informed by primary^[3] and secondary applied research conducted by Partners for Action, which sought to understand and test best practices for communicating flood risk reduction information to Canadians. More specifically, the research involved:

- 01** an assessment of flood risk reduction and preparedness communication resources in North America and select international jurisdictions,
- 02** a comprehensive review of academic and grey literature related to flood risk communication,
- 03** primary data collection (interviews, formal research group discussions) in consultation with technical and communications experts, including those with expertise in risk communication, behavioural change, community-based social marketing, municipal water professionals and communications personnel, and private sector and non-government organizations dealing with flooding and its aftermath, and
- 04** a comprehensive review of academic and grey literature related to flood risk communication,

COMMUNICATION MATERIALS

Partners for Action developed a series of communications materials, including standalone messages, social media posts, infographics and educational resources, which can be tailored by organizations and disseminated to encourage property-level flood risk reduction. The development of these materials involved consultation with water management experts, communications experts and members of the public. The process was guided by best practices from the fields of risk communication, community-based social marketing, behavioural change and community outreach. The messages and resources highlighted in this report are a sample of the complete portfolio, which is available (in English and French), on the project website: floodsmartcanada.ca



I. SEASONAL FLOOD PREVENTION

The project's public engagement revealed several key findings. First, property-owners need relevant and timely information about how to reduce flood risk to their home. Specifically, it was suggested that property-level flood risk reduction advice should be season-specific. Seasonal preparedness information presented in the form of infographics or checklists are likely to be more effective than generic advice because it coincides with a milestone in the calendar year, making it more relevant and memorable. Distributing risk reduction advice that is tailored to each season also ensures the audiences receive fresh content throughout the year. The following is a series of information sheets that highlight specific actions Canadian homeowners can take to reduce flood risk in spring, summer, fall and winter.

Spring

Summer

Fall

Winter

BE FLOOD SMART THIS SPRING

Flooding can happen in any season. It's important to be ready to protect yourself and your home. Here are a few simple tips to help keep your home dry this spring.

KNOW YOUR OWN RISKS
Take a walk in and around your home to see where it might be at risk. Look at your community flood maps to learn if your home is located in a flood risk area. Signs for weather alerts to know if flooding is happening or might happen. Follow your municipality or local media to stay informed about flood and prevention information.

GUIDE THE WATER
Downspouts and eavestroughs can clog during the winter. It's important to clear them out before spring. Clean out eavestroughs, gutters and downspouts of leaves and dirt that can build up over the winter. Use your shovel to correct the grading around your house for adding soil to the foundation. Use a hose to clean downspouts. Check your municipal website for information or reach out to a contractor for help.

STOP WATER FROM GETTING IN
Check and cover lower-level windows. Look for wall cracks and seal them. Check your sump pump weekly and more often during heavy rain or snow melt. In case of a fault, install a backwater valve to block sewage from getting into your basement from the main sanitary sewer and check it annually.

LOWER YOUR FINANCIAL RISKS
Flood damages to your home are expensive. Read your insurance policy or talk to your insurance provider to know if your home is covered against all types of flooding. Take stock of your valuables by making a list, or snapping photos or a video, in case you need to make an insurance claim. Check your municipal website or contact them about financial incentive programs for residential flood risk reduction tools. The backwater valves and downspout disconnection.

GET PREPARED
Stock up on emergency supplies that you can grab and take with you easily. Think of what steps you would take in an emergency. Find your valuables and make a list of them. Move your hazardous materials, the paint and chemicals, off the ground. Talk to your family, friends and neighbours about a plan. Follow the advice of emergency officials.

Soyez prêt en cas d'inondation au printemps

Les inondations peuvent se produire en toute saison. Il est important d'être prêt à vous protéger vous-même ainsi que votre résidence. Voici quelques conseils simples pour aider à garder votre résidence au sec en printemps.

Connaître vos propres risques
Faites le tour de l'extérieur de votre résidence pour repérer les endroits où elle pourrait être exposée à des risques. Consultez les cartes des zones inondables de votre municipalité. Les signes de météo pour savoir si des inondations se produisent ou pourraient se produire. Suivez votre municipalité ou les médias locaux pour rester informés des nouvelles et des conseils de prévention.

Guidez l'eau
Les bacs d'écoulement des gouttières peuvent se boucher pendant l'hiver. Il est important de les nettoyer avant le printemps. Nettoyez les gouttières et les descentes de feuilles et de saleté accumulées pendant l'hiver. Utilisez votre pelle pour corriger le nivellement autour de votre maison pour ajouter de la terre au bon endroit. Utilisez votre pelle pour corriger le nivellement autour de votre maison pour ajouter de la terre au bon endroit. Consultez le site Web de votre municipalité pour plus d'informations ou contactez un entrepreneur pour obtenir de l'aide.

Arrêtez l'eau de pénétrer
Collez et couvrez les fenêtres de sous-sol. Inspectez les murs pour vérifier s'il y a des fissures et scellez-les. Vérifiez votre pompe à eau avant l'arrivée du printemps. Vérifiez votre pompe à eau avant l'arrivée du printemps. Vérifiez votre pompe à eau avant l'arrivée du printemps. Vérifiez votre pompe à eau avant l'arrivée du printemps. Vérifiez votre pompe à eau avant l'arrivée du printemps.

Réduisez vos risques financiers
Les dommages à votre résidence résultent d'une inondation peuvent être coûteux. Lisez votre politique d'assurance ou parlez à votre fournisseur d'assurance afin de savoir si votre résidence est couverte contre tous les types de dommages. Faites l'inventaire de vos objets de valeur en cas de sinistre à l'aide d'une caméra numérique ou d'un téléphone. Faites l'inventaire de vos objets de valeur en cas de sinistre à l'aide d'une caméra numérique ou d'un téléphone. Consultez le site Web de votre municipalité pour plus d'informations ou contactez un entrepreneur pour obtenir de l'aide.

Soyez prêt
Faites des provisions de fournitures d'urgence que vous pouvez prendre avec vous facilement. Pensez aux mesures que vous prendrez en cas d'urgence. Réassemblez vos objets de valeur et préparez-les à être transportés. Déplacez vos matériaux dangereux, comme la peinture et les produits chimiques, hors du sol. Déplacez vos matériaux dangereux, comme la peinture et les produits chimiques, hors du sol. Déplacez vos matériaux dangereux, comme la peinture et les produits chimiques, hors du sol.

BE FLOOD SMART THIS SUMMER

Flooding can happen in any season. It's important to be ready to protect yourself and your home. Here are a few simple tips to help keep your home dry this summer.

KNOW YOUR OWN RISKS
Take a walk in and around your home to see where it might be at risk. Look at your community flood maps to learn if your home is located in a flood risk area. Check your sump pump weekly and more often during heavy rain. In case of a fault, install a backwater valve to block sewage from getting into your basement from the main sanitary sewer and check it annually.

STAY CONNECTED
Going away on vacation? Have someone check on your home regularly when you are away to make sure it has not experienced flood damage. Sign up for local weather alerts to know if flooding is happening or might happen. Follow your municipality or local media to stay up-to-date about flood and prevention information relevant to you.

CATCH THE RAIN
Build or add to a rain garden to help bring excess of your property where rain water pools. Connect your downspout to a rain barrel and use the rain water on plants and grass on your property.

RECORD IT
Take stock of your valuables by making a list, or snapping photos or a video, in case you need to make an insurance claim. Read and store your valuables and insurance coverage details in a safe and dry place.

GET PREPARED
Stock up on emergency supplies that you can grab and take with you easily if you need to evacuate. Think of what steps you would take in an emergency. Find your valuables and make a list of them. Move your hazardous materials, the paint and other chemicals, off the ground. Talk to your family, friends and neighbours about a plan. Follow the advice of emergency officials.

Soyez prêt en cas d'inondation cet été

Les inondations peuvent se produire en toute saison. Il est important d'être prêt à vous protéger vous-même ainsi que votre résidence. Voici quelques conseils simples pour aider à garder votre résidence au sec cet été.

Connaître vos propres risques
Faites le tour de l'extérieur de votre résidence pour repérer les endroits où elle pourrait être exposée à des risques. Consultez les cartes des zones inondables de votre municipalité. Les signes de météo pour savoir si des inondations se produisent ou pourraient se produire. Suivez votre municipalité ou les médias locaux pour rester informés des nouvelles et des conseils de prévention.

Rester au courant
Vous partez en vacances? Demandez à quelqu'un de venir régulièrement vérifier votre maison quand vous n'êtes pas présent pour vous assurer qu'elle n'a pas subi de dommages. Inscrivez-vous aux alertes météo locales pour savoir si des inondations se produisent ou pourraient se produire. Suivez votre municipalité ou les médias locaux pour rester informés des nouvelles et des conseils de prévention.

Arrêtez l'eau de pénétrer
Amalgamez ou ajoutez un jardin pluvial dans les points les plus élevés de votre propriété afin de diriger l'excès d'eau vers le jardin. Installez une vanne à retour d'eau pour empêcher les eaux usées de pénétrer dans votre sous-sol.

Faites des provisions d'urgence
Faites des provisions de fournitures d'urgence que vous pouvez prendre avec vous facilement. Pensez aux mesures que vous prendrez en cas d'urgence. Réassemblez vos objets de valeur et préparez-les à être transportés. Déplacez vos matériaux dangereux, comme la peinture et les produits chimiques, hors du sol. Déplacez vos matériaux dangereux, comme la peinture et les produits chimiques, hors du sol.

Soyez prêt
Faites des provisions de fournitures d'urgence que vous pouvez prendre avec vous facilement. Pensez aux mesures que vous prendrez en cas d'urgence. Réassemblez vos objets de valeur et préparez-les à être transportés. Déplacez vos matériaux dangereux, comme la peinture et les produits chimiques, hors du sol. Déplacez vos matériaux dangereux, comme la peinture et les produits chimiques, hors du sol.

BE FLOOD SMART THIS FALL

Flooding can happen in any season. It's important to be ready to protect yourself and your home. Here are a few simple tips to help keep your home dry this fall.

KNOW YOUR OWN RISKS
Leaves and dirt can block water from moving through your eavestroughs, gutters and downspouts and cause water to build up near your foundation. Install a gutter cover to stop leaves from building up.

GUIDE THE WATER
Point your downspouts on the ground, 4 feet away from your and your neighbour's foundation. Use your shovel to add soil to the foundation to correct the grading around your house, so that water drains away from it. Check your municipal website for more information or reach out to a contractor for help.

STOP WATER FROM GETTING IN
Check and cover lower-level windows. Look for wall cracks and seal them. Check your sump pump weekly and more often during heavy rain or snow melt. In case of a fault, install a backwater valve to block sewage from getting into your basement from the main sanitary sewer and check it annually.

LOWER YOUR FINANCIAL RISKS
Flood damages to your home are expensive. Read your insurance policy or talk to your insurance provider to know if your home is covered against all types of flooding. Take stock of your valuables by making a list, or snapping photos or a video, in case you need to make an insurance claim. Check your municipal website or contact them about financial incentive programs for residential flood risk reduction tools. The backwater valves and downspout disconnection from the stormwater system.

GET PREPARED
Stock up on emergency supplies that you can grab and take with you easily. Think of what steps you would take in an emergency. Find your valuables and make a list of them. Move your hazardous materials, the paint and other chemicals, off the ground. Talk to your family, friends and neighbours about a plan. Follow the advice of emergency officials.

Soyez prêt en cas d'inondation cet automne

Les inondations peuvent se produire en toute saison. Il est important d'être prêt à vous protéger vous-même ainsi que votre résidence. Voici quelques conseils simples pour aider à garder votre résidence au sec cet automne.

Connaître vos propres risques
Des feuilles et de la saleté peuvent empêcher l'eau de circuler dans vos gouttières et vos bacs de descente pluviale, ce qui pourrait causer de l'eau accumulée au-dessus de votre fondation. Installez un couvercle gouttière pour empêcher l'accumulation de feuilles.

Guidez l'eau
Dirigez les bacs d'écoulement de vos tuyaux de descente pluviale au sol, à 1,2 m (4 pi) de distance de votre fondation et de votre voisin. Utilisez une pelle pour corriger le nivellement autour de votre résidence en ajoutant de la terre au bon endroit de la fondation, afin que l'eau s'écoule et s'évapore à l'extérieur. Consultez le site Web de votre municipalité pour plus d'informations ou contactez un entrepreneur pour obtenir de l'aide.

Arrêtez l'eau de pénétrer
Collez et couvrez les fenêtres de sous-sol. Inspectez les murs pour vérifier s'il y a des fissures et scellez-les. Vérifiez votre pompe à eau avant l'arrivée du printemps. Vérifiez votre pompe à eau avant l'arrivée du printemps. Vérifiez votre pompe à eau avant l'arrivée du printemps. Vérifiez votre pompe à eau avant l'arrivée du printemps.

Réduisez vos risques financiers
Les dommages à votre résidence résultent d'une inondation peuvent être coûteux. Lisez votre politique d'assurance ou parlez à votre fournisseur d'assurance afin de savoir si votre résidence est couverte contre tous les types de dommages. Faites l'inventaire de vos objets de valeur en cas de sinistre à l'aide d'une caméra numérique ou d'un téléphone. Faites l'inventaire de vos objets de valeur en cas de sinistre à l'aide d'une caméra numérique ou d'un téléphone. Consultez le site Web de votre municipalité pour plus d'informations ou contactez un entrepreneur pour obtenir de l'aide.

Soyez prêt
Faites des provisions de fournitures d'urgence que vous pouvez prendre avec vous facilement. Pensez aux mesures que vous prendrez en cas d'urgence. Réassemblez vos objets de valeur et préparez-les à être transportés. Déplacez vos matériaux dangereux, comme la peinture et les produits chimiques, hors du sol. Déplacez vos matériaux dangereux, comme la peinture et les produits chimiques, hors du sol.

BE FLOOD SMART THIS WINTER

Flooding can happen in any season. It's important to be ready to protect yourself and your home. Here are a few simple tips to help keep your home dry this winter.

KNOW YOUR OWN RISKS
Take a walk in and around your home to see where it might be at risk. Look at your community flood maps to learn if your home is located in a flood risk area. Check your sump pump weekly and more often during heavy rain or snow melt. In case of a fault, install a backwater valve to block sewage from getting into your basement from the main sanitary sewer and check it annually.

MOVE THE SNOW
Keep a shovel handy to move snow away from your home's foundation. Shovel and dump snow regularly and make sure to build up your foundation. Install a gutter cover to stop leaves from building up.

CLEAR THE DEBRIS
Leaves, dirt and ice can block water from moving through your eavestroughs, gutters and downspouts and cause water to build up near your foundation. Install a gutter cover to stop leaves from building up.

STOP WATER FROM ENTERING YOUR HOME
Check and cover lower-level windows. Check if your sump pump is working and test it before you need it. Check your sump pump weekly and more often during heavy rain or snow melt. In case of a fault, install a backwater valve to block sewage from getting into your basement from the main sanitary sewer and check it annually.

GET PREPARED
Stock up on emergency supplies that you can grab and take with you easily if you need to evacuate. Think of what steps you would take in an emergency. Find your valuables and make a list of them. Move your hazardous materials, the paint and other chemicals, off the ground. Talk to your family, friends and neighbours about a plan. Follow the advice of emergency officials.

Soyez prêt en cas d'inondation cet hiver

Les inondations peuvent se produire en toute saison. Il est important d'être prêt à vous protéger vous-même ainsi que votre résidence. Voici quelques conseils simples pour aider à garder votre résidence au sec cet hiver.

Connaître vos propres risques
Faites le tour de l'extérieur de votre résidence pour repérer les endroits où elle pourrait être exposée à des risques. Consultez les cartes des zones inondables de votre municipalité. Les signes de météo pour savoir si des inondations se produisent ou pourraient se produire. Suivez votre municipalité ou les médias locaux pour rester informés des nouvelles et des conseils de prévention.

Déneigez votre résidence
Gardez une pelle à portée de main pour enlever les accumulations de neige. Nettoyez et déposez régulièrement la neige sur votre fondation. Installez un couvercle gouttière pour empêcher l'accumulation de feuilles.

Éliminez les débris
Des feuilles, de la saleté et de la neige peuvent empêcher l'eau de circuler dans vos gouttières et vos bacs de descente pluviale, ce qui pourrait causer de l'eau accumulée au-dessus de votre fondation. Installez un couvercle gouttière pour empêcher l'accumulation de feuilles.

Arrêtez l'eau de pénétrer dans votre résidence
Collez et couvrez les fenêtres de sous-sol. Vérifiez les murs pour vérifier s'il y a des fissures et scellez-les. Vérifiez votre pompe à eau avant l'arrivée du printemps. Vérifiez votre pompe à eau avant l'arrivée du printemps. Vérifiez votre pompe à eau avant l'arrivée du printemps. Vérifiez votre pompe à eau avant l'arrivée du printemps.

Soyez prêt
Faites des provisions de fournitures d'urgence que vous pouvez prendre avec vous facilement. Pensez aux mesures que vous prendrez en cas d'urgence. Réassemblez vos objets de valeur et préparez-les à être transportés. Déplacez vos matériaux dangereux, comme la peinture et les produits chimiques, hors du sol. Déplacez vos matériaux dangereux, comme la peinture et les produits chimiques, hors du sol.

II. SOCIAL MEDIA KIT

Social media platforms are a powerful medium for transmitting information to the public. Social media can be effective in reaching audiences instantly, directing their attention to timely issues and linking messages to websites for more comprehensive information and resources about flooding. The following guidelines emerged from the research as ways to optimize the distribution of flood-related information via social media:



Connect with other trusted sources to reach the target audience. Distributing flood prevention and preparedness information on social media enables senders to leverage virtual partnerships by connecting to (or tagging) other trusted sources relevant to the target audience. For instance, other community organizations can aid in broadening the reach of the messages.



Invest time in posts. Social media platforms are designed to be interactive, but research suggests many organizations (especially government units) typically use them as a one-way dissemination tool.[4] Each post is an opportunity to engage with the target audience, offering clarification, directing them to other sources and dispelling inaccurate information that may surface, particularly during a flood emergency.



Craft posts that contain an individual message and associated desired action. Rather than disseminating generic information about flooding or flood-related resources, use the post as a call to action. For example, a message might direct readers to visit a municipality's website to learn about a downspout disconnection program, resources available to pay for the work and a justification for why it is important to do so.



Inform recipients about financial incentives. Research suggests that behaviour can be motivated with economic incentives, so social media messages should highlight subsidies or credit programs, such as stormwater fee credits that will help with the costs of property-level flood risk reduction. Research participants reported that doing so can drive more visits to municipal websites that contain more detailed information on flood risk reduction.



Consider the demographics of the target audience. Age in particular is an important consideration: research suggests that older audiences are more likely to access information via Facebook or LinkedIn[5] and prefer to access social media posts with links to videos.[6] Another consideration is primary language used in the home. Social media posts in multiple languages are likely to reach a broader audience than those drafted in English only.

The following messages are designed for social media use and address singular flood prevention actions. The information in parentheses can be tailored as needed. More information is available on the FloodSmartCanada.ca website.

Flood Prevention Messages

Soak up the rain! Rain gardens beautify your property and contribute to a cleaner and greener environment. Rain gardens help absorb storm water that runs over land during a rainstorm and help reduce the potential of flooding. [To learn about how to get started, visit here]

Disconnect it! Downspouts help drain rain water from your roof to the ground. Disconnecting downspouts and diverting them 6 feet away from your home's foundation can reduce the risk of basement flooding. [Use this guide to learn how you can disconnect]

Keep it dry! Sump pumps prevent basement flooding and help you avoid costly damages. Install a sump pump with a battery back-up. The [enter municipality name] offers financial incentive programs for purchasing/installing sump pumps. [Click here to find out more]

Got a Minute? Take a walk around your home to see if it is at risk of flooding. Use this list to check your flood risks. [Insert checklist]

Get social! Follow [enter municipality name] on [enter social media platform] to stay informed about flood information, warning and tips to reduce your flood risks. [Insert social media accounts (e.g. Twitter, Facebook, Instagram, website(s) etc.)]

Fall forward! When you change your clocks, clean your eavestrough. Eavestroughs help direct rainwater away from the foundation of your home. Leaves and debris build-up and clog your eavestroughs, which may cause flooding. Learn how to clean your eavestroughs and keep your basement dry. [Watch this short video and learn how]

Collect it! Rain barrels can help collect excess rain water and help prevent water from seeping into your basement. Install a rain barrel to help avoid flood damage to your home. [Click here to find out how]

Trees absorb rainwater on your property. To learn how to plant trees click [here] To find out what type of trees to plant, click [here]

Plan for your risks

- Talk to your local government, insurer, real estate agent and neighbours about your flood risks.
- Check online for available local flood maps to learn if your home is at risk.
- Sign-up for local weather watches, alerts and warnings.

Prepare with your community

- Know who needs help, and who to ask for help in your community.
- Work together before, during and after a flood.
- Sign-up for local weather alerts and be prepared.
- Talk about your emergency plans with your family, friends and neighbours.
- Be aware of emergency services and safe areas within your community.

Protect your home

- Talk to your municipality, insurer, and neighbours about your risks.
- Install window wells or caulk windows to keep your basement dry.
- Clear storm grates on your street.
- Direct water from downspouts away from your home.
- Talk to your municipality about disconnecting downspouts from the municipal water system.
- Install a sump pump or backwater valve to keep your basement dry.
- Clean your gutters.
- Move valuable items and documents to keep them safe and dry.
- Learn about your flood insurance coverage options.

Protect your family

- Make a plan to evacuate and connect with your family at a safe place.
- Talk to your neighbours and help each other out before, during and after a flood.
- Sign up for local weather alerts and be prepared.
- Build an emergency plan and kit with your family. Don't drive in flood waters.
- Turn around. Flood water may contain dangerous chemicals and bacteria.
- Be aware of emergency services and safe areas within your community.

Social Media Messages Directed to FloodSmart Canada. FloodSmartCanada.ca is a Partners for Action project. It is a repository of flood preparedness and prevention resources that may be accessed and shared.

- Visit www.floodsmartcanada.ca for flood risk resources #FloodSmart #floodsmartcanada
- Learn what to do before, during and after a flood. Visit www.floodsmartcanada.ca and take action today! #flood #beprepared #floodsmartcanada
- Be #FloodSmart, know what to do before the water hits.
- Visit www.floodsmartcanada.ca and start preparing and protecting your home. #floodsmartcanada
- It's a wet and rainy day. Make sure you are #FloodSmart and know what to do in case of a flood <http://floodsmartcanada.ca/homeowners-and-renters/> #floodsmartcanada
- There is no such thing as 'flood season' anymore. Flooding is a year-round risk, but you can take action! Visit www.floodsmartcanada.ca for advice on what to do before, during and after a flood. #floodsmartcanada
- Not all flooding is the same! Be #FloodSmart and learn how water can enter your home or business at <http://floodsmartcanada.ca/homeowners-and-renters/> #floodsmartcanada
- Even if you don't live near water, your home or business could be at risk. Learn how to prepare before, during and after a flood. Visit www.floodsmartcanada.ca #floodsmartcanada
- If a flood hits your home or community, do you know what to do? Floods can happen any time of year, make sure you know how to protect your home and family. #floodsmartcanada
- It's up to you to know your flood risk! Take action and talk to your local government, insurer, real estate agent and neighbours about your risks. #floodsmartcanada
- Floods happen and it's up to you to protect your home and family. Be aware of emergency services in your community. #floodsmartcanada
- FloodSmart Canada is about helping Canadians prepare for floods. Stay up to date with flood news and learn what you can do to at prepare www.floodsmartcanada.ca #floodsmartcanada
- Not all flooding is the same and it's important that you know the difference. Be #FloodSmart and learn about sewer backup and overland flooding at www.floodsmartcanada.ca #floodsmartcanada

III. ENGAGING AND EMPOWERING YOUTH WITH EDUCATIONAL MATERIALS ON FLOODING

Encouraging Canadian youth to learn about flooding in Canada – including its causes, prevalence across the country and the importance of taking action to be prepared – is essential to our collective resiliency. In 2019, Partners for Action partnered with Canadian Geographic and the Royal Canadian Geographic Society to develop bilingual educational materials on flooding. These unique resources are tailored to students in grades 5-12, but they are also suitable for distribution to older age groups. They include a tiled map, infographic and companion lesson plans. Canadian Geographic has made them available to more than 20,000 educators and others seeking to inspire food risk awareness.

Infographic

How to Be Flood Smart



Comment Vous Préparer
En Cas d'inondation



For the complete package of educational plans on flooding, please visit:
www.floodsmartcanada.ca

IV. FLOOD PREVENTION MESSAGES

Generating public messages that are tailored by audience, flood type, season, or risk reduction action are more likely to grab audience attention and lead to action than generic, all-encompassing communications.

Messages developed as part of this project apply principles of effective communication and adhere to tenets of community-based social marketing. Based on insights from the fields of psychology and social marketing, a key priority in encouraging behavioural change is to address the known benefits and barriers associated with the desired action.[7]

Each message presented in this report addressed a potential or perceived barrier to action and/or emphasizes a benefit in taking the action. For example, in encouraging households to move valuables to higher levels of the home, the message “Upstairs is Best” signals a common barrier (identifying valuable items) and implies the benefit of the action (protecting valuable). Risk communication experts argue that effective communication explains why the desired action is necessary or desirable.[8] To this end, the message should include either a brief justification for the desired action or direct the audience to more comprehensive information. Additionally, messages can sometimes be effective if they frame the action using atypical language in order to increase the likelihood that it will be memorable.



**How to Be Flood Smart:
Upstairs is best**

How to be Flood Smart
UPSTAIRS IS BEST



Find your valued belongings. Move them upstairs to save them from becoming damaged in unexpected floods.

FloodSmart Canada For more information and resources, visit floodsmartcanada.ca

Comment se préparer à une inondation: À l'étage, c'est mieux

Comment se préparer à une inondation
À l'étage, c'est mieux!



Rassemblez vos objets de valeur. Déménagez-les aux étages supérieurs de votre résidence afin de les protéger des dommages en cas d'inondation.

FloodSmart Canada Pour de plus amples renseignements, visitez floodsmartcanada.ca

**How to Be Flood Smart:
Soak up the rain**

How to be Flood Smart
SOAK UP THE RAIN!



Rain gardens beautify your property and contribute to a cleaner and greener environment. Rain gardens help absorb storm water that runs over land during a rainstorm and help reduce the potential of flooding.

FloodSmart Canada For more information and resources, visit floodsmartcanada.ca

Comment se préparer à une inondation: Absorbz l'eau de pluie

Comment se préparer à une inondation
Absorbz l'eau de pluie!



Un jardin pluvial rehausse l'apparence de votre propriété et contribue à créer un environnement plus propre et plus écologique. Les jardins pluviaux absorbent l'eau qui ruisselle sur le sol lors de pluies abondantes et réduisent les risques de dommages causés par les eaux de surface. Pour en savoir plus, cliquez ici.

FloodSmart Canada Pour de plus amples renseignements, visitez floodsmartcanada.ca

**How to Be Flood Smart:
Install a sump pump**

How to be Flood Smart
INSTALL A SUMP PUMP!



Sump pumps prevent basement flooding and help you avoid costly damages. Install a sump pump with a battery backup. Some municipalities provide cost-sharing programs to help cover the costs. Click here to find out more!

FloodSmart Canada For more information and resources, visit floodsmartcanada.ca

Comment se préparer à une inondation: Gardez votre résidence au sec

Comment se préparer à une inondation
Gardez votre résidence au sec!



Une pompe de puisard prévient l'inondation du sous-sol de votre résidence et peut vous aider à éviter des dommages coûteux. Installez une pompe de puisard dotée d'une batterie de secours. Certaines municipalités offrent des programmes de partage des coûts pour contribuer à financer les frais d'installation d'une pompe de puisard.

FloodSmart Canada Pour de plus amples renseignements, visitez floodsmartcanada.ca

**How to Be Flood Smart:
Disconnect it**

How to be Flood Smart
DISCONNECT IT!



Downspouts help drain rain water from your roof to the ground. Disconnecting downspouts and diverting them away (6 feet) from your home's foundation can reduce the risk of basement flooding.

FloodSmart Canada For more information and resources, visit floodsmartcanada.ca

Comment se préparer à une inondation: Détachez-les

Comment se préparer à une inondation
Détachez-les!



Les bacs d'évacuation fixés à l'extrémité des descentes de gouttières aident à drainer vers le sol l'eau qui ruisselle sur la toiture de votre résidence. En détachant les bacs d'évacuation et en les prolongeant jusqu'à 1,8 m (6 pi) de la fondation de votre résidence, vous pouvez réduire le risque d'inondation de votre sous-sol.

FloodSmart Canada Pour de plus amples renseignements, visitez floodsmartcanada.ca

**How to Be Flood Smart:
Get Social**

How to be Flood Smart
GET SOCIAL!



Follow your municipality on social media to stay informed about flood information, warning and tips to reduce your flood risk!

FloodSmart Canada For more information and resources, visit floodsmartcanada.ca

Comment se préparer à une inondation: Utilisez les médias sociaux

Comment se préparer à une inondation
Utilisez les médias sociaux!



Suivez votre municipalité sur les réseaux sociaux pour vous tenir au courant de l'information, des avertissements et des conseils relatifs aux inondations et réduire les risques auxquels votre résidence est exposée.

FloodSmart Canada Pour de plus amples renseignements, visitez floodsmartcanada.ca

How to Be Flood Smart: Get Social, [community name]

How to be Flood Smart
GET SOCIAL!



Talk to your neighbours about flood safety. Share your experiences and what steps you take to prepare your family and home for flooding and emergencies.

FloodSmart Canada For more information and resources, visit floodsmartcanada.ca

Comment se préparer à une inondation: Utilisez les médias sociaux

Comment se préparer à une inondation
Utilisez les médias sociaux!



Discutez avec vos voisins de la sécurité en cas de crue des eaux de surface. Partagez vos expériences et les mesures que vous prenez pour préparer votre famille et votre résidence aux risques d'inondation et aux autres situations d'urgence.

FloodSmart Canada Pour de plus amples renseignements, visitez floodsmartcanada.ca

How to Be Flood Smart: Got a Minute?

How to be Flood Smart
GOT A MINUTE?

Take a walk around your home to see where there are risks. Use this list to check your risks.

- Clean your sewers and gutters of any debris that you see, such as leaves and dirt.
- Clean eavestroughs of any debris such as leaves and dirt. Do this at least once a year!
- Make a minor one-minute check of the basement for an obvious place of the top level of your home.
- Check if your basement is waterproofed & that water from your home foundation and electrical boards your heat exchanger.
- Check to see if your basement windows are closed, sealed and your window wells are cleared of leaves and dirt.
- Check to make sure your sump pump is working.

FloodSmart Canada
For more information and resources, visit: FloodSmartCanada.ca

Comment se préparer à une inondation: Vous avez une minute?

Comment se préparer à une inondation
Vous avez une minute?

Prenez le temps de faire un tour de votre résidence pour identifier les risques. Utilisez cette liste pour vérifier la présence de risques.

- Nettoyez vos égouts et gouttières de toute débris que vous voyez, tels que des feuilles et de la saleté.
- Nettoyez les gouttières de toute débris que vous voyez, tels que des feuilles et de la saleté. Faites-le au moins une fois par année.
- Faites un rapide contrôle de votre sous-sol pour vérifier si le niveau de votre maison est au-dessus du niveau de l'eau de la fondation de votre maison.
- Assurez-vous que les murs et fondations de votre sous-sol sont étanches et que les panneaux de votre maison sont étanches.
- Vérifiez que les fenêtres de votre sous-sol sont fermées, scellées et que les puits des fenêtres sont débarrassés des feuilles et de la saleté.
- Vérifiez que le fonctionnement de votre pompe de vidage est en bon état.

FloodSmart Canada
Pour en savoir plus, visitez: FloodSmartCanada.ca

How to Be Flood Smart: Cover it up

How to be Flood Smart
COVER IT UP!

Basement window wells are a common place for rainwater to collect, which can lead to flooding. Install window well covers to prevent your basement from flooding and still let the light in.

HERE'S WHAT THEY DO!

1. Reduce built-up of water, ice and debris that can enter your home.
2. Reduce dampening of inside walls.
3. Add extra security and keep pests out.

Remember to clear basement window well drains of leaves and other debris to reduce your chances of flooding.

FloodSmart Canada
For more information and resources, visit: FloodSmartCanada.ca

Comment se préparer à une inondation: Couvrez-les

Comment se préparer à une inondation
Couvrez-les!

Les eaux de ruissellement s'accumulent fréquemment dans les puits des fenêtres de sous-sol, ce qui peut entraîner des inondations. Installez des couvercles sur les puits des fenêtres de sous-sol de votre résidence pour éviter les dommages causés par les inondations, tout en laissant la lumière pénétrer par les fenêtres.

Les couvercles de puits de fenêtre vous apportent les avantages suivants:

1. Réduction de l'accumulation d'eau, de glace et de débris pouvant pénétrer dans votre résidence.
2. Réduction de l'humidité sur les murs intérieurs.
3. Sécurité accrue et barrière contre les animaux et les insectes nuisibles.

Veuillez à garder les puits des fenêtres de votre sous-sol exempts de feuilles et d'autres débris afin de réduire les risques d'inondation.

FloodSmart Canada
Pour en savoir plus, visitez: FloodSmartCanada.ca

How to Be Flood Smart: Reduce your financial risks

How to be Flood Smart
REDUCE YOUR FINANCIAL RISKS

Damages to your home caused by flooding are expensive. The average cost to repair a flooded basement in Canada is \$43,000.

If you do not have overland flooding insurance, but this coverage was available in your area, you may not be eligible for government disaster assistance when it is offered. Read your insurance policy or call your insurance provider to find out if you have it.

FloodSmart Canada
For more information and resources, visit: FloodSmartCanada.ca

Comment se préparer à une inondation: Réduisez vos risques financiers

Comment se préparer à une inondation
Réduisez vos risques financiers

Les dommages causés à votre résidence par les eaux de surface (inondations d'eau douce) sont coûteux. Au Canada, le coût moyen de réparation d'un sous-sol inondé s'élevait à 43 000 \$.

Si vous ne disposez pas d'une assurance contre les dommages causés par les eaux de surface, mais qu'une telle couverture est offerte dans votre région, vous pourriez ne pas être admissible à l'aide gouvernementale en cas de catastrophe naturelle. Lisez votre police d'assurance ou communiquez avec votre assureur pour déterminer si vous possédez cette couverture.

FloodSmart Canada
Pour en savoir plus, visitez: FloodSmartCanada.ca

Overland Flood Insurance

OVERLAND FLOOD INSURANCE

WHAT IS OVERLAND FLOODING?

Overland flooding is water that flows over your property from a nearby water source. It is not caused by rain falling on your property.

Damages to your home caused by flooding are expensive. The average cost to repair a flooded basement in Canada is \$43,000.

DO YOU NEED OVERLAND FLOOD INSURANCE?

WHAT HAPPENS WHEN YOU GET OVERLAND FLOOD INSURANCE?

FloodSmart Canada
For more information and resources, visit: FloodSmartCanada.ca

Assurance contre les dommages occasionnés par les eaux de surface

Assurance contre les dommages occasionnés par les eaux de surface

Une inondation d'eau de surface est l'eau qui s'écoule sur votre propriété à partir d'une source d'eau voisine. Elle n'est pas causée par la pluie qui tombe sur votre propriété.

Les dommages causés par les inondations sont coûteux. Le coût moyen de réparation d'un sous-sol inondé au Canada s'élevait à 43 000 \$.

NECESSITEZ-VOUS UNE ASSURANCE CONTRE LES DOMMAGES CAUSÉS PAR LES EAUX DE SURFACE?

QU'ARRIVE-T-IL QUAND VOUS OBTENEZ UNE ASSURANCE CONTRE LES DOMMAGES CAUSÉS PAR LES EAUX DE SURFACE?

FloodSmart Canada
Pour en savoir plus, visitez: FloodSmartCanada.ca

1-in-100 year flood

1-IN-100 YEAR FLOOD

A 1-in-100-year flood is a flood that has a 1% chance of happening in any given year. It does NOT mean a flood that occurs once every 100 years.

Sold differently. If you live in a 1-in-100-year flood zone and have a mortgage repayment period of 30 years, your home has a 26% chance of experiencing a flood during the mortgage term.

Flooding is Canada's most common and expensive natural hazard. Our climate is changing and extreme weather is expected to increase, so be Flood Smart. Know your own risks and start taking steps to reduce them.

FloodSmart Canada
For more information and resources, visit: FloodSmartCanada.ca

Inondation centenaire

Inondation centenaire

Une inondation centenaire est une crue qui a 1 % de chance de se produire chaque année. Cela ne signifie PAS qu'une telle crue se produise tous les 100 ans.

En d'autres mots, si vous habitez une zone d'inondation centennale et que vous avez une période de remboursement hypothécaire de 30 ans, votre résidence a 26 % de chances de connaître une inondation de crue durant le délai de l'hypothèque.

Les inondations sont le risque naturel le plus fréquent et le plus coûteux au Canada. Notre climat change et son effet est ce que les conditions météorologiques extrêmes augmentent. Ainsi, soyez prêt en cas d'inondation. Connaissez vos risques et commencez à prendre des mesures pour les réduire.

FloodSmart Canada
Pour en savoir plus, visitez: FloodSmartCanada.ca

GUIDANCE FOR DEVELOPING FLOOD PREVENTION MESSAGING

There are a number of approaches to creating flood risk messaging. Indeed, communities across Canada are at varied stages in their capacity and experience in developing flood risk and prevention communication materials. The guidance offered below is not intended to be prescriptive. Depending on factors such as time available, resources and the unique needs of the community, adopting some or all of these approaches in the development of flood prevention messaging is a step in the right direction. This guidance is based on best practices drawn from research on risk communication and community-based social marketing, and from focus groups and meetings held by Partners for Action.



1. Know your communication objectives.

To create effective communication materials, it is necessary to first consider the specific actions you are seeking from the public. Identify what these are, why they are important to focus on and when it is important to highlight these actions. When developing communications materials, consider the audience you wish to reach (e.g., demographic, specific neighbourhoods, residential vs. business property owners) and ensure the information targets them appropriately. This might mean, for example, translating messages into non-English languages to reach newcomers to Canada, using a larger font to accommodate older residents, or highlighting actions that are appropriate for property renters versus owners. Adopting a communications plan will help you to more effectively develop relevant materials and suitable approaches for disseminating them.

2. Consider barriers and benefits to action.

Simply providing people with information will not necessarily lead to the desired action. Experts stress the importance of determining what factors motivate people to take certain actions (benefits) and what factors inhibit them from taking desired actions (barriers).[9] This requires determining the specific action you want the individual to take, doing background research to anticipate why people do and do not take those actions, and piloting communications and programs in the community.[10] These programs could include elements that promote social norms (i.e., people do what they see others doing), provide visual prompts such as signage, or offer incentives.[11] Examples include providing a lawn sign for those who implement stormwater management measures or offering a financial credit for doing so.

When developing communications materials, consider the barriers to action and address them by highlighting the benefits. For instance, this project's public surveys and focus groups revealed the following barriers to some common flood risk reduction actions:

ACTION	BARRIER
<ul style="list-style-type: none"> • purchasing overland insurance 	<ul style="list-style-type: none"> • not knowing what is already covered in existing policy
<ul style="list-style-type: none"> • disconnecting downspouts 	<ul style="list-style-type: none"> • not knowing where to direct them without creating accessibility issues around the home • observing that others have not disconnected • not knowing the steps to disconnect or who can help them do so
<ul style="list-style-type: none"> • learning about community flood risk • installing back-water valve or sump-pump 	<ul style="list-style-type: none"> • not knowing where to locate flood maps • not knowing what they are and how they work • not knowing if home requires one • not knowing where to get more information (who does this work; what does it cost)
<ul style="list-style-type: none"> • reporting flooding to the municipality 	<ul style="list-style-type: none"> • not knowing who to call

3. Develop distinct messages

Consider developing communications material so that each desired action is the focus of a distinct message. Simple messages like those showcased above are more memorable. Using this approach focuses the audience on the steps required to take that particular action without being inundated with information. Keep the message brief and simple. If distributing the message online, such as through social media, direct the audience to other sources for more comprehensive information. Doing this satisfies an important principle of risk communication, which is the importance of explaining why actions are important, the risks of not taking the action and the benefits that will be produced.[12]

4. Make it understandable

Flood risk messaging is often ineffective because it lacks specific direction about the actions individuals should take, fails to explain why these actions are important and does not incorporate memorable elements. In addition, the language and terminology used in public flood risk communication must be appropriate for the intended audience. During a recent workshop on flood risk communication, one presenter noted that many Canadians have weak literacy skills (i.e., the ability to acquire and communicate meaning through language) and numeracy skills (i.e., the ability to make informed decisions based on quantitative or spatial information). It is therefore counterproductive to use terms such as fluvial and pluvial to describe types of flooding, or to refer to flood-related hazards using terms such as contamination and groundwater, which might be misunderstood by many people.

Language should be inclusive, simple and clear. When presenting information to the public, it is important that messages are written at a level that is appropriate to the literacy and numeracy skills of the audience. If more technical terminology is necessary to communicate in resources such as brochures, booklets or websites, consider also including a definitions section, which can help people to better understand.[13]

Watch the Wording!

Nearly half of Canadians have literacy skills that fall below high school equivalency, and more than half score in the two lowest skill levels in numeracy. Writing experts typically recommend using language suitable for a reading level of **Grade 9 or lower** to maximize its reach.

<input checked="" type="checkbox"/> Don't say	<input checked="" type="checkbox"/> Say
close proximity to	near
comply with	follow
in the near future	soon
is authorized to	may
magnitude	size
monitor	watch
numerous	many

Tip: Some office software programs can help you assess the reading level of text documents. Review the reading level of communication materials before distributing these to the public.

5. Explain Risk

Encouraging Canadians to undertake flood risk reduction actions requires informing them of their risks and their potential consequences. According to a P4A national survey, only 16% of Canadians who live in high-risk flood areas have accessed flood maps for their community. Furthermore, only 6% of these Canadians are aware that they reside in an area that is at high risk of flooding.[14]

Although the quality and accessibility of flood maps varies across the country,[15] it is nonetheless important that Canadians are aware that this information is available to them and where they should get it. Therefore, it is useful to develop simple messages via social media posts to prompt Canadians to know their flood risk, such as consulting local flood maps during a real estate transaction. To limit confusion, consider offering a link to the map and a relevant municipal contact, such as a conservation authority, water services department or emergency management personnel.

The way in which we communicate flood risk to Canadians may influence their willingness to pay attention to and act on the information. Experts typically quantify and discuss flood hazards using probabilities: the 100-year flood, for example, refers to a flood the magnitude of which has a 1% chance of occurring in any given year. Research has shown, however, that the public finds this terminology confusing. As a result, people underestimate the likelihood that they will be affected by flooding and discount the risk that a flood will reoccur after it has happened once. In the 2016 survey conducted by Partners for Action, for instance, only about 30% of respondents answered correctly that a home in a 1-in-100-year-flood zone has a roughly 25% chance of being flooded over a 25-year mortgage period.[16]

Behavioural experts warn that our perception of danger is skewed because people tend to overestimate the probability of rare, extreme events while underestimating the risks associated with hazards that are more common.[17] To remedy this distorted risk perception, it is more effective to communicate risk using cumulative probability—the likelihood that a risk outcome will occur within a specified, more meaningful period of time—rather than annual probability.[18]

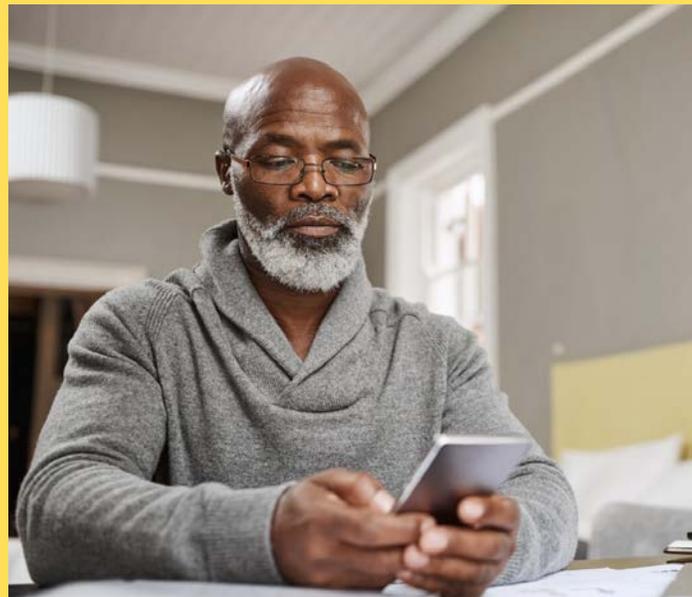
For example, instead of informing people that their property faces a 1% (or 1-in-100-year) annual flooding probability (which individuals might discount as insignificant), officials should frame the risk within a more meaningful time period, such as the life of a residential home mortgage (e.g., 26% chance of flooding over 30 years). Researchers who study the presentation of probabilities such as flood risk argue the latter framing increases the likelihood that target audiences willing to take preparedness actions.[19]

Adjusting our risk communication by both personalizing the information (e.g., local flood maps) and presenting it in terms that are more relevant and understandable to Canadians will contribute to a greater awareness of personal flood risk.

6. Customize messages to target demographics and community characteristics.

To further personalize flood risk reduction communication materials, it is useful to identify the demographic groups that you are seeking to reach in your community. The following suggestions emerged from the research to guide the development of materials to reach particular demographics.

- Ensure that images reflect the age of your targeted demographic. For example, if you seek to reach an older population, ensure that the message uses images that reflect this target group. Similarly, if you are speaking to a younger audience of homeowners, make certain the images reflect them.
- For an older demographic, craft simple messages that use a larger font. Be sure to explain why the desired actions are important and direct them to more information, in order to counter any distrust they may have in local services before or during a flooding emergency. In addition, encourage older residents to discuss flood risk reduction and preparedness with their neighbours and/or to reach out to the municipality or other organizations to counter isolation elderly residents often experience. It is important to keep them engaged in personal flood awareness and risk reduction.
- To reach larger groups of Canadian newcomers, translate the materials into their first language. In targeting renters in the community, develop and distribute communication messages about flood risk (e.g., where to find local flood maps), content insurance and taking inventory (lists or pictures) of their possessions in case they are damaged, as well as landlord responsibilities for property damage and information on how to respond to a flood emergency.
- Communication to homeowners should reflect resources on flood reduction measures that can be adopted at the property level, such as installing sump pumps and backwater valves, using water resistant building materials in the basement, the importance of downspout disconnection and maintenance, property grading, and, where relevant, information on financial incentive programs that support such measures.
- Communication materials geared towards women could encourage them to review local flood maps. Materials could encourage women to connect with people within their network and to relevant organizations (including connecting with the municipality on social media) about flood risk reduction. They should be prompted to make a plan for flood emergency preparedness and response, including evacuation. For example, they should identify feasible accommodation options nearby, and should prepare and maintain emergency resources that can be easily accessed and transported.
- Flood risk reduction messages for businesses could direct them to engage financial incentive programs that subsidize property-level measures such as stormwater management (e.g., bioswales, cisterns, natural infrastructure, and permeable pavement). They should be reminded of the importance of connecting with the municipality (e.g., through social media) and undertake business continuity planning for flooding emergencies.



7. Keep it positive

Research has shown that communication that evokes negative emotions such as fear and sorrow is more likely to cause individuals to ignore or discount the message rather than take action.[20] Canadians are frequently exposed to negative and frightening messages about formidable contemporary issues such as climate change, environmental degradation, and income inequality and so on, and this communication can make people despondent. Every year, Canadians see images of flood devastation in one part of the country or another, and there is a risk that they will feel overwhelmed and disengaged. It is therefore important for flood risk communication to adopt an optimistic and hopeful tone when framing messages to nudge people into action. Developing communication materials that seek to make recipients more hopeful about being equipped and capable of taking action to improve their flood resiliency are more likely to keep the public's attention and lead to action.

Examples of ways to make flood communication more positive or hopeful include:

- writing action-oriented statements that explain precisely what the person should do and why it is important;
- including imagery (photographs, animation, sketches) that represents people helping themselves by doing something about the issue, such as assembling an emergency kit, sealing basement windows, or extending downspouts;
- create messages that showcase success stories of those who took action to become more resilient.

Risk communication experts assert that the use of strong language is typically required to communicate messages leading up to and during an emergency situation. It is necessary, however, to accompany strong language statements with an explanation as to why the desired action is important (e.g., avoid entering floodwaters because they contain dangerous contaminants and bacteria that will make people ill).

8. Images

Whether communicated on social media, a website, infographic or mail insert, flood risk communication materials that include imagery is more likely to gain a reader's attention. While many forms of imagery are useful for flood prevention messaging, photographs are typically better received. Selected imagery should reflect a positive, optimistic tone. For example, photos or videos representing individuals taking the specific desired action (e.g., viewing a flood map or installing a rain barrel) are more effective than images of the devastating impacts of flooding. Ensuring that images of individuals represent the target audience/demographic that you seek to reach will further enable the audience to see themselves in the message. Although identifying or developing a more targeted roster of photos or videos is an investment in time and some financial resources, there are many online photo databases from which to choose effective photographs at low or no cost.

9. Tailor the message to flood type

Much of the available advice on flood prevention at the property level is relevant to many different causes of flooding, such as heavy rainfall or riverine overflow. Messages that promote preventative actions such as sump pumps, backwater valves, disconnected downspouts, property grading, sealing lower level windows and cracks in walls, and adopting natural infrastructure, are typically relevant. However, flooding that occurs due to storm surge, ice jams, or rapid snowmelt may warrant distinct messaging. Although more research is required to determine the additional flood risk reduction advice that is suitable for audiences dealing with these sources of flooding, it is always appropriate to develop communications materials focused on emergency preparedness and response. For example, taking steps to secure personal safety, protecting important possessions and documents (inside or outside the home), options for temporary barriers around the home (e.g., sandbags or others) and steps to take in response to an evacuation order are all relevant in anticipation of a spring thaw or ice jam.

10. Make the message memorable

Like many successful marketing campaigns do, making the communication and message memorable to the audience is an important objective in encouraging Canadians to think about and take action to reduce their flood risks. While achieving this outcome is very dependent upon the audience, message and the context of the message, attempting to ensure that the communication is memorable can extend its impact with the audience.

If it is appropriate to do so, depending on the context and timing of the message, insert humour or playfulness either in the message itself or in the overall communication and its depiction of the message. If possible, attempt to craft call to action messages that rhyme in order to increase the likelihood that the audience will remember it long after hearing or reading it. The compilation of tools used in the communication can also attract attention and enable people to more easily recall it, such as the quality and vitality of the photographs coupled with simple catchy phrases and the relevance of the message to the audience. Marketing and communications are important skill sets and ones that lend themselves well to the development of flood prevention communication. If your department does not retain this capacity, identify other ways that you can access it by collaborating with other departments or organizations that do.

RECOMMENDATIONS FOR COMMUNICATION METHODS

There is a wealth of print and online information available in Canada on flood prevention and preparedness, yet our awareness about its causes, our risks and how to prevent it, remains low. Some of this limited awareness can be attributed to information overload. We are inundated with digital and other information in every facet of life, and unless we have personal experience with flooding, we are unlikely to consider ourselves at risk. To gain increased attention by Canadians on flood prevention and risk and to incite action, the following guidance is recommended for approaches to tackling flood risk prevention communication.

1. Develop a targeted campaign

All too often, information that is made available on flood prevention is encompassed within lengthy booklets, reports and brochures that attempt to cover a lot of, albeit useful, content. It is not tailored to the audience or flood risk. In addition, there is a significant interest among Canadian governments and organizations to improve and increase public awareness and education regarding flooding. Since most departments are not positioned to undertake expensive campaigns on flood prevention, consider first determining your flood prevention communication goals and devise a feasible plan to work towards them. For example: What are the common and recurring flooding issues in your community? Are particular regions in the community vulnerable to a specific kind of flooding? Who are its residents and what do you want them to do and when? Do you seek to increase the number of homes that implement stormwater management measures on their properties (e.g., rain barrels, rain gardens)? Is the goal to encourage residents in a particular area prone to flooding to install back-water valves? Once the objectives have been determined, develop a short or longer-term plan for what you need to communicate and how you will do this over the desired term.

2. Leverage key calendar milestones and initiatives

Calendar milestones throughout the year offer unique opportunities to leverage people's attention to take note of flood prevention. One that has been commonly cited by the public over the course of this and past projects is the changing seasons. Since effective flood prevention requires taking multiple steps on one's property, multiple times a year, every year, taking advantage of the changing seasons to communicate the specific season-specific actions people should take can be more relevant and memorable. If flooding events are predicted or likely for parts of the community, use these occurrences to prompt people to take specific action. Note that in pending or emergency situations, members of the public should always be directed to follow the advice of emergency personnel. Other milestones could include annual emergency preparedness weeks, typical home buying seasons to inform potential buyers about flood prevention and the availability of flood maps for the community, and gardening weeks, among others. In developing your targeted communications plan, review important dates relevant to the community and target audience and consider what flood prevention information would be relevant to communicate around these periods.

3. Rely on multiple mediums

From surveys, focus groups and expert interviews for this project, it is clear that people wish to access information on flood prevention in multiple formats, including in print, online (social media and websites) and in-person. Although social media (Twitter and Facebook in particular) was most often selected as the medium from which people wish to access flood prevention messages and other information (which direct users to other sites for more information), websites, mail outs, and media advertisements were also commonly mentioned by members of the public and interviewed municipal officials. According to emergency management officials interviewed for this project, in-person meetings (e.g., community information sessions) and targeted door-to-door campaigns are also effective in reaching targeted audiences as they enable people to ask specific questions of experts who are also considered trusted sources within the community. Examples of print formats mentioned to be most appealing to members of the public in communicating flood prevention actions include, door knockers and mail outs with municipal tax invoices.

Tool Box

Present calls to flood prevention action at the property level using these preferred condensed print formats. Always provide a website or other relevant link for more, comprehensive information.

- Check lists
- Visual, single-page information sheets
- Infographics
- Door Knockers



4. Amplify the message using trusted sources

A well-established principle of effective communication is that the audience must trust the source in order to trust the message. Where it makes sense to do so, plan to and work in collaboration with other organizations and departments that are considered to be trusted sources for your target audience in order to efficiently mobilize flood prevention communication and messages. This can include connecting with groups on social media and social media posts, meeting with its representatives to learn about their community's needs and concerns with respect to flooding, and engaging with them to meet with members of your target audience in person. Each community has its own unique network of trusted sources, which may include employers, cultural, recreational or commerce focused organizations and associations, fire departments, and non-profit organizations. Taking advantage of these trusted communication channels also enables organizations, particularly municipalities, to more broadly expand its communications reach and also to obtain valuable feedback on its target audiences, including any prevalent flooding concerns and communications preferences.

5. Get social about flood prevention

Social media websites have become popular communication platforms that many organizations, government, and municipalities utilize to convey timely information although their usage and frequency and type of engagement with the public varies. Using social media to raise awareness about flood preparedness information in the context of a probable, imminent or ongoing emergency is imperative and many emergency management officials do use these outlets. However, social media can also serve as an effective prompt for people to think about and inform themselves about flood prevention, that is, property-level actions that can be taken to reduce personal flood risks. Organizations that typically offer flood prevention information on websites should consider optimizing their use of social media platforms available to them in order to drive activity to their respective websites. From a scan of available flood prevention resources across Canada, it is clear that there is an abundance of comprehensive information and unique resources available to educate Canadians about their relevant flood risks, the causes of flooding, how to prevent it, reduce one's financial risks from it, how to respond and recover from it. Informing your respective community or target audience that the information exists and expanding your engagement with this audience, using the principles of message development outlined in this report, is imperative to improving awareness and ultimately, to improving Canadians' responses.



Tips:***Follow these suggestions for improving and increasing your flood prevention social media presence***

- Only post/repost information from trusted sources
- Tag the primary source or relevant trusted source partner to enable the post to gain more impressions (this increases the number of accounts that view the post)
- Use visual content (photographs, videos, graphics) in posts to attract attention
- Post original content (written/created by your organization) regularly (minimum of 1-2 times per week)
- Repost
- Share varied content, such as infographics, op-eds, facts and figures, videos, images
- Share how-to tutorials
- Use simple language
- Include a call to action
- Use standalone graphics to share information with quick tips and facts
- Keep the tone of posts positive
- Consider using multiple social media platforms to ensure you reach all relevant audiences
- Respond to/comment on others' posts
- Use hashtags to contribute to a broader discussion on the issue and to reach a broader audience. Stay current by using new and relevant trending hashtags
- Where applicable, “pin” posts to better showcase your top content (Highlights your most liked and engaged content)
- Share content from influencers that is relevant to your audience
- Post in French and English or in the dominant language of the community
- Share videos to capture and engage with elder population (65 years and older)



6. Assess your efforts

Drawing a direct correlation between flood prevention communication and subsequent action is difficult to do, especially on a broad scale. However, it is possible to implement basic assessments of these efforts, which may include the following:

- uptake of financial incentive programs related to flooding at the municipal level, such as backwater valve credits or rain barrel programs;
- number of residents accepting flood resiliency services;
- data from a survey via social media every two years to learn what people know about their flood risk and what actions they have taken;
- data from in-person surveys at community events;
- analyzing logs of calls and inquiries to emergency services departments or other call centres related to flooding;
- collecting public engagement data (i.e., number of clicks and comments) on flood communication via social media and other relevant websites
- number of downloads of flood prevention resources
- number of participants at flood prevention workshops, town halls and other presentations
- number of questions received about flooding and flood prevention at prevention workshops, town halls and other presentations
- number of collaborating organizations who also transmit your flood prevention communication
- number of people who received flood prevention information in the mail

Embedding these and other evaluation touch points in the flood prevention communication plan and consulting on progress regularly, such as annually or before, during and after the communications initiative, will offer an important starting point about where even basic improvements to the communications approach can be made.

CONCLUSION

Communities and organizations across Canada have an important role to play in communicating flood risk and prevention to Canadians and to incite meaningful action. The tested and utilized communication materials and guidance in this report on flood communication highlight that many of the challenges faced in doing this work effectively are not uncommon to the field of communication. Lessons can be drawn from across disciplines of community based social marketing, risk communication, behavioural change and marketing, and indeed from across communities to improve and work towards the development and dissemination of more effective flood prevention communication and ultimately to inspire Canadians to reflect on their risk, roles and responsibilities regarding flooding.



REFERENCES

- [1] Thistlethwaite, J., Henstra, D., Peddle, S., Scott, D. (2017). Canadian Voices on Changing Flood Risk: Findings from a National Survey. Waterloo, ON. Partners for Action.
- [2] Thistlethwaite, J., Henstra, D., Peddle, S., Scott, D. (2017). Canadian Voices on Changing Flood Risk: Findings from a National Survey. Waterloo, ON. Partners for Action.
- [3] Note that excerpts in this report are reproduced from Ziolecki, Anna and Jason Thistlethwaite. (2019). Communicating Flood Risk to Canadians: Understanding the Challenges and Developing Best Practices. Findings from a Research Workshop. Waterloo, Ontario: Partners for Action.
- [4] Gintova, M. (2019). Use of social media in Canadian public administration: opportunities and barriers. Canadian Public Administration, Vol. 62, No. 1, pg.7-26
- [5] Zickuhr, K., Madden, M. (2012). Older Adults and internet use. PewResearchCentre. Washington, D.C. Accessed from: <http://pewinternet.org/Reports/2012/OlderEadultsEandEinternetEuse.aspx>
- [6] Ofcom (2019). Adults: Media Use and Attitudes Report. Ofcom. Accessed from: https://www.ofcom.org.uk/__data/assets/pdf_file/0021/149124/adults-media-use-and-attitudes-report.pdf
- [7] McKenzie-Mohr, Doug. (2011) Fostering Sustainable Behavior: An Introduction to Community-Based Social Marketing. New Society Publications. Obtained from: <https://cbsm.com/>
- [8] Ziolecki, A., Thistlethwaite, J. (2019). (2019). Communicating Flood Risk to Canadians: Understanding the Challenges and Developing Best Practices. Findings from a Research Workshop. Waterloo, Ontario: Partners for Action.
- [9] McKenzie-Mohr, Doug. (2011) Fostering Sustainable Behavior: An Introduction to Community-Based Social Marketing. New Society Publications. Obtained from: <https://cbsm.com/>
- [10] McKenzie-Mohr, Doug. (2011) Fostering Sustainable Behavior: An Introduction to Community-Based Social Marketing. New Society Publications. Obtained from: <https://cbsm.com/>
- [11] McKenzie-Mohr, Doug. (2011) Fostering Sustainable Behavior: An Introduction to Community-Based Social Marketing. New Society Publications. Obtained from: <https://cbsm.com/>
- [12] Lundgren, R.E., McMakin, A.H. (2009). Risk communication: a handbook for communicating environmental, safety, and health risks. 4th Edition. Piscataway, NJ : IEEE Press ; Hoboken, N.J. : Wiley.
- [13] Lundgren, R.E., McMakin, A.H. (2009). Risk communication: a handbook for communicating environmental, safety, and health risks. 4th Edition. Piscataway, NJ : IEEE Press ; Hoboken, N.J. : Wiley
- [14] Thistlethwaite, Henstra, Peddle, Scott (2017). Canadian Voices on Changing Flood Risk: Findings from a National Survey. University of Waterloo. Obtained from: https://uwaterloo.ca/climate-centre/sites/ca.climate-centre/files/uploads/files/canadian_voices_on_changing_flood_risk_fnl.pdf
- [15] Henstra, Thistlethwaite, Minano (2018). Communicating Disaster Risk? An Evaluation of the Availability and Quality of Flood Maps. Natural Hazards and Earth System Sciences, Vol. 1, Issue 1 313-323.
- [16] Thistlethwaite, Henstra, Peddle, Scott (2017). Canadian Voices on Changing Flood Risk: Findings from a National Survey. University of Waterloo. Obtained from: https://uwaterloo.ca/climate-centre/sites/ca.climate-centre/files/uploads/files/canadian_voices_on_changing_flood_risk_fnl.pdf
- [17] S.J. Chaudhry, Hand, M. Kunreuther, H (February 2020). Broad bracketing for low probability events. Accessed from: file:///Y:/01-P4A/Resources-Publications/Probabilities%20and%20Risk/S.Chaudhry_Risk_probabilities.pdf
- [18] S.J. Chaudhry, Hand, M. Kunreuther, H (February 2020). Broad bracketing for low probability events. Accessed from: file:///Y:/01-P4A/Resources-Publications/Probabilities%20and%20Risk/S.Chaudhry_Risk_probabilities.pdf
- [19] S.J. Chaudhry, Hand, M. Kunreuther, H (February 2020). Broad bracketing for low probability events. Accessed from: file:///Y:/01-P4A/Resources-Publications/Probabilities%20and%20Risk/S.Chaudhry_Risk_probabilities.pdf
- [20] Nabi, R., Myrick, J G. (2019). Uplifting Fear Appeals: Considering the Role of Hope in Fear-Based Persuasive Messages. Health Communication, Vol. 34 (4). pg. 463-474