

Calgary



# 2023 Perspectives on Calgary Flood Risk Awareness

FINAL REPORT

July 2023

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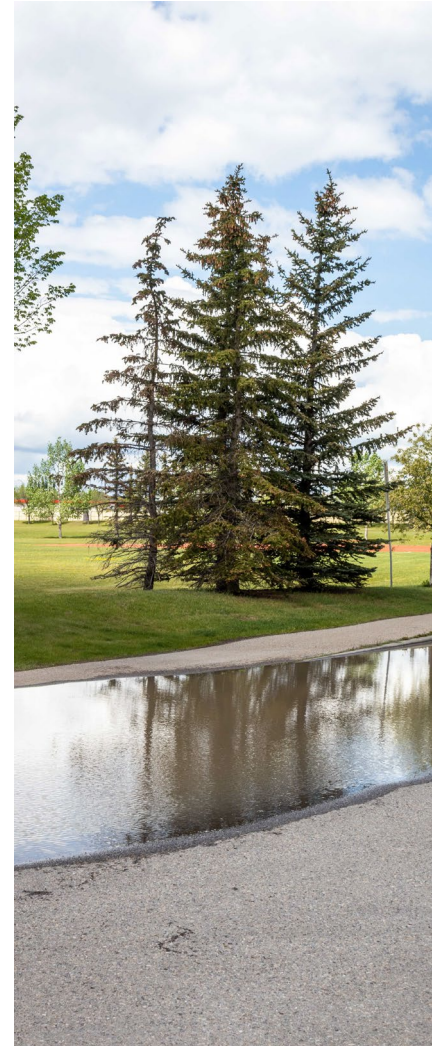
# Acknowledgements

## **Land Acknowledgement**

We acknowledge the traditional territories and oral practices of the Blackfoot Nations, which include the Siksika, the Piikani, and the Kainai. We also acknowledge the Tssut'ina and Stoney Nakoda First Nations, the Métis Nation (Region 3), and all people who make their homes in the Treaty 7 region of Southern Alberta.

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# Background and methodology

## Background

Since the 2013 flood, it has been a priority for The City of Calgary (The City) to build resilience to flooding. The purpose of this survey is to understand Calgarians' level of understanding of their personal risk of river flooding and knowledge about how to reduce flood risk, ten years after the Calgary flood.

## Methodology

The survey was conducted by Advanis from June 6 to June 16, 2023 with 500 Calgarians via telephone survey. The average time to complete the survey was 19 minutes.

The survey was conducted using numbers from both landlines (23%) and cell phones (77%) to obtain a random and statistically representative sample of Calgarians.

The margin of error (MOE) for the total sample of  $n=500$  is  $\pm 4.1$  percentage points, 19 times out of 20.

Data were weighted based on the Statistics Canada 2021 Census of Population for age, gender, and city quadrant, as well as based on adapted statistics from the Statistics Canada 2019 Survey of Household Spending using a conservative extrapolation to estimate 2022 results for phone type ownership (cell phone only, landline only, and both).

Although the results are weighted, sample size for each question represents the number of actual respondents (i.e., unweighted  $n$ ).





# Key findings

# Key findings

## **Three-in-ten (31%) Calgarians have been impacted by wildfires or smoke in the past five years.**

- Fewer than one-in-ten (6%) Calgarians mentioned flooding due to extreme rain and very few (1%) mentioned river flooding.
- In contrast, one-quarter (25%) of Calgarians indicated being impacted by hailstorms.

## **Around seven-in-ten (72%) Calgarians are concerned about the impact of extreme weather events.**

- Nearly three-quarters (73%) of Calgarians indicated that they think wildfire and smoke events will increase in the next ten years.
- Only three-in-ten Calgarians expect more flooding from extreme rain (31%) or river flooding (30%) in the next decade.

## **Despite nearly one-half (47%) of Calgarians indicating they are concerned about river flooding, the majority (92%) feel safe from river flooding, and many (83%) know their related risks.**

- Most Calgarians (87%) agree that Calgary is in a better position to respond to flooding today than in 2013.
- There is a marked increase in knowledge between Calgarians who lived in Calgary during the 2013 floods compared to those who did not regarding knowledge of their own risk of river flooding (86% vs. 71%, respectively) and where to find information to prepare for river flooding (75% vs. 48%).

## Key findings (continued)

### **There are differences in understanding of risk and behaviours associated with flooding based on quadrant of the city a resident is from.**

- Calgarians from the southeast (95%) and northwest (93%) are more likely to agree that they feel safe from river flooding compared to Calgarians from the southwest (86%); however, Calgarians in the southwest (42%) are more likely to have overland flood insurance than Calgarians from the northwest (27%) or northeast (26%). This may be an indication that residents of southwest communities are attempting to take the precautions needed to address these concerns.

### **Six-in-ten (60%) of Calgarians would like to do more to lower their risk of future flood damage.**

- When asked about personal preparation for river or basement flooding, there are differences between preparation methods for renters and homeowners. Renters (39%) are more likely than homeowners to have a grab and go bag. In contrast, homeowners (45%) are more likely to have personal belongings in a waterproof bin or out of the basement than renters.

### **Tenure in the city appears to impact Calgarians' access to social supports in the community in case of an emergency like a flood.**

- Individuals who have lived in Calgary for less than 10 years (20%) are more likely to disagree that they have people they feel comfortable asking for help during an emergency like a flood compared to those who have lived in Calgary for 11 to 20 years (5%) or more than 20 years (8%).

## Key findings (continued)

### **Cost may be a factor preventing Calgarians from taking further personal action to lower their flood risk.**

- A majority of (78%) Calgarians agree that it is worth the effort to take personal action to lower their future risk of flood, but only a small majority (56%) of Calgarians indicated that they have the money that would be required to take personal action to lower their risk of future flood damage.

### **Nearly all Calgarians (92%) trust flood-related information provided by The City.**

- Calgarians also put a lot of trust in academic institutions (91%), not-for-profit organizations (90%) when it comes to flood-related information.

### **Calgarians (77%) would prefer to receive resources to prepare for flooding via The City of Calgary website.**





# Detailed findings



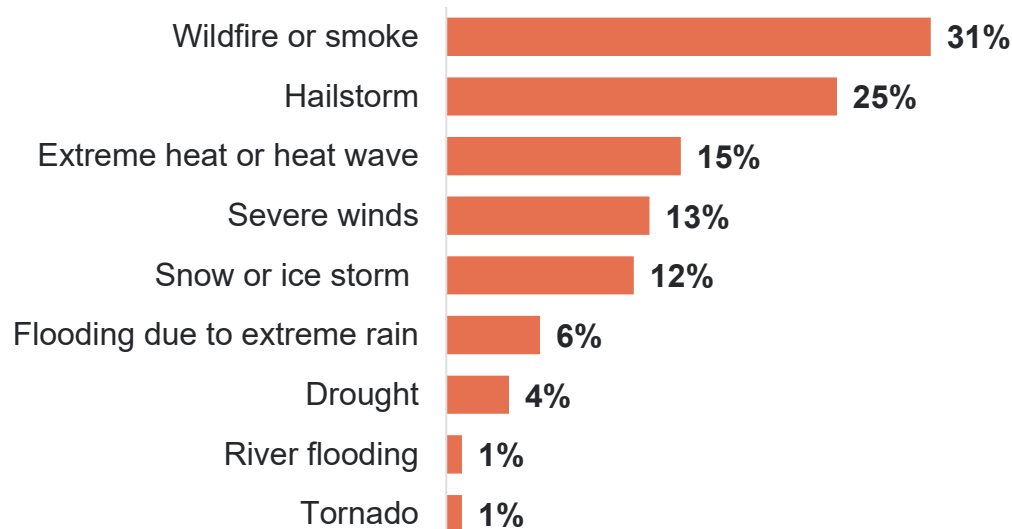


# Extreme weather events

# Extreme weather events

When asked about various types of extreme weather events, three-in-ten (31%) Calgarians say they have been impacted by wildfire/smoke. Being 'impacted' means experiencing damage, incurring costs, health impacts or injury as a result of the weather event in the past five years. It should be noted that during fieldwork, Calgary was being affected by wildfire smoke from northern Alberta. One-quarter (25%) indicate being impacted by hailstorms, while fewer than two-in-ten have been impacted by other types of extreme weather events. Flooding is mentioned by very few Calgarians.

## Proportion of Calgarians impacted by extreme weather events



Q. In the past 5 years, have you experienced damage, costs, health impacts, or injury because of any of the following extreme weather events?

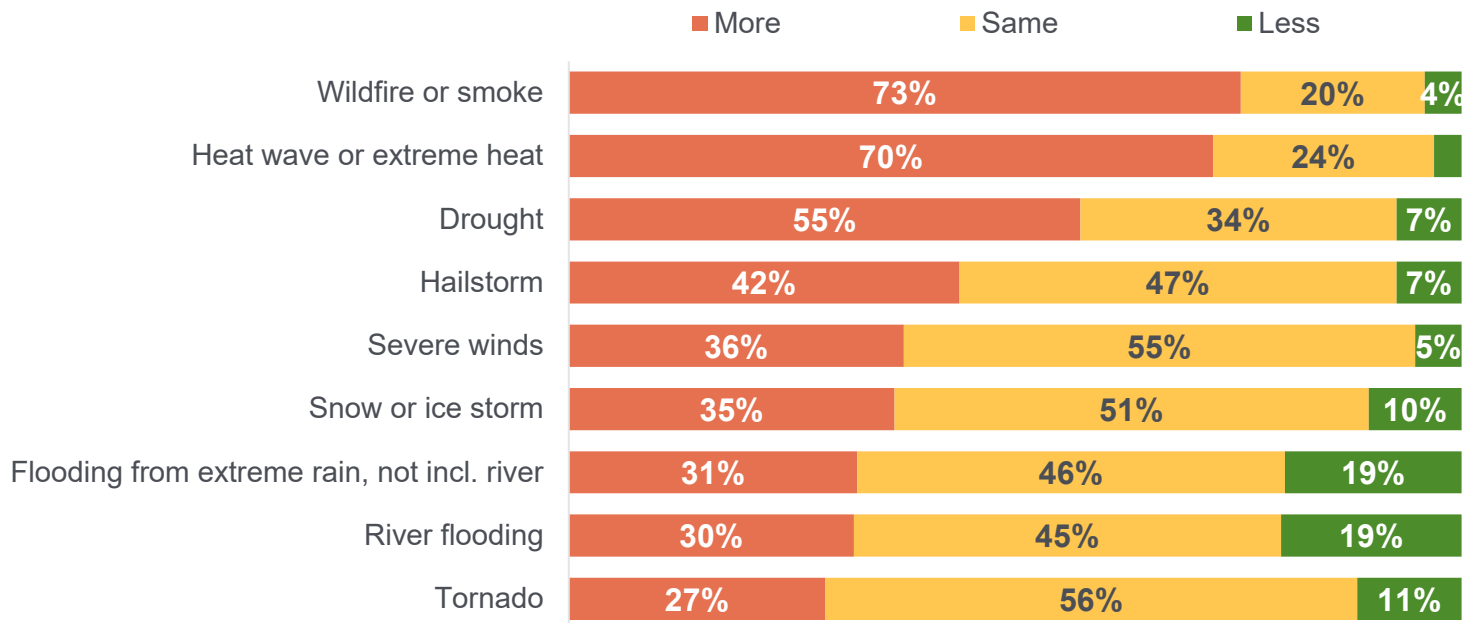
Base: Valid respondents (n=500)

Multiple responses allowed

# Extreme weather predictions

Nearly three-quarters (73%) of Calgarians think there will be more wildfires/smoke in the next decade, nearly as many (70%) think there will be more heat waves or extreme heat events, and around one-half (55%) think there will be more drought. Three-in-ten Calgarians expect flooding from extreme rain and river flooding to increase (31% and 30%, respectively).

## Expectations for future extreme weather events



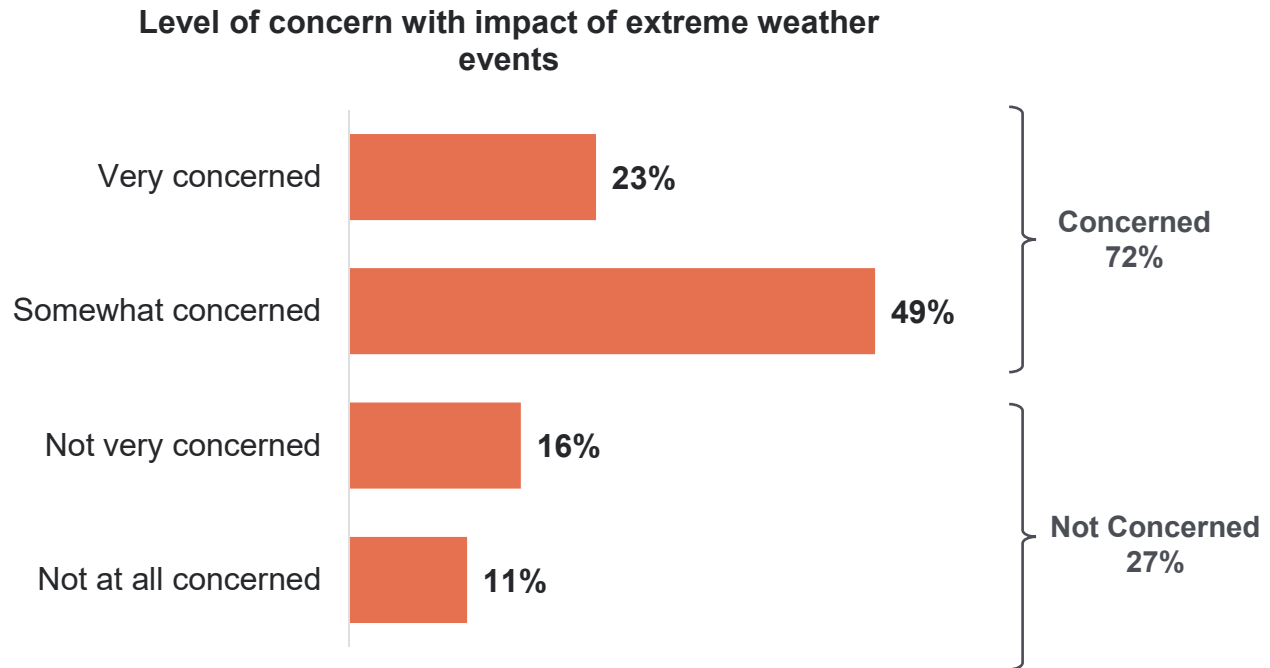
Q. Please tell me if you think there will be more, less, or about the same amount of each of the following extreme weather events over the next 10 years.  
Base: Valid respondents (n=500)

≤3% labels not shown



# Level of concern: Extreme weather events

Seven-in-ten (72%) Calgarians are concerned about the impact extreme weather events are having, or might have, on their life, including nearly one-quarter (23%) who are 'very' concerned.



Q. How concerned are you about the impacts that extreme weather events are having, or might have, on your life? Would you say you are ...

Base: Valid respondents (n=500)

# Detailed findings: Extreme weather events

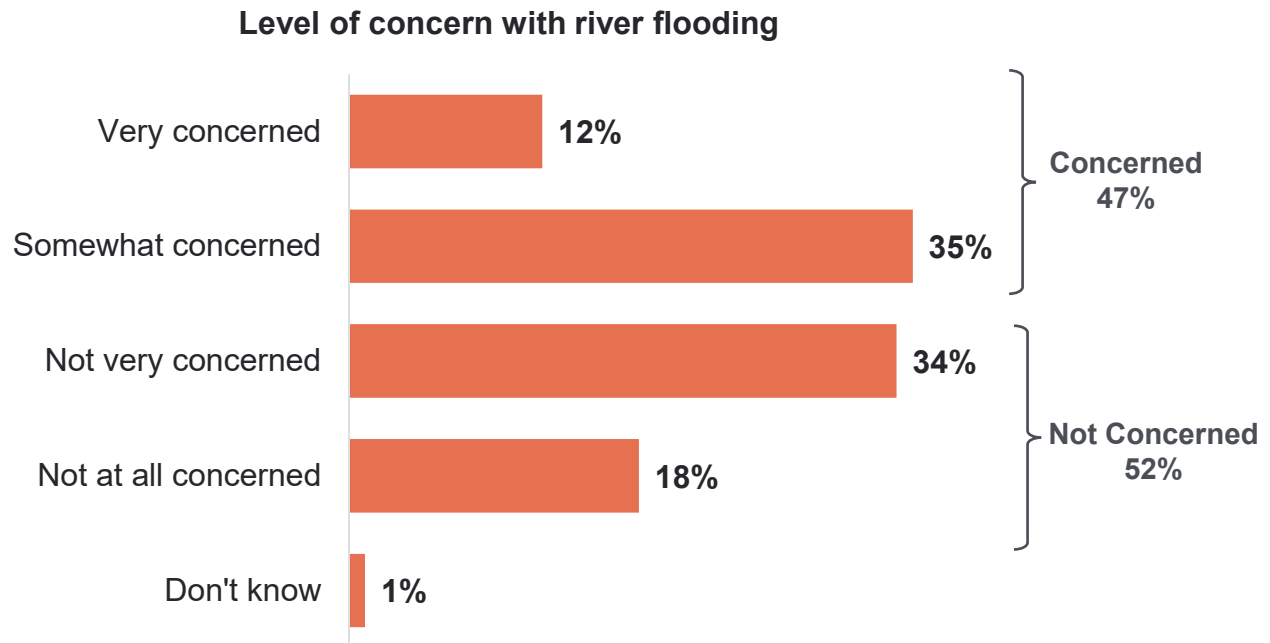
- The most common extreme weather event experienced by Calgarians is wildfire or smoke (31%), an unsurprising finding considering this survey was in field while wildfires were pushing smoke into Calgary from northern Alberta.
  - One-quarter (25%) indicate being impacted by hailstorms, while fewer than two-in-ten have been impacted by other types of extreme weather events.
  - Flooding due to extreme rain is mentioned by 6% of Calgarians, while river flooding is mentioned by only 1%.
- More than one-half of Calgarians expect to see increases in wildfires/smoke (73%), heatwaves/extreme heat (70%) and drought (55%) over the next ten years.
  - Four-in-ten Calgarians expect to see more hailstorms in the next decade, while 36% anticipate more severe winds and 35% expect to see snow or ice storms more frequently.
  - Flooding, whether from extreme rain or from the river, is the extreme weather event that Calgarians are most likely to expect less of. Two-in-ten (19%) feel there will be less flooding in the next ten years.
  - The majority of Calgarians (56%) expect the prevalence of tornados to remain stable.
- Calgarians are concerned about the impact of extreme weather events has or may have on their life, with more than seven-in-ten (72%) reporting some level of concern.
  - Nearly one-quarter (23%) indicate they are very concerned.
  - Women are more concerned than men about the impact extreme weather events may have on their life (79% vs. 66%, respectively).



# River flooding

# Level of concern: River flooding

Nearly one-half of Calgarians are concerned about river flooding in Calgary.



Q. And overall, how concerned are you about river flooding in Calgary?

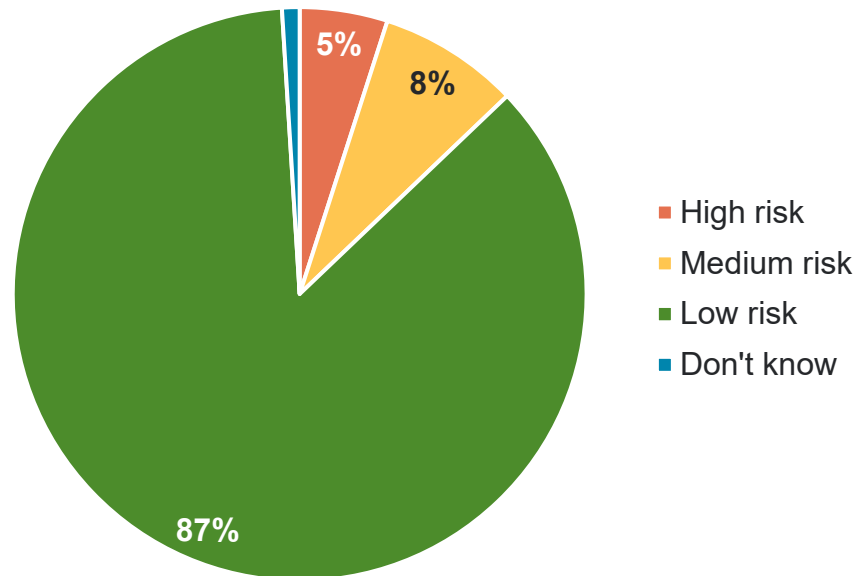
Base: Valid respondents (n=500)



# Level of risk: River flooding

A majority of Calgarians (87%) consider their own personal risk for potential river flooding to be low. Eight percent feel their risk is medium. Only 5% of Calgarians consider their risk for potential river flooding is high, based on where they live.

Self-reported risk of river flooding at residence



Q. Thinking about where you live today, would you say your risk for potential river flooding is high, medium, or low?

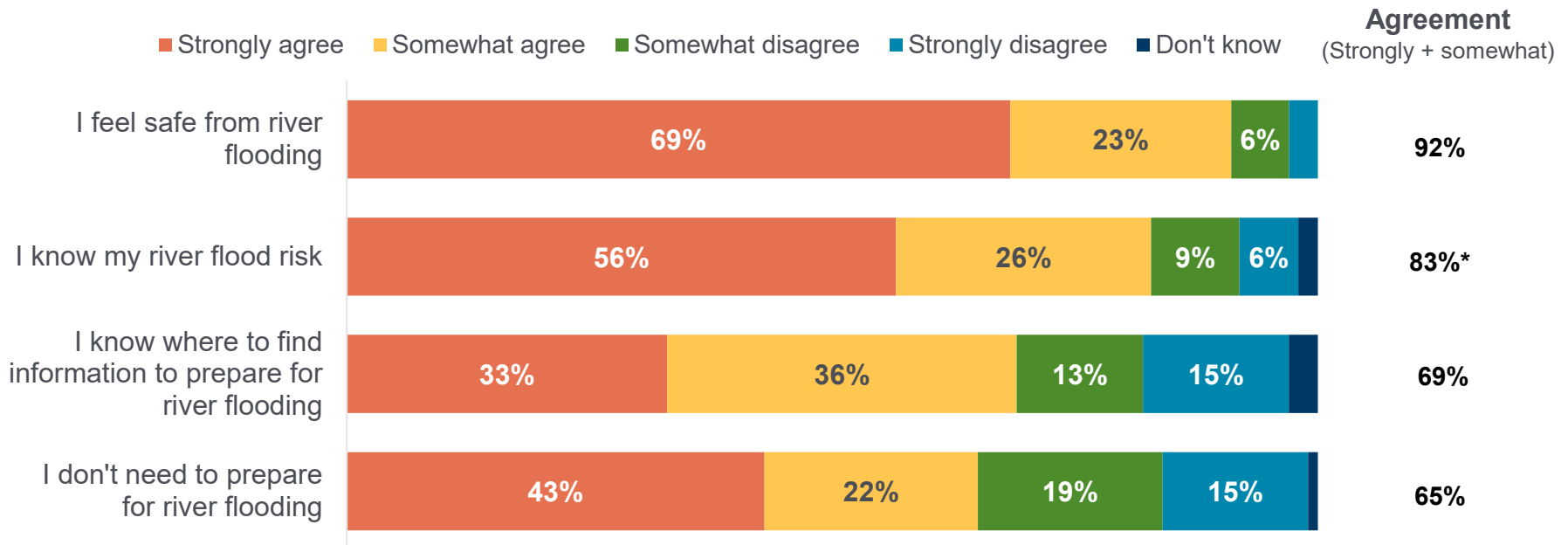
Base: Valid respondents (n=500)

≤3% labels not shown

# Perceptions of river flood risk and preparedness

A large majority of Calgarians (92%) feel safe from river flooding, and many (83%) state they know their river flood risk. Seven-in-ten (69%) know where to find information to prepare for river flooding, while two-thirds (65%) feel they don't need to prepare for river flooding.

## Perceptions of flood risk and preparedness



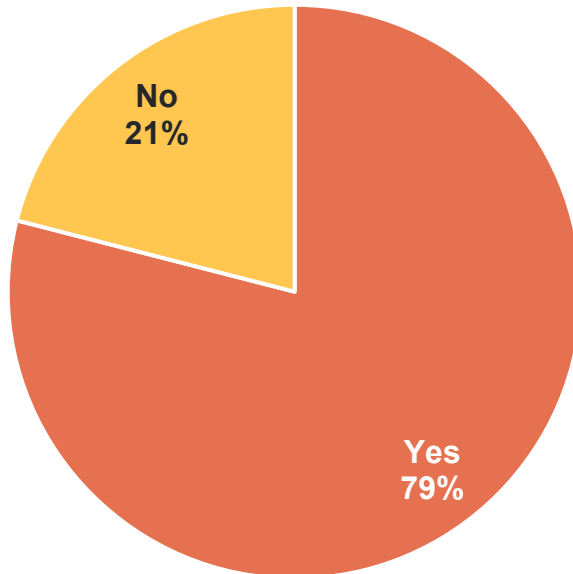
Q. For each of the following statements, please let me know if you strongly agree, somewhat agree, somewhat disagree, or strongly disagree.

Base: Valid respondents (n=500)

# 2013 Calgary flood

Eight-in-ten respondents lived in Calgary during the 2013 Calgary flood. Of those, 6% were personally affected by the 2013 flood as the residence they lived in at the time flooded.

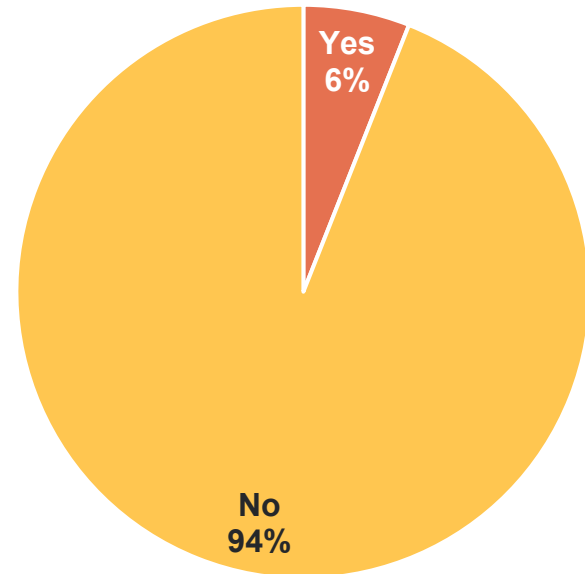
**Lived in Calgary in 2013**



Q. The flood of June 2013 was the largest flood in Calgary since 1932. Did you live in Calgary during the 2013 flood?

Base: Valid respondents (n=500)

**Residence was flooded**

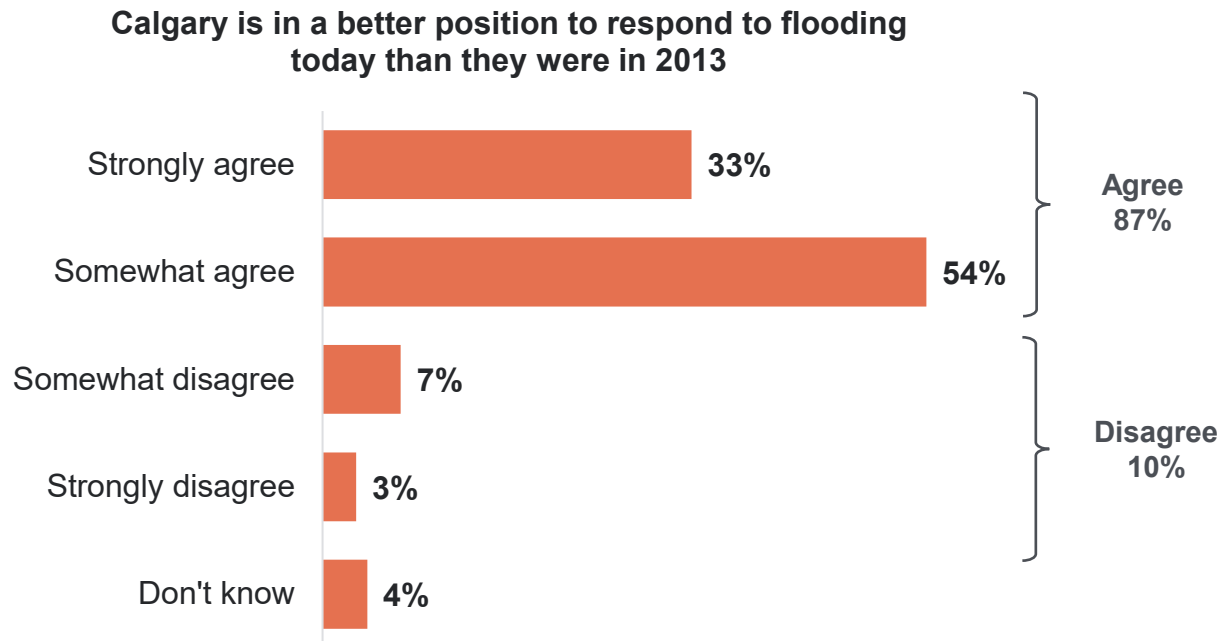


Q. Did the residence you lived in at the time of the flood get flooded?

Base: Respondents who lived in Calgary in 2013 (n=414)

# Calgary flood preparedness

Most Calgarians (87%) agree that Calgary is in a better position to respond to flooding today than they were in 2013, with one-third (33%) 'strongly' agreeing.



Q. Based on anything you may have seen, read or heard, to what extent do you agree or disagree that Calgary is in a better position to respond to flooding today than they were in 2013? Would you say you...  
Base: Valid respondents (n=500)



# Detailed findings

- Calgarians are divided on their level of concern with river flooding with nearly one-half (47%) concerned and around half (52%) not concerned about this extreme weather event.
  - Of note, those who are not concerned about river flooding are more likely than those concerned about river flooding to agree that they do not need to be prepared for river flooding (72% vs. 58% respectively).
  - In contrast, those who are concerned about river flooding are more likely to agree that it is worth the effort to take personal action at lowering their risk of future flood damage (87% vs. 69%) and that they would like to do more to lower their risk of future flood damage (66% vs. 53%) than those who are not concerned about flooding.
  - Those who are concerned about river flooding are more likely to see the worth in taking personal action to lower their risk of future flood damage than those who are not concerned about river flooding (87% vs. 69%, respectively).
- The majority (92%) of Calgarians feel safe from river flooding and many (83%) feel they know their river flood risk.
  - Those who have lived in Calgary for 11 to 20 years (77%) and more than 20 years (73%) are more likely to agree that they know where to find information to prepare for river flooding than those who have lived in Calgary for 10 years or less (48%). They are also more likely to feel they do not need to prepare for river flooding (72% 11-20 years and 69% >20 years vs. 47% <10 years).
  - Those who own their own home are more likely to agree that they do not need to prepare for river flooding than those who rent (68% vs. 54%, respectively), possibly because they are less likely to live in flood-prone areas.

## Detailed findings (continued)

- The majority of respondents (79%) lived in Calgary during the 2013 flood; however, only a small minority (6%) were affected by the flood.
  - Those who lived in Calgary during the flood are more likely to agree that they know the risks of river flooding (86% vs. 71%), know where to find information to be prepared for river flooding (75% vs. 48%) compared to those who did not live in Calgary during the 2013 floods. However, they are also more likely to agree they don't need to prepare for river flooding (70% vs. 48%).
- A large majority of Calgarians (87%) agree that Calgary is in a better position to respond to flooding today than in 2013.
  - Those who trust The City are more likely to think that The City is in a better position to respond to flooding now than in 2013 (88% vs. 70% of those who do not trust The City).

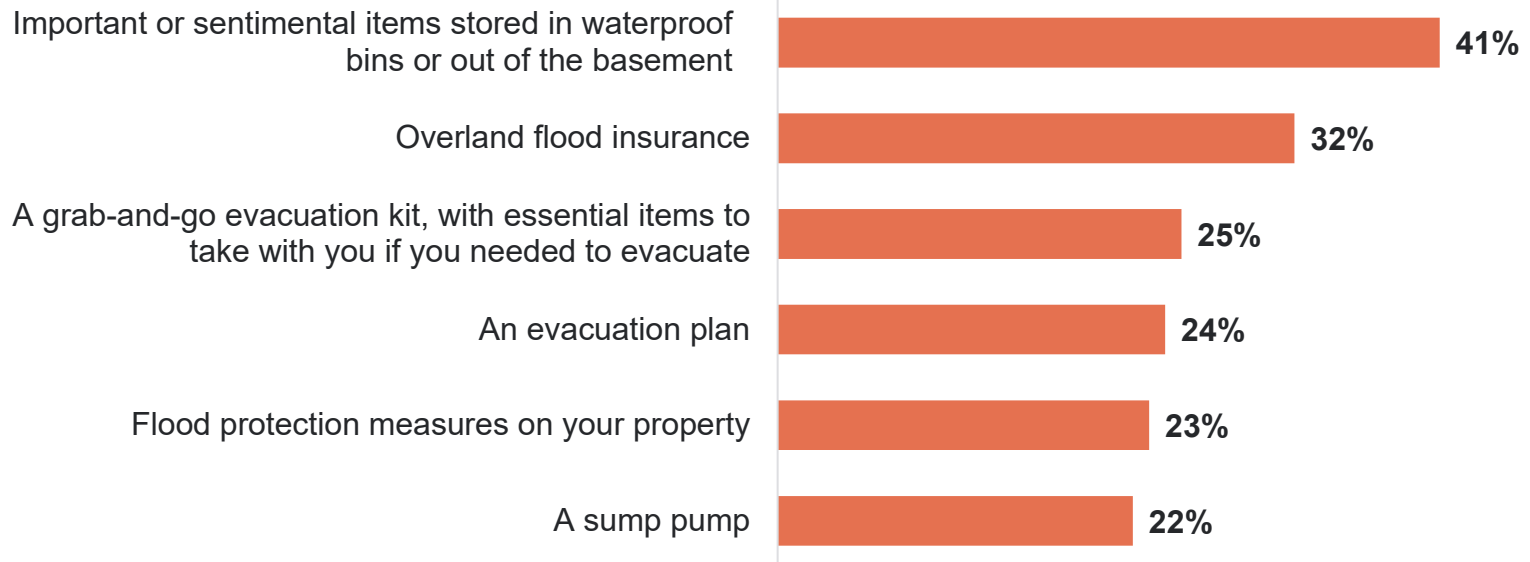


# Personal flood preparedness

# Personal flood mitigation measures

With the exception of storing important items in a safe place, each of the main flood preparedness measures are reported by less than one-third of Calgarians.

## Flood mitigation measures taken



Q. In preparation for river or basement flooding, do you have ... ?  
Base: Valid respondents (n=500)

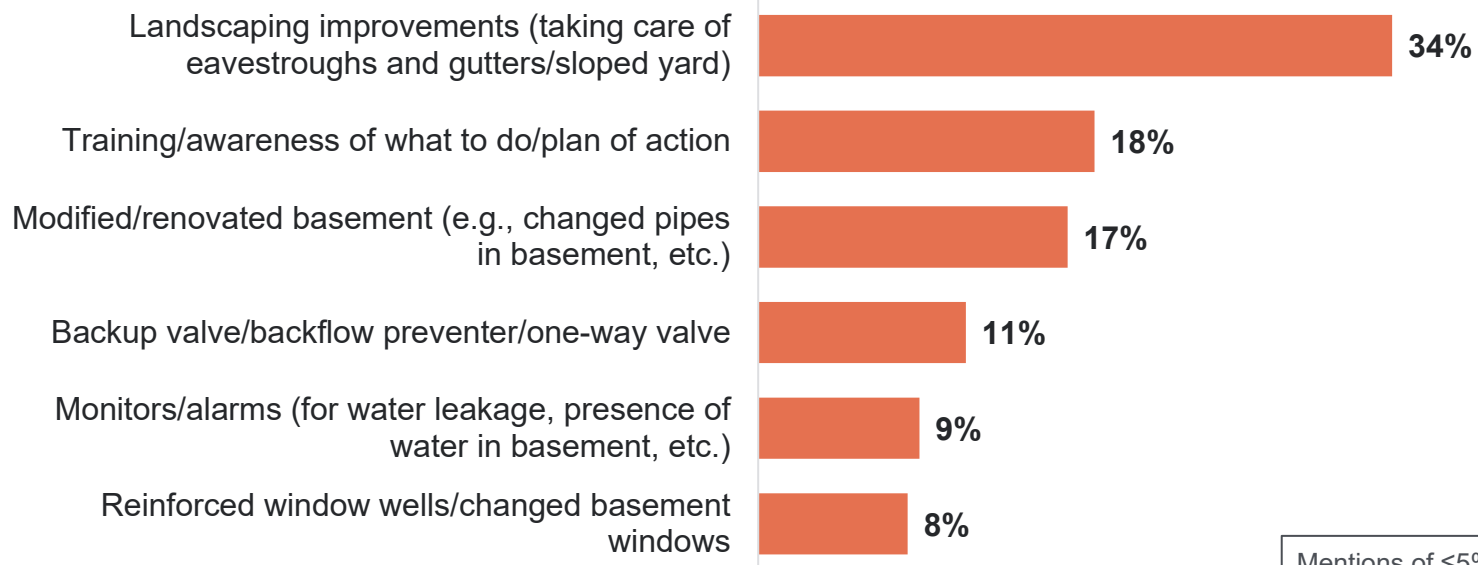
Multiple responses allowed



# Additional flood mitigation measures

Of those Calgarians that indicate they took additional flood mitigation measures, other than those tested, the most commonly mentioned mitigation is landscaping improvements (34%).

## Additional flood mitigation measures mentioned



Mentions of  $\leq 5\%$  are not shown

Multiple responses allowed

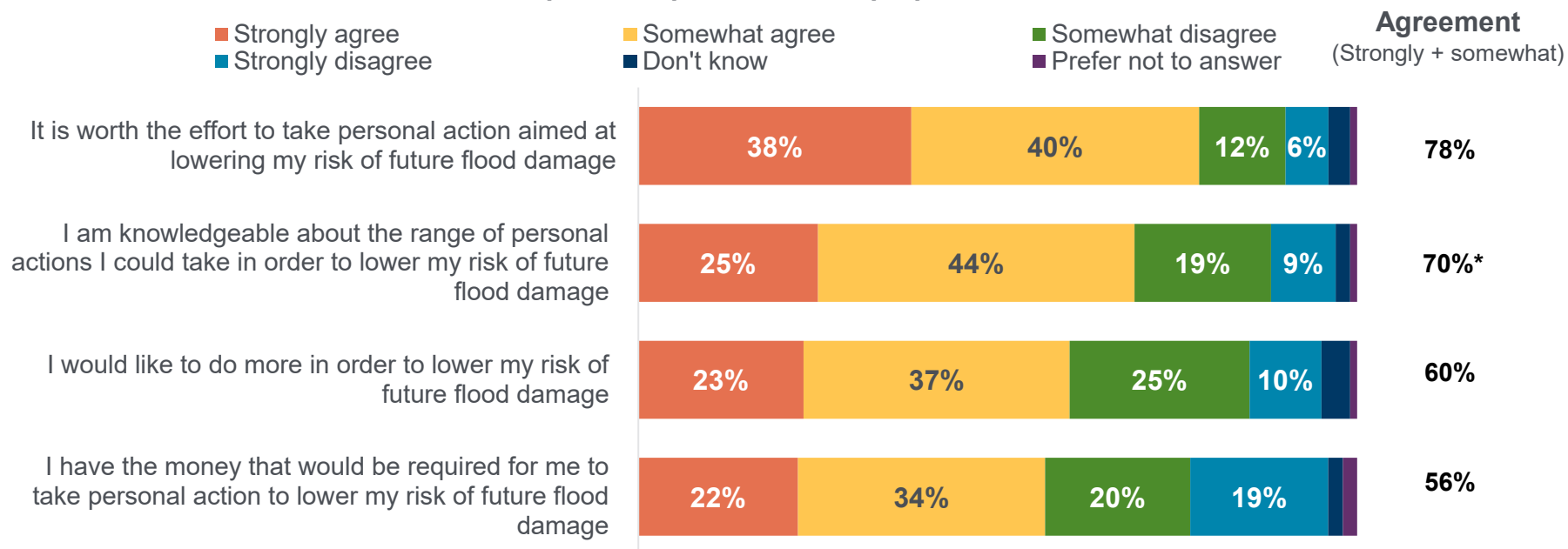
Caution: Small sample size

Q. Have you taken any other actions to prepare for potential river or basement flooding? (Specify)  
Base: Valid respondents (n=65)

# Perceptions of personal flood preparedness

Most Calgarians agree that efforts to lower their risk of future flood damage are worthwhile (78%) and that they have the knowledge to do so (70%). Six-in-ten (60%) would like to do more to lower their risk, while just over half (56%) feel they do not have the money to do so.

## Perceptions of personal flood preparedness



Q. For each of the following statements, please let me know if you strongly agree, somewhat agree, somewhat disagree, or strongly disagree.

Base: Valid respondents (n=500)

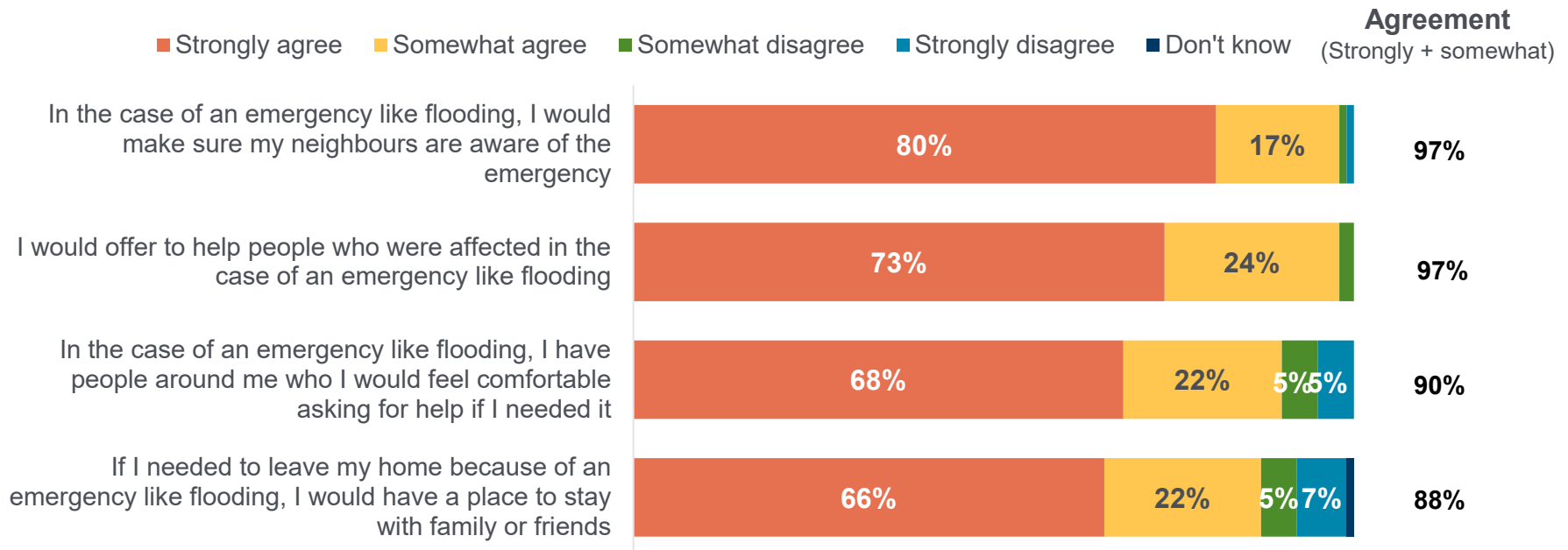
≤3% labels not shown

\*Rounding

# Community support in times of flooding

Nearly all Calgarians (97%) would ensure their neighbours are aware in the event of an emergency and the same proportion would offer help to people impacted by an emergency such as flooding. Slightly fewer, though still a large majority feel they have people they could ask for help if they needed it during an emergency (90%) and that they would have a place to stay with friends or family if they needed to leave their home (88%).

## Community support for flooding



Q. For each of the following statements, please let me know if you strongly agree, somewhat agree, somewhat disagree, or strongly disagree.

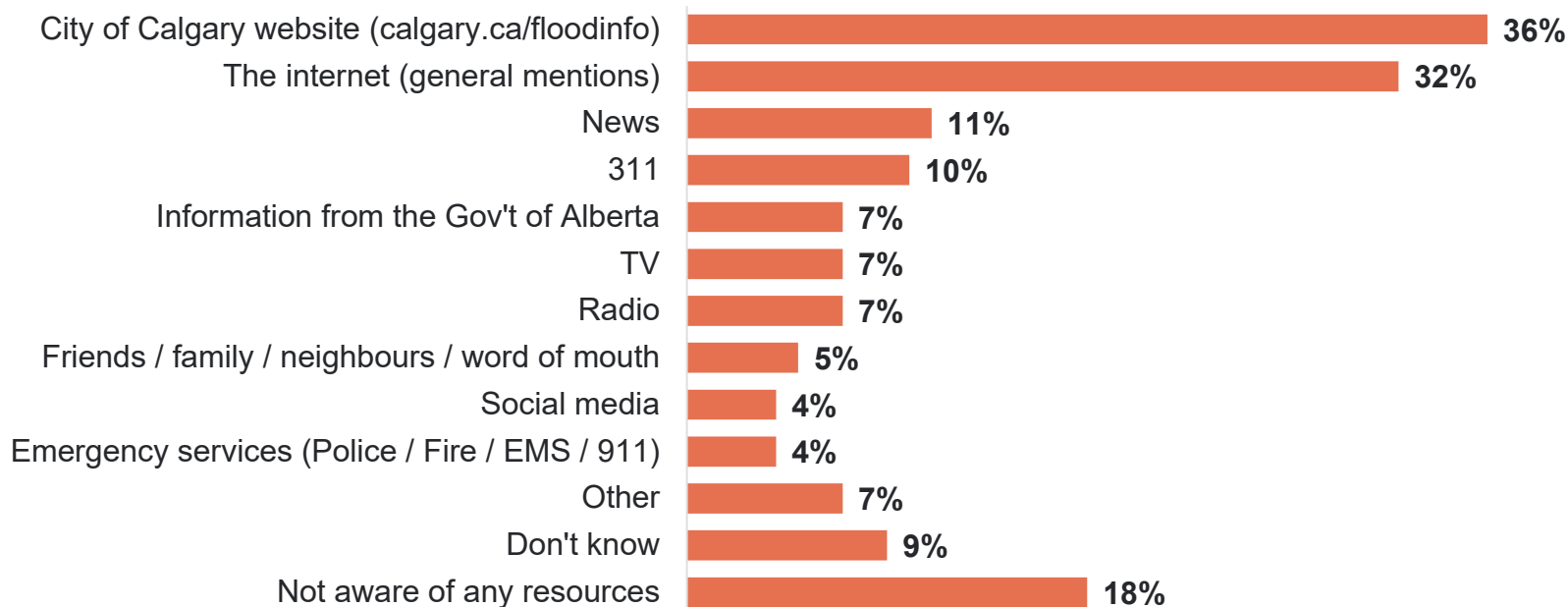
Base: Valid respondents (n=500)

≤3% labels not shown

# Awareness of flood readiness resources

The City of Calgary website is the most well-known flood preparedness resource, with 36% of Calgarians mentioning it as a source they are aware of. The internet in general is mentioned by nearly as many Calgarians (32%). Nearly one-fifth (18%) of Calgarians are not aware of any flood readiness resources.

## Awareness of flood readiness resources



Q. What resources are you aware of that provide information to help you be more prepared for potential river flooding at your property or handle other disruptions caused by potential river flooding in our city?

Base: Valid respondents (n=500)

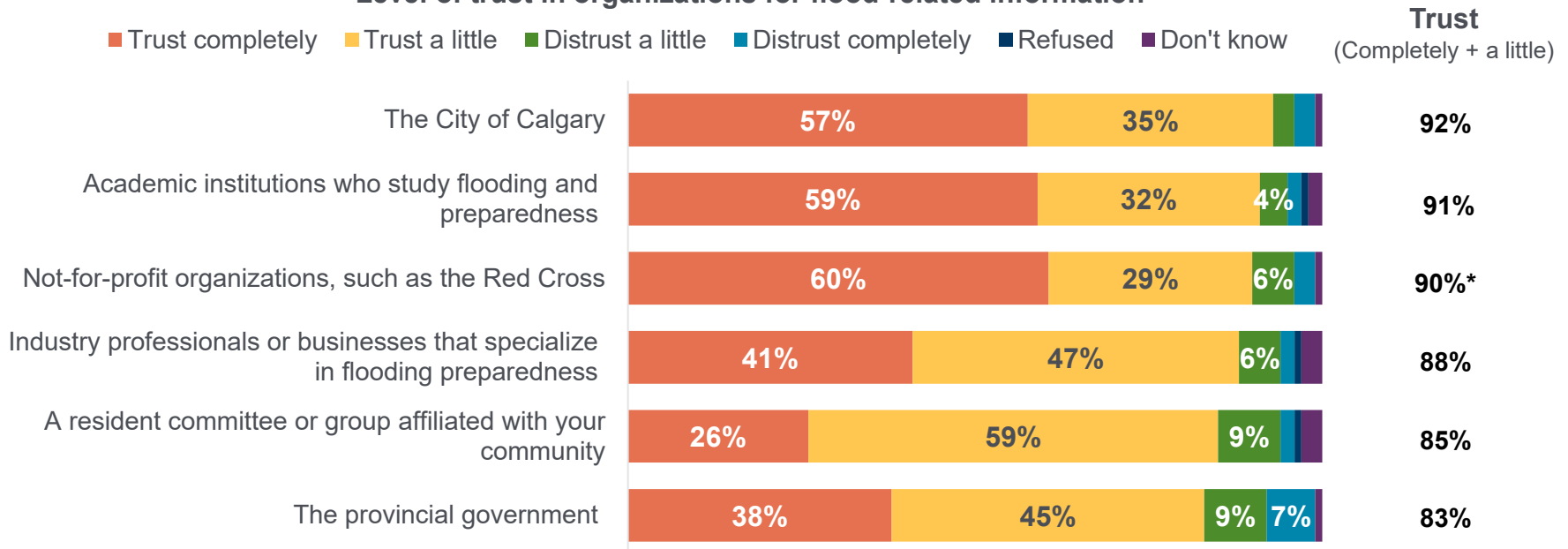
Multiple responses allowed

Mentions of ≤3% are not shown

# Level of trust in organizations

Trust in The City of Calgary when it comes to reliable information about flooding is very high, with 92% of Calgarians trusting The City in this regard. Calgarians also have a lot of trust in academic institutions who study flooding and preparedness (91%) and not-for-profit organizations such as the Red Cross (90%).

## Level of trust in organizations for flood-related information



Q. Please let me know how much you would trust or not trust each of these to provide you with reliable information about the risks of potential river flooding and how to prepare for potential river flooding. Starting with .... Would you say ...

Base: Valid respondents (n=500)

\*Rounding

≤3% labels not shown



# Preferred channels

Three-quarters (77%) of Calgarians selected The City's website or Calgary.ca, as the most preferred channel for receiving flood related information. Online videos or tutorials was selected by 58% of Calgarians and email newsletters and a mobile app were selected by more than one-half of Calgarians as a preferred source for flood-related resources (52% and 51%, respectively).

## Preferred channels for flood-related information



Q. If The City were to develop additional resources with information about how to prepare for potential river flooding and to lower your risk of future flood damage, how would you prefer that they make those resources available to you?

Base: Valid respondents (n=500)

Multiple responses allowed

# Detailed findings: Personal flood preparedness

- There are differences between groups noted when in-depth analysis was conducted on individual flood mitigation measures.
  - Renters are more likely than homeowners to have a grab and go bag (39% vs. 20%, respectively). In contrast, homeowners are more likely to have personal belongings in a waterproof bin or out of the basement than renters (45% vs. 33%).
- There are differences in understanding of risk and behaviours associated with flooding based on quadrant of the city a resident is from. This may be influenced by a variety of factors such as living in a location that may be more susceptible to river flooding or living in a more affluent quadrant of the city.
  - For example, Calgarians from the southeast (95%) and northwest (93%) are more likely to agree that they feel safe from river flooding compared to Calgarians from the southwest (86%); however, Calgarians in the southwest (42%) are more likely to have overland flood insurance than Calgarians from the northwest (27%) or northeast (26%). This may be an indication that residents of southwest communities are attempting to take the precautions needed to address these concerns.
- Six-in-ten (60%) Calgarians would like to do more to lower their risk of future flood damage.
  - Females are more likely to agree that they would like to do more to lower their risk of future floods compared to males (66% vs. 53%, respectively). However, females are more likely to disagree that they have the funds required to take personal action to lower personal flood risks (44% vs. 34% of males).
  - Younger Calgarians are also more likely to want to do more to lower their risk than older Calgarians (75% 18 to 34 vs. 57% 35 to 64 and 43% 65+).
  - Those who have been in the city for less than 10 years (77%) or 11 to 20 years (69%) would like to do more in order to lower the risk of future flood damage than those who have lived in Calgary for more than 20 years (51%).

# Detailed findings: Personal flood preparedness

- A majority of (78%) Calgarians agree that it is worth the effort to take personal action to lower their future risk of flood, but only a small majority (56%) of Calgarians indicated that they have the money that would be required to take personal action to lower their risk of future flood damage.
  - Calgarians whose annual income was \$135,000 or more (72%) are more likely to agree that they had the money required to take personal action to lower their future risk of flooding compared to those who make less than \$45,000 a year (30%), between \$45,000 and \$75,000 (49%), and those who earn \$75,000 to less than \$105,000 a year (48%).
  - Similarly, individuals who own their own home (63%) are more likely to report having enough money to take personal action to lower their future flood risk than those who rent (37%). Renters (73%), however, are more likely to want to do more to lower their future flood risks compared to homeowners (55%).
  - Furthermore, those who were born in Canada (62%) are more likely to agree that they have the money that would be required to take personal action to lower their risk of future flood damage compared to those who were born outside of Canada (45%). Despite this, Calgarians who were born outside of Canada are more likely to agree they would like to do more to lower their risk of future flood damage (68% vs. 55% born in Canada).
  - Respondents without children in the household (60%) are more likely to agree that they have the money that would be required to take personal action to lower risk of future flood damage compared to those with children (47%).
- Those who lived in Calgary during the flood are more likely to agree that they are knowledgeable about the range of personal actions that can be taken to lower the risk of future flood damage than those who did not live in Calgary during the 2013 floods (74% vs. 56%, respectively).
- Nearly all Calgarians indicate that in case of an emergency like flooding, they would make sure their neighbours are aware of the emergency (97%) and that they would offer to help people who were affected by an emergency like flooding (97%).

# Detailed findings: Flood preparedness resources

- Tenure in the city appears to impact Calgarians access to social supports in the community.
  - Individuals who have lived in Calgary for less than 10 years (20%) are more likely to disagree that they have people they feel comfortable asking for help during an emergency like a flood compared to those who have lived in Calgary for 11 to 20 years (5%) or more than 20 years (8%).
  - Similarly, people who were born in Canada are more likely to have people they feel comfortable asking for help during an emergency (93% vs. 85% of Calgarians not born in Canada) and that they are more likely to have a place to stay with family and friends compared to those who were not born in Canada (94% vs. 77%).
- The vast majority of Calgarians trust the various sources of information on potential river flooding risks and preparation for potential river flooding. Nearly all Calgarians (92%) trust the information provided by The City.
  - Calgarians who have lived in Calgary for less than 10 years (99%) are more likely to trust information provided by The City than those who have lived in the city for 11 to 20 years (92%) and more than 20 years (90%).
  - Moreover, those who are concerned about river flooding are more likely to trust multiple sources than those who are not concerned about river flooding, including: The City of Calgary (96% vs. 89%, respectively), academic institutions who study flood preparedness (94% vs. 88%), not-for-profit organizations (94% vs. 86%), and residential committee or group affiliated with the community (89% vs. 82%).
- Three-quarters (77%) of Calgarians would prefer to receive resources to prepare for potential river flooding and to lower their future risk of floods from The City of Calgary website.
  - While those who are concerned about river flooding and those not concerned are equally likely to prefer The City's website, those with concerns about flooding would be more interested in receiving information through open houses/workshops than individuals who are not concerned (37% vs. 25%). The same is true of online videos or tutorials (65% concerned vs. 53% not concerned).
  - In addition, females are more likely to welcome resources on flood preparedness through mail (48% vs. 32% males) or email newsletters (57% vs. 47%).





# Respondent profile

# Respondent profile

## Children in household

Yes	31%
No	68%
Prefer not to answer	1%

## Seniors in household

Yes	26%
No	73%

## Disability in household

Yes – myself	12%
Yes – someone in my household	11%
No	79%
Prefer not to answer	1%

## Income

Less than \$30,000	4%
\$30,000 to < \$45,000	5%
\$45,000 to < \$60,000	6%
\$60,000 to < \$75,000	6%
\$75,000 to < \$90,000	7%
\$90,000 to < \$105,000	11%
\$105,000 to < \$120,000	5%
\$120,000 to < \$135,000	7%
\$135,000 to < \$150,000	5%
\$150,000 < \$175,000	8%
\$175,000 < \$200,000	6%
\$200,000 < \$225,000	4%
\$225,000 < \$250,000	3%
\$250,000 and over	5%
Don't know	7%
Prefer not to answer	10%

## Racialized

Yes	27%
No	70%
Prefer to self-describe	1%
Prefer not to answer	3%

## LGBTQ2S+ Community

Yes	7%
No	91%
Prefer not to answer	2%

## Born in Canada

Yes	66%
No	33%

# Respondent profile (continued)

# of people in Household	
Just myself	14%
2	35%
3 - 4	38%
5 or more	12%
Prefer not to answer	1%

Gender	
Female	50%
Male	49%
Prefer not to answer	1%
Prefer to self-describe	1%

Indigenous identity	
Yes – First Nations	1%
Yes – Métis	1%
Yes – Inuit	0%
Prefer to self-describe	0%
No	97%
Prefer not to answer	1%

# of Years Lived in Calgary	
Less than 5 years	10%
5 to 10 years	9%
11 to 20 years	20%
21 to 30 years	20%
More than 30 years	40%

Age	
18 to 24	10%
25 to 34	19%
35 to 44	17%
45 to 54	20%
55 to 64	14%
65 or older	19%

Born in Canada	
Yes	66%
No	33%

Residence	
Own	73%
Rent	24%
Other	3%

# Respondent profile (continued)

Quadrant	
Northwest	28%
Northeast	20%
Southwest	28%
Southeast	24%

Telephone	
Cellphone	91%
Landline	23%

Residence type	
Single detached house	66%
Duplex, triplex or fourplex	8%
Townhouse or rowhouse	7%
Apartment or apartment-style condominium	16%
Another type of multi-unit complex	2%
Don't know	1%

Education	
Did not complete high school or equivalent	4%
Completed high school or equivalent	17%
Completed a Registered Apprenticeship or other trades certificate or diploma	7%
Completed a college or other non-university certificate or diploma	17%
Or completed a university certificate, diploma or degree	54%
Prefer not to say	1%



Calgary



# Questionnaire



## Flood Preparedness Survey

City of Calgary

Generated on 2023-05-29 at 09:45:22 MT



## INTRODUCTION

## Intro

Hello, I'm \_\_\_\_\_ with Advanis, calling on behalf of The City of Calgary. We are conducting a study about flooding in Calgary and would like to include your input. Are you 18 years of age or older and do you currently live in Calgary?

*IF CREDIBILITY IS AN ISSUE OR IF RESPONDENT HAS A CONCERN SAY: If you wish to talk to a [City](#) official about this survey, we encourage you to contact The City at 311 and specifically mention the "2023 Perspectives on Calgary Survey". City Staff would be happy to address your concerns.*

*IF ASKED: The survey will take approximately 15 minutes.*

- ☐ 1 Yes
- ☐ 2 No, getting an adult *(Show if is landline ([advanis](#) = 1))*
- ☐ 3 No, refusal
- ☐ 4 No, callback
- ☐ 5 No, under 18 *(Show if is wireless ([advanis](#) = 2))*
- ☐ 6 No, does not live in Calgary

## QS7

Great! Your participation is voluntary and this call may be recorded for quality control purposes. The survey will take approximately 15 minutes and your responses will remain confidential, and you will not be personally identified. Any personal information collected in this survey is done so under the authority of the Freedom of Information and Protection of Privacy Act, Section 33(c) and is used solely for the review and improvement of City of Calgary programs and services.

If you have questions about the collection or use of your information, you can contact a City of Calgary Research Coordinator. Would you like me to provide you with their contact information?

- ☐ 1 Yes
- ☐ 2 No
- ☐ 3 Refusal
- ☐ 4 Call back later

QS7info *Show if QS7 Yes (QS7 = 1)*

You can contact a City of Calgary Research Coordinator via phone, email, or regular mail and mention the "2023 Perspectives on Calgary Survey". What contact information would you prefer?

**If phone:** 403-268-2798

**If email:** [research@calgary.ca](mailto:research@calgary.ca)

**If mail:** Research Coordinator, The City of Calgary, Mail code 8305, P.O. Box 2100, Station M, Calgary, AB Canada T2P 2M5

## QSEX

DO NOT ASK; RECORD GENDER

- ☐ 1 Male
- ☐ 2 Female

## QS4

Which of the following age groups do you belong to? Just stop me when I get to your age group.

- ☐ 1 18 to 19
- ☐ 2 20 to 24
- ☐ 3 25 to 34
- ☐ 4 35 to 44
- ☐ 5 45 to 54
- ☐ 6 55 to 64
- ☐ 7 65 to 74
- ☐ 8 75 and older
- ☐ 9 [\[DO NOT READ\]](#) Prefer not to say

## QS1

Can you tell me which quadrant of the city you live in?

[WAIT FOR RESPONSE - READ LIST TO CLARIFY IF NEEDED.](#)

- ☐ 1 Southwest
- ☐ 2 Southeast
- ☐ 3 Northwest
- ☐ 4 Northeast
- ☐ 5 [\[DO NOT READ\]](#) Prefer not to say
- ☐ 6 [\[DO NOT READ\]](#) Does not live in Calgary

# Questionnaire (continued)

## MAIN SURVEY

### Q1

In the past 5 years, have you experienced damage, costs, health impacts, or injury because of any of the following extreme weather events?

1. Snow or ice storm \*
2. Hailstorm \*
3. Severe winds \*
4. River flooding
5. Flooding due to extreme rain, not including river flooding
6. Drought \*
7. Tornado \*
8. Heat wave or extreme heat \*
9. Wildfire or smoke \*

*Levels marked with \* are randomized*

- ☐ 1 Yes  
☐ 2 No  
☐ 9 [DO NOT READ] Don't know  
☐ 10 [DO NOT READ] Prefer not to answer

### Q2

Please tell me if you think there will be more, less, or about the same amount of each of the following extreme weather events over the next 10 years.

1. Snow or ice storm \*
2. Hailstorm \*
3. Severe winds \*
4. River flooding
5. Flooding due to extreme rain, not including river flooding
6. Drought \*
7. Tornado \*
8. Heat wave or extreme heat \*
9. Wildfire or smoke \*

*Levels marked with \* are randomized*

- ☐ 1 More  
☐ 2 Less  
☐ 3 About the same  
☐ 4 [DO NOT READ] Don't know  
☐ 5 [DO NOT READ] Prefer not to answer

### A7

How concerned are you about the impacts that extreme weather events are having, or might have, on your life? Would you say you are ...

- ☐ 1 Not at all concerned  
☐ 2 Not very concerned  
☐ 3 Somewhat concerned  
☐ 4 Very concerned  
☐ 5 [DO NOT READ] Don't know  
☐ 6 [DO NOT READ] Prefer not to answer

### A1

And overall, how concerned are you about river flooding in Calgary?

#### REPEAT SCALE IF NEEDED

- ☐ 1 Not at all concerned  
☐ 2 Not very concerned  
☐ 3 Somewhat concerned  
☐ 4 Very concerned  
☐ 5 [DO NOT READ] Don't know  
☐ 6 [DO NOT READ] Prefer not to answer

### A2

Thinking about where you live today, would you say your risk for potential river flooding is high, medium, or low?

- ☐ 1 High  
☐ 2 Medium  
☐ 3 Low  
☐ 4 [DO NOT READ] None  
☐ 5 [DO NOT READ] Don't know  
☐ 6 [DO NOT READ] Prefer not to answer

# Questionnaire (continued)

## A3

For each of the following statements, please let me know if you strongly agree, somewhat agree, somewhat disagree, or strongly disagree.

1. I know my river flood risk \*
2. I know where to find information to prepare for river flooding  
*If needed: If respondent says they don't live in a flooding zone, probe by asking them 'Ignoring for a second where you live, if you had to find information to prepare for river flooding, to what degree would you say you agree or disagree that you know where to look?'*
3. I feel safe from river flooding \*
4. I don't need to prepare for river flooding \*

*Levels marked with \* are randomized*

- ☐ 1 Strongly agree
- ☐ 2 Somewhat agree
- ☐ 3 Somewhat disagree
- ☐ 4 Strongly disagree
- ☐ 5 [DO NOT READ] Don't know
- ☐ 6 [DO NOT READ] Prefer not to answer

## A4

The flood of June 2013 was the largest flood in Calgary since 1932. Did you live in Calgary during the 2013 flood?

- ☐ 1 Yes
- ☐ 2 No
- ☐ 3 [DO NOT READ] Don't know
- ☐ 4 [DO NOT READ] Prefer not to answer

## A5 Show if Lived in Calgary during the 2013 flood (A4 = 1)

Did the residence you lived in at the time of the flood get flooded?

- ☐ 1 Yes
- ☐ 2 No
- ☐ 3 [DO NOT READ] Don't know
- ☐ 4 [DO NOT READ] Prefer not to answer

## A8

Based on anything you may have seen, read or heard, to what extent do you agree or disagree that Calgary is in a better position to respond to flooding today than they were in 2013? Would you say you ...

- ☐ 1 Strongly agree
- ☐ 2 Somewhat agree
- ☐ 3 Somewhat disagree
- ☐ 4 Strongly disagree
- ☐ 5 [DO NOT READ] Don't know
- ☐ 6 [DO NOT READ] Prefer not to answer

## B1

In preparation for river or basement flooding, do you have ...?

1. An evacuation plan \*
2. A grab-and-go evacuation kit, with essential items to take with you if you needed to evacuate \*
3. A sump pump *IF NEEDED: A small pump installed in the lowest part of a basement to remove water that has accumulated and direct it away from the home \**
4. Important or sentimental items stored in waterproof bins or out of the basement \*
5. Overland flood insurance \*
6. Flood protection measures on your property *IF NEEDED: things you can do to prevent flood water from entering your home, like raising the elevation of your yard, raising your main floor elevation, installing window well covers, purchasing flood tubes or a demountable flood wall that can be set up before a flood,*

*Levels marked with \* are randomized*

- ☐ 1 Yes
- ☐ 2 No
- ☐ 3 [DO NOT READ] Don't know
- ☐ 4 [DO NOT READ] Not applicable
- ☐ 5 [DO NOT READ] Prefer not to answer

## B2

Have you taken any other actions to prepare for potential river or basement flooding?

*If they say Yes, Probe for what actions were taken*

- ☐ 1 Yes, specify: \_\_\_\_\_
- ☐ 2 No
- ☐ 3 DO NOT READ: Don't know

# Questionnaire (continued)

## B6

For each of the following statements, please let me know if you strongly agree, somewhat agree, somewhat disagree, or strongly disagree.

1. It is worth the effort to take personal action aimed at lowering my risk of future flood damage \*
2. I am knowledgeable about the range of personal actions I could take ~~in order to~~ lower my risk of future flood damage \*
3. I have the money that would be required for me to take personal action to lower my risk of future flood damage \*
4. I would like to do more ~~in order to~~ lower my risk of future flood damage \*

*Levels marked with \* are randomized*

- ☐ 1 Strongly agree  
☐ 2 Somewhat agree  
☐ 3 Somewhat disagree  
☐ 4 Strongly disagree  
☐ 5 **DO NOT READ: Not applicable/no risk of flooding**  
☐ 6 **DO NOT READ: Don't know**

## D1

The following question is about community support. For each of the following statements, please let me know to what extent you agree or disagree.

**REPEAT SCALE IF NEEDED**

1. In the case of an emergency like flooding, I have people around me who I would feel comfortable asking for help if I needed it \*
2. In the case of an emergency like flooding, I would make sure my ~~neighbours~~ are aware of the emergency \*
3. I would offer to help people who were affected in the case of an emergency like flooding \*
4. If I needed to leave my home because of an emergency like flooding, I would have a place to stay with family or friends \*

*Levels marked with \* are randomized*

- ☐ 1 Strongly agree  
☐ 2 Somewhat agree  
☐ 3 Somewhat disagree  
☐ 4 Strongly disagree  
☐ 5 **DO NOT READ: Don't know**

## C2a

What resources are you aware of that provide information to help you be more prepared for potential river flooding at your property or handle other disruptions caused by potential river flooding in our city?

**DO NOT READ LIST. SELECT ALL MENTIONED.**

- ☐ 1 City of Calgary website (calgary.ca/~~floodinfo~~)  
☐ 2 City of Calgary River Flooding ~~Storymap~~  
☐ 3 City of Calgary Flood Readiness Guide  
☐ 4 Calgary Emergency Management Agency checklists for emergency preparedness  
☐ 6 Information from the Government of Alberta on flood preparedness and recovery  
☐ 7 Alberta Emergency Alert app  
☐ 13 311  
☐ 19 The internet (general mentions)  
☐ 14 Social media  
☐ 15 News  
☐ 16 TV  
☐ 17 Radio  
☐ 10 Other (specify): \_\_\_\_\_  
☐ 11 Not aware of any resources *(Exclusive)*  
☐ 12 Don't know *(Exclusive)*  
☐ 18 Prefer not to answer

## C3

Next, I will read out a list of different types of organizations. Please let me know how much you would trust or not trust each of these to provide you with reliable information about the risks of potential river flooding and how to prepare for potential river flooding. Starting with .... Would you say ...

1. The City of Calgary \*
2. The provincial government \*
3. Not-for-profit organizations, such as the Red Cross \*
4. Industry professionals or businesses that specialize in flooding preparedness \*
5. Academic institutions who study flooding and preparedness \*
6. A resident committee or group affiliated with your community \*

*Levels marked with \* are randomized*

- ☐ 1 Trust completely  
☐ 2 Trust a little  
☐ 3 Distrust a little  
☐ 4 Distrust completely  
☐ 5 **DO NOT READ: Refused**  
☐ 6 **DO NOT READ: Don't know**



# Questionnaire (continued)

## C4a

If The City were to develop additional resources with information about how to prepare for potential river flooding and to lower your risk of future flood damage, how would you prefer that they make those resources available to you? You can select more than one if you like.

*READ LIST. Select all that apply*

- ☐ 1 On the City of Calgary website \*
- ☐ 2 Through regular mail \*
- ☐ 3 At open houses or workshops \*
- ☐ 4 Through email newsletters \*
- ☐ 5 Online videos or tutorials \*
- ☐ 6 Through an App for mobile devices \*
- ☐ 7 Or another method (specify): \_\_\_\_\_
- ☐ 8 **DO NOT READ: Don't know** (Exclusive)

*Levels marked with \* are randomized*

## DEMOGRAPHICS

### DQ1a *Show if is wireless (phonetype = 2)*

We are almost finished. I just have a few demographic questions that will allow us to group responses and to sort the information we collect.

Do you have a landline telephone number in your household? Note that this does not include cell phones, numbers that are only used by a computer or fax machine, or numbers used solely for business purposes.

*DO NOT READ LIST*

- ☐ 1 Yes
- ☐ 2 No
- ☐ 9 **[DO NOT READ]** Prefer not to answer

### DQ1b *Show if is landline (phonetype = 1)*

We are almost finished. I just have a few demographic questions that will allow us to group responses and to sort the information we collect.

Do you or does anyone in your household have a mobile or cellular telephone that you use for personal reasons?

*DO NOT READ LIST*

- ☐ 1 Yes
- ☐ 2 No
- ☐ 9 **[DO NOT READ]** Prefer not to answer

## Q24

How many people, including yourself, live in your household?

Minimum: 1, Maximum: 50

\_\_\_\_\_ people

- ☐ .8 **[DO NOT READ]** Prefer not to answer

## Q25 *Show if HH Members More Than 1 (Q24 > 1)*

Do you have any children under the age of 18 living in your household?

*DO NOT READ LIST*

- ☐ 1 Yes
- ☐ 2 No
- ☐ 9 **[DO NOT READ]** Prefer not to answer

## Q26 *Show if HH Members More Than 1 (Q24 > 1)*

*(if is under 65 (QS4 = 1,2,3,4,5,6)) Is there anyone aged 65 years or older living in your household? (if is 65 plus (QS4 = 7,8)) Besides yourself, is there anyone else aged 65 years or older living in your household?*

*DO NOT READ LIST*

- ☐ 1 Yes
- ☐ 2 No
- ☐ 9 **[DO NOT READ]** Prefer not to answer

## Q27

How many years have you lived in Calgary?

*IF LESS THAN 1 YEAR, ENTER 0*

Minimum: 0, Maximum: 100

\_\_\_\_\_ years

- ☐ .8 **[DO NOT READ]** Prefer not to answer

# Questionnaire (continued)

## QD5

Do you own or rent your current place of residence?

- ☐ 1 Own  
☐ 2 Rent  
☐ 4 [\[DO NOT READ\] Other](#) (please specify) \_\_\_\_\_  
☐ 99 [\[DO NOT READ\] Prefer](#) not to answer

## QD5B

Which of the following best describes the type of home you live in?

### READ LIST

- ☐ 1 Single detached house [\[DO NOT READ: This includes bungalow, split level, 2-story, suite in a house, etc.\]](#)  
☐ 2 Duplex, triplex or fourplex  
☐ 3 Townhouse or rowhouse  
☐ 4 Apartment or apartment-style condominium  
☐ 5 Another type of multi-unit complex [\[DO NOT READ: This includes mobile home park, trailer park, seniors home, etc.\]](#)  
☐ 98 [\[DO NOT READ\] Don't](#) know  
☐ 99 [\[DO NOT READ\] Prefer](#) not to answer

## Q28

We want to make sure our research is reflective of all Calgarians. Were you born in Canada?

### DO NOT READ LIST

- ☐ 1 Yes  
☐ 2 No  
☐ 9 [\[DO NOT READ\] Prefer](#) not to answer

## Q29

Are you Indigenous, that is, First Nations, Métis, or Inuit?

### MULTIPLE RESPONSES ARE ACCEPTED

- ☐ 1 Yes - First Nations  
☐ 2 Yes - Métis  
☐ 3 Yes - Inuit  
☐ 4 Yes - Prefer to self-describe (specify) \_\_\_\_\_  
☐ 5 No *(Exclusive)*  
☐ 99 [\[DO NOT READ\] Prefer](#) not to answer *(Exclusive)*

## Q30 Show if Not Indigenous (Q29\_5 = 1 OR Q29\_99 = 1)

Do you consider yourself a racialized person? A racialized person means someone, other than Indigenous people, who are non-Caucasian in race or non-white in [colour](#).

- ☐ 1 Yes  
☐ 2 No  
☐ 96 Prefer to self-describe (specify) \_\_\_\_\_  
☐ 99 [\[DO NOT READ\] Prefer](#) not to answer

## QD7

Which of the following best describes the highest level of schooling that you have obtained?

*If the respondent mentions that they completed a post-graduate degree / Master's / PhD, please code as "completed a university certificate, diploma or degree".*

- ☐ 1 Did not complete high school or equivalent  
☐ 2 Completed high school or equivalent  
☐ 3 Completed a Registered Apprenticeship or other trades certificate or diploma  
☐ 4 Completed a college or other non-university certificate or diploma  
☐ 5 Or completed a university certificate, [diploma](#) or degree  
☐ 9 [\[DO NOT READ\] Prefer](#) not to answer

## Q31a

Which of the following categories best describes the total annual income, before taxes, of all the members of your household? Please stop me when I get to your category.

### READ LIST

- ☐ 1 Less than \$90,000  
☐ 2 \$90,000 to just under \$150,000  
☐ 3 \$150,000 and over  
☐ 9 [\[DO NOT READ\] Don't](#) Know  
☐ 10 [\[DO NOT READ\] Prefer](#) not to answer

# Questionnaire (continued)

**Q31b** Show if Q31a Answered (Q31a = 1,2,3)  
Would that be...

**READ LIST – ACCEPT RESPONSES BEFORE FINISHING LIST**

- ☐ 1 Less than \$30,000 (Show if D10a Under90k (Q31a = 1))
- ☐ 2 \$30,000 to just under \$45,000 (Show if D10a Under90k (Q31a = 1))
- ☐ 3 \$45,000 to just under \$60,000 (Show if D10a Under90k (Q31a = 1))
- ☐ 4 \$60,000 to just under \$75,000 (Show if D10a Under90k (Q31a = 1))
- ☐ 5 \$75,000 to just under \$90,000 (Show if D10a Under90k (Q31a = 1))
- ☐ 6 \$90,000 to just under \$105,000 (Show if D10a 90k to under 150k (Q31a = 2))
- ☐ 7 \$105,000 to just under \$120,000 (Show if D10a 90k to under 150k (Q31a = 2))
- ☐ 8 \$120,000 to just under \$135,000 (Show if D10a 90k to under 150k (Q31a = 2))
- ☐ 9 \$135,000 to just under \$150,000 (Show if D10a 90k to under 150k (Q31a = 2))
- ☐ 10 \$150,000 to just under \$175,000 (Show if D10a 150k plus (Q31a = 3))
- ☐ 11 \$175,000 to just under \$200,000 (Show if D10a 150k plus (Q31a = 3))
- ☐ 12 \$200,000 to just under \$225,000 (Show if D10a 150k plus (Q31a = 3))
- ☐ 13 \$225,000 to just under \$250,000 (Show if D10a 150k plus (Q31a = 3))
- ☐ 14 \$250,000 and over (Show if D10a 150k plus (Q31a = 3))
- ☐ 15 **[DO NOT READ]** Don't Know
- ☐ 16 **[DO NOT READ]** Prefer not to answer

**Q32**

And what is your gender?

**DO NOT READ EXCEPT TO CLARIFY.**

**IF NECESSARY - Gender refers to the gender that a person internally feels and/or the gender a person publicly expresses in their daily life, including at work, while shopping, or accessing other services, in their home or in the broader community.**

- ☐ 1 Male
- ☐ 2 Female
- ☐ 96 Prefer to self-describe (specify): \_\_\_\_\_
- ☐ 99 **[DO NOT READ]** Prefer not to answer

**Q33**

Do you or a member of your household have a disability?

**DO NOT READ LIST**

- ☐ 1 Yes - myself
- ☐ 2 Yes - someone in my household
- ☐ 3 No (Exclusive)
- ☐ 4 **[DO NOT READ]** Prefer not to answer (Exclusive)

**Q34**

Do you consider yourself to be a member of the 2SLGBTQ+ community?

**ONLY IF ASKED: 2SLGBTQ+ STANDS FOR TWO SPIRIT, LESBIAN, GAY, BI-SEXUAL, TRANSGENDER, QUEER OR QUESTIONING, WITH THE PLUS RECOGNIZING THERE IS ALSO A WIDE SPECTRUM OF IDENTITIES BEYOND THOSE IN THE ACRONYM**

- ☐ 1 Yes
- ☐ 2 No
- ☐ 9 **[DO NOT READ]** Prefer not to answer

**Q35a**

Would you be interested in participating in future research related to The City of Calgary?

- ☐ 1 Yes
- ☐ 2 No
- ☐ 3 **[DO NOT READ]** Don't know

**Q35b** Show if Willing to Participate in Future Research (Q35a = 1)

Could I please have an email address where we can contact you?

**Read back email address phonetically to confirm.**

☐ -3 **[DO NOT READ]** Prefer not to answer

**Q35c** Show if Willing to Participate in Future Research (Q35a = 1)

Could I please have your first name and confirm your telephone number?

**If respondent indicates "this number is fine" please enter the phone number associated to this call.**

First name: \_\_\_\_\_  
Telephone number: \_\_\_\_\_  
☐ -3 **[DO NOT READ]** Prefer not to answer

**Q35d** Show if Follow Up Research Phone Number Provided ((Q35a = 1) AND NOT (Q35c.b = [DO NOT READ] Prefer not to answer))

Is this phone number a cell phone or a landline?

- ☐ 1 Cell phone
- ☐ 2 Landline
- ☐ 3 **[DO NOT READ]** Prefer not to answer





# Contact

**The Corporate Research Team**  
Customer Service and Communications  
The City of Calgary  
[research@calgary.ca](mailto:research@calgary.ca)