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# Flood Mitigation Public Opinion Research – Spring 2020

## Final Report

Prepared for Public Safety Canada

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*Ce rapport est aussi disponible en français.*



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Public Safety Canada commissioned Kantar to conduct a public opinion research survey to obtain tracking data on the state of public opinion on the issue of flood mitigation as a follow up to 2016 baseline research. The research was conducted among 1,200 Canadians.

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The views expressed herein are those of the supplier/authors and do not necessarily reflect those of Public Services and Procurement Canada

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# 1. Executive Summary

## 1.1 Research Purpose and Objectives

In 2014, the Government of Canada committed \$200 million in funding over five years for the development of the National Disaster Mitigation Program (NDMP). Within the Government, the mandate to help Canadians and their communities protect themselves from emergencies and disasters (natural and otherwise) falls to Public Safety Canada (PSC). As the lead on this initiative, PSC launched the NDMP in 2015, which focused on flood mitigation, and aimed to better protect Canadians, their homes and communities.

Baseline public opinion research conducted in 2016 found that over half of Canadians in key demographic regions were not concerned about overland flooding, while three-quarters had done nothing to prepare their homes. In order to support public awareness of overland flooding and reduce the Government's financial exposure to flood related risks, the PSC developed a five-year flood mitigation campaign called "Flood Ready", which has seen high levels of engagement and will be extended into the Spring of 2020.

As the campaign nears the end of its third and final year, the current research will measure the state of Canadians' knowledge of flood mitigation and track any changes in knowledge and behaviour since the program was launched. This research will be compared against the 2016 baseline measurements and help PSC measure the impact of the marketing campaign as well as support future policy and communications planning for flood mitigation.

The methodology was designed to ensure consistency with previous iteration of the Flood Mitigation Public Opinion Research.

More specifically, this research was designed to address the following objectives:

1. To track the current state of public opinion on the issue of flood mitigation including:
  - a) awareness surrounding the issue of flooding;
  - b) knowledge related to flood mitigation measures;
  - c) attitudes related to individual and community responsibility for flood mitigation; and
  - d) flood mitigation behaviours and actions taken by Canadians.
2. To provide the data required to conduct an analysis of the knowledge, attitudes and behaviours of two segments of the Canadian public: those living in flood-prone areas and homeowners.

## 1.2 Summary of Findings

### Attitudes Towards Overland Flooding

At an overall level, Canadians are more concerned about overland flooding than they were in 2016 (42% in 2020 vs. 36% in 2016; very/somewhat concerned). This is not a surprising finding given both an increase in past 10-year overland flood experience (15% in 2020 vs. 10% in 2016) as well as an increase in the perceived disruptiveness of overland flooding (59% in 2020 vs. 54% in 2016).

However, the increased concern is not prompting a greater number of Canadians to take preventative action. Consistent with 2016, slightly more than one-quarter of Canadians (27%) have acted to protect their home from

overland flood damage. Further, Canadians are less likely to believe that the government will take care of them and their home in the event of a major overland flood (36% vs. 40%) and more likely to believe they are easily able to obtain overland flood insurance (44% vs. 38%), which has translated into greater uptake of insurance (25% in 2020 vs. 20% in 2016). This suggests that many Canadians are relying on insurance as a means of security, rather than taking precautionary measures.

### **Preventative Measures**

When Canadians are asked why they have not acted to protect their home from overland flood damage, most cite not being in a flood zone (42%), regardless of region. Fewer believe it won't happen to them (15%), it's their landlord's responsibility (12%), or that they were unaware they needed to (5%).

Among those that have taken action, the most common steps are consistent with 2016, and include ensuring proper grading of foundation (71%), making sure downspouts extend at least six feet from basement wall (67%), ensuring storm drains are clear (65%), clearing snow away from the house foundation (63%), keeping water out of window wells (54%), installing a sump pump and/or backflow valves (53%), and using water-resistant building materials below ground level (52%). However, in 2020 it appears that Canadians are taking fewer steps overall, as the endorsement on almost all forms of action has dropped significantly. This suggests that Canadians may feel only one or two preventative measures are necessary and may be unaware they are still at risk of damages.

### **Information Sources**

Significantly more Canadians recall seeing, reading, or hearing information about what they can do to protect their home from flood damage in 2020 (40% vs. 17% in 2016), likely reflecting the impact of the "Flood Ready" campaign and NDMP efforts. Among those that saw, heard, or read information about overland flooding, most (55%) said they were exposed via various news sources (radio/TV/internet/newspaper), followed by a general online search (20%), or television show/home improvement expert (16%), which may reflect remembering information conveyed by spokesperson Bryan Baeumler. Those who recalled information were most likely to recall flood mitigation efforts (e.g., sandbags or sump pumps) (27%), property protection and preparation for risks (22%) and flood prevention designs (e.g., downspouts) (20%).

When it comes to flood mitigation, not all Canadians have similar attitudes and behaviours towards flood mitigation. Several factors seem to play a role. Notably, region, income and previous flood experience all play a role in relation to the attitudes and behaviours towards flood mitigation.

#### Region

Quebeckers tend to be more aware of overland flood related risks compared to their counterparts in other areas of Canada. Specifically, Quebeckers are more likely to:

- Be concerned about overland flooding (52% vs. 34-41%);
- Believe they need to do everything they can to protect themselves and their homes from overland floods (84% vs. 62-69%);
- Believe they or their landlords are personally responsible for flood prevention (34% vs. 20-26%);
- To have overland flooding insurance (34% vs. 16-21%); and
- To be aware of online or digital resources that can help them identify their flood risk levels (33% vs. 11-20%).

However, despite higher levels of concern and belief that they are personally responsible for flood mitigation, Quebeckers are less likely than those in other provinces to have acted to protect their homes (18% vs. 23-32%). This may be because they are less likely to have actually experienced a flood in the past 10 years (7% vs. 13-20%) and are relying on insurance in the event of flooding.

#### Income

Income plays a role in both concern around flooding and preventative action:

- Canadians in the lowest income bracket (under \$40K) are more concerned about overland flooding than those in higher income brackets (48-54% vs. 37-43% among \$40K+), likely because this group feels less prepared to deal with the financial impact a flood would have on their household;
- Canadians with household incomes under \$60K+ are less likely to have obtained insurance than those with household incomes over \$60K (15-20% vs. 30-33%); and
- Canadians in the wealthiest income bracket (\$100K+) are more likely to have taken action to protect their home from overland flooding (35% vs. 20-26%).

### Previous Overland Flood Experience

Not unexpectedly, having previous experience with overland flooding appears to impact attitudes and motivate a change in behaviour. Those who have experienced overland flooding:

- Report higher levels of concern about overland flooding (59% vs. 40%);
- Are more likely to have taken steps to protect their home (59% vs. 21%);
- Are more likely to cite certain barriers to protecting their home, including cost (16%), not having the skills (14% vs. 4%), or not having enough time (5% vs. 1%);
- Are less likely to believe they can easily obtain overland flood insurance (37% vs. 45%), and;
- Are more likely to remember seeing, hearing, or reading information about overland flooding (50% vs. 38%).

In summary, the 2020 results suggest that communications around overland flooding appear to be reaching Canadians but are having limited impact on the flood mitigation behaviours of Canadians. While Canadians are more likely to have seen, read or heard about what to do to protect their home from overland flood damage Canadians are not increasingly taking further action to protect their property from overland flooding. Rather, it would appear that Canadians are increasingly purchasing flood insurance and as such may be relying on insurance as a safety net. Future communications may wish to emphasize the importance of preventative measures to avoid the disruption and damages caused by flooding. As well, income also appears to be a barrier to taking preventative actions and obtaining insurance, and future campaigns may benefit from emphasizing low cost and/or easy to implement measures that Canadians can take to mitigate overland flood damage.

### **1.3 Methodology**

For tracking purposes and comparability over time, most questions remained the same or similar to the ones used for the 2016 baseline research.

An eight-minute telephone survey was conducted among a nationally representative sample of 1,200 Canadians twenty-five years of age or older (25+), including 150 “cell phone only” respondents to ensure sample was representative of the population.

Sampling was conducted disproportionately by region to ensure minimum sample sizes were attained to allow for valid statistical analysis. This included establishing quotas for the following regions susceptible to flooding: New Brunswick, James Bay and Peterborough in Ontario, and the Prairies.

The telephone sample was a national disproportionate sample drawn to achieve a national margin of error of no greater than +/- 5%. The actual margin of error was 2.78 per cent 19 times out of 20. Regional and other sub-samples will have correspondingly higher margins of error. Smaller sub-samples will have correspondingly higher margins of error. Details related to the number of calls made by region can be found in the Appendix.

A pre-test consisting of 10 completed English interviews and 10 completed French interviews was completed on January 27<sup>th</sup>, 2020 and no changes were made to the questionnaire. The survey was in field from 29<sup>th</sup> to February 12<sup>th</sup>, 2020.

A detailed methodology can be found in Chapter 3.

*Please note: Analysis was undertaken to establish the extent of the relationship among variables such as gender, age, region, education, etc. Only differences significant at the 95% confidence level are presented in this report. Any differences that are statistically significant between subgroups are indicated with an uppercase letter to refer to the applicable column.*

*The numbers presented throughout this report are rounded to the closest full number. Due to this rounding, in some cases it may appear that ratings collapsed together are different by a percentage point from when they are presented individually, and totals may not add up to 100%. The data for 2016 was taken directly from the Flood Mitigation Public Awareness Campaign – Baseline Study 2016 data tables. Kantar has incorporated these results into the 2020 report for year-over-year comparison where applicable.*

#### **1.4 Contract Value**

The total contract value for the project was **\$90,355.04** including applicable taxes.

#### **1.5 Statement of Political Neutrality**

I hereby certify as a representative of Kantar that the deliverables fully comply with the Government of Canada political neutrality requirements outlined in the Communications Policy of the Government of Canada and Procedures for Planning and Contracting Public Opinion Research. Specifically, the deliverables do not include information on electoral voting intentions, political party preferences, standings with the electorate or ratings of the performance of a political party or its leaders.

A handwritten signature in black ink that reads "Tanya Whitehead". The signature is written in a cursive, flowing style.

**Tanya Whitehead**

Kantar

Senior Director, Public Practice Leader



## 2. Public Opinion of Flood Mitigation

### 2.1 Attitudes Towards Flooding

#### 2.1.1 Level of Concern of Overland Flooding

Overland flooding, defined as water flowing overland and seeping in through windows, doors, and cracks, is one of the most common natural hazards and affects hundreds of thousands of Canadians each year. Compared to 2016, Canadians report being more concerned about overland flooding (42% in 2020 vs. 36% in 2016; very/somewhat concerned).

Concern is higher in Quebec and the Atlantic provinces than in other regions of Canada (49-52% vs. 34-41%). It is also higher among those with household incomes under \$40K (48-54% vs. 38-43% among \$40K+), who may feel less financially prepared to deal with the associated costs of flooding. Not unexpectedly, those with previous flood experience also report higher levels of concern (59% vs. 39%).

**Exhibit 2.1.1.a Level of Concern Overland Flooding by Region and Income**

Attitudes Towards Overland Flooding	2016	2020											
	2016 Total	2020 Total	Region					INCOME					
			Atlantic (I)	Quebec (J)	Ontario (K)	Prairies (L)	BC (M)	Under \$20K (D)	\$20K To \$40K (E)	\$40K To \$60K (F)	\$60K To \$80K (G)	\$80K To \$100K (H)	\$100K+ (I)
<b>Base = actual</b>	<b>(1234) %</b>	<b>(1222) %</b>	<b>(208) %</b>	<b>(254) %</b>	<b>(350) %</b>	<b>(205) %</b>	<b>(205) %</b>	<b>(77) %</b>	<b>(167) %</b>	<b>(146) %</b>	<b>(144) %</b>	<b>(138) %</b>	<b>(306) %</b>
Very concerned	12	15	19 LM	19 LM	16 L	9	12	26 FGHI	20 FHI	10	13	7	13
Somewhat concerned	24	27	30	32 K	25	25	27	28	28	33	25	33	27
Neither concerned nor unconcerned	10	11	5	24 IKLM	9	6	5	3	13 D	11	18 D	13 D	12 D
Not very concerned	27	23	20 J	11	29 IJ	27 J	24 J	18	15	23	23	28 E	23 E
Not at all concerned	27	23	26 J	13	21 J	34 JK	32 JK	25	22	23	22	20	27
Don't know	*	1	-	*	*	*	1	-	2	-	-	-	-

B1. How concerned are you about overland flooding? Overland flooding is defined as water flowing overland and seeping in through windows, doors and cracks. It does not, for example, include flooding caused from a sewer backup or burst pipes. 2020 (n=1,222); 2016 (n=1,234).

Note: Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B.

\* Denotes less than 1%

- Denotes 0

**Exhibit 2.1.1.b Level of Concern Overland Flooding by Flood Experience**

Attitudes Towards Overland Flooding	2016	2020		
	2016 Total	2020 Total	Experienced A Flood	
			Yes (L)	No (M)
<b>Base = actual</b>	<b>(1234)</b> %	<b>(1222)</b> %	<b>(186)</b> %	<b>(1031)</b> %
Very concerned	12	15	27 M	13
Somewhat concerned	24	27	32	26
Neither concerned nor unconcerned	10	11	7	12
Not very concerned	27	23	17	24 L
Not at all concerned	27	23	16	24 L
Don't know	*	1	1	1

B1. How concerned are you about overland flooding? Overland flooding is defined as water flowing overland and seeping in through windows, doors and cracks. It does not, for example, include flooding caused from a sewer backup or burst pipes. 2020 (n=1,222); 2016 (n=1,234).

Note: Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B.

\* Denotes less than 1%

## 2.1.2 Attitudes Towards Overland Flooding

Canadians' attitudes towards personal responsibility for flood prevention have remained fairly steady, with the majority believing (strongly agree or agree) that they need to do everything they can to protect their homes (71%) and that there are actions they can take to reduce overland flood damage to their homes (61%). However, in comparison to 2016, they are less likely to believe the government will take care of them and their home in the event of a major overland flood (36% vs. 40%) and more likely to believe they are easily able to obtain overland flood insurance (44% vs. 38%).

Women are more likely to believe they need to do everything they can to protect themselves and their homes from overland floods (73% vs. 68%), as are those in Quebec (84% vs. 62-69% in other regions), and those who have experienced an overland flood (79% vs. 70%). Those who have experienced a flood are also less likely to believe they can easily obtain overland flood insurance (37% vs. 45%), suggesting this is something they may have researched and had trouble obtaining after a prior flood.

### Exhibit 2.1.2.a. Attitudes Towards Overland Flooding by Gender and Region

Level of Agreement with Flood Statements	2016		2020						
	2016 Total	2020 Total	Gender		Region				
			Male (B)	Female (C)	Atlantic (I)	Quebec (J)	Ontario (K)	Prairies (L)	B.C. (M)
<b>Base = actual</b>	<b>(1234)</b> %	<b>(1222)</b> %	<b>(642)</b> %	<b>(580)</b> %	<b>(208)</b> %	<b>(254)</b> %	<b>(350)</b> %	<b>(205)</b> %	<b>(205)</b> %
I need to do everything i can to protect myself and my home from overland flooding	72	71	68	73 B	67	84 IKLM	67	69	62
The government will take care of me and my home if there's major overland flood	40	36	37	35	32	47 IKLM	33	32	29
There are actions i can take to reduce overland flood damage to my home	60	61	61	62	56	69 IKM	60 M	66 IM	49
I am able to easily obtain overland flood insurance for my home	38	44	47 C	41	38	52 IKL	40	41	47 I

B2. I'm now going to read you some statements related to overland flooding. Please tell me to what extent you agree or disagree with each statement.

2020 (n=1,222); 2016 (n=1,234).

Note: Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B.

### **Exhibit 2.1.2.b. Attitudes Towards Overland Flooding by Flood Experience**

Level of Agreement with Flood Statements	2016	2020		
	2016 Total	2020 Total	Experienced A Flood	
			Yes (L)	No (M)
<b>Base = actual</b>	<b>(1234) %</b>	<b>(1222) %</b>	<b>(186) %</b>	<b>(1031) %</b>
I need to do everything i can to protect myself and my home from overland flooding	72	71	79 M	70
The government will take care of me and my home if there's major overland flood	40	36	30	37
There are actions i can take to reduce overland flood damage to my home	60	61	67	61
I am able to easily obtain overland flood insurance for my home	38	44	37	45 L

B2. I'm now going to read you some statements related to overland flooding. Please tell me to what extent you agree or disagree with each statement.

2020 (n=1,222); 2016 (n=1,234).

Note: Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B.

However, despite agreeing they must take steps to protect their homes, the majority of Canadians continue to believe that the primary responsibility for preventing overland flood damage to their home lies with some level of government (63%), while a minority believe it lies with themselves or their landlord (27%). Of the 63 per cent that believe that prevention is the responsibility of the government, most believe it is the responsibility of their municipal or local governments (51%), followed by provincial government (32%), or federal government (17%).

Older Canadians (35+) are more likely than their younger cohorts (25-34) to believe they or their landlords are personally responsible for flood prevention (27-31% vs. 19%). Those in the Quebec and Atlantic provinces are also more likely to believe they or their landlords are personally responsible (34% vs. 20-26% in other areas of Canada).

**Exhibit 2.1.2.c. Responsibility for Overland Flood Damage Prevention by Age and Region**

Level of Agreement with Flood Statements	2016	2020									
	2016 Total	2020 Total	Age				Region				
			25 To 34 (E)	35 To 44 (F)	45 To 54 (G)	55+ (H)	Atlantic (I)	Quebec (J)	Ontario (K)	Prairies (L)	B.C. (M)
<b>Base = actual</b>	<b>(1234) %</b>	<b>(1222) %</b>	<b>(204) %</b>	<b>(201) %</b>	<b>(220) %</b>	<b>(597) %</b>	<b>(208) %</b>	<b>(254) %</b>	<b>(350) %</b>	<b>(205) %</b>	<b>(205) %</b>
Yourself or your landlord	27	27	19	31 E	28 E	27 E	34 KM	34 KM	23	26	20
Municipal or local government	31	32	30	37 H	32	29	24	25	33 IJ	32	41 IJKL
Provincial government	24	20	27 FG	17	17	21	25 J	16	20	25 J	21
Federal government	9	11	11	8	14	12	8	13	13	9	9
Don't know	8	8	11 F	3	7	9 F	8	8	9	6	7
No response	2	3	2	3	1	3	*	3 I	2	3	3

B4. Who, in your opinion, is primarily responsible for preventing overland flood damage to your home?

2020 (n=1,222); 2016 (n=1,234).

Note: Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B.

\* Denotes less than 1%

- Denotes 0

## 2.2 Experience with Overland Flooding

### 2.2.1 Past 10 Year Experience with Overland Flooding

Canadians report experiencing significantly more overland flooding over the past four years (15% in 2020 vs. 10% in 2016). Notably, despite being more concerned about overland flooding, those in Quebec have experienced less flooding than in other regions of Canada (7% vs. 13-20%).

#### **Exhibit 2.2.1.a. Past 10 Year Experience with Overland Flooding by Region**

Experienced Flooding In P10Y	2016	2020					
	2016 Total	2020 Total	Region				
			Atlantic (I)	Quebec (J)	Ontario (K)	Prairies (L)	B.C. (M)
<b>Base = actual</b>	(1234) %	(1222) %	(208) %	(254) %	(350) %	(205) %	(205) %
Yes	10	15	20 JM	7	19 JM	16 J	13 J
No	89	85	80	92 IKL	81	83	87 IK
Don't know	*	*	*	*	*	1	-

C1. In the past 10 years, have you experienced overland flooding in Canada in the place you live or have lived? Just as a reminder, overland flooding is defined as water flowing overland and seeping in through windows, doors and cracks. It does not, for example, include flooding caused from a sewer backup or burst pipes.

2020 (n=1,222); 2016 (n=1,234).

Note: Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B.

\* Denotes less than 1%

- Denotes 0

## 2.2.2 Disruption Due to Overland Flooding

Canadians are more likely to have experienced a severe disruption in 2020 (59% in 2020 vs. 54% in 2016), suggesting flooding is worse than in past years.

### Exhibit 2.2.2.a. Disruption due to Overland Flooding

Severe Disruption	2016	2020
	2016 Total	2020 Total
<b>Base = actual</b>	<b>(126)</b> %	<b>(186)</b> %
Yes	54	59
No	46	41

C2. Did this overland flooding result in a severe disruption to your daily activities? By "severe disruption" we mean the event prevented you from engaging in regular daily activities such as going to school or work, preparing meals, bathing, doing laundry, etc

2020 (n=186); 2016 (n=126).

Note: Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B.



### 2.2.3 Incidence of Flood Insurance

Canadians are now more likely to have flood insurance (25% in 2020 vs. 20% in 2016), likely reflecting increased levels of concern. Middle aged Canadians (35-54) are more likely than their younger (25-34) or older (55+) counterparts to have obtained flood insurance (28-31% vs. 20-21%). Those with higher household incomes (\$60K+) are also more likely to have obtained insurance than those with household incomes under \$60K (30-33% vs. 15-20%). This suggests costs are likely a barrier that leave some more vulnerable groups at risk. Quebeckers, who in general are more concerned about overland flooding, are also more likely to have overland flooding insurance (34% vs. 16-24% in other regions).

#### **Exhibit 2.2.3.a. Incidence of Flood Insurance by Age and Income and Flood Experience**

Flood Insurance	2016		2020												
	2016 Total	2020 Total	Age				Income						Experienced A Flood		
			25 To 34 (E)	35 To 44 (F)	45 To 54 (G)	55+ (H)	Under \$20K (D)	\$20K To \$40K (E)	\$40K To \$60K (F)	\$60K To \$80K (G)	\$80K To \$100K (H)	\$100K+ (I)	YES (L)	NO (M)	
<b>Base = actual</b>	<b>(1234) %</b>	<b>(1222) %</b>	<b>(204) %</b>	<b>(201) %</b>	<b>(220) %</b>	<b>(597) %</b>	<b>(77) %</b>	<b>(167) %</b>	<b>(146) %</b>	<b>(144) %</b>	<b>(138) %</b>	<b>(306) %</b>	<b>(186) %</b>	<b>(1031) %</b>	
Yes	20	25	20	31 EH	28 EH	21	15	20	17	30 DF	30 DF	33 DEF	25	25	
No	60	59	59	54	51	66 FG	80 GHI	71 GHI	70 GHI	57 I	57 I	45	54	60	
Don't know	20	16	21 H	15	21 H	12	5	9	13	13	13	22 DEFGH	21 M	15	

C4. Do you have overland flood insurance?

2020 (n=1,222); 2016 (n=1,234).

Note: Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B.

- Denotes 0

**Exhibit 2.2.3.b. Incidence of Flood Insurance by Region**

Flood Insurance	2016	2020					
	2016 Total	2020 Total	Atlantic (I)	Quebec (J)	Ontario (K)	Prairies (L)	B.C. (M)
<b>Base = actual</b>	<b>(1234)</b> %	<b>(1222)</b> %	<b>(208)</b> %	<b>(254)</b> %	<b>(350)</b> %	<b>(205)</b> %	<b>(205)</b> %
Yes	20	25	21	34 IKLM	24 M	21	16
No	60	59	55	59	55	63	69 IJK
Don't know	20	16	24 JLM	7	21 J	16 J	15 J

C4. Do you have overland flood insurance?

2020 (n=1,222); 2016 (n=1,234).

Note: Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B.

- Denotes 0

## 2.2.4 Actions Taken to Protect Home from Overland Flood Damage

Despite Canadians reporting increased levels of overland flooding over the past four years, only one-quarter of Canadians (27%) have acted to protect their home from overland flood damage, consistent with 2016.

Despite higher levels of concerns among Quebeckers, they are less likely than those in other provinces to have taken action to protect their homes (18% vs. 23-32%). This may be due to higher levels of overland flooding insurance among this group.

Not unexpectedly, home owners are more likely to have taken steps to protect their home than renters (32% vs. 12%), as are the majority of those with flood experience (59% vs. 21%). Those in the wealthiest income bracket (\$100K+) are also more likely to have taken action (35% vs. 20-26%), again suggesting cost may be a barrier to prevention.

### Exhibit 2.2.4.a. Action Taken to Protect Home from Overland Flood Damage by Region and Home Ownership

Any Flood Protection Measures Taken	2016	2020							
	2016 Total	2020 Total	Region					Home	
			Atlantic (I)	Quebec (J)	Ontario (K)	Prairies (L)	B.C. (M)	Own (R)	Rent (S)
<b>Base = actual</b>	<b>(1234)</b> %	<b>(1222)</b> %	<b>(208)</b> %	<b>(254)</b> %	<b>(350)</b> %	<b>(205)</b> %	<b>(205)</b> %	<b>(889)</b> %	<b>(304)</b> %
Yes	26	27	26 J	18	32 JM	30 J	23	32 S	12
No	74	73	74	82 IKL	68	70	77 K	68	88 R

C5.1 Have you done anything to protect your home from overland flood damage?

2020 (n=1,222); 2016 (n=1,234).

Note: Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B.

**Exhibit 2.2.4.b. Action Taken to Protect Home from Overland Flood Damage by Flood Experience and Income**

Any Flood Protection Measures Taken	2016	2020								
	2016 Total	2020 Total	Experienced A Flood		Income					
			Yes (L)	No (M)	Under \$20K (D)	\$20K To Under \$40K (E)	\$40K To Under \$60K (F)	\$60K To Under \$80K (G)	\$80K To Under \$100K (H)	\$100K+ (I)
<b>Base = actual</b>	<b>(1234) %</b>	<b>(1222) %</b>	<b>(186) %</b>	<b>(1031) %</b>	<b>(77) %</b>	<b>(167) %</b>	<b>(146) %</b>	<b>(144) %</b>	<b>(138) %</b>	<b>(306) %</b>
Yes	26	27	59 M	21	22	20	24	21	26	35 DEFGH
No	74	73	41	79 L	78 I	80 I	76 I	79 I	74 I	65

C5.1 Have you done anything to protect your home from overland flood damage?

2020 (n=1,222); 2016 (n=1,234).

Note: Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B.

Among those who have taken action to protect their home from overland flood damage, steps include:

- Ensured proper grading of foundation (71%);
- Made sure downspouts extended at least six feet from basement wall (67%);
- Ensured storm drains were clear (65%);
- Cleared snow away from the house foundation (63%);
- Kept water out of window wells (54%);
- Installed a sump pump and/or backflow valves (53%);
- Used water-resistant building materials below ground level (52%);
- Installed weeping tiles (49%);
- Sealed basement windows (48%); and
- Used rain barrels to catch runoff (36%).

However, in 2020 Canadians are less likely to have taken multiple steps, as the endorsement on almost all steps has dropped significantly. These include proper grading of foundation (71% vs. 85%), made sure downspouts extended at least six feet from basement wall (67% vs. 75%), ensured storm drains were clear (65% vs. 77%), installed a sump pump and/or backflow valves (53% vs. 61%), used water-resistant building materials below ground level (52% vs. 65%), and installed weeping tiles (49% vs. 63%).

### **Exhibit 2.2.4.c. Specific Action Taken to Protect Home from Overland Flood Damage**

Flood Prevention	2016	2020
	2016 Total	2020 Total
<b>Base = actual</b>	<b>(295) %</b>	<b>(328) %</b>
Made sure downspouts extended at least six feet from the basement wall	75	67
Ensured proper grading around the foundation	85	71
Installed weeping tiles	63	49
Installed a sump pump and/or backflow valves	61	53
Ensured storm drains were clear	77	65
Used water-resistant building materials below ground level	65	52
Kept water out of window wells	57	54
Sealed basement windows	56	48
Used rain barrels to catch runoff	33	36
Cleared snow away from the house foundation	70	63
None of the above	2	5

C5. I'm now going to read you a list of things that can be done to protect your home from overland flood damage. Please let me know whether you or someone living in your home has done any of these things?

2020 (n=328); 2016 (n=295).

Note: Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B

Among those that did not take steps to protect their home, most cited not being in a flood zone (46%), thinking it won't happen to them (15%), believing it's their landlord's responsibility (12%), or not knowing they needed to (5%). A full breakdown can be found in 2.2.4.d.

Notably, those who have previously experienced a flood are more likely to cite cost (16%), not having the skills (14% vs. 4%), or not having enough time (5% vs. 1%) as reasons for doing anything to protect their home from overland flood damage, suggesting these Canadians are at risk of continued flood damage.

**Exhibit 2.2.4.d. Reasons for Not Taking Action to Protect Home from Overland Flood Damage by Flood Experience**

Why No Additional Flood Protection Measures	2016	2020 Total	2020 Experienced A Flood	
	2016 Total		Yes (L)	No (M)
<b>Base = actual</b>	<b>(945) %</b>	<b>(911) %</b>	<b>(78) %</b>	<b>(828) %</b>
No time / too busy	1	1	5 M	1
Cost / too expensive	3	3	16 M	2
Didn't know I needed to	6	5	5	4
It won't happen to me / my home won't get flooded	27	15	10	15
Don't know how / don't have the skills	5	4	14 M	4
Insurance will cover the damage	2	3	6	3
Not in a flood zone / no flood risk	54	46	37	47
I rent / it's the landlord's responsibility	12	12	16	12
Government will help us if anything happens	1	2	-	2
Home is already protected	3	4	4	4
Live in a condo / high rise / apartment	NA	3	4	3
Low flood risk / not a concern / don't think about it / not	NA	4	6	4
Nothing can be done / can't prevent flooding altogether / we	NA	1	4	1
Live on high ground / live on a hill	NA	4	3	4
Never experienced flooding / haven't had any issues	NA	2	2	2
Don't live near a body of water / dry where i live / have go	NA	1	-	1
Not my house / don't live in a house	NA	*	-	*

Family member takes care of it / third party takes care	NA	*	-	*
Other	3	2	6 M	1
Don't know / no response	8	6	2	6

C5.2. Why have you or someone living in your home not done anything to protect your home from overland flood damage?

2020 (n=911); 2016 (n=945).

Note: Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B

\* Denotes less than 1%

- Denotes 0

## 2.3 Information Sources

### 2.3.1 Recall of Overland Flood Damage Information

Significantly more Canadians recall seeing, reading, or hearing information about what they can do to protect their home from flood damage in 2020 (40% vs. 17% in 2016).

Quebeckers are more likely than those in Ontario or BC to remember hearing information about overland flooding (48% vs. 32-38%), as are those with flood experience (50% vs. 38%). This is likely because these groups are more concerned about flood damage in general, and more likely to research or pay attention to communications. Home owners are also more likely to remember information (43% vs. 33%).

#### **Exhibit 2.3.1.a. Recall of Overland Flood Damage Information by Region and Home Ownership**

Looked For Info	2016	2020							
	2016 Total	2020 Total	Region					Home	
			Atlantic (I)	Quebec (J)	Ontario (K)	Prairies (L)	B.C. (M)	Own (R)	Rent (S)
<b>Base = actual</b>	<b>(1234)</b> %	<b>(1222)</b> %	<b>(208)</b> %	<b>(254)</b> %	<b>(350)</b> %	<b>(205)</b> %	<b>(205)</b> %	<b>(889)</b> %	<b>(304)</b> %
Yes	17	40	39	48 KM	38	40	32	43 S	33
No	82	58	58	51	60 J	58	67 JL	55	66 R
Don't know	*	2	2 J	-	2 J	3 J	1	1	1

D1. Have you ever seen, read, or heard any information about what to do to protect your home from overland flood damage?

2020 (n=1,222); 2016 (n=1,234).

Note: Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B

\* Denotes less than 1%

- Denotes 0



### Exhibit 2.3.1.b. Recall of Overland Flood Damage Information by Flood Experience

Looked For Info	2016	2020 Total	2020 Experienced A Flood	
	2016 Total		YES (L)	NO (M)
<b>Base = actual</b>	<b>(1234) %</b>	<b>(1222) %</b>	<b>(186) %</b>	<b>(1031) %</b>
Yes	17	40	50 M	38
No	82	58	46	61 L
Don't know	*	2	4 M	1

D1. Have you ever seen, read, or heard any information about what to do to protect your home from overland flood damage?

2020 (n=1,222); 2016 (n=1,234).

Note: Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B

\* Denotes less than 1%

Among those that saw, heard, or read information about overland flooding, most (55%) were exposed via various news sources (radio/TV/internet/newspaper). Other sources include:

- General online search (e.g. Google) (20%);
- Television show/home improvement expert (16%);
- Social media (e.g., Twitter or Facebook) (12%);
- Family/friends/neighbours (10%);
- Local government (e.g., city/town hall, municipal services) (7%);
- Insurance agent/company (6%);
- Provincial government (3%);
- Hardware/home supply store (3%); and
- Police/Law enforcement/First responders (2%).

### Exhibit 2.3.1.c. Source of Overland Flood Damage Information

Info Sources	2020  2020 Total
<b>Base = actual</b>	<b>(490) %</b>
News – radio/television/internet/newspaper	55
Television show/home improvement expert	16
Hardware/home supply store	3
Social media (e.g., twitter or facebook)	12
General online search (e.g. google)	20
Family/friends/neighbours	10
Police/law enforcement/first responders	2
Insurance agent/company	6
Local government (e.g., city/town hall, municipal services)	7
Provincial government (e.g., representative or service)	3
Federal government (e.g., representative or service)	2
Other	14
Don't know	3

D1.1. Where did you see, read, or hear the information?

2020 (n=490); 2016 (n=NA).

Note: Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B.

Among those that recalled information, most centred around prevention and damage reduction. A full breakdown can be found in Exhibit 2.3.1.d below.

The most common information recalled included:

- Mitigation efforts to reduce damage (e.g., sandbags, sump pump) (27%);
- Property protection and preparation for risks (22%);
- Flood prevention designs (e.g. building berms, downspouts) (20%); and
- Flood damage and what to do in the case of flooding (8%).

### **Exhibit 2.3.1.d. Information Recalled**

Info Remembered	2020  2020 Total
<b>Base = actual</b>	<b>(472) %</b>
Flood damage and what to do in the case of flooding	8
Mitigation efforts and reducing damage (e.g. sandbags, sump pump)	27
Government related (e.g. roles, policies, contact information)	6
Property protection and preparation for risks	22
Flood prevention designs (e.g. building berms, downspout)	20
Awareness of property / where to build (e.g. flood plain)	11
What to use for your property / where you can get it	4
Flood insurance	4
The information doesn't affect me / doesn't apply to me	3
Other	*
No response / refuse	22

D1.2. What do you remember about this information?

2020 (n=472); 2016 (n=NA)

Note: Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B.

\* Denotes less than 1%

### 2.3.2 Likely Sources of Overland Flood Damage Information

Likely sources Canadians would use for information about protecting their homes from overland flood damage have shifted. While it is still most common, Canadians are less likely to say they would seek out information from a general internet search (42% vs. 58%), local government (16% vs. 22%), or insurance agent (8% vs. 14%), and more likely to say they would turn to the news (24% vs. 11%) or social media (11% vs. 1%). Other sources include the provincial government (10%), federal government (8%) family/friends/neighbours (5%), or television show/home improvement expert (4%), A full breakdown can be found in Exhibit 2.3.2.a below.

The information sources Canadians are likely to turn to differs by education level. Those without a high school diploma are more likely to seek out information from a television show/home improvement expert (11% vs. 3-4%) or family/friends/neighbours (12% vs. 4-5%), suggesting the Flood Ready campaign is a good way to reach this demographic. Those with a college degree or further higher education are more likely to conduct a general internet search (54% vs. 28-39%) or seek out information from the provincial government (15% vs. 6-9%).

**Exhibit 2.3.2.a. Likely Sources of Overland Flood Damage Information by Education**

Likely Info Sources Used	2016	2020				
	2016 Total	2020 Total	Education			
			Less Than H.S. Grad. (N)	H.S. GRAD. (O)	Some College (P)	Grad. College Or Higher (Q)
<b>Base = actual</b>	<b>(1234) %</b>	<b>(1222) %</b>	<b>(107) %</b>	<b>(203) %</b>	<b>(483) %</b>	<b>(398) %</b>
News - radio/television/internet/newspaper	11	24	32 Q	23	27 Q	19
Television show/home improvement expert	2	4	11 OPQ	3	3	4
Hardware/home supply store	2	1	2	-	1	1
Social media (e.g., twitter or facebook)	1	11	9	12	10	11
General online search (e.g. google)	58	42	28	39	38	54 NOP
Family/friends/neighbours	8	5	12 OPQ	4	5	4
Police/law enforcement/first responders	1	2	4 P	2	1	2
Insurance agent/company	14	8	10	8	8	8
Local government (e.g., city/town hall, municipal services)	22	16	14	13	16	19

Provincial government (e.g., representative or service)	14	10	6	9	7	15 NOP
Federal government (e.g., representative or service)	10	8	7	5	7	11 O
Not-for-profit/charitable organization (e.g., red cross, salvation army)	1	2	5 OP	1	*	3 P
Other community organization	1	2	5	1	1	3
Other	10	9	15 Q	9	10	8
Don't know	7	8	11 Q	9 Q	8 Q	4

D2. Where would you be most likely to look for information about what to do to protect your home from overland flood damage?

2020 (n=1,222); 2016 (n=1,234)

Note: Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B.

\* Denotes less than 1%

- Denotes 0

### 2.3.3 Digital Sources of Overland Flood Damage Information

Most Canadians are not aware of any online or digital resources that can help Canadians identify their flood risk levels (77%). Awareness is highest in Quebec (33%) and is significantly lower than the rest of Canada in Ontario and BC (11% for both vs. 17-20% in other regions).

#### **Exhibit 2.3.3.a. Digital Sources of Overland Flood Damage Information by region**

Aware Of Online Digital Resource	2016	2020					
	2016 Total	2020 Total	Region				
			Atlantic (I)	Quebec (J)	Ontario (K)	Prairies (L)	B.C. (M)
<b>Base = actual</b>	<b>NA</b>	<b>(1222)</b> %	<b>(208)</b> %	<b>(254)</b> %	<b>(350)</b> %	<b>(205)</b> %	<b>(205)</b> %
Yes	NA	18	20 KM	33 IKLM	11	17 KM	11
No	NA	77	75 J	64	83 IJ	78 J	83 IJ
Don't know	NA	4	5	2	5	4	6 J

D3. Are you aware of any online or digital resources available, either government or NGO, that helps Canadians identify their flood risk levels in order to help reduce their level of flood damage?

2020 (n=1,222); 2016 (n=NA)

Note: Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B.

# Appendix A: Methodology

### 3. Methodological Overview

#### Survey Administration

An eight-minute telephone survey was conducted among a nationally representative sample of 1,200 Canadians twenty-five years of age or older (25+), including 150 “cell phone only” respondents to ensure sample was representative of the population.

Sampling was conducted disproportionately by region to ensure minimum sample sizes were attained to allow for valid statistical analysis. This included establishing quotas for the following regions susceptible to flooding: New Brunswick, James Bay and Peterborough in Ontario, and the Prairies.

The telephone sample was a national disproportionate sample drawn to achieve a national margin of error of no greater than +/- 5%. The actual margin of error was 2.78 per cent 19 times out of 20. Regional and other sub-samples will have correspondingly higher margins of error. Smaller sub-samples will have correspondingly higher margins of error. Details related to the number of calls made by region can be found in the Appendix.

A pre-test consisting of 10 completed English interviews and 10 completed French interviews was completed on January 27<sup>th</sup>, 2020 and no changes were made to the questionnaire. The survey was in field from 29<sup>th</sup> to February 12<sup>th</sup>, 2020.

To allow for regional analyses, regional quotas were also set as follows:

**Table 5.1.1.a: Survey Quotas**

Region	Sample Size
Atlantic Canada	200 (100 from New Brunswick)
Quebec	250
Ontario	350 (100 from James Bay and Peterborough areas)
Prairies	200
British Columbia	200
<b>TOTAL</b>	<b>1,200</b>

Weighting adjustments (age, gender and region) were applied to the final edited, clean data to ensure that the data were representative of the 25+ population of Canada based on the 2016 Census. In cases where the respondent refused to provide their age, an age was randomly assigned.



## **Questionnaire**

This is a tracking survey and the overall objectives have not changed, although some questions were removed or added to the survey since the 2016 wave. A draft questionnaire was submitted to the Project Authority for review. Once Kantar received and compiled feedback on the draft questionnaire it was revised, and then re-submitted it for final review and approval. The approved version of the English questionnaire was then professionally translated to French, using an in-house Kantar translator. The French questionnaire was submitted to the Project Authority for review and any translation comments were incorporated into final versions of the French questionnaire.

## **Pre-test**

A pre-test was undertaken on January 27<sup>th</sup>, 2020 obtaining 10 English and 10 French completed interviews. The results were reviewed to ensure the survey was working as expected and that the questions were being interpreted as expected. Based on the results of the pre-test, no changes were required for the survey and as such the results of the 20 completes were included in the final data set.

## **Sample Design and Selection**

The telephone sample was a national disproportionate sample drawn to achieve a national margin of error of no greater than +/- 5%. The actual margin of error was 2.78 per cent 19 times out of 20. Regional and other sub-samples will have correspondingly higher margins of error. Regional sampling was drawn to ensure minimum sample sizes were attained to allow for valid statistical analysis. This includes establishing quotas of 100 completes for the following regions susceptible to flooding: New Brunswick, James Bay and Peterborough in Ontario, and the Prairies. The person answering the phone was selected for the study if they were 25 years of age or older.

## **Survey Administration**

The telephone survey was conducted using computer assisted telephone interviewing (CATI) technology. CATI ensures the interview flows as it should with pre-programmed skip patterns. It also controls responses to ensure appropriate ranges and data validity. Sample is imported directly into the survey to ensure accurate recording of sample variables such as region. The system also controls automated scheduling and call-backs to ensure all appointments are adhered to.

Surveys were conducted in English or French as chosen by the respondent. Interviewing was conducted by fully trained interviewers and supervisors. A minimum of five per cent of all interviews were independently monitored and validated in real time.

All participants were informed of the general purpose of the research, the sponsor and the supplier, and that all of their responses were voluntary and confidential. They were also informed of their rights under the Privacy Act and ensured that those rights would be protected throughout the research process.

**Table 2.1a Sample Distribution**

Total	Atlantic	Quebec	Ontario	Prairies	BC
1222	208	254	350	205	205

**3.1 Fieldwork**

A Random Digit Dialling plus digit<sup>1</sup> telephone survey was conducted with Canadians aged 25 and older. In total, 1,222 surveys were completed from January 27<sup>th</sup> – February 13<sup>th</sup>, 2020. A total response rate of 2.11% was obtained (see Table 2.4a for details).

**3.2 Weighting**

Weighting adjustments (age, gender and region) were applied to the final edited, clean data to ensure that the data were representative of the 25+ population of Canada based on the 2016 Census. In cases where the respondent refused to provide their age, an age was randomly assigned. The following is the breakdown of actual and weighted completions.

**Table 2.3a: Actual**

	Total	Atlantic	Quebec	Ontario	Prairies	BC
M 25-34	115	12	28	31	22	22
M 35-44	104	11	26	32	14	21
M 45-54	120	20	34	30	19	17
M 55+	303	65	52	90	55	41
F 25-34	89	12	28	23	10	16
F 35-44	97	16	26	24	14	17
F 45-54	100	19	14	30	15	22
F 55+	294	53	46	90	56	49

**Table 2.3b: Weighted**

	Total	Atlantic	Quebec	Ontario	Prairies	BC
M 25-34	111	7	27	41	22	15

<sup>1</sup> Random Digit Dialling plus digit involves selecting household telephone numbers at random from a landline telephone directory and adding one to the last number in each telephone number selected.

M 35-44	115	8	27	45	21	15
M 45-54	137	10	33	53	23	18
M 55+	226	18	56	85	35	32
F 25-34	114	7	27	43	22	15
F 35-44	119	8	27	48	21	16
F 45-54	141	10	33	55	23	19
F 55+	260	20	66	98	39	36

### 3.3 Record of Call

The following is a breakdown of all calls attempted and the result of the call.

**Table 2.4a**

Total Numbers Attempted	<b>88626</b>
<b>Invalid</b>	<b>27154</b>
NIS	25206
Fax	1240
Business/Non-Residential	708
<b>Unresolved (U)</b>	<b>52928</b>
Busy	2561
No Answer	12822
Answering Machine	37545
<b>Unresolved (IS)</b>	<b>7246</b>
Language Problem/Illness/Incapable	235
Selected Respondent not Available	2320
Household Refusal	4497
Qualified Respondent Break-off	194
<b>In-scope Responding Units (R)</b>	<b>1298</b>
No one 25+	36
Other disqualify	40
Completed Interviews	1222
<b>Response Rate (R/U+IS+R)</b>	<b>2.11%</b>

#### **Non-response Bias**

We undertook a non-response bias for age, gender and region. We found that men 45-54 and 55+ and women 55+ were overrepresented in the Atlantic provinces, as were men 55+ in the prairies. Additionally, women 45-54 were underrepresented in Quebec and Ontario, men 45-54 were underrepresented in Ontario, and women 35-44 were underrepresented in the prairies. To address the issue of response bias, where data was available it was weighted to be representative of the Canadian population.

**Tabulated Data**

Detailed tables are included under separate cover.

# 4. Appendix B: Survey Instrument

## Public Safety Canada

### Flood Mitigation survey – Questionnaire, FINAL

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Hello/Bonjour. My name is \_\_\_\_\_ and I am calling from Kantar on behalf of the Government of Canada. We are conducting a survey with Canadians to get their opinions about issues related to natural disasters. Would you prefer that I continue in English or French? Préférez-vous continuer en français ou en anglais?

Record language of Interview [**DO NOT ASK - RECORD**]

English 1

French 2

Your participation in this survey is voluntary. We assure you that your responses are confidential and will not be reported individually nor attributed to you personally. Any information you provide will be administered in accordance with the Privacy Act and other applicable privacy laws. This survey is registered with the National Survey Registration System.

The survey will take about 7 minutes to complete. May I continue?

Yes **CONTINUE**

No, other time **SCHEDULE CALLBACK**

No/Refused **THANK AND TERMINATE**

#### A. **SCREENER AND PROFILE**

[**IF ASKED:** Kantar is a professional research company hired by the Government of Canada to conduct this survey]

A1. And, just to confirm, have I reached you on a landline phone or a cell phone?

Landline **CONTINUE to A2**

Cell phone **CONTINUE**

Don't know/Refused

**THANK AND TERMINATE**

**[IF CELL PHONE AT A1] ASK**

A1a. For your safety, are you currently driving?

Yes

**SCHEDULE CALLBACK**

No

**CONTINUE**

Don't know/Refused

**THANK AND TERMINATE**

A2. Are you or is any member of your household or immediate family employed in **READ LIST**?

- |  |   |                              |
|--|---|------------------------------|
| Market Research                            | 1 | <b>[THANK AND TERMINATE]</b> |
| Public or media relations or advertising   | 2 | <b>[THANK AND TERMINATE]</b> |
| Any media company such as print, radio, TV | 3 | <b>[THANK AND TERMINATE]</b> |
| Media monitoring                           | 4 | <b>[THANK AND TERMINATE]</b> |
| None of the above                          | 5 | <b>[CONTINUE]</b>            |

A3. Record gender **[DO NOT ASK - RECORD]**

Male 1

Female 2

A4. Can you tell me, in what year were you born?

\_\_\_\_\_ **[RECORD YEAR TO CALCULATE AGE]**

DK/refused

**IF AGE IS LESS THAN 25 YEARS, THANK AND TERMINATE**

**[IF QA4 = DK/refused] ASK**

A4.1 For classification purposes, could you tell me whether your age is: **[READ LIST]**

- |                   |   |                              |
|-------------------|---|------------------------------|
| between 18 and 24 | 1 | <b>[THANK AND TERMINATE]</b> |
| between 25 and 34 | 2 |                              |
| between 35 and 44 | 3 |                              |
| between 45 and 54 | 4 |                              |
| between 55 and 64 | 5 |                              |
| 65 years or older | 6 |                              |

**[ASK ALL]**

A5. Before we begin, can you please confirm that you live in **[PROVINCE FROM SAMPLE]**? **[IF NECESSARY, INTERVIEWER SAYS:]** This information will be used for classification purposes only.

- |     |   |
|-----|---|
| Yes | 1 |
| No  | 2 |

**[IF A5=2] ASK**

A5.1 In which province or territory do you live?

- |                      |   |
|----------------------|---|
| Alberta              | 1 |
| British Columbia     | 2 |
| Manitoba             | 3 |
| New Brunswick        | 4 |
| Newfoundland         | 5 |
| Nova Scotia          | 6 |
| Ontario              | 7 |
| Prince Edward Island | 8 |
| Quebec               | 9 |



Saskatchewan	10
Yukon	11
Nunavut	12
Northwest Territories	13

**B. ATTITUDES TOWARDS FLOODING**

B1. How concerned are you about overland flooding? **READ DEFINITION AND THEN LIST.**

*Overland flooding is defined as water flowing overland and seeping in through windows, doors and cracks. It does not, for example, include flooding caused from a sewer backup or burst pipes.*

Very concerned	1	
Somewhat concerned	2	
Neither concerned nor unconcerned	3	
Not very concerned	4	
Not at all concerned	5	
Don't know / no response	6	<b>[DO NOT READ]</b>

B2. I'm now going to read you some statements related to overland flooding. Please tell me to what extent you agree or disagree with each statement. **READ STATEMENT THEN READ SCALE.**

**INTERVIEWER SHOULD ONLY READ SCALE THE FIRST TIME – ONLY IF NECESSARY, CAN REPEAT SCALE**

Statements: **RANDOMIZE**

1. I need to do everything I can to protect myself and my home from overland flooding
2. The government will take care of me and my home if there's major overland flood
3. There are actions I can take to reduce overland flood damage to my home
4. I am able to easily obtain overland flood insurance for my home

- |                            |   |                      |
|----------------------------|---|----------------------|
| Strongly agree             | 1 |                      |
| Somewhat agree             | 2 |                      |
| Neither agree nor disagree | 3 |                      |
| Somewhat disagree          | 4 |                      |
| Strongly disagree          | 5 |                      |
| Don't know / no response   | 6 | <b>[DO NOT READ]</b> |

B4. Who, in your opinion, is primarily responsible for preventing overland flood damage to your home? **READ LIST.**

**ROTATE LIST. SELECT ONE ONLY.**

- |                               |   |                                      |
|-------------------------------|---|--------------------------------------|
| Yourself or your landlord     | 1 |                                      |
| Municipal or local government | 2 |                                      |
| Provincial government         | 3 |                                      |
| Federal government            | 4 |                                      |
| Don't know                    | 8 | <b>[DO NOT READ] – ANCHOR TO END</b> |
| No response                   | 9 | <b>[DO NOT READ] – ANCHOR TO END</b> |

**C. EXPERIENCE WITH FLOODING**

C1. In the past 10 years, have you experienced overland flooding in Canada in the place you live or have lived?

Just as a reminder, *overland flooding is defined as water flowing overland and seeping in through windows, doors and cracks. It does **not**, for example, include flooding caused from a sewer backup or burst pipes.*

- Yes 1
- No 2 -- **SKIP TO C4.**
- Don't know 9 -- **SKIP TO C4.**

C2. Did this overland flooding result in a severe disruption to your daily activities?

***By "severe disruption" we mean the event prevented you from engaging in regular daily activities such as going to school or work, preparing meals, bathing, doing laundry, etc.***

- Yes 1
- No 2

C4. Do you have overland flood insurance?

- Yes 1
- No 2
- Don't know 9

C5.1 Have you done anything to protect your home from overland flood damage?

- Yes 1
- No 2 -- **SKIP TO C5.2**

C5. I'm now going to read you a list of things that can be done to protect your home from overland flood damage. Please let me know whether you or someone living in your home has done any of these things?

**RANDOMIZE LIST. READ LIST. RECORD ALL THAT APPLY**

- |  |    |
|--|----|
| Made sure downspouts extended at least six feet from the basement wall | 1  |
| Ensured proper grading around the foundation                           | 2  |
| Installed weeping tiles  | 3  |
| Installed a sump pump and/or backflow valves                           | 4  |
| Ensured storm drains were clear  | 5  |
| Used water-resistant building materials below ground level             | 6  |
| Kept water out of window wells   | 7  |
| Sealed basement windows  | 8  |
| Used rain barrels to catch runoff                                      | 9  |
| Cleared snow away from the house foundation                            | 10 |
| None of the above [ <b>ANCHOR TO END OF LIST – DO NOT READ</b> ]       | 99 |

**[IF C5 = 99 OR C5.1 =2] ASK**

C5.2. Why have you or someone living in your home not done anything to protect your home from overland flood damage? **PROBE: ANY OTHER REASONS? DO NOT READ LIST. SELECT ALL THAT APPLY.**

- No time / too busy 1
- Cost / too expensive 2
- Didn't know I needed to 3
- It won't happen to me / my home won't get flooded 4
- Don't know how / don't have the skills 5
- Insurance will cover the damage 6
- Not in a flood zone / no flood risk 7
- I rent / it's the landlord's responsibility 8
- Government will help us if anything happens 9
- Home is already protected 10
- Don't know / no response 99

**D. INFORMATION SOURCES**

D1. Have you ever seen, read, or heard any information about what to do to protect your home from overland flood damage?

- Yes 1
- No 2 -- **SKIP TO C5.2**
- Don't know 8 -- **SKIP TO C5.2**
- Refuse 9 -- **SKIP TO C5.2**

**[IF D1 = 1] ASK**

D1.1. Where did you see, read, or hear the information? **PROBE: ANY OTHER REASONS? DO NOT READ LIST. SELECT ALL THAT APPLY.**

- News – Radio/Television/Internet/Newspaper 1
- Television show/home improvement expert 2

Hardware/home supply store	3
Social media (e.g., Twitter or Facebook)	4
General online search (e.g. Google)	5
Family/Friends/Neighbours	6
Police/Law enforcement/First responders	7
Insurance agent/Company	8
Local government (e.g., city/town hall, municipal services)	9
Provincial government (e.g., representative or service)	10
Other	97
Don't know	98
Refuse	99

**[IF D1.1. = 1-7 or 97] ASK**

D1.2. What do you remember about this information?

\_\_\_\_\_ **[OPEN, RECORD RESPONSE]**

No response / refuse 99

D2. Where would you be most likely to look for information about what to do to protect your home from overland flood damage? **DO NOT READ. SELECT ALL THAT APPLY. PROBE...ANY OTHERS?**

News – Radio/Television/Internet/Newspaper	1
Television show/home improvement expert	2
Hardware/home supply store	3
Social media (e.g., Twitter or Facebook)	4
General online search (e.g. Google)	5
Family/Friends/Neighbours	6

Police/Law enforcement/First responders	7
Insurance agent/Company	8
Local government (e.g., city/town hall, municipal services)	9
Provincial government (e.g., representative or service)	10
Federal government (e.g., representative or service)	11
Not-for-profit/charitable organization (e.g., Red Cross, Salvation Army)	12
Other community organization	13
Other	97
Don't know	98
Refuse	99

D3. Are you aware of any online or digital resources available, either government or NGO, that helps Canadians identify their flood risk levels in order to help reduce their level of flood damage?

Yes	1
No	2
Don't know	8
Refuse	9

## E. DEMOGRAPHICS

We now just have a couple of other questions about you and your household that we need for classification purposes. Please be assured that your responses will remain confidential.

E1. Do you or your family own or rent your home?

Own	1
Rent	2
Prefer not to say	3
Don't know	9

E2. What is the highest level of formal education that you have completed? **[READ IF NECESSARY - CODE ONE ONLY]**

Grade 8 or less	1
Some high school	2
High School diploma or equivalent	3
Registered Apprenticeship or other trades certificate or diploma	4
College, CEGEP or other non-university certificate or diploma	5
University certificate or diploma below bachelor's level	6
Bachelor's degree	7
Post graduate degree above bachelor's level	8
Prefer not to answer <b>[DO NOT READ]</b>	99



E3. What is your current work status? **READ LIST**

Working full-time (35 or more hours per week)	1
Working part-time (less than 35 hours per week)	2
Self employed	3
Student attending full time school (not working)	4
Unemployed and not looking for work	5
Not in the workforce (for example, unemployed, but not looking for work, a full-time homemaker or parent)	6
Retired	7
Other	8
Refused [ <b>DO NOT READ</b> ]	99

E4. How many children or teenagers under the age of 18 are currently living in your household?

\_\_\_\_\_

No response / refuse 99

E5. How many people over the age of 65 who depend on you for care are currently living in your household?

\_\_\_\_\_

No response / refuse 99

E6. Which of the following categories best describes your total household income? That is, the total income of all persons in your household combined, before taxes? **[READ - CODE ONE ONLY]**

Under \$20,000	1
\$20,000 to just under \$40,000	2
\$40,000 to just under \$60,000	3
\$60,000 to just under \$80,000	4
\$80,000 to just under \$100,000	5
\$100,000 to just under \$150,000	6
\$150,000 and above	7
Refused <b>[DO NOT READ]</b>	99

E7. Are you an Indigenous person, that is, First Nations, Métis or Inuk (Inuit)? First Nations includes Status and Non-Status Indians.

Yes	1
No	2
Don't know	8
Refuse	9

Those are all the questions I have for you today. The Government of Canada thanks you very much for your time. This survey was conducted on behalf of Public Safety Canada. In the coming months, a report with the findings from this study will be available from Library and Archives Canada. Thank you very much for taking part. It is appreciated.