



## **Home Flood Protection Assessment Homeowner Participation Waiver**

### **Purpose of this Document**

The purpose of this participation waiver (“Agreement”) is to ensure that participating Homeowner(s) (for the purposes of this document meaning the Homeowner **or** their designated representative(s)) understand and agree to the terms of the Assessment before the on-site and/or remote portion of the Assessment begins.

### **Terms of Home Flood Protection Assessment Homeowner Participation**

The Home Flood Protection Assessment is available to owners of single-detached, semi-detached and town homes for a fee. Fees are paid directly to AET Group.

In roughly one hour, a trained Flood Protection Assessor from AET Group works with the homeowner to complete a 50-point visual assessment of potential sources of water entry into the home. A concise, easy to read report identifies top ranked action to:

- ✓ Reduce sewer and overland flood risks
- ✓ Reduce moisture levels that cause mold and mildew growth
- ✓ Reduce damage risks to contents and valuables
- ✓ Wisely manage water onsite
- ✓ Understand risks as they relate to insurance coverage

A live customer service helpline, personal follow-up from the Assessor, and seasonal maintenance reminders provide additional support to homeowners as they work to protect their homes from future flooding events.

### **What is the Home Flood Protection Program?**

The Home Flood Protection Program is a basement flood risk reduction education program developed by the Intact Centre on Climate Adaptation (Intact Centre), an applied research centre at the University of Waterloo. The goal of the program is to help Homeowners reduce their risk of basement flooding and minimize damage if flooding occurs. The program provides free online self-help resources to Homeowners and a custom, on-site and/or remote assessment service for participating homeowners, known as the “Home Flood Protection Assessment.” AET has a license to deliver this program across Canada.



## **Background of the Assessors**

The Home Flood Protection Assessors are managed by AET Group Inc. (AET). Each Assessor possesses a clear criminal records check and has demonstrated competencies in relevant areas including but not limited to home construction, home inspection, environmental assessments/inspections, water resources management and/or environmental engineering. Assessors have successfully completed the Home Flood Protection Assessment Training Program developed by the University of Waterloo. Assessors have a variety of professional experience and AET Group Inc. makes no guarantee that they will be certified home inspectors, building inspectors or building engineers.

## **Do Homeowners Have to Be Present for a Home Flood Protection Assessment?**

The Homeowner or a person that they designate in writing to be their representative, must be present during the Assessment. Where a designated representative will be present a signature from both parties on this form is required.

## **How are Flood Risks at the House Assessed?**

Flood risks are assessed by examining the physical condition of a variety of features inside and outside the home, as well as by completing a preventative maintenance questionnaire with the homeowner. In order to complete this work, the Assessor uses the following tools: a standardized preventative maintenance questionnaire, a standardized home assessment scoring system, a moisture meter, humidity gage, camera, and measuring tape. Collected information is entered into an electronic form (on a tablet) that assigns a general category of performance or preventative maintenance activity ranging from “good, intermediate or poor/ needs further investigation.”

## **What Does the Assessment Report Include/ Exclude?**

The report includes an easy to read summary of items that receive a “poor/ needs further investigation score”, a record of all gathered information, and additional resources to help the homeowner take action to reduce risk.

The assessed features and preventative maintenance activities that score a “poor or needs further investigation” grade are listed in a summary page of items that lists the type of flood risk they represent, their condition and high level opportunities for the homeowner to further explore to take action to reduce flood risk. Links to practical how-to resources from reputable sources are included in the report, as well as links to local subsidy



programs and tips for selecting qualified contractors and questions to ask insurers to make sure that you have the water-damage related coverage you need.

### **What Does the Report Not Include?**

Beyond summarizing the report findings related to assessed items that received a score of “poor/ needs further investigation”, the report does not formally state a prioritized approach for addressing deficiencies. It is up to the Homeowner to decide which actions they will take and in what order.

In order to ensure program impartiality the report does not recommend specific contractors, suppliers or products. The report also does not provide in-depth drawings or tailored step-by-step instructions to complete projects at the home to address deficiencies.

### **What Follow-up Support is Available to the Homeowner?**

After the on-site and/or remote visit is complete, an electronic copy of the report is available typically within 48 hours. Requested hard copy reports should arrive at the participant’s home within 1 week. Questions that homeowners have about the reports can be accommodated with a short email follow-up or up to a 15-minute phone follow-up with the Assessor. Additional online resources are available through the website at [www.HomeFloodProtect.ca](http://www.HomeFloodProtect.ca). Additional assistance may be provided by the customer service email at [rkirkby@aet98.com](mailto:rkirkby@aet98.com) or at phone 1-877-876-9235.

### **Who Has Access to My Home Flood Protection Assessment Report?**

Assessment Reports are **available exclusively to registered Homeowners** and are not shared with funders or program partners.

Assessment Reports are made available to Homeowners through a secure database with access provided only to those who enter a valid user name and password. Printed reports, when requested, are sent via Canada Post directly to the participating homeowner or their official designate.

The only Home Flood Protection Assessment team members that have strictly confidential access to individual assessment reports are: the AET Home Flood Protection Assessor assigned to the individual household, the Home Flood Protection Assessment Quality Assurance Manager, and AET’s Home Flood Protection Assessment Customer Service Staff. Confidential access to this information is granted exclusively to register and assist Homeowners and to ensure program quality assurance.



## **Can My Information Be Used to Contribute to the Home Flood Protection Assessment Study Carried out by the University of Waterloo?**

Yes, the completion of a separate *OPTIONAL and VOLUNTARY* document entitled “Home Flood Protection Study Waiver Form” is required to participate in this study. All information shared will be stripped of its personal identifying information (address, contact information) and will be analyzed at a community-wide scale *ONLY* to share the results of the work with funders and partners.

### **Statement of Acknowledgement:**

- a) **Observations on Day of Assessment Only:** The Homeowner acknowledges that the Assessment and Assessment Report are based on the Assessor’s observations of the conditions that existed and the preventative maintenance activities reported by the homeowner at the time of the assessment only;
- b) **Participation:** The Homeowner acknowledges that they have been encouraged to participate in the Assessment and accept responsibility for incomplete information should they not participate in the Assessment.

The homeowner signature below acknowledges the agreement between the homeowner and AET Group Inc. to perform a visual assessment of the inside and outside of the home that identifies flood risks and identifies opportunities to reduce risk.

### **Warranty Disclaimer**

YOU, THE HOMEOWNER, ACKNOWLEDGE AND AGREE THAT AET GROUP INC., THE UNIVERSITY OF WATERLOO, AND THEIR RESPECTIVE AFFILIATES, LICENSORS, AGENTS AND REPRESENTATIVES DO NOT WARRANT THAT COMPLETING ACTIONS IDENTIFIED IN THE REPORT TO REDUCE FLOOD RISK WILL ACTUALLY PREVENT ALL OR ANY WATER DAMAGE IN THE FUTURE. THE HOMEOWNER ASSUMES ALL RISK FOR PROBLEMS NOTED IN THIS REPORT THAT MAY INCLUDE, BUT IS NOT LIMITED TO CONCEALED DAMAGE WHICH IS REVEALED DURING THE COURSE OF REPAIR OR THROUGH FURTHER INVESTIGATION BY A QUALIFIED SPECIALIST. THE DECISION TO PURSUE OPPORTUNITIES FOR ACTION TO REDUCE FLOOD RISK IDENTIFIED IN THE REPORT IS AT THE HOMEOWNER’S SOLE DISCRETION. AET GROUP INC., THE UNIVERSITY OF WATERLOO, AND THEIR RESPECTIVE AFFILIATES, LICENSORS, AGENTS AND REPRESENTATIVES EXPRESSLY DISCLAIM ALL WARRANTIES, REPRESENTATIONS, GUARANTEES, AND CONDITIONS, EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OR CONDITIONS OF

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MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. THE HOME FLOOD PROTECTION ASSESSMENT AND ALL ASSOCIATED SERVICES ARE PROVIDED TO THE HOMEOWNER “AS IS” AND “WITH ALL FAULTS”. THIS WARRANTY DISCLAIMER SHALL SURVIVE THE TERMINATION OR EXPIRATION OF THIS AGREEMENT OR YOUR PARTICIPATION IN THE HOME FLOOD PROTECTION PROGRAM, INCLUDING BUT NOT LIMITED TO THE COMPLETION OF YOUR HOME FLOOD PROTECTION ASSESSMENT.

### **Limitation of Liability**

AET GROUP INC., THE UNIVERSITY OF WATERLOO AND THEIR RESPECTIVE AGENTS, ADMINISTRATORS, OFFICERS, DIRECTORS, GOVERNORS, SENATORS, EMPLOYEES, INDEPENDENT CONTRACTORS, STUDENTS, REPRESENTATIVES, SUCCESSORS, AND ASSIGNS (THE “RELEASEES”) SHALL NOT BE RESPONSIBLE FOR ANY HARM, LOSS OR INJURY, INCLUDING DEATH, SUFFERED BY YOU, THE HOMEOWNER, OR ANY OTHER PERSON, AT ANY TIME FOR ANY REASON WHATSOEVER, WHETHER REASONABLY FORESEEABLE OR NOT, INCLUDING, BUT WITHOUT LIMITATION, ANY RISKS, HARM, LOSS, OR INJURY, INCLUDING DEATH, CAUSED IN CONNECTION ANY RELATED ACTIVITY, INCLUDING THE VISUAL ASSESSMENT OF THE PROPERTY AND CONVERSATION WITH THE HOMEOWNER DURING THE ASSESSMENT (“RELATED ACTIVITIES”) WHILE ENROLLED IN THIS HOME FLOOD PROTECTION PROGRAM. FOR THE AVOIDANCE OF DOUBT, NONE OF THE RELEASEES SHALL BE LIABLE UNDER ANY CLAIM, DEMAND OR ACTION ARISING OUT OF OR RELATING TO YOUR PARTICIPATION IN THIS HOME FLOOD PROTECTION PROGRAM, NOR FOR ANY DIRECT, SPECIAL, INCIDENTAL, INDIRECT, CONSEQUENTIAL OR EXEMPLARY DAMAGES WHETHER BASED IN CONTRACT, TORT OR ANY OTHER LEGAL THEORY, EVEN IF THE RELEASEES HAD ACTUAL OR CONSTRUCTIVE KNOWLEDGE OF THE POSSIBILITY OF SUCH LOSS OR DAMAGES AND WHETHER OR NOT SUCH LOSS OR DAMAGES WERE FORESEEABLE. THIS LIMITATION OF LIABILITY CLAUSE SHALL SURVIVE THE TERMINATION OR EXPIRATION OF THIS AGREEMENT OR YOUR PARTICIPATION IN THE HOME FLOOD PROTECTION PROGRAM, INCLUDING BUT NOT LIMITED TO THE COMPLETION OF YOUR HOME FLOOD PROTECTION ASSESSMENT.

### **Release**

I HEREBY FOREVER RELEASE AND HOLD HARMLESS THE RELEASEES FROM ANY AND ALL LIABILITY FOR ANY LOSS, DAMAGE, INJURY, OR EXPENSE THAT I OR MY NEXT OF KIN MAY SUFFER, WHETHER REASONABLY FORESEEABLE OR NOT, WHETHER ARISING FROM THE NEGLIGENCE OF THE RELEASEES OR OTHERWISE, WHICH MAY BE MADE OR BROUGHT AGAINST THE RELEASEES IN ANY WAY NOW OR IN THE FUTURE AS A RESULT OF MY PARTICIPATION IN ANY RELATED ACTIVITIES WHILE ENROLLED IN THE HOME FLOOD PROTECTION PROGRAM, ON A SUBSTANTIAL INDEMNITY BASIS.



I understand that this Agreement cannot be modified or interpreted except in writing by AET Group Inc., in cooperation and acting reasonably, and that no oral modification or interpretation shall be valid. This agreement shall be effective and binding upon my heirs, next of kin, executors, administrators, assigns, and personal representatives in the event of death.

I have read and understand this Agreement and I sign this document voluntarily and without inducement.

**A SIGNED ACCEPTANCE OF THIS AGREEMENT MUST BE RECEIVED BEFORE THE ASSESSMENT CAN BEGIN**

**Homeowner's Name:** \_\_\_\_\_

**Homeowner's Signature:** \_\_\_\_\_

**Name of Designated Representative (if applicable):** \_\_\_\_\_

**Signature of Designated Representative (if applicable):** \_\_\_\_\_

**Property Address:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Witness Name:** \_\_\_\_\_

**Witness Signature:** \_\_\_\_\_



## **Home Flood Protection Study Participation Consent Form**

### **Purpose of this Document**

The purpose of this document is to ensure that the participating Homeowner (for the purposes of this document meaning the Homeowner **or** their designated representative) understand and agree to the terms of participating in the Home Flood Protection Study before participation begins.

### **Introduction to the Home Flood Protection Program**

The Home Flood Protection Program is a basement flood risk reduction education program developed by the Intact Centre on Climate Adaptation, an applied research centre at the University of Waterloo. AET Group has a license to deliver this program to residents across Canada.

The goal of the program is to help homeowners reduce their risk of basement flooding and minimize damage if flooding occurs. The program provides free online self-help resources to homeowners and a custom, on-site assessment service for participating homeowners, known as the “Home Flood Protection Assessment.”

### **What is the Home Flood Protection Study?**

The Home Flood Protection Study (Study) is a confidential analysis of home flood risks identified at the time of the Home Flood Protection Assessment and action taken to reduce flood risk as reported in follow-up surveys and noted during follow-up assessments. Data is collected and analyzed **ONLY** from homeowners (or their designated representatives) who have voluntarily consented to share the results of their Home Flood Protection Assessment Reports and follow-up surveys by completing this form. All information that is gathered as part of the Study is stripped of its personal identifying information (name, all elements of address, contact information), stored in an encrypted, secure online database and is analyzed in aggregate form. Information gathered as part of this Study is used only for the express purposes laid out in this agreement.

### **What are the goals of the study?**

The goals of the Study are to improve program delivery and to report the findings and impacts of our work to program funders and partners.

Data analysis will determine:

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- Most common flood risks identified at different ages of homes;
- The degree to which participation in the program influenced practical action to reduce flood risk;
- The degree to which participation in the program impacted knowledge levels about home flood risks; and
- Participant level of satisfaction with the program.

### **Is there compensation for participating in the study?**

University of Waterloo will not be offering any kind of compensation for participating. AET may offer some kind of compensation if they would like. This has yet to be determined.

### **What is involved?**

Consent to participate in the study means that a Homeowner agrees to **complete** and **share the results** of their:

- Home Flood Protection Assessment Report
- One 10-15 minute follow-up surveys at roughly 3 months after report completion

### **How do homeowners complete the follow-up surveys?**

For those who consent to participate by email, an email link to access the surveys through the secure database will be sent at roughly 3 months after the Assessment Report is sent to the Homeowner. For those participants who consent to participate by phone, a confidential phone survey will be conducted by a Home Flood Protection Customer Service Agent at the same time intervals. Each survey takes approximately 10-15 minutes to complete.

### **How is the homeowner information going to be protected?**

Upon consenting to participate in the Home Flood Protection Study, all personally identifying information is stripped from the Home Flood Protection Report and it is assigned a participant number. All follow-up survey forms and follow-up on-site assessments will use only this same participant number. All information will be stored in an encrypted, secure online database with confidential access granted only to authorized University of Waterloo and AET Team members including: University of Waterloo research students, the University of Waterloo's Home Flood Protection Program Director, AET's Home Flood Protection Assessors who complete the follow-up on-site assessments and





AET's Customer Service Team members who enter data directly into the secure database from participants who complete follow-up surveys by telephone.

### **Statement of consent**

My signature below acknowledges that I have read and understood the terms of participating in the Home Flood Protection Study as written above. I agree to participate in the Study by sharing the results of my Home Flood Protection Assessment. I also consent to participate in a 3 month follow up survey and share these results. I understand that my personal information is protected as confidential and that all personal identifying information (name, all address information, contact information) will be removed from the information that I share before it used for analysis. The final report will be shared with project funders and partners.

I understand that participation is completely voluntary and I may opt to withdraw my consent at any time.

### **Email and Phone Contact Consent**

By signing below, I provide my express consent to the following:

**If I am participating in the program by email:** I consent to receive a 3 and 6 month follow-up survey reminder by email that will include a link to a secure portal where the survey will be completed.

**Unsubscribe mechanism:** My signature acknowledges that I understand that if I would like to opt-out and withdraw my consent to participate in the Home Flood Protection Assessment Study that I should contact **Cheryl Evans at 226-338-4825 or email at [c8evans@uwaterloo.ca](mailto:c8evans@uwaterloo.ca) at any time and include "Unsubscribe" in the subject heading.**

**If I am participating in the program using the phone:** I consent to receive a 3 and 6 month follow-up call from a customer service representative to request the completion on the surveys by phone.

**Opting out:** If I would like to opt out of the study I may do this at any time by informing the customer service representative on the phone. **Cheryl Evans at 226-338-4825 or email at [c8evans@uwaterloo.ca](mailto:c8evans@uwaterloo.ca) at any time and include "Unsubscribe" in the subject heading.**

**Questions about collection, storage and analysis of data:**

Faculty of Environment, University of Waterloo  
200 University Avenue West, Waterloo, ON N2L 3G1  
[www.homefloodprotect.ca](http://www.homefloodprotect.ca)



My signature acknowledges that I understand that if I have any questions about the collection, storage or analysis of information that I may contact **Cheryl Evans, Program Director at any time at [c8evans@uwaterloo.ca](mailto:c8evans@uwaterloo.ca).**

**A SIGNED ACCEPTANCE OF THIS AGREEMENT MUST BE RECEIVED BEFORE THE PARTICIPATION IN THE HOME FLOOD PROTECTION STUDY CAN BEGIN**

Homeowner’s Name: \_\_\_\_\_

Homeowner’s Signature: \_\_\_\_\_

Name of Designated Representative (if applicable): \_\_\_\_\_

Signature of Designated Representative (if applicable): \_\_\_\_\_

Home Address: \_\_\_\_\_

Date: \_\_\_\_\_

**Participation method preference  
(Please check one box and provide required contact information):**

Please check one of the boxes below to identify if you would prefer to participate in follow-up surveys and to be contacted about your interest in voluntary participation in a follow-up assessment by **email or by phone**. Please provide the requested related contact information so that we may contact you using your preferred method.

Email      Please provide email: \_\_\_\_\_

Phone      Please provide phone number: \_\_\_\_\_



## Home Flood Protection Report Quality Assurance Checklist

To pass quality assurance, reports must meet the following minimum standards for being complete, accurate and easy to understand:

### Deemed Complete When:

- All fields are filled out**
  - With any of N/A or Assessment score of green, yellow or red
  - Where NR a note must be made about why this was not recorded
  
- All “Opportunity To Reduce Risk” comments are customized**
  - Describe the location and the condition of the assessed item
  - Lists the most relevant of the standardized options or a custom option that is approved by QA
  
- Property chart is complete**
  - Outline of house and driveway complete and labelled
  - North arrow is present
  - At least 4 items per chart that correspond to “Opportunity to Reduce Risk” notes with #x magic button
  - Labels must briefly state problem and item featured e.g, clogged eaves trough, leaking rain barrel
  
- Enough photos are present**
  - Main photo of home is inserted on title page
  - 2-4 photos are present per section (Sections are: inside assessed features, inside assessed maintenance, outside assessed features, outside assessed maintenance)

### Deemed Accurate When:

- Assessment score and “Opportunity to Reduce Risk” comments are deemed reasonable based upon:**
  - age of home
  - photo evidence of condition of physical features
  - reported maintenance practices

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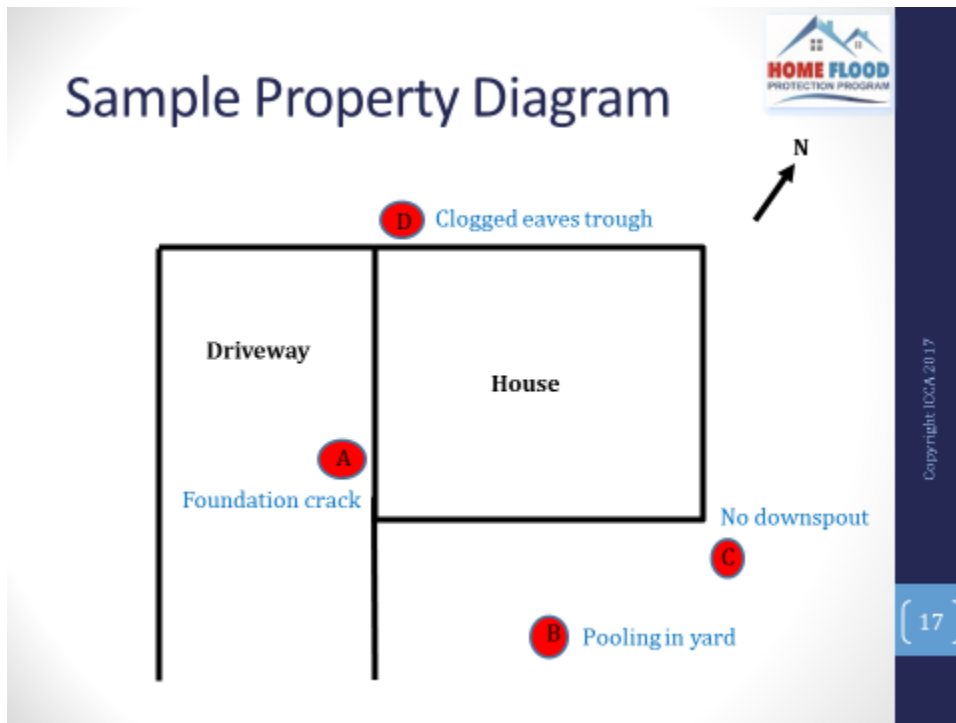
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- Spelling is correct

**Deemed Easy to Understand When:**

- Property diagram is clearly laid out and easy to understand
- Comments in “Opportunity to Reduce Risk” section are easy to understand



# THREE STEPS TO COST-EFFECTIVE BASEMENT FLOOD PROTECTION

Complete these 3 steps to reduce your risk of basement flooding and lower the cost of cleanup if flooding occurs. For items listed under step 3 check with your municipality about any permit requirements and the availability of flood protection subsidies.

## Step 1: Maintain What You've Got at Least Twice per Year

Do-It-Yourself  
for \$0

Remove Debris from Nearest Storm Drain

Clean Out Eaves Troughs

Maintain Plumbing, Fixtures and Appliances

Test Your Sump Pump

Clean Out Your Backwater Valve

## Step 2: Complete Simple Upgrades

Do-It-Yourself  
for Under \$250

Install Window Well Covers

Extend Downspouts and Sump Discharge Pipes at Least 2m from Foundation

Store Valuables and Hazardous Materials in Watertight Containers or Remove from Basement

Remove Obstructions to Basement Floor Drain

Install and Maintain Flood Alarms

## Step 3: Complete More Complex Upgrades

Work with a Contractor for  
Over \$250

Install Window Wells that Sit 10-15 cm Above Ground and Upgrade to Water Resistant Windows

Disconnect Downspouts, Cap Foundation Drains and Extend Downspouts to Direct Water at Least 2m from Foundation

Correct Grading to Direct Water at Least 2m Away from Foundation

Install Backwater Valve

Install Backup Sump Pump and Battery

Note: Not all actions will be applicable to each home. Completing these steps does not guarantee the prevention of basement flooding.

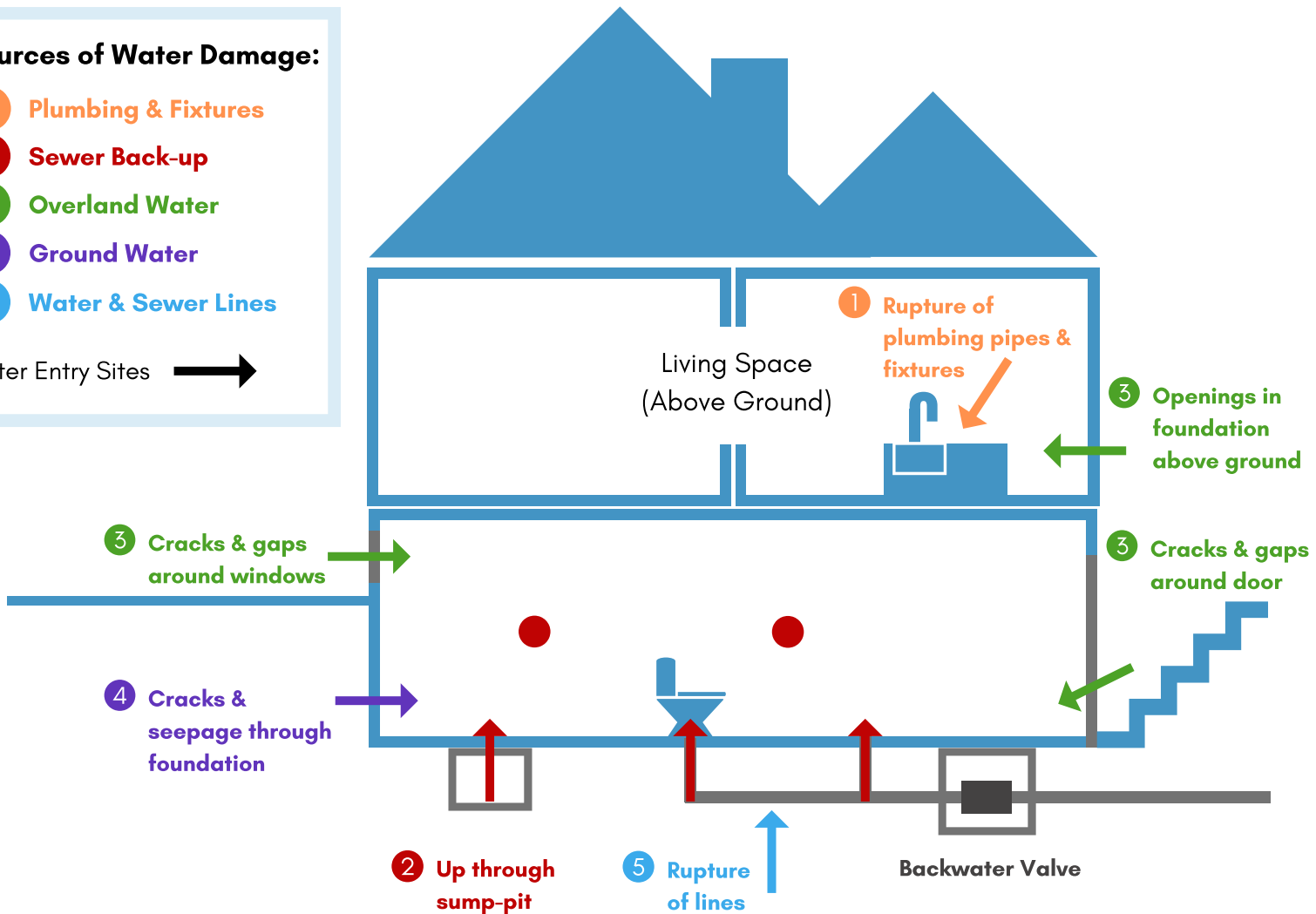
# Understanding Water Damage Insurance Coverages

This information is being provided to help you understand the different types of water damage risks at your home and the types of water damage coverages that may be available from insurers. It is intended as a starting place for discussion with your insurer to determine which kind of coverages might be right for you.

## Sources of Water Damage:

- 1 Plumbing & Fixtures
- 2 Sewer Back-up
- 3 Overland Water
- 4 Ground Water
- 5 Water & Sewer Lines

Water Entry Sites →



## Home Owner Water Damage Insurance Coverages:

- ✓ **Typically Covered:** Sudden and accidental damage caused by escape of water from plumbing pipes, appliances or fixtures
- ✓ **Optional Coverages:** Sudden and accidental damage caused by sewer back-up, overland and groundwater flow and rupture of water and sewer lines
- ✗ **Typically Not Covered:** Damage created by chronic leaks or poor maintenance and damage that occurs during prolonged absences without regular monitoring

## Tenant Water Damage Insurance Coverages:

- ✓ **Typically Covered:** Replacement of personal contents and temporary accommodations while damage is being repaired

# Basement Flood Protection Checklist

Take these steps to reduce your risk of basement flooding and reduce the cost of cleaning up after a flood. Remember to check with your municipality about the availability of basement flood protection subsidies. Check with your insurer about discounts for taking action to reduce flood risk.

## 1. Maintain Your Home's Flood Protection Features at Least Twice Per Year

SPRING FALL

- |                          |                          |  |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | Remove debris from nearest storm drain     |
| <input type="checkbox"/> | <input type="checkbox"/> | Clean out eaves troughs                    |
| <input type="checkbox"/> | <input type="checkbox"/> | Test sump pump(s) and backup power source  |
| <input type="checkbox"/> | <input type="checkbox"/> | Clean out backwater valve                  |
| <input type="checkbox"/> | <input type="checkbox"/> | Maintain plumbing, appliances and fixtures |
| <input type="checkbox"/> | <input type="checkbox"/> | Test flood alarms                          |

## 2. Keep Water Out of Your Basement

- Correct grading to direct water at least 2m away from your foundation
- Extend downspouts and sump discharge pipes to direct water at least 2m away from your foundation or to the nearest drainage swale
- Install window well covers
- Install window wells that are 10-15cm above the ground and are sealed at the foundation
- Install water-resistant basement windows
- Install a backwater valve (work with a plumber and get required permits)

## 3. Prepare to Remove Any Water from Your Basement as Quickly as Possible

- Remove obstructions to the basement floor drain
- Install a back-up sump pump and power source

## 4. Protect Personal Belongings in Your Basement

- Store valuables in watertight containers or remove
- Store hazardous materials (paints, chemicals) in watertight containers or remove
- Raise electronics off the floor
- Select removable area rugs and furnishings that have wooden or metal legs

*Note: Not all actions will be applicable to each home. Completing these steps does not guarantee the prevention of basement flooding.*



Prepared for Sally Homeowner  
123 Some Rd. Burlington, ON



Date Completed: August 03, 2017  
Assessor Name: Cheryl Evans  
Assessor Email: [c8evans@uwaterloo.ca](mailto:c8evans@uwaterloo.ca)

Prepared on behalf of AET Group [www.aet98.com](http://www.aet98.com) 1-877-876-9235





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## Introduction to Report

### **What Does This Report Include?**

This report includes an easy to read summary of top ranked items for priority action that have received a "poor/needs further investigation" score or require specific mention based on questions asked by the homeowner. It also provides a record of all gathered information and provides additional helpful resources to help homeowners take action to reduce flood risk.

### **How Are Assessed Features Scored?**

Assessors use the standardized assessment tool provided to guide them through a visual assessment of the property and to ask a list of preventative maintenance questions to homeowners. The information gathered is then compared to the tool's scoring definitions, developed by the University in Waterloo in concert with a wide variety of national experts in the area of basement flood risk reduction. Assessed Features are assigned scores of "Good-Best Practice", "Intermediate" or "Poor/ Needs Further Investigation" based on where they fall within these definitions. Any Assessed Features not accessible for observation and any preventative maintenance questions that are not completed by the homeowner are marked "Not Recorded."

### **What Does This Report Not Include?**

Beyond summarizing the report findings related to assessed items that received a score of "poor/needs further investigation" or require specific mention based on questions asked by the homeowner the report does not formally state a prioritized approach for addressing deficiencies. It is up to Homeowner to decide which actions they will take and in what order.

To ensure program impartiality the report does not recommend specific contractors, suppliers or products. The report also does not provide in-depth drawings or tailored step-by-step instructions to complete projects at the home to address deficiencies.

### **How Was Information for this Report Gathered?**

The contents of this report have been gathered by examining the physical condition of a variety of features inside and outside the home using simple tools such as a moisture meter, humidity gauge, flashlight and measuring tape. A verbal preventative maintenance questionnaire has also been completed with the homeowner or their designate.

### **Reporting Time Frame**

This report documents the observed condition of physical features of the home and the preventative maintenance information gathered from the Homeowner on the day of the Assessment only.

### **Follow-Up Support Provided**

Your assessment fee includes the equivalent of a 15 minute email follow-up conversation with your Assessor. Our customer service team can also answer your basic questions at 1-877-876-9235. For ongoing support, visit [homefloodprotect.ca](http://homefloodprotect.ca) to register for our e-newsletter that includes important preventative maintenance reminders. For do-it-yourself tips and Homeowner Success stories, like us on Facebook @HomeFloodProtect.

### **What is Included in the Additional Resources Section?**

A list of easy to read, highly practical, online links is provided to help Homeowners take action to reduce flood risk. These include how-to fact sheets and videos, local subsidy information, questions to ask your insurance provider and tips about hiring contractors.



## Definition Of Terms

### Scoring of Assessment

Each assessed item is assigned a score based on the standardized criteria laid out in the Home Flood Protection Assessment ranking system.

Score	Description
<b>Good- Best practice</b>	Observed or reported in good condition or reported maintenance practice
<b>Intermediate</b>	Observed or reported in intermediate condition or reported maintenance practice
<b>Poor/ Needs Further Investigation</b>	Observed or reported in poor condition or reported maintenance practice or needs further investigation
<b>Not Reported</b>	Unobserved or unreported observed condition or reported maintenance practice
<b>Out of Scope</b>	Out of scope for this assessment but worthy of further consideration

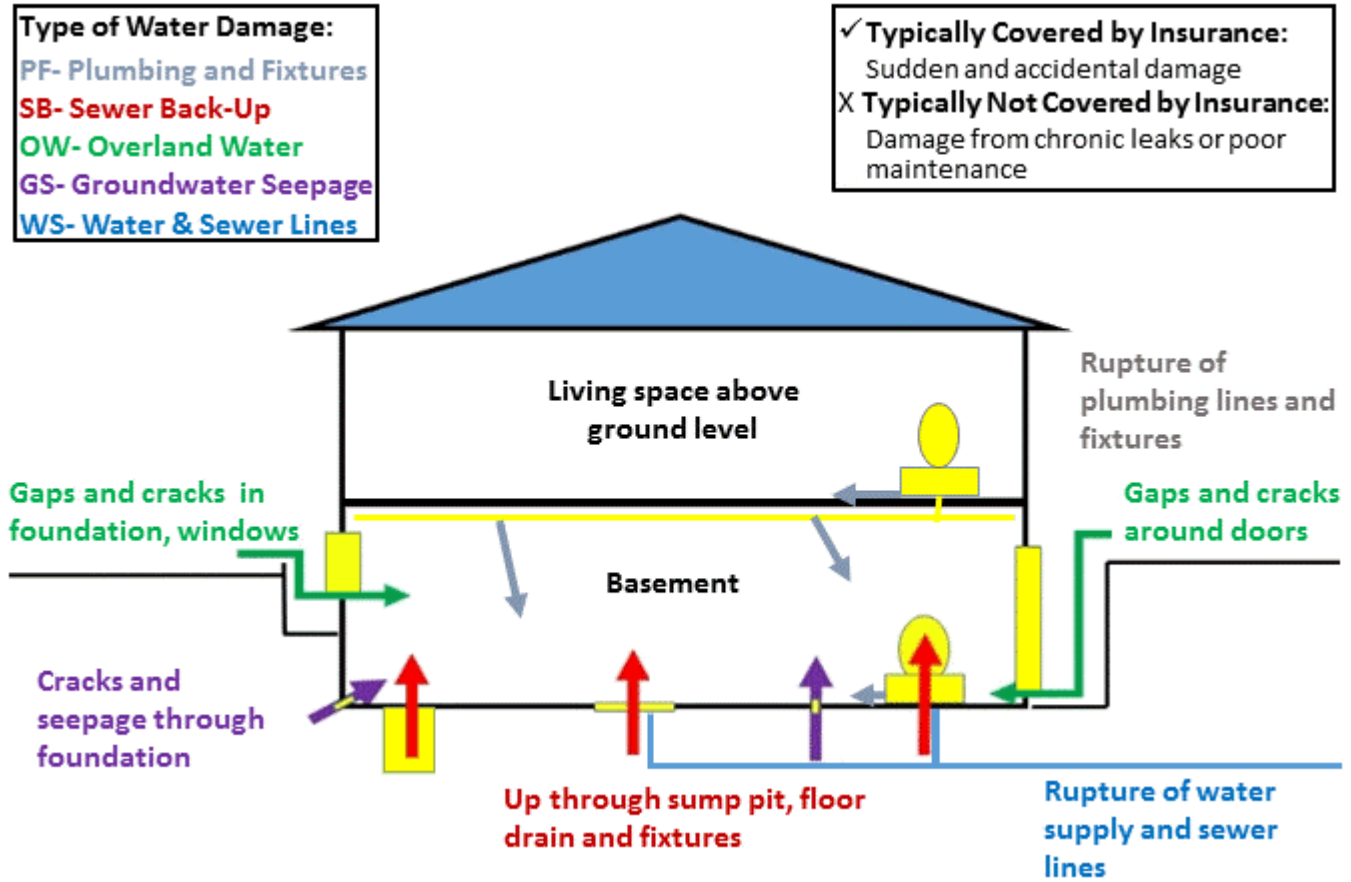
### Understanding Different Types of Water Damage Risks at Your Home

The diagram and the definitions below are provided to help you understand the types of water damage that may affect any home due to deterioration of physical features, lack of preventative maintenance or water backup from municipal sewer systems during extreme weather events.

These water damage types are referenced in your Home Flood Protection Assessment Report to help you understand the types of water damage risks that have been identified at your home and your opportunities to reduce risk. Please see the customized list of maintenance best practices listed in your report to help you develop your preventative maintenance routine.

#### Insurance Coverage Considerations:

Sudden and accidental water damage is typically covered by insurers, however damage due to slow leaks or lack of preventative maintenance is typically not covered. Since there is no industry-wide, standard language used to define water damage types you may find using the terms and descriptions in this document helpful when working with your insurer to determine which coverage is best for you. Please note that not all insurance companies provide all types of coverages for all homes. See the "Questions for Your Insurance Provider" document in the Additional Resources section of the report for additional information.

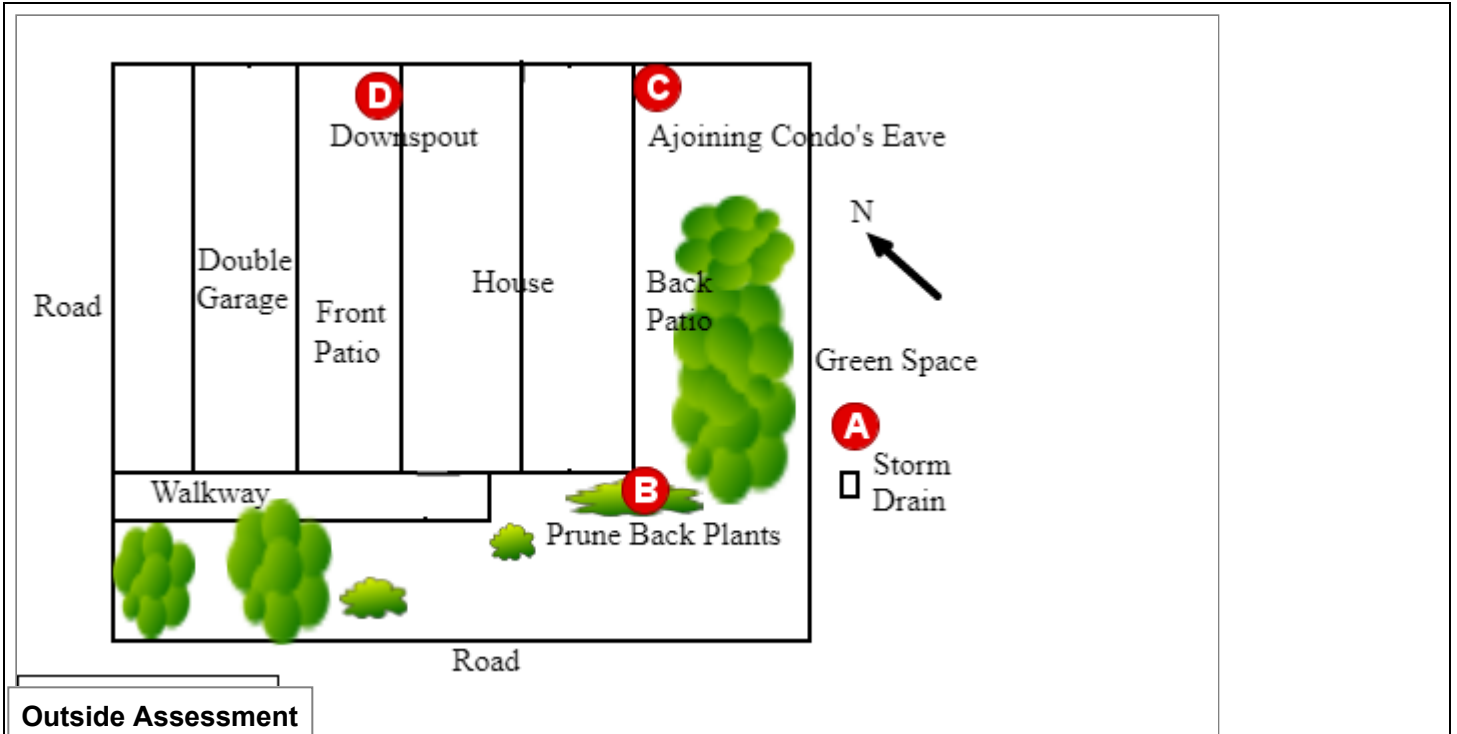


Typical Insurance Policy Coverage for Sudden and Accidental Damage	Code	Type of Water Damage	Simple Definition
Included	PF	Plumbing and Fixtures	Water that enters your home from a tear or rupture of plumbing pipes or fixtures (e.g. toilets, hot water heaters, dish washers)
Optional	SB	Sewer Back-Up	Water that flows from the sanitary or storm sewer or your home's foundation drains and backs up into your home through the sump pit, toilets and drains
Optional	OW	Overland Water	Water that flows from a lake or river, heavy rain or rapid snow melt and enters through cracks and gaps in your home's exterior from a point at or above ground level
Optional	GS	Ground Water	Water that has saturated the ground and enters your home below ground level through gaps, cracks and seepage through your home's foundation
Optional	WS	Water and Sewer Lines	Water that enters your home due a tear or rupture of a water supply and/or sewer lines



## Outside Assessment Summary Top-Ranked Opportunities to Reduce Flood Risk

All features and maintenance practices that were assessed as "poor/ needs further investigation", require specific mention based on questions asked by the homeowner or are marked as "out of scope" but deserve further consideration, have been compiled into this summary.



**Outside Assessment**





C



D

## Assessed Features

Fig	Assessed Feature and Best Practice	Type of Water Damage	Assessment	Opportunity to Reduce Risk
B	<p><b>Garden beds adjacent to home - Do garden beds slope away from your home at minimum of 5% slope and leave a minimum of 20 cm (8") of your foundation exposed? Do foundation plantings provide adequate light exposure and air movement to foundation?</b></p> <p>Foundation plantings provide good light and air circulation between plantings and foundation. A minimum 20 cm (8") of foundation remains exposed. Trees that will reach a height of 10m (30') or more are minimum of 5m (15') from foundation and shrubs are minimum of 1.8m (6') from foundation. The garden bed has a 5% slope away from the foundation and water drains freely away from the foundation.</p>	GS	<p>Foundation plantings provide poor light and air circulation between plantings and foundation. Less than 20cm (8") foundation remains exposed. Trees that will reach height of 10m (30') or are closer than 4m (12') from foundation and shrubs are closer than 1m (12") from foundation. The garden bed has less than 2-3% slope away from the foundation and water drains poorly away from the foundation.</p>	<p>See <b>B</b> on <b>Outside Assessment</b> diagram.</p> <p>Heavily prune back plantings to improve light and air circulation. Remove plantings that are too close to foundation. Correct grade to minimum 5% slope to ensure water flows away from foundation.</p>

<b>C</b>	<b>Eaves troughs- Are eaves troughs adequately sized and in adequate condition to reduce flood risk?</b> Eaves troughs wrap around entire building, are in good repair and are free of debris, with a minimum downspout placement every 9-12m (30-40'). Eaves trough of 13cm (5") are present for asphalt shingles or 15cm (6") for metal roof.	<b>GS</b>	Eaves troughs do not wrap around entire building, are in poor repair, contain a high amount of debris, OR do not have downspouts placed every 9-12m (30-40'). Eaves troughs are undersized and/or do not have 13cm (5") eaves trough for asphalt shingles or 15cm (6") for metal roof OR needs further investigation.	See <b>C</b> on <b>Outside Assessment</b> diagram. The eaves trough from the joining condo drains into your eaves trough causing a potential over flow of your eave trough. You have noted regular overflow of your eaves trough which increases your risk of overland flooding. Contact the Condo Corp to assess and consult a qualified professional to correct the eaves drainage and install proper downspouts to direct water away from your property.
	<b>Connected downspouts- Are downspouts connected to SANITARY OR STORM sewer?</b> Where approved by local authorities, downspouts should be disconnected from foundation drains, caps should be installed over underground pipe connections and downspouts should be extended to at least 1.8-3m (6-10') from the foundation or to nearest drainage swale. Water should not drain onto hard surfaces or onto adjacent property.	<b>SB</b>	<b>Note: Check with the government department having jurisdictional authority to determine eligibility for downspout disconnection and any available subsidy.</b>	See <b>D</b> on <b>Outside Assessment</b> diagram. Downspouts are connected to a clay tile in the front patio and rear patio with no visible drainage point. Consult with your Condo Corp or Municipality about whether disconnection is right for your property and if grants are available.

### Assessed Maintenance

Fig	Maintenance Feature and Best Practice	Type of Water Damage	Assessment	Opportunity to Reduce Risk
<b>A</b>	<b>Overland drainage maintenance-</b> Once per season or when major storm events are predicted, homeowner checks for and removes debris and obstructions from water flow paths including swales, nearby storm drains, culverts and drainage ditches.	<b>OW</b>	Never checks for and removes debris and obstructions from water flow paths including swales, nearby storm drains, culverts and drainage ditches.	See <b>A</b> on <b>Outside Assessment</b> diagram. Once per season or when major storm events are predicted, check for and remove debris and obstructions in swales and the storm drain behind your property. If storm drain behind your property is free of debris but is still not draining within 24 hours, contact the Condo Corp.
	<b>Landscaping maintenance-</b> Once per year homeowner corrects grading issues within 1.8m (6') of foundation, applies mulch to garden beds, aerates lawn.	<b>GS</b>	Homeowner never corrects grading issues within 1.8m (6') of foundation, applies mulch to garden beds, aerates lawn.	Once per year correct grading issues within 10' (3m) of foundation, apply mulch to garden beds.

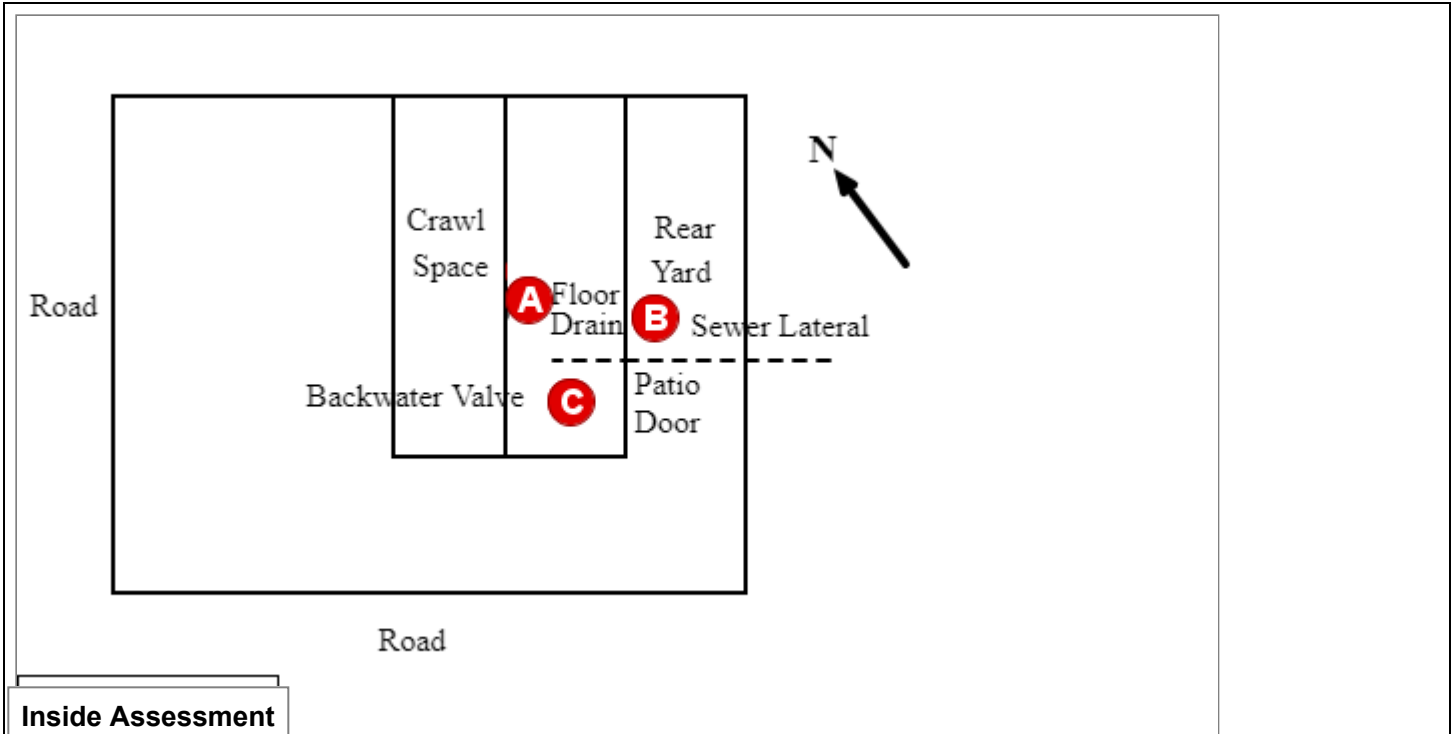
	<b>Impermeable (waterproof) driveway maintenance-</b> Once per season homeowner checks for evidence of pooling and ice buildup, repairs grading, seals cracks, fills gaps, removes weeds.	<b>GS</b>	Homeowner never checks for evidence of pooling and ice buildup, repairs grading, seals cracks, fills gaps, removes weeds.	Once per season check for evidence of pooling, ice buildup, repair grading, seal cracks, fill gaps, remove weeds.
	<b>Walkways and patios maintenance-</b> Once per season homeowner checks for evidence of pooling, ice buildup, repairs grading, seals cracks, fill gaps, removes weeds.	<b>OW, GS</b>	Homeowner never checks for evidence of pooling, ice buildup, repairs grading, seals cracks, fill gaps, removes weeds.	Once per season check for evidence of pooling, ice buildup, repair grading, fill gaps, removes weed. Replace if surface in very poor condition.
	<b>Grading at foundation maintenance-</b> Each season homeowner checks for signs of water pooling or ice formation; corrects grading to achieve at least 5% slope away from foundation.	<b>OW, GS</b>	Homeowner never checks for signs of water pooling or ice formation; corrects grading to achieve at least 5% slope away from foundation.	Each season check for signs of water pooling or ice formation. Repair grading 1-2% for paved surfaces.
<b>D</b>	<b>Downspout maintenance-</b> Once per season homeowner checks to make sure downspout extensions are secured, free of leaks, depositing water at least 1.8m (6') from foundation or to drainage swale and that water is not flowing onto adjacent property.	<b>GS</b>	Homeowner never checks to make sure downspout extensions are secured, free of leaks, depositing water at least 1.8m (6') from foundation or to drainage swale and that water is not flowing onto adjacent property.	See <b>D</b> on <b>Outside Assessment</b> diagram. Once per year check to make sure downspout extensions are secured, free of leaks, deposit water 10' (3m) from foundation or to a drainage swale and that water is not flowing onto adjacent property. Downspouts are connected to a clay tile in the front patio and rear patio with no visible drainage point. Consult with your Condo Corp or Municipality about whether disconnection is right for your property and if grants are available.
	<b>Foundation structure maintenance-</b> Once per season homeowner checks for cracks and gaps, repairs as required.	<b>GS</b>	Homeowner never checks for cracks and gaps, repairs as required.	Once per season check for cracks and gaps, repair as required. Contact a qualified foundation repair contractor for cracks greater than 1/4" (6mm).



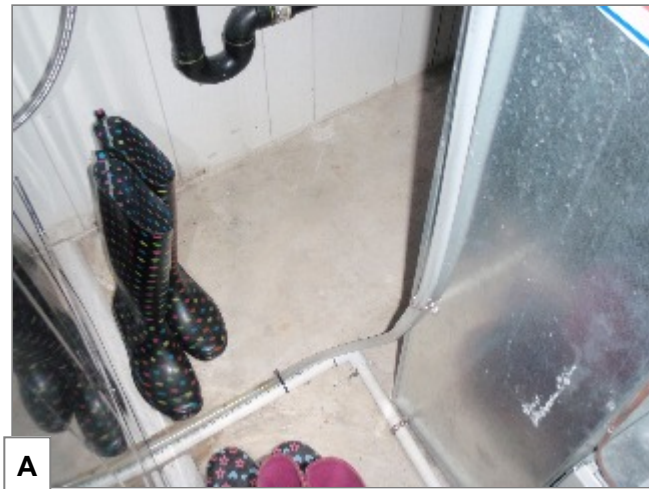
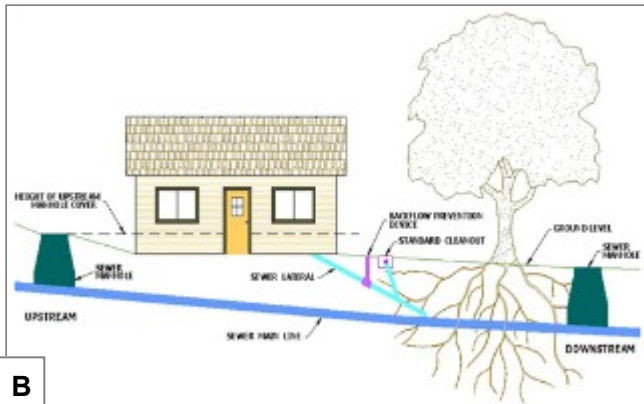


## Inside Assessment Summary Top-Ranked Opportunities to Reduce Flood Risk

All features and maintenance practices that were assessed as "poor/ needs further investigation", require specific mention based on questions asked by the homeowner or are marked as "out of scope" but deserve further consideration, have been compiled into this summary.



### Inside Assessment





C

## Assessed Features

Fig	Assessed Feature and Best Practice	Type of Water Damage	Assessment	Opportunity to Reduce Risk
B	<b>Sanitary sewer lateral- Is your sanitary sewer lateral in good condition and is it free of blockages?</b> Inspection of sanitary sewer lateral with a closed circuit television (CCTV) is best practice if a home is over 25 years old, if the home has experienced sewer backup or if the home experiences chronic drain backup. <b>Note: Determining the condition of the sewer lateral is outside of scope of this assessment. Consult a qualified professional.</b>	SB, WS	<b>Note: Only a qualified professional can formally identify the condition and the connection status of this item. Note: Work with a qualified professional and check with the government department having jurisdictional authority to determine availability your eligibility for any subsidies.</b>	See <b>B</b> on <b>Inside Assessment</b> diagram. Your sanitary lateral is over 25 years old. Consider working with a qualified professional to complete a closed circuit television inspection of the sewer lateral to determine if maintenance or repairs are recommended to reduce your flood risk. If work is recommended, engage a qualified professional and contact the Region to determine your eligibility for a subsidy.
A	<b>Floor drain- Is your floor drain clear of physical barriers to water flow and in adequate condition to reduce flood risk?</b> Note: Some homes built before 1950 do not have a floor drain. Floor drain is present, demonstrates clear flow path of water to drain, drain is in good condition, free of debris, standing water is present in trap.	SB	Floor drain is present, demonstrates partly blocked water flow path to drain, drain in poor condition (evidence of cracks, roots, smell), debris evident, standing water present in trap.	See <b>A</b> on <b>Inside Assessment</b> diagram. The floor drain is partially blocked under the washer and dryer. Consider relocating the washer and/or dryer or both to provide access to the floor drain. Remove items blocking the path of water flow to drain, clean out debris in the trap.
	<b>Basement sanitary sewer lateral cleanout-</b> Basement sanitary sewer lateral cleanout is present and easily accessible.	SB	Basement sanitary sewer lateral cleanout is inaccessible OR not present OR needs further investigation.	The basement sanitary cleanout was not located. Consult with the Condo Corp to locate the sanitary sewer cleanout. Consider working with a qualified plumber to install an easily accessible hatch to improve maintenance access.

<p><b>C</b></p>	<p><b>Backwater valve- Is a backwater valve appropriate for use in your home or if it is in place, is it in good condition?</b> Consider working with a qualified professional to determine if a backwater valve is suitable for your home or to evaluate the condition of your backwater valve. Installing a backwater valve alarm further reduces risk by letting the homeowner know when the valve is closed and that house drains should not be used. <b>Note: This item is outside of scope of this assessment. Consult a qualified professional.</b></p>	<p><b>SB</b></p>	<p><b>Note: Only a qualified professional can formally identify if a backwater valve would be right for your home and the condition of an existing unit. Note: Check with the check with the government department having jurisdictional authority to determine availability of subsidy for installation and your eligibility.</b></p>	<p>See <b>C</b> on <b>Inside Assessment</b> diagram. Consider working with a qualified plumber to determine if a backwater valve is appropriate at your home to reduce flood risk. Consult with the municipality about grants to support the installation of a backwater valve on your sanitary sewer line.</p>
	<p><b>Foundation drain- Is a foundation drain (weepers) present? Is foundation drain functioning properly to drain water away from your foundation?</b> Note: Foundation drains are not common before 1960. Depending on the age of your house it may or may not have a foundation drain or it may have a drain that is old and in poor condition. Missing or clogged drains increase the risk of basement infiltration flooding. Foundation drains that are connected to sanitary or storm sewers increase the risk of sewer backup related flooding. <b>Note: Determining the condition and the plumbing connection of the foundation drain is outside of scope of this assessment. Consult a qualified professional.</b></p>	<p><b>GS, OW, SB</b></p>	<p><b>Note: Only a qualified professional can formally identify the condition of this item or recommend if one would be right for your home. Note: Check with the check with the government department having jurisdictional authority to determine availability of subsidy and your eligibility.</b></p>	<p>This house does not appear to have a foundation drain.</p>
	<p><b>Indoor Sources of Moisture- Are indoor sources of moisture limited to reduce mold and mildew risk?</b> If bathroom with shower is present, fan is present and when running is strong enough to hold a piece of tissue. Fan is run for 30-60 minutes after bath or shower use. Furnace humidifiers do not operate in the summer. Wood is not stored, laundry is not hung, boots are not dried etc. in the basement.</p>	<p><b>N/A</b></p>	<p>If bathroom with shower is present, fan is present but can't hold piece of tissue when running, OR fan is not present OR fan is run for less than 10 minutes after shower or bath. Furnace humidifiers operate in the summer OR items are stored that increase humidity. OR needs further investigation.</p>	<p>No bathroom in the basement. The relative humidity was approx. 55% in the basement. Run dehumidifier(s) to ensure relative humidity is kept at between 30-50%.</p>

**Assessed Maintenance**

Fig	Maintenance Feature and Best Practice	Type of Water Damage	Assessment	Opportunity to Reduce Risk
	<p><b>Sanitary sewer lateral maintenance-</b> If the home is over 25 years of age, has experienced sewer backup or has experienced chronic drainage issues, the homeowner has completed closed circuit television (CCTV) inspection. Based on recommendations of a qualified professional, homeowner has cleaned out, lined or replaced damaged lateral as needed. Homeowner prevents clogging by preventing fats, oils, flushable wipes and grease from going down the drain.</p>	<p><b>SB, WS</b></p>	<p>If the home is over 25 years of age, has experienced sewer backup or has experienced chronic drainage issues, the homeowner has not completed closed circuit television (CCTV) inspection. Homeowner puts fats, oils, flushable wipes and grease down the drain.</p>	<p>Complete sewer camera inspection if sewer backup occurs; camera inspection recommended every 5-10 years as preventative measure. Once the home is 25 years old, line or replace damaged lateral as needed. Prevent clogging by preventing fats, oils and grease from going down the drain.</p>
	<p><b>Floor drain maintenance-</b> Each season the homeowner removes obstacles to water flowing freely to the drain, tops up standing water in trap, removes any debris from drain. In case of blockage, strange smell, lack of water in trap, contacts a licensed plumber.</p>	<p><b>SB</b></p>	<p>Homeowner never removes obstacles to water flowing freely to the drain, tops up standing water in trap, removes any debris from drain. In case of blockage, strange smell, lack of water in trap, homeowner does not contact a licensed plumber.</p>	<p>See <b>A</b> on <b>Inside Assessment</b> diagram. Each season move the washer and dryer to inspect the floor drain, clear the path of water to drain, top up standing water in trap, remove any debris from drain. In case of blockage, strange smell, lack of water in trap, contact a licensed plumber.</p>
	<p><b>Unfinished wall crack maintenance-</b> Homeowner checks for cracks once per season, fills cracks, removes sources of water buildup at foundation as needed (corrects drainage, repairs eaves troughs and/or removes snow in winter, seals foundation from outside in extreme cases). Consults with professional in case of major problems.</p>	<p><b>GS</b></p>	<p>Homeowner never checks for cracks, fills cracks, removes sources of water buildup at foundation as needed.</p>	<p>Check for cracks once per season, fill cracks, remove sources of water buildup at foundation as needed (correct drainage, repair eaves troughs and/or remove snow in winter, seal foundation from outside in extreme cases).</p>
	<p><b>Unfinished wall efflorescence maintenance-</b> Once per season checks for evidence of efflorescence, addresses sources of water buildup at foundation, cleans and repaints with masonry waterproofing paint as required.</p>	<p><b>GS</b></p>	<p>Never checks for evidence of efflorescence, addresses sources of water buildup at foundation, cleans and repaints with masonry waterproofing paint as required.</p>	<p>Once per season check for evidence of efflorescence. Address sources of water buildup at foundation. Clean and repaint with masonry waterproofing paint as required.</p>

	<p><b>Unfinished floor crack maintenance-</b> Checks for cracks once per season, fills cracks, removes source of water buildup at foundation as needed (corrects drainage, repairs eaves troughs and/or removes snow in winter, seals foundation from outside in extreme cases). Consults with professional regarding major concerns.</p>	<b>GS</b>	<p>Homeowner never checks for cracks, fills cracks, removes source of water buildup at foundation as needed (corrects drainage, repairs eaves troughs and/or removes snow in winter, seals foundation from outside in extreme cases). Never consults with qualified professional regarding major concerns.</p>	<p>Check for cracks once per season, fill cracks, remove source of water buildup at foundation as needed (correct drainage, repair eaves troughs and/or remove snow in winter, seal foundation from outside in extreme cases).</p>
	<p><b>Unfinished floor efflorescence maintenance-</b> Once per season homeowner checks for evidence of efflorescence, addresses sources of water buildup at foundation, cleans and repaints with masonry waterproofing paint as required.</p>	<b>GS</b>	<p>Homeowner never checks for evidence of efflorescence, addresses sources of water buildup at foundation, cleans and repaints with masonry waterproofing paint as required.</p>	<p>Once per season check for evidence of efflorescence. Address sources of water buildup at foundation. Clean and repaint with masonry waterproofing paint as required.</p>
	<p><b>Indoor plumbing and fixtures maintenance-</b> Each season toilets, taps, pipes and water heaters are inspected by homeowner, inspected and repaired by plumber as needed. Water leak alarms are present.</p>	<b>PF</b>	<p>Toilets, taps, pipes and water heaters are not inspected by homeowner, inspected and repaired by plumber as needed. No water leak alarms are present.</p>	<p>This house does not have a basement bathroom, however; each season inspect taps, pipes and water heater for leaks and signs of wear. Repair or replace items with the assistance of a plumber as needed.</p>



## Additional Flood Protection Resources

### Regional Resources

#### [Saskatoon Key Flood Protection Resources](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Key-Flood-Protection-Resources_Saskatoon_final.pdf)

[http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Key-Flood-Protection-Resources\\_Saskatoon\\_final.pdf](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Key-Flood-Protection-Resources_Saskatoon_final.pdf)

#### [Saskatoon Contractor List](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Contractor-List-Saskatoon_March-2018.pdf)

[http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Contractor-List-Saskatoon\\_March-2018.pdf](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Contractor-List-Saskatoon_March-2018.pdf)

#### [Burlington Key Flood Protection Resources](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Key-Flood-Protection-Resources_Burlington_2017.pdf)

[http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Key-Flood-Protection-Resources\\_Burlington\\_2017.pdf](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Key-Flood-Protection-Resources_Burlington_2017.pdf)

#### [Burlington Contractor List](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Contractors-List-Final-Burlington.pdf)

<http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Contractors-List-Final-Burlington.pdf>

#### [Toronto Key Flood Protection Resources](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Key-Flood-Protection-Resources_Toronto_2018.pdf)

[http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Key-Flood-Protection-Resources\\_Toronto\\_2018.pdf](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Key-Flood-Protection-Resources_Toronto_2018.pdf)

#### [Toronto Contractor List](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Contractor-List-Toronto-Final-March-2018.pdf)

<http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Contractor-List-Toronto-Final-March-2018.pdf>

#### [Hamilton Key Flood Protection Resources](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Key-Flood-Protection-Resources_Hamilton-2018.pdf)

[http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Key-Flood-Protection-Resources\\_Hamilton-2018.pdf](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Key-Flood-Protection-Resources_Hamilton-2018.pdf)

#### [Oakville Key Flood Protection Resources](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Key-Flood-Protection-Resources_Oakville-2018.pdf)

[http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Key-Flood-Protection-Resources\\_Oakville-2018.pdf](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Key-Flood-Protection-Resources_Oakville-2018.pdf)

#### [Waterloo Region Flood Protection Resources](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Key-Flood-Protection-Resources_Waterloo-Region-2018.pdf)

[http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Key-Flood-Protection-Resources\\_Waterloo-Region-2018.pdf](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Key-Flood-Protection-Resources_Waterloo-Region-2018.pdf)

### National Resources

#### [Infographic- Top Tips For Reducing Flood Risk](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2016/08/reduce_your_risk_infographic_r13.jpg)

[http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2016/08/reduce\\_your\\_risk\\_infographic\\_r13.jpg](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2016/08/reduce_your_risk_infographic_r13.jpg)

#### [Seasonal Flood Protection Checklist](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2017/04/Seasonal-Flood-Protection-Maintenance-Record-2018_Final.pdf)

[http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2017/04/Seasonal-Flood-Protection-Maintenance-Record-2018\\_Final.pdf](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2017/04/Seasonal-Flood-Protection-Maintenance-Record-2018_Final.pdf)

#### [Infographic- Understanding Flood Insurance Coverage](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2016/08/types_of_flood_risks_infographic_r10.jpg)

[http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2016/08/types\\_of\\_flood\\_risks\\_infographic\\_r10.jpg](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2016/08/types_of_flood_risks_infographic_r10.jpg)

#### [Question Ask Your Insurance Providers to](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Questions-to-Ask-Your-Insurance-Provider_March-2018.pdf)

[http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Questions-to-Ask-Your-Insurance-Provider\\_March-2018.pdf](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Questions-to-Ask-Your-Insurance-Provider_March-2018.pdf)

**[Estimated Cost Ranges for Completing Flood Protection Projects](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Cost-Range-for-Flood-Risk-Reduction-Projects_final.pdf)**

[http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Cost-Range-for-Flood-Risk-Reduction-Projects\\_final.pdf](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Cost-Range-for-Flood-Risk-Reduction-Projects_final.pdf)

**[Water Resistant Building Materials for Your Basement](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Water-Resistant-Building-Materials-Resource-for-Homeowners_FINAL.pdf)**

[http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Water-Resistant-Building-Materials-Resource-for-Homeowners\\_FINAL.pdf](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Water-Resistant-Building-Materials-Resource-for-Homeowners_FINAL.pdf)

**[Temporary Flood Barriers for Your Home](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Final-Copy-Flood-Barriers-for-Homeowners_2018.pdf)**

[http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Final-Copy-Flood-Barriers-for-Homeowners\\_2018.pdf](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/Final-Copy-Flood-Barriers-for-Homeowners_2018.pdf)

**[CMHC Guide for Understanding and Fixing Interior Moisture Problems](http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/CMHC-Mold-Brochure.pdf)**

<http://www.intactcentreclimateadaptation.ca/wp-content/uploads/2018/03/CMHC-Mold-Brochure.pdf>



## Appendices

### Appendix A. Client Information Summary

Type of Home	Townhouse End Unit
Ownership	Owner
Type of Ownership	Condominium
Consents To Study	Yes
Length of Time in Home	0-5 years
Plan to Stay in Home	5-10 years
Year Home Was Built	1982
Era of Neighbourhood development	Between 1971 and 1990
Home Layout	Split Level
Home Size	Between 1000 to 2000 sq ft
Lot Size	Up to 1/4 acre
Basement Type	Partly finished
Foundation Type	Poured concrete
Soil Type	Unsure
Property within CA Regulated Area	No
Water Supply	Municipal
Sewage Service	Municipal
Weather Conditions	Sunny





## Appendix B. Reported Past Water Damage Summary

<b>Past Water Damage to Your Lot and Exterior Structures</b>	
Have you experienced any type of water damage to your lot and/or exterior structures (decks, garages, sheds) in the past?	Yes
What was the cause of the water damage?	Rain fall or snow melt originating on your property.
What category would the water damage fit into (total damage to structures or content)	Above \$25,000
What actions did you take to reduce your risk of future water damage outside your home?	Completing repairs or upgrades, Completing maintenance activities.
What is your level of concern about experiencing water damage to your lot or exterior structures in the future?	High
Please list your top 2 water damage-related questions you have about your lot or exterior structures	How do I prevent overland flooding like I experienced in my former home?
<b>Past Water Damage To Your Home</b>	
Have you experienced water in your basement or any type of water damage inside your home in the past?	Yes
What was the cause of the water damage?	Sewer backup through toilet or drains, Sump pump failure.
What category would the water damage fit into (Total damage to structures or content)	Above \$25,000
What actions did you take to reduce your future risk of indoor water damage?	Completing repairs or upgrades, Completing maintenance activities.
What is your level of concern about experiencing water damage to your home is in the future?	High
Please list top 2 water-damage related questions you have about your home	How do I prevent sewer back up to avoid the terrible flood like I had at my former home?



## Appendix C. Outside Assessment Form

Assessed Feature and Best Practice	Type of Water Damage	Assessment	Opportunity to Reduce Risk
<b>Overland Drainage of Property</b>			
<p><b>Overland drainage of property- Twenty four hours after a heavy rain do you see ponding or pooling on your property or in nearby storm drains or drainage ditches?</b> Twenty four hours after a heavy rain water does not pool on the subject property or in nearby storm drains or drainage ditches. If drainage swales are present on the property they are unblocked and are at least 15cm (6") deep.</p>	OW	<p>Twenty four hours after a heavy rain some water pooling is seen on the subject property or in nearby storm drains or drainage ditches. If drainage swales are present on the property they are unblocked and are at least 15cm (6") deep.</p>	<p>Ensure water flows away freely from the foundation. There is a swale that runs along the back property lines. Behind your property, in the swale is a storm drain. Consult with the Condo Corp to ensure that the storm drain is free and clear of any obstructions. Ensure that the storm drain has the capacity to drain water away from an extreme storm event. Contact the Condo Corp if the storm drain is not emptying within 24 hours. Note: Consult with the City about drainage by-laws if any significant grading change is being considered.</p>
<p><b>Overland drainage maintenance-</b> Once per season or when major storm events are predicted, homeowner checks for and removes debris and obstructions from water flow paths including swales, nearby storm drains, culverts and drainage ditches.</p>	OW	<p>Never checks for and removes debris and obstructions from water flow paths including swales, nearby storm drains, culverts and drainage ditches.</p>	<p>See <b>A</b> on <b>Outside Assessment</b> diagram. Once per season or when major storm events are predicted, check for and remove debris and obstructions in swales and the storm drain behind your property. If storm drain behind your property is free of debris but is still not draining within 24 hours, contact the Condo Corp.</p>
<b>Landscaping</b>			

<p><b>Condition and location of trees- Would falling limbs due to strong winds or ice accumulation pose any risk of property damage to the home or hydro lines? Does their location pose potential risk to the home's foundation or sewer lateral?</b> Trees appear to be in good condition. Their limbs do not hang over the home, driveway or hydro lines. Trees are in a position where they likely do not pose a root damage risk to the home's foundation or sewer lateral.</p>	<p><b>SB, WS, GS</b></p>	<p>Trees appear to be in moderate condition. OR A few tree limbs hang over the home, driveway or hydro lines. OR The position of trees represents moderate potential root risk to the home's foundation or sewer lateral.</p>	<p>If the trees are on Condo Corp property, request trimming or removal of tree by the Condo Corp. If the trees are on private property consider contacting a certified arborist to assess tree health and prune as required. Look for warning signs of sewer lateral blockage inside home (see Inside Assessment).</p>
<p><b>Tree maintenance-</b> Once per season homeowner checks condition of trees and waters during drought periods.</p>	<p><b>SB, WS, GS</b></p>	<p>Once per year homeowner checks condition of trees and waters during drought periods.</p>	<p>Once per season check the condition of the trees. Water during drought periods. If concerned about the trees on the Condo Corp property contact the Condo Corp for assistance. If concerned about trees on your property contact a certified arborist for help.</p>
<p><b>Garden beds adjacent to home - Do garden beds slope away from your home at minimum of 5% slope and leave a minimum of 20 cm (8") of your foundation exposed? Do foundation plantings provide adequate light exposure and air movement to foundation?</b> Foundation plantings provide good light and air circulation between plantings and foundation. A minimum 20 cm (8") of foundation remains exposed. Trees that will reach a height of 10m (30') or more are minimum of 5m (15') from foundation and shrubs are minimum of 1.8m (6') from foundation. The garden bed has a 5% slope away from the foundation and water drains freely away from the foundation.</p>	<p><b>GS</b></p>	<p>Foundation plantings provide poor light and air circulation between plantings and foundation. Less than 20cm (8") foundation remains exposed. Trees that will reach height of 10m (30') or are closer than 4m (12') from foundation and shrubs are closer than 1m (12") from foundation. The garden bed has less than 2-3% slope away from the foundation and water drains poorly away from the foundation.</p>	<p>See <b>B</b> on <b>Outside Assessment</b> diagram. Heavily prune back plantings to improve light and air circulation. Remove plantings that are too close to foundation. Correct grade to minimum 5% slope to ensure water flows away from foundation.</p>
<p><b>Landscaping maintenance-</b> Once per year homeowner corrects grading issues within 1.8m (6') of foundation, applies mulch to garden beds, aerates lawn.</p>	<p><b>GS</b></p>	<p>Homeowner never corrects grading issues within 1.8m (6') of foundation, applies mulch to garden beds, aerates lawn.</p>	<p>Once per year correct grading issues within 10' (3m) of foundation, apply mulch to garden beds.</p>
<p><b>Driveways, Walkways and Patios</b></p>			

<p><b>Impermeable (waterproof surface such as asphalt and interlocking pavers) driveway- Is your driveway free of cracks and does it slope away from your home at a minimum of 1-2%?</b> Driveway is sloped away from the foundation walls at a slope of 1-2% and is free of cracks and gaps.</p>	<p><b>GS</b></p>	<p>Impermeable driveway directs water away from foundation (1-2% slope) and is free of cracks and gaps.</p>	<p>No action required.</p>
<p><b>Impermeable (waterproof) driveway maintenance-</b> Once per season homeowner checks for evidence of pooling and ice buildup, repairs grading, seals cracks, fills gaps, removes weeds.</p>	<p><b>GS</b></p>	<p>Homeowner never checks for evidence of pooling and ice buildup, repairs grading, seals cracks, fills gaps, removes weeds.</p>	<p>Once per season check for evidence of pooling, ice buildup, repair grading, seal cracks, fill gaps, remove weeds.</p>
<p><b>Walkways and patios- Do your walkways and patios slope a minimum of 1-2% away from foundation walls? Are they free of cracks and gaps?</b> Walkway achieves minimum slope of 1-2% to direct water away from foundation and is free of cracks and gaps.</p>	<p><b>OW, GS</b></p>	<p>Walkway achieves minimum 1-2% slope to direct water away from foundation, small number of cracks or gaps are present.</p>	<p>Rear patio stone remove weeds and fill joints with sand to prevent additional damage.</p>
<p><b>Walkways and patios maintenance-</b> Once per season homeowner checks for evidence of pooling, ice buildup, repairs grading, seals cracks, fill gaps, removes weeds.</p>	<p><b>OW, GS</b></p>	<p>Homeowner never checks for evidence of pooling, ice buildup, repairs grading, seals cracks, fill gaps, removes weeds.</p>	<p>Once per season check for evidence of pooling, ice buildup, repair grading, fill gaps, removes weed. Replace if surface in very poor condition.</p>
<p><b>Grading at Foundation</b></p>			
<p><b>Grading at foundation- After a heavy rain does the grading within 1.8m (6') of your foundation walls direct water away or do you see water pooling?</b> The grading within 1.8 m (6') of the foundation walls achieves a minimum 5% slope to direct water away from the foundation. The surface does not easily soak up water.</p>	<p><b>OW, GS</b></p>	<p>The grading within 1m (3') at the foundation achieves a 5% slope away from the foundation. The surface moderately soaks up water.</p>	<p>Rear patio, repair grading to achieve at least 1-2% for paved surfaces. Replace surface with non-water absorbent material.</p>
<p><b>Grading at foundation maintenance-</b> Each season homeowner checks for signs of water pooling or ice formation; corrects grading to achieve at least 5% slope away from foundation.</p>	<p><b>OW, GS</b></p>	<p>Homeowner never checks for signs of water pooling or ice formation; corrects grading to achieve at least 5% slope away from foundation.</p>	<p>Each season check for signs of water pooling or ice formation. Repair grading 1-2% for paved surfaces.</p>
<p><b>Eaves Troughs and Downspouts</b></p>			

<p><b>Eaves troughs- Are eaves troughs adequately sized and in adequate condition to reduce flood risk?</b> Eaves troughs wrap around entire building, are in good repair and are free of debris, with a minimum downspout placement every 9-12m (30-40'). Eaves trough of 13cm (5") are present for asphalt shingles or 15cm (6") for metal roof.</p>	GS	Eaves troughs do not wrap around entire building, are in poor repair, contain a high amount of debris, OR do not have downspouts placed every 9-12m (30-40'). Eaves troughs are undersized and/or do not have 13cm (5") eaves trough for asphalt shingles or 15cm (6") for metal roof OR needs further investigation.	See <b>C</b> on <b>Outside Assessment</b> diagram. The eaves trough from the joining condo drains into your eaves trough causing a potential overflow of your eave trough. You have noted regular overflow of your eaves trough which increases your risk of overland flooding. Contact the Condo Corp to assess and consult a qualified professional to correct the eaves drainage and install proper downspouts to direct water away from your property.
<p><b>Eaves trough maintenance-</b> Each season during heavy water flow, homeowner checks eaves troughs for leaks, debris and blockage. Repairs and debris removal are completed as needed.</p>	GS	Each season during heavy water flow, homeowner checks eaves troughs for leaks, debris and blockage. Repairs and debris removal are completed as needed.	Each season during heavy water flow, check for leaks, debris and blockage. Repair, replace and clean out as needed.
<p><b>Connected downspouts- Are downspouts connected to SANITARY OR STORM sewer?</b> Where approved by local authorities, downspouts should be disconnected from foundation drains, caps should be installed over underground pipe connections and downspouts should be extended to at least 1.8-3m (6-10') from the foundation or to nearest drainage swale. Water should not drain onto hard surfaces or onto adjacent property.</p>	SB	<b>Note: Check with the government department having jurisdictional authority to determine eligibility for downspout disconnection and any available subsidy.</b>	See <b>D</b> on <b>Outside Assessment</b> diagram. Downspouts are connected to a clay tile in the front patio and rear patio with no visible drainage point. Consult with your Condo Corp or Municipality about whether disconnection is right for your property and if grants are available.
<p><b>Disconnected downspouts- Are downspouts (that are not presently connected into underground pipes) directing water at least 1m (6') away from your home or nearest drainage swale?</b> For downspouts that have been disconnected, caps are securely in place to block movement of water into underground pipes. Downspouts extend at least 1.8m (6') away from the foundation or to drainage swale. Water is not directed onto hard surfaces or adjacent private property.</p>	GS	N/R	N/R

<p><b>Downspout maintenance-</b> Once per season homeowner checks to make sure downspout extensions are secured, free of leaks, depositing water at least 1.8m (6') from foundation or to drainage swale and that water is not flowing onto adjacent property.</p>	<p><b>GS</b></p>	<p>Homeowner never checks to make sure downspout extensions are secured, free of leaks, depositing water at least 1.8m (6') from foundation or to drainage swale and that water is not flowing onto adjacent property.</p>	<p>See <b>D</b> on <b>Outside Assessment</b> diagram. Once per year check to make sure downspout extensions are secured, free of leaks, deposit water 10' (3m) from foundation or to a drainage swale and that water is not flowing onto adjacent property. Downspouts are connected to a clay tile in the front patio and rear patio with no visible drainage point. Consult with your Condo Corp or Municipality about whether disconnection is right for your property and if grants are available.</p>
<p><b>Foundation</b></p>			
<p><b>Foundation structure- Is your foundation free of cracks and gaps?</b> Foundation appears to be in good condition, is free of cracks and finishing gaps (e.g. missing parging). Foundation penetrations are well sealed and sit above the anticipated flood level.</p>	<p><b>GS</b></p>	<p>Foundation appears to be in good condition, is free of cracks and finishing gaps (e.g. missing parging). Foundation penetrations are well sealed and sit above the anticipated flood level.</p>	<p>No action required.</p>
<p><b>Foundation structure maintenance-</b> Once per season homeowner checks for cracks and gaps, repairs as required.</p>	<p><b>GS</b></p>	<p>Homeowner never checks for cracks and gaps, repairs as required.</p>	<p>Once per season check for cracks and gaps, repair as required. Contact a qualified foundation repair contractor for cracks greater than 1/4" (6mm).</p>
<p><b>Foundation clearance maintenance-</b> Stored items are kept at least 15cm (6") from foundation. As dictated by snow storm events, homeowners clears snow 1m (3'6") away from foundation, keeps window openings clear of snow and ensures vents are clear.</p>	<p><b>GS</b></p>	<p>Stored items are kept at least 15cm (6") from foundation. As dictated by snow storm events, homeowner clears snow 1m (3'6") away from foundation, keeps window openings clear of snow piles and ensures vents are clear.</p>	<p>Store item at least 6" from foundation. At intervals dictated by snow storms, regularly keep snow piles 3' (1m) away from foundation and keep window openings clear of snow piles. Ensure vents are clear.</p>
<p><b>Foundation efflorescence- Are there signs of efflorescence on the foundation that could indicate moisture problems?</b> Efflorescence (mineral deposits) indicate water moving through masonry, evaporating, leaving minerals behind. Presence of efflorescence can indicate water issues that can lead to spalling or structural damage.</p>	<p><b>GS</b></p>	<p>No evidence of efflorescence.</p>	<p>No action required.</p>

<p><b>Foundation moisture content- Is your foundation showing high levels of water retention?</b> Low level of moisture at surface is indicated.</p>	<p><b>GS</b></p>	<p>Low level of moisture at surface is indicated.</p>	<p>No action required.</p>
<p><b>Windows</b></p>			
<p><b>Condition of windows- Are windows in adequate condition to help reduce risk of basement flooding?</b> Frames, glass and seals are all in good condition.</p>	<p><b>OW</b></p>	<p>Frames, glass and seals are in moderate condition.</p>	<p>Seal and repair frames, glass and seals, replace as required.</p>
<p><b>Exterior Water Sources</b></p>			
<p><b>Hose bib maintenance-</b> Spring, summer, fall homeowner checks for leaks, repairs as necessary. Before winter, outdoor water supply is shut off and water line is drained. Hose is drained and removed.</p>	<p><b>OW, GS</b></p>	<p>Once per year homeowner checks for leaks, repairs as necessary. Before winter, outdoor water supply is shut off and water line is drained. Hose is drained but not removed.</p>	<p>Spring, summer, fall check for leaks, repair as necessary. In the winter shut off outdoor water supply and drain water line.</p>



## Appendix D. Inside Assessment Form

Assessed Feature and Best Practice	Type of Water Damage	Assessment	Opportunity to Reduce Risk
<b>Sewer and Storm Lateral</b>			
<p><b>Sanitary sewer lateral- Is your sanitary sewer lateral in good condition and is it free of blockages?</b> Inspection of sanitary sewer lateral with a closed circuit television (CCTV) is best practice if a home is over 25 years old, if the home has experienced sewer backup or if the home experiences chronic drain backup. <b>Note: Determining the condition of the sewer lateral is outside of scope of this assessment. Consult a qualified professional.</b></p>	SB, WS	<p><b>Note: Only a qualified professional can formally identify the condition and the connection status of this item.</b></p> <p><b>Note: Work with a qualified professional and check with the government department having jurisdictional authority to determine availability your eligibility for any subsidies.</b></p>	<p>See <b>B</b> on <b>Inside Assessment</b> diagram.</p> <p>Your sanitary lateral is over 25 years old. Consider working with a qualified professional to complete a closed circuit television inspection of the sewer lateral to determine if maintenance or repairs are recommended to reduce your flood risk. If work is recommended, engage a qualified professional and contact the Region to determine your eligibility for a subsidy.</p>
<p><b>Sanitary sewer lateral maintenance-</b> If the home is over 25 years of age, has experienced sewer backup or has experienced chronic drainage issues, the homeowner has completed closed circuit television (CCTV) inspection. Based on recommendations of a qualified professional, homeowner has cleaned out, lined or replaced damaged lateral as needed. Homeowner prevents clogging by preventing fats, oils, flushable wipes and grease from going down the drain.</p>	SB, WS	<p>If the home is over 25 years of age, has experienced sewer backup or has experienced chronic drainage issues, the homeowner has not completed closed circuit television (CCTV) inspection. Homeowner puts fats, oils, flushable wipes and grease down the drain.</p>	<p>Complete sewer camera inspection if sewer backup occurs; camera inspection recommended every 5-10 years as preventative measure. Once the home is 25 years old, line or replace damaged lateral as needed. Prevent clogging by preventing fats, oils and grease from going down the drain.</p>
<b>Floor Drain</b>			
<p><b>Floor drain- Is your floor drain clear of physical barriers to water flow and in adequate condition to reduce flood risk?</b></p> <p>Note: Some homes built before 1950 do not have a floor drain. Floor drain is present, demonstrates clear flow path of water to drain, drain is in good condition, free of debris, standing water is present in trap.</p>	SB	<p>Floor drain is present, demonstrates partly blocked water flow path to drain, drain in poor condition (evidence of cracks, roots, smell), debris evident, standing water present in trap.</p>	<p>See <b>A</b> on <b>Inside Assessment</b> diagram.</p> <p>The floor drain is partially blocked under the washer and dryer. Consider relocating the washer and/or dryer or both to provide access to the floor drain. Remove items blocking the path of water flow to drain, clean out debris in the trap.</p>



<p><b>Floor drain maintenance-</b> Each season the homeowner removes obstacles to water flowing freely to the drain, tops up standing water in trap, removes any debris from drain. In case of blockage, strange smell, lack of water in trap, contacts a licensed plumber.</p>	<p><b>SB</b></p>	<p>Homeowner never removes obstacles to water flowing freely to the drain, tops up standing water in trap, removes any debris from drain. In case of blockage, strange smell, lack of water in trap, homeowner does not contact a licensed plumber.</p>	<p>See <b>A</b> on <b>Inside Assessment</b> diagram. Each season move the washer and dryer to inspect the floor drain, clear the path of water to drain, top up standing water in trap, remove any debris from drain. In case of blockage, strange smell, lack of water in trap, contact a licensed plumber.</p>
<p><b>Basement sanitary sewer lateral cleanout-</b> Basement sanitary sewer lateral cleanout is present and easily accessible.</p>	<p><b>SB</b></p>	<p>Basement sanitary sewer lateral cleanout is inaccessible OR not present OR needs further investigation.</p>	<p>The basement sanitary cleanout was not located. Consult with the Condo Corp to locate the sanitary sewer cleanout. Consider working with a qualified plumber to install an easily accessible hatch to improve maintenance access.</p>
<p><b>Backwater Valve</b></p>			
<p><b>Backwater valve- Is a backwater valve appropriate for use in your home or if it is in place, is it in good condition?</b> Consider working with a qualified professional to determine if a backwater valve is suitable for your home or to evaluate the condition of your backwater valve. Installing a backwater valve alarm further reduces risk by letting the homeowner know when the valve is closed and that house drains should not be used. <b>Note: This item is outside of scope of this assessment. Consult a qualified professional.</b></p>	<p><b>SB</b></p>	<p><b>Note: Only a qualified professional can formally identify if a backwater valve would be right for your home and the condition of an existing unit. Note: Check with the check with the government department having jurisdictional authority to determine availability of subsidy for installation and your eligibility.</b></p>	<p>See <b>C</b> on <b>Inside Assessment</b> diagram. Consider working with a qualified plumber to determine if a backwater valve is appropriate at your home to reduce flood risk. Consult with the municipality about grants to support the installation of a backwater valve on your sanitary sewer line.</p>
<p><b>Foundation Drain (Weepers)</b></p>			

<p><b>Foundation drain- Is a foundation drain (weepers) present? Is foundation drain functioning properly to drain water away from your foundation?</b> Note: Foundation drains are not common before 1960. Depending on the age of your house it may or may not have a foundation drain or it may have a drain that is old and in poor condition. Missing or clogged drains increase the risk of basement infiltration flooding. Foundation drains that are connected to sanitary or storm sewers increase the risk of sewer backup related flooding. <b>Note: Determining the condition and the plumbing connection of the foundation drain is outside of scope of this assessment. Consult a qualified professional.</b></p>	<p><b>GS, OW, SB</b></p>	<p><b>Note: Only a qualified professional can formally identify the condition of this item or recommend if one would be right for your home. Note: Check with the check with the government department having jurisdictional authority to determine availability of subsidy and your eligibility.</b></p>	<p>This house does not appear to have a foundation drain.</p>
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### Exposed Foundation Walls, Floors and Cold Rooms

<p><b>Unfinished wall cracks- Are your foundation walls free of cracks and stains?</b> Foundation walls are free of cracks and water stains.</p>	<p><b>GS</b></p>	<p>Foundation walls are free of cracks and water stains.</p>	<p>No action required.</p>
<p><b>Unfinished wall crack maintenance-</b> Homeowner checks for cracks once per season, fills cracks, removes sources of water buildup at foundation as needed (corrects drainage, repairs eaves troughs and/or removes snow in winter, seals foundation from outside in extreme cases). Consults with professional in case of major problems.</p>	<p><b>GS</b></p>	<p>Homeowner never checks for cracks, fills cracks, removes sources of water buildup at foundation as needed.</p>	<p>Check for cracks once per season, fill cracks, remove sources of water buildup at foundation as needed (correct drainage, repair eaves troughs and/or remove snow in winter, seal foundation from outside in extreme cases).</p>
<p><b>Unfinished wall efflorescence- Is there evidence of efflorescence on your walls, indicating water movement through the foundation?</b> Foundation walls are free of efflorescence.</p>	<p><b>GS</b></p>	<p>Foundation walls are free of efflorescence.</p>	<p>No action required.</p>
<p><b>Unfinished wall efflorescence maintenance-</b> Once per season checks for evidence of efflorescence, addresses sources of water buildup at foundation, cleans and repaints with masonry waterproofing paint as required.</p>	<p><b>GS</b></p>	<p>Never checks for evidence of efflorescence, addresses sources of water buildup at foundation, cleans and repaints with masonry waterproofing paint as required.</p>	<p>Once per season check for evidence of efflorescence. Address sources of water buildup at foundation. Clean and repaint with masonry waterproofing paint as required.</p>

<p><b>Unfinished wall moisture- Are there high levels of moisture on the surface of your walls below windows, near cracks and where walls meet floor?</b> Low moisture levels on all tested areas of wall surface.</p>	GS	Low moisture levels on all tested areas of wall surface.	No action required.
<p><b>Unfinished floor cracks- Are there cracks in your floor that provide potential water entry sites to your basement?</b> Unfinished floors are free of cracks and water stains.</p>	GS	Unfinished floors are free of cracks and water stains.	No action required.
<p><b>Unfinished floor crack maintenance-</b> Checks for cracks once per season, fills cracks, removes source of water buildup at foundation as needed (corrects drainage, repairs eaves troughs and/or removes snow in winter, seals foundation from outside in extreme cases). Consults with professional regarding major concerns.</p>	GS	Homeowner never checks for cracks, fills cracks, removes source of water buildup at foundation as needed (corrects drainage, repairs eaves troughs and/or removes snow in winter, seals foundation from outside in extreme cases). Never consults with qualified professional regarding major concerns.	Check for cracks once per season, fill cracks, remove source of water buildup at foundation as needed (correct drainage, repair eaves troughs and/or remove snow in winter, seal foundation from outside in extreme cases).
<p><b>Unfinished floor efflorescence- Is there evidence of efflorescence on floors, indicating water movement through the foundation?</b> Floors are free of efflorescence.</p>	GS	Floors are free of efflorescence.	No action required.
<p><b>Unfinished floor efflorescence maintenance-</b> Once per season homeowner checks for evidence of efflorescence, addresses sources of water buildup at foundation, cleans and repaints with masonry waterproofing paint as required.</p>	GS	Homeowner never checks for evidence of efflorescence, addresses sources of water buildup at foundation, cleans and repaints with masonry waterproofing paint as required.	Once per season check for evidence of efflorescence. Address sources of water buildup at foundation. Clean and repaint with masonry waterproofing paint as required.
<p><b>Unfinished floor moisture- Are there high levels of moisture, indicating water entry into basement?</b> Low moisture levels are present on floor surface.</p>	GS	Low moisture levels are present on floor surface.	No action required.
<b>Finished Walls and Floors</b>			
<p><b>Finished walls- Are water stains or high moisture levels indicating source of water infiltration?</b> Walls are free of water stains, no evidence of mold (smell or visual evidence), audible moisture meter indicates no concern.</p>	GS	Walls are free of water stains, no evidence of mold (smell or visual evidence), audible moisture meter indicates no concern.	No action required.

<b>Finished wall maintenance- Each season homeowner checks for high levels of moisture and water stains.</b> If high levels of moisture or water damage and/or mold is evident, consults a professional for remediation.	<b>GS</b>	Each year homeowner checks for high levels of moisture and water stains. If high levels of moisture or water damage and/or mold is evident, consults a professional for remediation.	Each season check for water damage and signs of mold growth. Ensure humidity at between 30-50% by running dehumidifier if necessary. If water damage or mold is evident, consult professional for remediation.
<b>Finished floors- Are there high levels of moisture, indicating water entry into basement?</b> Low levels of moisture are present, no evidence of mold or mildew, no musty smell is present.	<b>GS</b>	Low levels of moisture are present, no evidence of mold or mildew, no musty smell is present.	No action required.
<b>Finished floor maintenance-</b> Each season homeowner checks for water damage, signs of mold growth. If water damage and/or mold is evident, consults professional for remediation.	<b>GS</b>	Each year checks for water damage, signs of mold growth. If water damage and/or mold is evident, consults professional for remediation.	Each season check for water damage, signs of mold growth. Ensure humidity at between 30-50% by running dehumidifier if necessary. If water damage, mold evident, consult professional for remediation.
<b>Windows</b>			
<b>Basement windows- Are windows in adequate condition to reduce risk of overland flooding?</b> Glass, frames and seals are all in good condition, no evidence of water entry.	<b>OW</b>	Glass, frames and seals are in moderate condition, evidence of minor water entry.	Seal cracks in window frame/sash and between window frame and foundation.
<b>Basement window maintenance-</b> Homeowner checks once per season for cracked glass, broken seals and rotting frames, repairs and/or replaces these as required. Regular review and repair reduces risk of basement flooding.	<b>OW</b>	Homeowner checks once per year for cracked glass, broken seals and rotting frames, repairs and/or replaces these as required.	Check once per season for cracked glass, broken seals and rotting frames, repair and/or replace as required.
<b>Plumbing Fixtures</b>			
<b>Indoor plumbing and fixtures maintenance-</b> Each season toilets, taps, pipes and water heaters are inspected by homeowner, inspected and repaired by plumber as needed. Water leak alarms are present.	<b>PF</b>	Toilets, taps, pipes and water heaters are not inspected by homeowner, inspected and repaired by plumber as needed. No water leak alarms are present.	This house does not have a basement bathroom, however; each season inspect taps, pipes and water heater for leaks and signs of wear. Repair or replace items with the assistance of a plumber as needed.
<b>Additional Considerations for Limiting Risk of Water Damage, Mold and Mildew Growth</b>			

<p><b>Furniture and electronics- Are furniture and electronics at risk of damage in the event of a flood?</b> Furniture items have non-absorbent surfaces up to 30cm (12") and electronics are stored at least 30cm (12") off the floor (or to exceed anticipated flood levels).</p>	N/A	Furniture items have non-absorbent surfaces up to 15cm (6") and electronics are stored at least 15cm (6") off the floor.	Select furniture items that have non-absorbent surfaces up to 12" and store electronics at least 12" off the floor.
<p><b>Stored valuables- Are your valuables at risk of damage during a flood or at risk of mold and mildew growth?</b> Valuables are stored in sealed, non-absorbent containers at least 30cm (12") off the floor (or to exceed anticipated flood levels), at least 15cm (6") away from walls that provide good air circulation OR no valuables are stored in the basement.</p>	N/A	Valuables are stored in sealed, non-absorbent containers at least 30cm (12") off the floor (or to exceed anticipated flood levels), at least 15cm (6") away from walls that provide good air circulation OR no valuables are stored in the basement.	No action required.
<p><b>Indoor Sources of Moisture- Are indoor sources of moisture limited to reduce mold and mildew risk?</b> If bathroom with shower is present, fan is present and when running is strong enough to hold a piece of tissue. Fan is run for 30-60 minutes after bath or shower use. Furnace humidifiers do not operate in the summer. Wood is not stored, laundry is not hung, boots are not dried etc. in the basement.</p>	N/A	If bathroom with shower is present, fan is present but can't hold piece of tissue when running, OR fan is not present OR fan is run for less than 10 minutes after shower or bath. Furnace humidifiers operate in the summer OR items are stored that increase humidity. OR needs further investigation.	No bathroom in the basement. The relative humidity was approx. 55% in the basement. Run dehumidifier(s) to ensure relative humidity is kept at between 30-50%.
<b>Hazardous Materials</b>			
<p><b>Hazardous materials- Are hazardous materials stored in a way that represents a contamination risk during a flood?</b> No hazardous materials are stored in the basement and/or materials are stored in waterproof containers at least 30 cm (12") off the floor (or to exceed anticipated flood levels). Heating fuel tanks are secured to the floor.</p>	N/A	No hazardous materials are stored in the basement and/or heating fuel tanks are secured to the floor.	No action required.