HOME FLOOD PROTECTION PROGRAM

UNIVERSITY OF WATERLOO

Prepared for
Sally Homeowner
113 Lucky Lane, Kitchener, ON

Date Completed: November 15, 2018
Assessor Name: Sample Assessor Assessor
Email: sample@aetgroup.ca
1-519-123-4567

Prepared on behalf of AET Group
www.aet98.com

TABLE OF CONTENTS

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 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
Good – Best practice	Observed or reported in good condition or reported maintenance practice
Intermediate	Observed or reported in intermediate condition or reported maintenance practice
Poor / Needs Further Investigation	Observed or reported in poor condition or reported maintenance practice or needs further investigation
Not Reported	Unobserved or unreported observed condition or reported maintenance practice
Out of Scope	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.

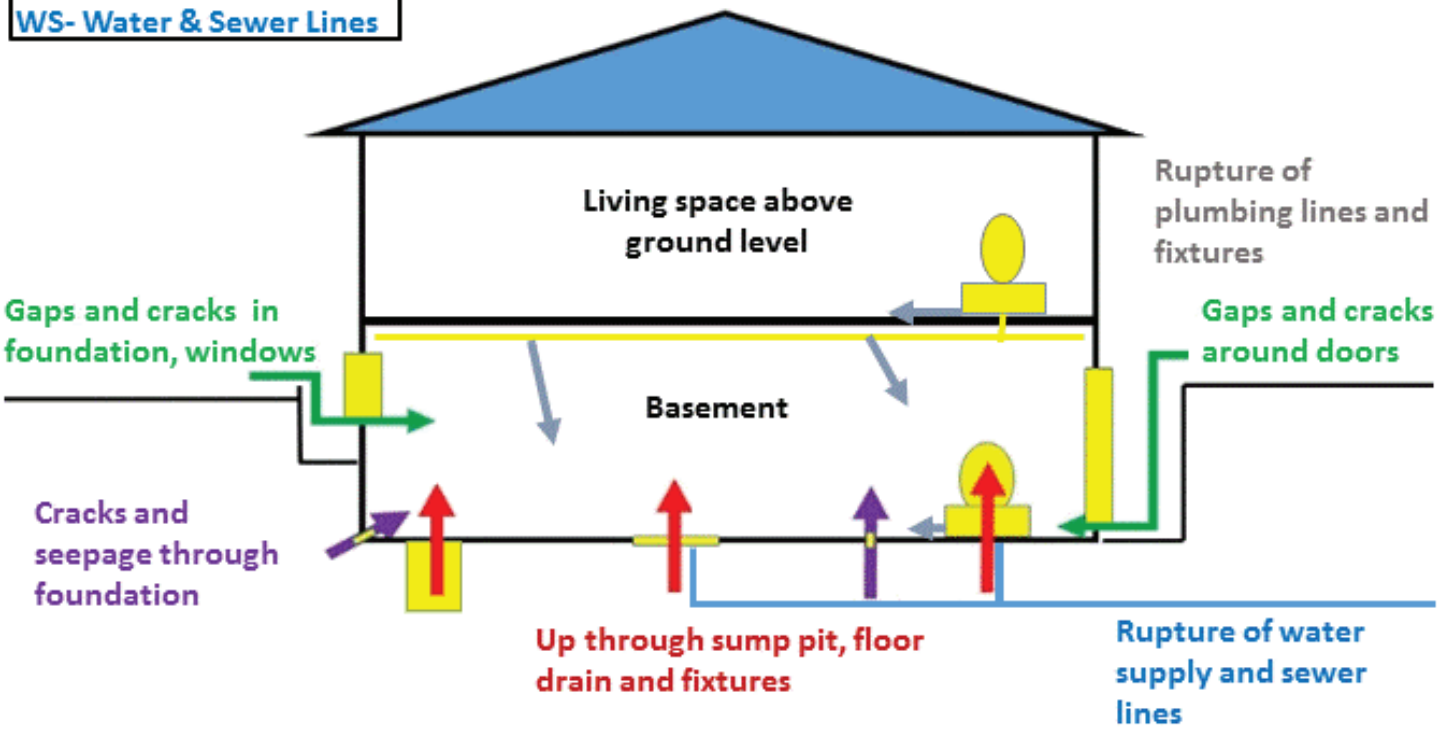
These water damage types are referenced in your Home Flood Protection Assessment Report to help you understand the types of water damage risks that have been identified at your home and your opportunities to reduce risk. Please see the customized list of maintenance best practices listed in your report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

Type of Water Damage:
PF- Plumbing and Fixtures
SB- Sewer Back-Up
OW- Overland Water
GS- Groundwater Seepage
WS- Water & Sewer Lines

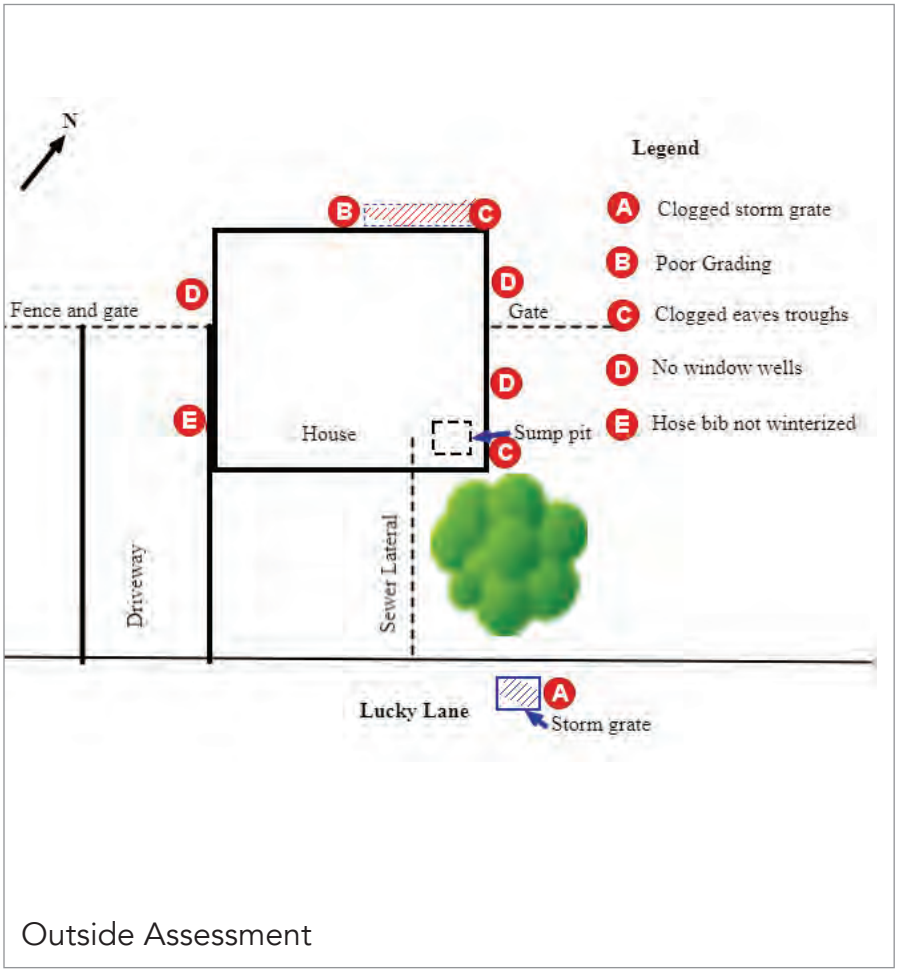
✓ **Typically Covered by Insurance:**
Sudden and accidental damage
X **Typically Not Covered by Insurance:**
Damage from chronic leaks or poor maintenance



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

A

B

C

D

ASSESSED FEATURES

Fig	Assessed Feature and Best Practice	Type of Water Damage	Assessment	Opportunity to Reduce Risk
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?** The grading within 1.8 m (6') of the foundation walls slopes a minimum of 5% to direct water away from the foundation. The foundation surface does not easily soak up water.	OW, GS	The grading is flat or slopes toward the foundation OR The foundation surface is highly water absorbent OR Needs further investigation.	See B on **Outside Assessment** diagram. The grading beside your home directs water toward the foundation. The line in the soil indicates eaves troughs are overflowing and adding additional risk. Correct grading to achieve at least a 5% slope away from the foundation. Consider replacing the surface with non-water absorbent material. See comments related to eaves trough maintenance.
D	**Window wells - Are window wells installed in such a way that they reduce flood risk?** For each window that is less than 10-15cm (4-6") above the ground surface, a window well is present and sits at least 10-15cm (4-6") above grade. The window well is sealed at the foundation and the grading adjacent to wells slopes away from the home at a minimum of 5%. Consider installing window wells covers to further reduce risk.	OW	For each window that is less than 10-15cm (4-6") above the ground surface, a window well is not present. OR Window wells sit less than 10-15cm (4-6") above grade or are not sealed at foundation or grading at the window wells does not slope away from home at a minimum of 5%. Window well covers are not present OR Requires further investigation.	See D on **Outside Assessment** diagram. The windows are only 2.5 cm above grade and there is no formal window well, placing windows at higher risk of water inflow during heavy rains and spring melts. Work with a qualified professional to install a window well with adequate drainage. Correct grading adjacent to the window wells to slope 5% away from home. Consider installing window well covers to further reduce risk.

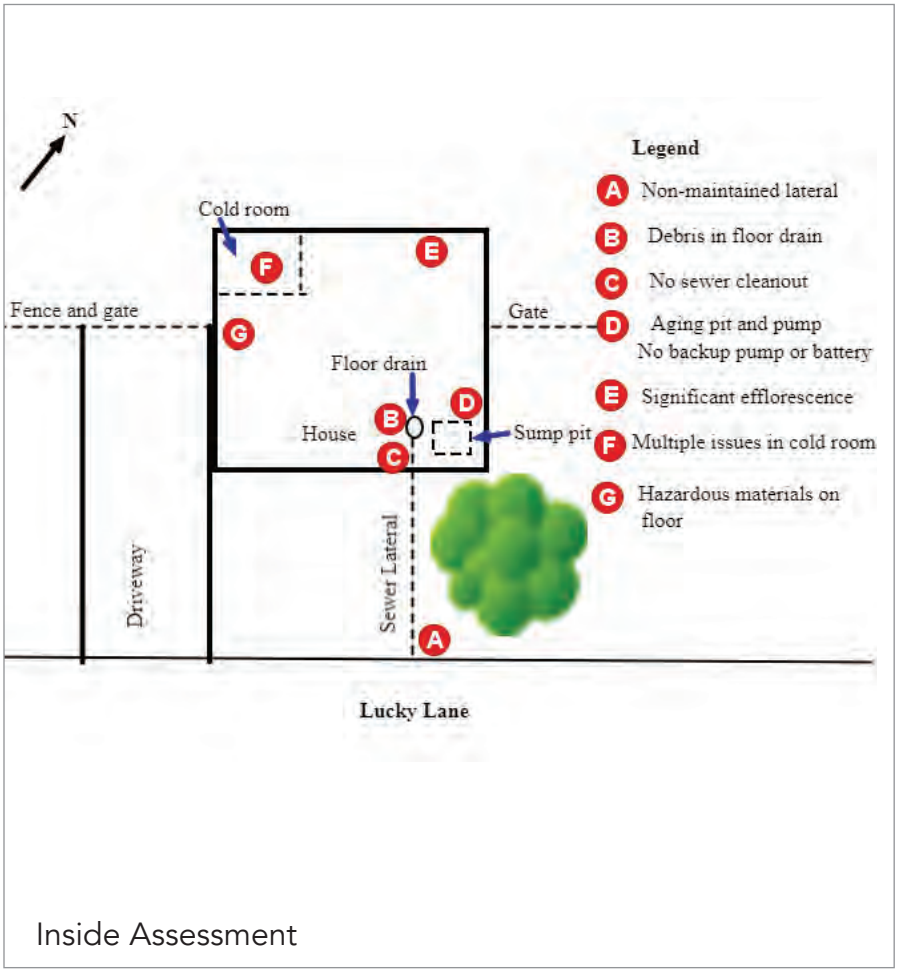
ASSESSED MAINTENANCE

Fig	Maintenance Feature and Best Practice	Type of Water Damage	Assessment	Opportunity to Reduce Risk
A	**Overland drainage maintenance –** Once per season or when major storm events are predicted, the homeowner checks for and removes debris and obstructions from the water flow paths including swales, nearby storm drains, culverts and drainage ditches.	OW	The homeowner never checks for or removes debris and obstructions from the water flow paths including swales, nearby storm drains, culverts and drainage ditches.	See **A** on **Outside Assessment** diagram. Once per season or when major storm events are predicted, check for and remove debris and obstructions from the water flow paths including swales and nearby storm drains. If nearby storm drains are free of debris but are still not draining within 24 hours, contact the government department with jurisdictional authority.
	Grading at foundation maintenance – Each season the homeowner checks for signs of water pooling or ice formation and corrects grading to achieve at least 5% slope away from the foundation	OW, GS	The homeowner never checks for signs of water pooling or ice formation nor corrects grading to achieve at least 5% slope away from the foundation.	Each season, check for signs of water pooling or ice formation at foundation. Correct grading to achieve at least 5% slope away from foundation.

C	**Eaves trough maintenance –** Each season during heavy rainfalls, the homeowner checks the eaves troughs for leaks, debris and blockage. Repairs and debris removal are completed as needed.	GS	The homeowner never checks the eaves troughs for leaks, debris and blockage. Repairs and debris removals are not completed as needed.	See **C** on **Outside Assessment** diagram. Each season during heavy rainfalls, check for leaks, debris and blockage. Repair, replace and clean out as needed.
	Downspout maintenance – Once per season the homeowner checks to make sure the downspout extensions are secured, free of leaks, depositing water at least 1.8m (6') from the foundation or to a drainage swale and that water is not flowing onto adjacent properties	GS	The homeowner never checks to make sure the downspout extensions are secure, free of leaks, depositing water at least 1.8m (6') from the foundation or to a drainage swale and that water is not flowing onto adjacent properties.	Once per season check to make sure the downspout extensions are secure, free of leaks, deposit water at least 1.8m (6') from the foundation or to a drainage swale and that water is not flowing onto adjacent properties.
	Window maintenance – Once per season the homeowner checks the condition of the frames, glass and seals, and completes repairs as necessary.	OW	The homeowner never checks the condition of the frames, glass and seals, or completes repairs as necessary.	Once per season check the condition of the frames, glass and seals. Repair as necessary.
	Hose bib maintenance – Spring, summer and fall the homeowner checks for leaks and completes repairs as necessary. Before winter, the outdoor water supply is shut off and the water line is drained. The hose is drained and removed.	OW, GS	The homeowner never checks for leaks or completes repairs as necessary. They never shut off the exterior water supply, drains the line or remove the hose.	See **E** on **Outside Assessment** diagram. Spring, summer and fall check for leaks and complete repairs as needed. Before winter freeze up shut off the outdoor water supply and drain the water line. Drain and remove the hose.

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


B


D


E


F


G

ASSESSED FEATURES

Fig	Assessed Feature and Best Practice	Type of Water Damage	Assessment	Opportunity to Reduce Risk
	Sanitary sewer lateral- Is your sanitary sewer lateral in good condition and is it free of blockages? 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. Note: Determining the condition of the sewer lateral is outside the scope of this assessment. Consult a qualified professional.	SB, WS	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 the availability and your eligibility for any subsidies.	You have noted that you sometimes get drain backups when you do laundry. This indicates restricted flow through your lateral. Consider a closed circuit television (CCTV) inspection by a qualified professional for assessment and repair or replacement to address this issue.
	Basement sanitary sewer lateral cleanout – A basement sanitary sewer lateral cleanout is present and easily accessible.	SB	A basement sanitary sewer lateral cleanout is not accessible OR not present OR Needs further investigation.	See **C** on **Inside Assessment** diagram. Consider working with a plumber to install an easily accessible hatch to improve inspection and maintenance access. This will make it more cost-effective for regular inspection, maintenance and repair.
	Backwater valve- Is a backwater valve appropriate for use in your home or if it is in place, is it in good condition? 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. **If you have a backwater valve or install one, consider installing an alarm to let you know when the valve is closed to prevent flooding from in-home sources. Note: This item is outside of scope of this assessment. Consult a qualified professional.**	SB	**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 government department having jurisdictional authority to determine the availability of a subsidy for installation and your eligibility.**	Consider working with a qualified professional to determine if a backwater valve is suitable for your home. If you install a backwater valve remember to complete seasonal maintenance and consider installing a backwater valve alarm to let you know when the valve is closed to prevent flooding from in-home sources. Check with your insurance provider regarding eligibility for premium discounts for installing a backwater valve and/or an alarm.

	Foundation drain- Is a foundation drain (weepers) present? Is foundation drain functioning properly to drain water away from your foundation? 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. Note: Determining the condition and the plumbing connection of the foundation drain is outside the scope of this assessment. Consult a qualified professional	GS, OW, SB	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 the availability of a subsidy and your eligibility.	The foundation weepers that enter your sump pit are made of clay. it is likely that these are over 50 years old. Symptoms such as dampness where the basement wall meets the floor are common when these are in poor condition so please monitor these areas regularly. Consider working with a qualified professional to inspect and/or repair your foundation drains to improve the rate of removal of water from your foundation. Check with the government department having jurisdictional authority to determine the availability of subsidy and your eligibility.
D	Sump pit- Does your sump pit have a sealed cover and is it in good repair? The sump pit has a sealed cap, is in good condition (free of cracks and holes) and is free of debris.	SB	The sump pit is in poor condition (cracks, holes greater than 6mm (1/4") present), there is no sealed cap, a large amount of debris is evident OR Needs further investigation.	See D on Inside Assessment diagram. You have an older sump pit without plastic walls and without a sealed plastic lid. Consider upgrading your sump pit to improve storage capacity and to decrease humidity levels in the basement by installing a unit with a sealable lid. Work with a qualified professional to complete this work.
	Sump pump- Is your sump pump in good condition and does it run infrequently? A sump pump is present and the homeowner reports it is functioning well and runs a maximum of 5 times per year. Consider installing an alarm to reduce flood risk.	SB	A sump pump is present and the homeowner reports it is not functioning well. AND/ OR The sump pump runs more than 10 times per year OR Needs further investigation.	Your sump pump is over 20 years old and you report that it does not always function well. Consider replacing your sump pump. Consider installing a ground fault interrupter (GFI) outlet to reduce the risk of electric shock. Hire a qualified professional for installation. Consider installing and maintaining alarms to reduce flood risk. Note: Check with the government department with jurisdictional authority regarding availability and eligibility for subsidy. Also check regarding plumbing permits requirements. Check with your insurance provider about discounts for installing alarm systems.

	Back-up sump pump- Is there a backup sump pump and is it in good condition? A back-up sump pump is present and the homeowner reports it is functioning well.	SB	A back-up sump pump is NOT present OR Back-up sump pump is present but the homeowner reports it is not functioning well OR Needs further investigation.	Purchase a back-up sump pump. Consider hiring a qualified professional for installation.
	Back-up power source – A back-up battery or generator is present, can generate electricity for a minimum of 72 hours and is reported by the homeowner to be functioning properly. A backup power source is elevated above anticipated flood levels. **Consider installing an alarm to further reduce risk.**	SB	There is no back-up power supply. OR A back-up battery or generator is present and is reported by homeowner to be functioning poorly AND/OR it is not elevated above the anticipated flood level OR Needs further investigation.	Purchase and install a 72 hour back-up power supply and maintain it each season. Raise the power source above the anticipated flood level. Consider installing and maintaining an alarm to reduce flood risk. Check with your insurance professional about discounts for installing sump pump backup batteries and alarm systems.
E	**Unfinished wall efflorescence- Is there evidence of efflorescence on your walls, indicating water movement through the foundation?** Foundation walls are free of efflorescence.	GS	There is significant evidence of efflorescence (large areas of solid coverage of white flakes) OR Needs further investigation.	See **E on Inside Assessment** diagram. Significant evidence of efflorescence was noted at the rear of the house where the grading is poor. Correct drainage, clean out eaves troughs and remove snow in winter. Remove efflorescence and seal the surface with masonry waterproofing paint.
F	**Cold Rooms- Are cold rooms properly ventilated, with all surfaces maintaining consistent temperature to reduce mold and mildew risk?** The door, frame and seals are all in good condition and there is no evidence of water entry. The door is adequately insulated. The air circulation level is good with adequate venting and all items are off the floor and away from walls by at least 15cm (6”). Space is unheated.	OW	Door, frame and seals are in poor condition, evidence of significant water entry and/or door is not insulated, air circulation is poor with restricted venting and items are stored against the walls or on the floor OR Needs further investigation.	See **F** on **Inside Assessment** diagram. Seal cracks in the door, frame and repair/replace seals. Improve insulation of the door or consider replacing them. Improve ventilation and raise items off of floor and away from walls by a minimum 15cm (6”). Consider working with a qualified contractor to remove plywood from the walls, to examine and address sources of water infiltration.

	Finished walls- Are water stains or high moisture levels indicating source of water infiltration? Walls are free of water stains. There is no evidence of mold (smell or visual evidence). The audible moisture meter indicates no concerns	GS	Walls show major evidence of water entry, clear evidence of mold (smell or visual evidence), moisture meter indicates higher concern OR Needs further investigation.	Major evidence of moisture has been noted on plywood walls inside cold room. Remove the source of water buildup at the foundation as needed (correct drainage, repair eaves troughs and/or remove snow in winter, seal foundation from outside in extreme cases). Remove and replace damaged materials. Consult a professional if you are concerned about mold. If you are considering refinishing your basement, refer to Water-Resistant Building Materials fact sheet.
	Furniture and electronics- Are furniture and electronics at risk of damage in the event of a flood? 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).	N/A	Furniture items have absorbent surfaces in contact with the floor and electronics are stored on the floor OR Needs further investigation.	Carpet on floors, couches with absorbent legs and electronics on the floor are at risk of damage in the event of a flood. Select furniture items that have non-absorbent surfaces up to 30cm (12") and store electronics at least 30cm (12") off the floor (or to exceed anticipated flood levels).
	Relative humidity, air movement and temperature - Are the moisture, humidity and temperature levels in your basement optimum to reduce mold and mildew risk? A 30-50% relative humidity reading is taken in the basement. Air circulation is good. A minimum regular temperature above 15C (60F) is maintained.	N/A	Over 60% relative humidity reading is taken in basement OR Air movement is highly restricted OR The temperature is kept below 10C (50F) OR Needs further investigation.	The relative humidity reading is 65. This exceeds the recommended maximum of 50%. Reduce sources of moisture and run one or more dehumidifiers to maintain 30-50% relative humidity. Improve air circulation. Maintain minimum temperature of 15C (60F).
G	**Hazardous materials- Are hazardous materials stored in a way that represents a contamination risk during a flood?** 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.	N/A	Hazardous materials are not sealed in waterproof containers and/or are stored on the floor and/or heating fuel tanks are not secured to the floor OR Needs further investigation.	See **G** on **Inside Assessment** diagram. Remove paint, chemicals and other hazardous material from basement or seal hazardous materials in waterproof containers and store at least 30 cm (12") off the floor (or to exceed anticipated flood levels).

ASSESSED MAINTENANCE

Fig	Maintenance Feature and Best Practice	Type of Water Damage	Assessment	Opportunity to Reduce Risk
	Sanitary sewer lateral maintenance – 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 of the sanitary sewer lateral. Based on recommendations of a qualified professional, the homeowner has cleaned out, lined or replaced damaged lateral as needed. The homeowner prevents clogging by preventing fats, oils, flushable wipes and grease from going down the drain.	SB, WS	Homeowner has a sanitary sewer lateral that is over 25 years old AND/ OR has experienced sewer lateral backup but has not completed a camera inspection or related repairs and upgrades. OR Needs further investigation. The homeowner regularly puts fats, oils, flushable wipes and grease down the drain.	See **A** on **Inside Assessment** diagram. Once a home has reached 25 years of age, a camera inspection of the sanitary sewer lateral is recommended every 5-10 years as a preventative measure. Based on the recommendations of a qualified professional, clean out, line or replace a damaged lateral as needed. Prevent clogging by preventing fats, oils, flushable wipes and grease from going down the drain.
B	**Floor drain maintenance –** Each season the homeowner removes obstacles to water flowing freely to the drain, tops up standing water in the trap and removes any debris from the drain. In case of blockage, strange smell, lack of water in trap, the homeowner contacts a licensed plumber.	SB	The homeowner never removes obstacles to water flowing freely to the drain, tops up standing water in trap or removes any debris from the drain. In case of blockage, strange smell, lack of water in trap, they do not contact a licensed plumber.	See **B** on **Inside Assessment** diagram. Each season remove obstacles that prevent water from flowing freely to the drain, top up standing water in the trap and remove any debris from the drain. In case of blockage, strange smell and/or lack of water in trap, contact a licensed plumber.
	Sump pit maintenance – Each season the homeowner checks the sump pit, repairs cracks or damage, and removes debris.	SB	The homeowner never checks the sump pit, repairs cracks or damage or removes debris.	Each season check the sump pit, repair cracks or damage and remove debris.

	Sump pump(s) maintenance – Each season, before vacation and when an extreme rain or melt event predicted, sump pump(s) and alarms are tested, repaired or replaced as required.	SB	Sump pump(s) are never tested, repaired or replaced as required.	Each season, before vacation and when an extreme rain or melt event is predicted, test the sump pump(s). Clean, repair or replace these items as required. Consider installing and maintaining an alarm each season to further reduce risk.
	Unfinished wall efflorescence maintenance –- Once per season the homeowner checks for evidence of efflorescence, addresses sources of water buildup at foundation, and cleans and repaints with masonry waterproofing paint as required.	GS	The homeowner never checks for evidence of efflorescence, addresses the sources of water buildup at the foundation, cleans and repaints the surface with masonry waterproofing paint as required.	Once per season check for evidence of efflorescence. Address sources of water buildup at the foundation. Clean and repaint the surface with masonry waterproofing paint as required.
	Finished wall maintenance – Each season 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. Monitor during heavy downpours and spring melts for signs of dampness.	GS	The homeowner never checks for high levels of moisture and water stains. If high levels of moisture or water damage and/or mold is evident, they do not consult a professional for remediation. The homeowner does not monitor for signs of dampness during heavy downpours and spring melts.	Each season check for high levels of moisture and water stains. If high levels of moisture or water damage and/or mold is evident, consult a professional for remediation. Monitor for signs of dampness during heavy downpours and spring melts.
	Indoor plumbing and fixtures maintenance – Each season toilets, taps, pipes and water heaters are inspected by the homeowner and are repaired by a plumber as needed. Consider installing and maintaining flood alarms.	PF	Toilets, taps, pipes and water heaters are not inspected by the homeowner or repaired by a plumber as needed.	Each season inspect toilets, taps, pipes and water heaters for leaks and signs of wear. Repair or replace items with the assistance of a plumber as needed. Consider installing and maintaining flood alarms to reduce flood risk. Check with your insurance professional about discounts for installing alarm systems.

	Sump pump(s) maintenance – Each season, before vacation and when an extreme rain or melt event predicted, sump pump(s) and alarms are tested, repaired or replaced as required.	SB	Sump pump(s) are never tested, repaired or replaced as required.	Each season, before vacation and when an extreme rain or melt event is predicted, test the sump pump(s). Clean, repair or replace these items as required. Consider installing and maintaining an alarm each season to further reduce risk.
	Unfinished wall efflorescence maintenance –- Once per season the homeowner checks for evidence of efflorescence, addresses sources of water buildup at foundation, and cleans and repaints with masonry waterproofing paint as required.	GS	The homeowner never checks for evidence of efflorescence, addresses the sources of water buildup at the foundation, cleans and repaints the surface with masonry waterproofing paint as required.	Once per season check for evidence of efflorescence. Address sources of water buildup at the foundation. Clean and repaint the surface with masonry waterproofing paint as required.
	Finished wall maintenance – Each season 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. Monitor during heavy downpours and spring melts for signs of dampness.	GS	The homeowner never checks for high levels of moisture and water stains. If high levels of moisture or water damage and/or mold is evident, they do not consult a professional for remediation. The homeowner does not monitor for signs of dampness during heavy downpours and spring melts.	Each season check for high levels of moisture and water stains. If high levels of moisture or water damage and/or mold is evident, consult a professional for remediation. Monitor for signs of dampness during heavy downpours and spring melts.
	Indoor plumbing and fixtures maintenance – Each season toilets, taps, pipes and water heaters are inspected by the homeowner and are repaired by a plumber as needed. Consider installing and maintaining flood alarms.	PF	Toilets, taps, pipes and water heaters are not inspected by the homeowner or repaired by a plumber as needed.	Each season inspect toilets, taps, pipes and water heaters for leaks and signs of wear. Repair or replace items with the assistance of a plumber as needed. Consider installing and maintaining flood alarms to reduce flood risk. Check with your insurance professional about discounts for installing alarm systems.

ADDITIONAL FLOOD PROTECTION RESOURCES

Regional Resources

Saskatoon Key Flood Protection Resources

Saskatoon Contractor List

Burlington Key Flood Protection Resources

Burlington Contractor List

Toronto Key Flood Protection Resources

Get Emergency Ready Guide- City of Toronto

Toronto Contractor List

Oakville Key Flood Protection Resources

Hamilton Key Flood Protection Resources

Waterloo Region Flood Protection Resources

National Resources

Self-Help Resources for Outside and Inside the Home

Seasonal Maintenance Checklist

Infographic- Top Tips For Reducing Flood Risk

Infographic- Understanding Flood Insurance Coverage

Questions to Ask Your Insurance Providers

Estimated Cost Ranges for Completing Flood Protection Projects

Water Resistant Building Materials for Your Basement

Temporary Flood Barriers for Your Home

CMHC Guide for Understanding and Fixing Interior Moisture Problems

Emergency Preparedness Resources

APPENDICES

Appendix A. Client Information Summary

Type of Home	Single Detached
Ownership	Owner
Type of Ownership	Freehold
Consents To Study	No
Length of Time in Home	0-5 years
Plan to Stay in Home	Over 10 years
Year Home Was Built	1950
Era of Neighbourhood development	Between 1940 and 1970
Home Layout	1.5 Storey
Home Size	Between 1000 to 2000 sq ft
Lot Size	Between 1/4 acre and 1/2 acre
Basement Type	Partly finished
Foundation Type	Rubble
Soil Type	Sand
Property within CA Regulated Area	No
Water Supply	Municipal
Sewage Service	Municipal
Weather Conditions	Clear and 5C

Appendix B. Reported Past Water Damage Summary

Past Water Damage to Your Lot and Exterior Structures	
Have you experienced any type of water damage to your lot and/or exterior structures (decks, garages, sheds) in the past?	No
What was the cause of the water damage?	
What category would the water damage fit into (total damage to structures or content)	$0
What actions did you take to reduce your risk of future water damage outside your home?	
What is your level of concern about experiencing water damage to your lot or exterior structures in the future?	Low
Please list your top 2 water damage-related questions you have about your lot or exterior structures	Is there anything I should do to protect my windows from leaking? How often should I clean out my eaves troughs?
Past Water Damage To Your Home	
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?	Leaking pipes or appliances, Sewer backup through toilet or drains, Sump pump failure, High humidity causing mould or mildew growth.
What category would the water damage fit into (Total damage to structures or content)	Under $5,000
What actions did you take to reduce your future risk of indoor water damage?	Completing maintenance activities.
What is your level of concern about experiencing water damage to your home is in the future?	Medium
Please list top 2 water-damage related questions you have about your home	How do I keep water from backing up through my floor drain? How do I make sure my sump pump will work when I need it in the spring?

Appendix C. Outside Assessment Form

Assessed Feature and Best Practice	Type of Water Damage	Assessment	Opportunity to Reduce Risk
Overland Drainage of Property			
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? 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.	OW	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.	Homeowner reports water pooling near the storm drain for several hours after a heavy rain. Contact the government department with jurisdictional authority if storm drain is not emptying within 24 hours. Please see preventative maintenance comment below.
Overland drainage maintenance – Once per season or when major storm events are predicted, the homeowner checks for and removes debris and obstructions from the water flow paths including swales, nearby storm drains, culverts and drainage ditches.	OW	The homeowner never checks for or removes debris and obstructions from the water flow paths including swales, nearby storm drains, culverts and drainage ditches.	See **A** on **Outside Assessment** diagram. Once per season or when major storm events are predicted, check for and remove debris and obstructions from the water flow paths including swales and nearby storm drains. If nearby storm drains are free of debris but are still not draining within 24 hours, contact the government department with jurisdictional authority.

Landscaping			
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? 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 the risk of root damage to the home's foundation or sewer lateral is unlikely.	SB, WS, GS	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.	No action is required.
Tree maintenance – Once per season, the homeowner checks the condition of trees, prunes as required and waters during drought periods.	SB, WS, GS	Once per season the homeowner checks the condition of trees, prunes as required and waters during drought periods.	Once per season, check the condition of trees and prune as required. Water during drought periods. If concerned about a tree on public property, contact the government department with jurisdictional authority for assistance. If concerned about a tree on your property, contact a certified arborist for help.
Garden beds adjacent to home – Do garden beds leave a minimum of 20 cm (8") of your foundation exposed? Do foundation plantings provide adequate light exposure and air movement to foundation? Foundation plantings provide good light and air circulation between the plantings and the foundation. A minimum 20 cm (8") of foundation remains exposed. Trees that will reach a height of 10m (30') or more are a minimum of 5m (15') from the foundation and shrubs are a minimum of 1.8m (6') from the foundation. Water drains freely away from the foundation.	GS	Foundation plantings allow for good light and air circulation between the plantings and the foundation. A minimum 20cm (8") of foundation remains exposed. Trees that will reach a height of 10m (30') or more are minimum of 5m (15') from the foundation and shrubs are minimum of 1.8m (6') from the foundation. Water drains freely away from the foundation.	No action required

Landscaping maintenance – Once per year the homeowner removes barriers which impede water flowing away from the foundation. **Consider applying mulch to garden beds and aerating the lawn to improve the ability of the soil to soak up water.**	GS	Once per year homeowner removes barriers which impede water flowing away from foundation.	Once per year remove barriers which impede water from flowing away from the foundation. Consider applying mulch to garden beds and aerating lawns to improve the ability of the soil to soak up water.
Driveways, Walkways and Patios			
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%? The driveway is sloped away from the foundation walls at a slope of 1-2% and is free of cracks and gaps.	GS	The impermeable driveway directs water away from the foundation (1-2% slope) and is free of cracks and gaps.	No action is required.
Impermeable (waterproof) driveway maintenance – Once per season the homeowner checks for evidence of pooling and ice buildup, repairs grading, seals cracks, fills gaps and removes weeds.	GS	Once per season the homeowner checks for evidence of pooling and ice buildup, repairs grading, seals cracks, fills gaps, and removes weeds.	Once per season check for evidence of pooling and/or ice buildup. Repair grading, seal cracks, fill gaps and remove weeds.
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? The walkway slopes a minimum of 1-2% to direct water away from foundation and is free of cracks and gaps.	OW, GS	Walkway slopes a minimum 1-2% to direct water away from the foundation and is free of cracks and gaps.	No action is required.
Walkways and patios maintenance – Once per season the homeowner checks for evidence of pooling and ice buildup. Grading is repaired, cracks and gaps are sealed, and weeds are removed.	OW, GS	Once per season the homeowner checks for evidence of pooling and ice buildup. They repair grading, seal cracks, fill gaps and remove weeds.	Once per season check for evidence of pooling and/or ice buildup. Repair grading, seal cracks, fill gaps and remove weeds. Replace if the surface is in very poor condition.

Grading at Foundation			
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? The grading within 1.8 m (6') of the foundation walls slopes a minimum of 5% to direct water away from the foundation. The foundation surface does not easily soak up water.	OW, GS	The grading is flat or slopes toward the foundation OR The foundation surface is highly water absorbent OR Needs further investigation.	See B on **Outside Assessment** diagram. The grading beside your home directs water toward the foundation. The line in the soil indicates eaves troughs are overflowing and adding additional risk. Correct grading to achieve at least a 5% slope away from the foundation. Consider replacing the surface with non-water absorbent material. See comments related to eaves trough maintenance.
Grading at foundation maintenance – Each season the homeowner checks for signs of water pooling or ice formation and corrects grading to achieve at least 5% slope away from the foundation.	OW, GS	The homeowner never checks for signs of water pooling or ice formation nor corrects grading to achieve at least 5% slope away from the foundation.	Each season, check for signs of water pooling or ice formation at foundation. Correct grading to achieve at least 5% slope away from foundation.
Eaves Troughs and Downspouts			
Eaves troughs – Are eaves troughs adequately sized and in adequate condition to reduce flood risk? Eaves troughs wrap around the entire building, are in good repair and have downspouts placed a minimum of 9-12m (30-40'). Eaves trough of 13cm (5") are present for asphalt shingles or 15cm (6") for a metal roof.	GS	Eaves troughs wrap around the entire building, are in good repair, and have downspouts placed a minimum of every 9-12m (30-40'). Eaves trough of 13cm (5") is present for asphalt shingles or 15cm (6") for metal roof.	No action is required.
Eaves trough maintenance – Each season during heavy rainfalls, the homeowner checks the eaves troughs for leaks, debris and blockage. Repairs and debris removal are completed as needed.	GS	The homeowner never checks the eaves troughs for leaks, debris and blockage. Repairs and debris removals are not completed as needed.	See C on **Outside Assessment** diagram. Each season during heavy rainfalls, check for leaks, debris and blockage. Repair, replace and clean out as needed.

Disconnected downspouts – Are downspouts (that are not presently connected into underground pipes) directing water at least 1.8m (6') away from your home or the nearest drainage swale? For downspouts that have been disconnected, caps are securely in place to block the movement of water into underground pipes. The downspouts extend at least 1.8m (6') away from the foundation or to a drainage swale. Water is not directed onto hard surfaces or adjacent properties.	GS	For downspouts that have been disconnected, caps are securely in place to block the movement of water into underground pipes. Downspouts extend at least 1.8m (6') away from the foundation or to a drainage swale. Water is not directed onto hard surfaces or adjacent properties.	Consider connecting downspouts to a French drain, rain garden, bioswales or infiltration gallery to soak up water at least 5m (15') away from foundation. Check with government department with jurisdictional authority about drainage by-laws if any significant change to grading or drainage of property is being considered.
Downspout maintenance – Once per season the homeowner checks to make sure the downspout extensions are secured, free of leaks, depositing water at least 1.8m (6') from the foundation or to a drainage swale and that water is not flowing onto adjacent properties.	GS	The homeowner never checks to make sure the downspout extensions are secure, free of leaks, depositing water at least 1.8m (6') from the foundation or to a drainage swale and that water is not flowing onto adjacent properties.	Once per season check to make sure the downspout extensions are secure, free of leaks, deposit water at least 1.8m (6') from the foundation or to a drainage swale and that water is not flowing onto adjacent properties.
Foundation			
Foundation structure – Is your foundation free of cracks and gaps? The foundation appears to be in good condition and is free of cracks and finishing gaps (e.g. missing parging). Foundation penetrations are well sealed and sit above anticipated flood levels.	GS	The foundation appears to be in good condition and is free of cracks and finishing gaps (e.g. no missing parging). The foundation penetrations are well sealed and sit above anticipated flood levels.	No action is required.
Foundation structure maintenance – Once per season the homeowner checks for cracks and gaps, and completes repairs as required.	GS	Once per season the homeowner checks for cracks and gaps, and completes repairs as required.	Once per season check for cracks and gaps, complete repairs as required. Contact a qualified foundation repair contractor to repair cracks greater than 6mm (1/4").

Foundation clearance maintenance – Stored items are kept at least 15cm (6") from the foundation. As dictated by snow storm events, the homeowner clears snow 1m (3'6") away from the foundation, keeps window openings clear of snow and ensures that vents are clear.	GS	Stored items are kept at least 15cm (6") from the foundation. As dictated by snow storm events, the homeowner clears snow 1m (3'6") away from the foundation, keeps window openings clear of snow piles and ensures that vents are clear.	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.
Foundation efflorescence – Are there signs of efflorescence on the foundation that could indicate moisture problems? Efflorescence (mineral deposits) indicate water moving through masonry, evaporating and leaving minerals behind. The presence of efflorescence can indicate water issues that can lead to spalling or structural damage.	GS	There is minor evidence of efflorescence.	Reduce the flow of water to the masonry by correcting the grading, maintaining eaves troughs, repairing foundation drains, sealing cracks on driveway, shoveling snow away from the walls in the winter, and minimizing salt use.
Efflorescence maintenance – Once per season the homeowner checks for evidence of efflorescence, addresses the sources of water buildup at foundation, and cleans and repaints the surface with masonry waterproofing paint as required.	GS	Once per year the homeowner checks for evidence of efflorescence, addresses the sources of water buildup at the foundation, and cleans and repaints the surface with masonry waterproofing paint as required.	Once per season check for evidence of efflorescence. Address the sources of water buildup at the foundation. Clean and repaint the surface with masonry waterproofing paint as required.
Foundation moisture content – Is your foundation showing high levels of water retention? Low levels of moisture at the surface are indicated.	GS	Moderate levels of moisture at the surface are indicated.	Reduce the flow of water to masonry by correcting the grading, maintaining eaves troughs, repairing foundation drains, sealing cracks on driveway, and shoveling snow away from walls in the winter. Improve drying of the foundation by referring to the landscaping best practices. Contact a qualified foundation repair contractor if the problem persists.
Windows			
Condition of windows – Are windows in adequate condition to help reduce risk of basement flooding? Frames, glass and seals are all in good condition.	OW	Frames, glass and seals are all in good condition.	No action is required.

Window maintenance – Once per season the homeowner checks the condition of the frames, glass and seals, and completes repairs as necessary.	OW	The homeowner never checks the condition of the frames, glass and seals, or completes repairs as necessary.	Once per season check the condition of the frames, glass and seals. Repair as necessary.
Window wells – Are window wells installed in such a way that they reduce flood risk? For each window that is less than 10-15cm (4-6”) above the ground surface, a window well is present and sits at least 10-15cm (4-6”) above grade. The window well is sealed at the foundation and the grading adjacent to wells slopes away from the home at a minimum of 5%. Consider installing window wells covers to further reduce risk.	OW	For each window that is less than 10-15cm (4-6”) above the ground surface, a window well is not present. OR Window wells sit less than 10-15cm (4-6”) above grade or are not sealed at foundation or grading at the window wells does not slope away from home at a minimum of 5%. Window well covers are not present OR Requires further investigation.	See **D** on **Outside Assessment** diagram. The windows are only 2.5 cm above grade and there is no formal window well, placing windows at higher risk of water inflow during heavy rains and spring melts. Work with a qualified professional to install a window well with adequate drainage. Correct grading adjacent to the window wells to slope 5% away from home. Consider installing window well covers to further reduce risk.
Exterior Water Sources			
Hose bib maintenance – Spring, summer and fall the homeowner checks for leaks and completes repairs as necessary. Before winter, the outdoor water supply is shut off and the water line is drained. The hose is drained and removed.	OW, GS	The homeowner never checks for leaks or completes repairs as necessary. They never shut off the exterior water supply, drains the line or remove the hose.	See **E** on **Outside Assessment** diagram. Spring, summer and fall check for leaks and complete repairs as needed. Before winter freeze up shut off the outdoor water supply and drain the water line. Drain and remove the hose.
Sump pump discharge – Does your sump pump drain pipe deposit water at least 1.8m (6’) from foundation or to the nearest drainage swale? Does pipe exit the home’s exterior above anticipated flood levels? Sump pump drain pipe is present and deposits water at least 1.8m (6’) from foundation or to drainage swale. It does not direct water onto a hard surface or onto adjacent property. The discharge pipe’s exit point through the home’s exterior is above anticipated flood levels.	OW, GS	Sump pump drain pipe is present and deposits water at least 1.8m (6’) from foundation or to drainage swale and is not directing water onto a hard surface or adjacent property. The discharge pipe’s exit point through the home’s exterior is above anticipated flood levels.	No action is required.

Appendix D. Inside Assessment Form

Assessed Feature and Best Practice	Type of Water Damage	Assessment	Opportunity to Reduce Risk
Sewer and Storm Lateral			
Sanitary sewer lateral – Is your sanitary sewer lateral in good condition and is it free of blockages? 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. **Note: Determining the condition of the sewer lateral is outside the scope of this assessment. Consult a qualified professional.**	SB, WS	**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 the availability and your eligibility for any subsidies.**	You have noted that you sometimes get drain backups when you do laundry. This indicates restricted flow through your lateral. Consider a closed circuit television (CCTV) inspection by a qualified professional for assessment and repair or replacement to address this issue.
Sanitary sewer lateral maintenance – 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 of the sanitary sewer lateral. Based on recommendations of a qualified professional, the homeowner has cleaned out, lined or replaced damaged lateral as needed. The homeowner prevents clogging by preventing fats, oils, flushable wipes and grease from going down the drain.	SB, WS	Homeowner has a sanitary sewer lateral that is over 25 years old AND/OR has experienced sewer lateral backup but has not completed a camera inspection or related repairs and upgrades. OR Needs further investigation. The homeowner regularly puts fats, oils, flushable wipes and grease down the drain.	See **A** on **Inside Assessment** diagram. Once a home has reached 25 years of age, a camera inspection of the sanitary sewer lateral is recommended every 5-10 years as a preventative measure. Based on the recommendations of a qualified professional, clean out, line or replace a damaged lateral as needed. Prevent clogging by preventing fats, oils, flushable wipes and grease from going down the drain.

Floor Drain			
Floor drain – Is your floor drain clear of physical barriers to water flow and in adequate condition to reduce flood risk? Note: Some homes built before 1950 do not have a floor drain. A floor drain is present and demonstrates a clear flow path of water to the drain. The drain is in good condition, free of debris and standing water is present in trap.	SB	A floor drain is present but demonstrates a partly blocked water flow path to the drain. The drain appears to be in moderate condition, minor debris is evident, and standing water is present in the trap.	Some minor debris was seen in the floor drain and an oily film water noted on the surface of the water. Remove stored boxes blocking path of water flow to drain, clean out debris in trap. Repair the drain as needed.
Floor drain maintenance – Each season the homeowner removes obstacles to water flowing freely to the drain, tops up standing water in the trap and removes any debris from the drain. In case of blockage, strange smell, lack of water in trap, the homeowner contacts a licensed plumber.	SB	The homeowner never removes obstacles to water flowing freely to the drain, tops up standing water in trap or removes any debris from the drain. In case of blockage, strange smell, lack of water in trap, they do not contact a licensed plumber.	See B on **Inside Assessment** diagram. Each season remove obstacles that prevent water from flowing freely to the drain, top up standing water in the trap and remove any debris from the drain. In case of blockage, strange smell and/or lack of water in trap, contact a licensed plumber.
Basement sanitary sewer lateral cleanout – A basement sanitary sewer lateral cleanout is present and easily accessible.	SB	A basement sanitary sewer lateral cleanout is not accessible OR not present OR Needs further investigation.	See **C** on **Inside Assessment** diagram. Consider working with a plumber to install an easily accessible hatch to improve inspection and maintenance access. This will make it more cost-effective for regular inspection, maintenance and repair.
Backwater Valve			
Backwater valve – Is a backwater valve appropriate for use in your home or if it is in place, is it in good condition? 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. **If you have a backwater valve or install one, consider installing an alarm to let you know when the valve is closed to prevent flooding from in-home sources. Note: This item is outside of scope of this assessment. Consult a qualified professional.**	SB	**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 government department having jurisdictional authority to determine the availability of a subsidy for installation and your eligibility.**	Consider working with a qualified professional to determine if a backwater valve is suitable for your home. If you install a backwater valve remember to complete seasonal maintenance and consider installing a backwater valve alarm to let you know when the valve is closed to prevent flooding from in-home sources. Check with your insurance provider regarding eligibility for premium discounts for installing a backwater valve and/or an alarm.

Foundation Drain (Weepers)			
Foundation drain – Is a foundation drain (weepers) present? Is foundation drain functioning properly to drain water away from your foundation? 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. **Note: Determining the condition and the plumbing connection of the foundation drain is outside the scope of this assessment. Consult a qualified professional.**	GS, OW, SB	**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 the availability of a subsidy and your eligibility.**	The foundation weepers that enter your sump pit are made of clay. it is likely that these are over 50 years old. Symptoms such as dampness where the basement wall meets the floor are common when these are in poor condition so please monitor these areas regularly. Consider working with a qualified professional to inspect and/or repair your foundation drains to improve the rate of removal of water from your foundation. Check with the government department having jurisdictional authority to determine the availability of subsidy and your eligibility.
Sump Pit and Pump			
Sump pit – Does your sump pit have a sealed cover and is it in good repair? The sump pit has a sealed cap, is in good condition (free of cracks and holes) and is free of debris.	SB	The sump pit is in poor condition (cracks, holes greater than 6mm (1/4”) present), there is no sealed cap, a large amount of debris is evident OR Needs further investigation.	See **D** on **Inside Assessment** diagram. You have an older sump pit without plastic walls and without a sealed plastic lid. Consider upgrading your sump pit to improve storage capacity and to decrease humidity levels in the basement by installing a unit with a sealable lid. Work with a qualified professional to complete this work.
Sump pit maintenance – Each season the homeowner checks the sump pit, repairs cracks or damage, and removes debris.	SB	The homeowner never checks the sump pit, repairs cracks or damage or removes debris.	Each season check the sump pit, repair cracks or damage and remove debris.
Sump pump connection – Does your sump pump discharge water to the surface of your property and does it have a backflow valve? The sump pump discharges water to the lot surface and has a backflow preventer installed.	OW, GS	The sump pump discharges water to the lot surface and has a backflow preventer installed.	No action required.

Sump pump – Is your sump pump in good condition and does it run infrequently? A sump pump is present and the homeowner reports it is functioning well and runs a maximum of 5 times per year. **Consider installing an alarm to reduce flood risk.**	SB	A sump pump is present and the homeowner reports it is not functioning well. AND/ OR The sump pump runs more than 10 times per year OR Needs further investigation.	Your sump pump is over 20 years old and you report that it does not always function well. Consider replacing your sump pump. Consider installing a ground fault interrupter (GFI) outlet to reduce the risk of electric shock. Hire a qualified professional for installation. Consider installing and maintaining alarms to reduce flood risk. Note: Check with the government department with jurisdictional authority regarding availability and eligibility for subsidy. Also check regarding plumbing permits requirements. Check with your insurance provider about discounts for installing alarm systems.
Back-up sump pump – Is there a backup sump pump and is it in good condition? A back-up sump pump is present and the homeowner reports it is functioning well.	SB	A back-up sump pump is NOT present OR Back-up sump pump is present but the homeowner reports it is not functioning well OR Needs further investigation.	Purchase a back-up sump pump. Consider hiring a qualified professional for installation.
Sump pump(s) maintenance – Each season, before vacation and when an extreme rain or melt event predicted, sump pump(s) and alarms are tested, repaired or replaced as required.	SB	Sump pump(s) are never tested, repaired or replaced as required.	Each season, before vacation and when an extreme rain or melt event is predicted, test the sump pump(s). Clean, repair or replace these items as required. Consider installing and maintaining an alarm each season to further reduce risk.
Back-up power source – A back-up battery or generator is present, can generate electricity for a minimum of 72 hours and is reported by the homeowner to be functioning properly. A backup power source is elevated above anticipated flood levels. Consider installing an alarm to further reduce risk.	SB	There is no back-up power supply. OR A back-up battery or generator is present and is reported by homeowner to be functioning poorly AND/OR it is not elevated above the anticipated flood level OR Needs further investigation.	Purchase and install a 72 hour back-up power supply and maintain it each season. Raise the power source above the anticipated flood level. Consider installing and maintaining an alarm to reduce flood risk. Check with your insurance professional about discounts for installing sump pump backup batteries and alarm systems.
Exposed Foundation Walls, Floors and Cold Rooms			
Unfinished wall cracks – Are your foundation walls free of cracks and stains? Foundation walls are free of cracks and water stains.	GS	The foundation walls are free of cracks and water stains.	No action is required.

Unfinished wall crack maintenance – The homeowner checks for cracks once per season, fills cracks and removes sources of water buildup at the foundation as needed (corrects drainage, repairs eaves troughs and/or removes snow in winter, seals foundation from outside in extreme cases). The homeowner consults with a qualified professional in case of major problems.	GS	Once per year the homeowner checks for cracks, fills cracks and removes the sources of water buildup at the foundation as needed (corrects drainage, repairs eaves troughs and/or removes snow in winter, seals foundation from outside in extreme cases). The homeowner consults with a professional in case of major problems.	Once per season, check for cracks, fill cracks and remove sources of water buildup at the foundation as needed (correct drainage, repair eaves troughs and/or remove snow in winter, seal foundation from outside in extreme cases). Consult with a qualified professional in case of major problems.
Unfinished wall efflorescence – Is there evidence of efflorescence on your walls, indicating water movement through the foundation? Foundation walls are free of efflorescence.	GS	There is significant evidence of efflorescence (large areas of solid coverage of white flakes) OR Needs further investigation.	See **E** on **Inside Assessment** diagram. Significant evidence of efflorescence was noted at the rear of the house where the grading is poor. Correct drainage, clean out eaves troughs and remove snow in winter. Remove efflorescence and seal the surface with masonry waterproofing paint.
Unfinished wall efflorescence maintenance – Once per season the homeowner checks for evidence of efflorescence, addresses sources of water buildup at foundation, and cleans and repaints with masonry waterproofing paint as required.	GS	The homeowner never checks for evidence of efflorescence, addresses the sources of water buildup at the foundation, cleans and repaints the surface with masonry waterproofing paint as required.	Once per season check for evidence of efflorescence. Address sources of water buildup at the foundation. Clean and repaint the surface with masonry waterproofing paint as required.
Unfinished wall moisture – Are there high levels of moisture on the surface of your walls below windows, near cracks and where walls meet floor? Low moisture levels are indicated on all tested areas of the wall surface. Monitor for signs of dampness during heavy downpours and spring melts.	GS	Moderate moisture levels are present on noted areas of the wall surface.	Moderate moisture levels were noted where the wall meets the floor at the rear of the home. Examine sources of moisture from inside and outside the home. Hire a qualified professional as needed to diagnose and repair moisture or mold problems. Monitor for signs of dampness during heavy downpours or spring melts.
Unfinished floor cracks – Are there cracks in your floor that provide potential water entry sites to your basement? Unfinished floors are free of cracks and water stains.	GS	Unfinished floors are free of cracks and water stains.	No action is required.

Unfinished floor crack maintenance – Once per season homeowner 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). Homeowner consults with professional regarding major concerns.	GS	The homeowner checks for cracks once per season, fills cracks and removes source of water buildup at the foundation as needed (corrects drainage, repairs eaves troughs and/or removes snow in winter, seals foundation from outside in extreme cases). The homeowner consults with a qualified professional regarding major concerns.	Check for cracks once per season, fill cracks, and remove the source of water buildup at the foundation as needed (correct drainage, repair eaves troughs and/or remove snow in winter, seal foundation from outside in extreme cases). Check with a qualified professional regarding major concerns.
Unfinished floor efflorescence – Is there evidence of efflorescence on floors, indicating water movement through the foundation? Floors are free of efflorescence.	GS	Floors are free of efflorescence.	No action is required.
Unfinished floor efflorescence maintenance – Once per season the homeowner checks for evidence of efflorescence, addresses sources of water buildup at foundation, and cleans and repaints with masonry waterproofing paint as required.	GS	Once per year the homeowner 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 the foundation. Clean and repaint with masonry waterproofing paint as required.
Unfinished floor moisture – Are there high levels of moisture, indicating water entry into the basement? Low moisture levels are present on the floor surface. Monitor for signs of dampness during heavy downpours and spring melts.	GS	Low moisture levels are present on the floor surface.	Monitor for signs of dampness during heavy downpours and spring melts.
Cold Rooms – Are cold rooms properly ventilated, with all surfaces maintaining consistent temperature to reduce mold and mildew risk? The door, frame and seals are all in good condition and there is no evidence of water entry. The door is adequately insulated. The air circulation level is good with adequate venting and all items are off the floor and away from walls by at least 15cm (6”). Space is unheated.	OW	Door, frame and seals are in poor condition, evidence of significant water entry and/or door is not insulated, air circulation is poor with restricted venting and items are stored against the walls or on the floor OR Needs further investigation.	See **F** on **Inside Assessment** diagram. Seal cracks in the door, frame and repair/replace seals. Improve insulation of the door or consider replacing them. Improve ventilation and raise items off of floor and away from walls by a minimum 15cm (6”). Consider working with a qualified contractor to remove plywood from the walls, to examine and address sources of water infiltration.

Finished Walls and Floors			
Finished walls – Are water stains or high moisture levels indicating source of water infiltration? Walls are free of water stains. There is no evidence of mold (smell or visual evidence). The audible moisture meter indicates no concerns.	GS	Walls show major evidence of water entry, clear evidence of mold (smell or visual evidence), moisture meter indicates higher concern OR Needs further investigation.	Major evidence of moisture has been noted on plywood walls inside cold room. Remove the source of water buildup at the foundation as needed (correct drainage, repair eaves troughs and/or remove snow in winter, seal foundation from outside in extreme cases). Remove and replace damaged materials. Consult a professional if you are concerned about mold. If you are considering refinishing your basement, refer to Water-Resistant Building Materials fact sheet.
Finished wall maintenance – Each season 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. Monitor during heavy downpours and spring melts for signs of dampness.	GS	The homeowner never checks for high levels of moisture and water stains. If high levels of moisture or water damage and/or mold is evident, they do not consult a professional for remediation. The homeowner does not monitor for signs of dampness during heavy downpours and spring melts.	Each season check for high levels of moisture and water stains. If high levels of moisture or water damage and/or mold is evident, consult a professional for remediation. Monitor for signs of dampness during heavy downpours and spring melts.
Finished floors – Are there high levels of moisture, indicating water entry into basement? Low levels of moisture are present, there is no evidence of mold or mildew and no musty smell is present.	GS	Low levels of moisture are present on floors, no evidence of mold or mildew I present and no musty smell is present.	No action is required. If you are considering refinishing your basement, refer to Water-Resistant Building Materials fact sheet.
Finished floor maintenance – Each season homeowner the checks for water damage and signs of mold growth. If water damage and/or mold is evident, the homeowner consults with a professional for remediation.	GS	Each season the homeowner checks for water damage and signs of mold growth. If water damage and/or mold is evident, they consult a professional for remediation.	Each season check for water damage and signs of mold growth. If water damage and/or mold are evident, consult a professional for remediation.
Windows			
Basement windows – Are windows in adequate condition to reduce risk of overland flooding? Glass, frames and seals are all in good condition and there is no evidence of water entry.	OW	Glass, frames and seals are all in good condition. There is no evidence of water entry.	No action is required.

Basement window maintenance – The homeowner checks once per season for cracked glass, broken seals and rotting frames. They repairs and/or replaces these as required.	OW	The homeowner checks once per year for cracked glass, broken seals and rotting frames, repairs AND/OR replaces these as required.	Once per season check for cracked glass, broken seals and rotting frames. Repair AND/OR replace these as required.
Plumbing Fixtures			
Indoor plumbing and fixtures maintenance – Each season toilets, taps, pipes and water heaters are inspected by the homeowner and are repaired by a plumber as needed. **Consider installing and maintaining flood alarms.**	PF	Toilets, taps, pipes and water heaters are not inspected by the homeowner or repaired by a plumber as needed.	Each season inspect toilets, taps, pipes and water heaters for leaks and signs of wear. Repair or replace items with the assistance of a plumber as needed. Consider installing and maintaining flood alarms to reduce flood risk. Check with your insurance professional about discounts for installing alarm systems.
Additional Considerations for Limiting Risk of Water Damage, Mold and Mildew Growth			
Furniture and electronics – Are furniture and electronics at risk of damage in the event of a flood? 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).	N/A	Furniture items have absorbent surfaces in contact with the floor and electronics are stored on the floor OR Needs further investigation.	Carpet on floors, couches with absorbent legs and electronics on the floor are at risk of damage in the event of a flood. Select furniture items that have non-absorbent surfaces up to 30cm (12") and store electronics at least 30cm (12") off the floor (or to exceed anticipated flood levels).
Stored valuables – Are your valuables at risk of damage during a flood or at risk of mold and mildew growth? 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 to provide good air circulation OR no valuables are stored in the basement.	N/A	Valuables are stored in sealed, non-absorbent containers at least 15cm (6") off the floor, at least 10cm (3") away from walls that provide moderate air circulation.	Store items in sealed, non-absorbent containers at least 30 cm (12") off the floor (or to exceed anticipated flood levels) and 15 cm (6") away from walls. Consider moving most valuable items above the basement.
Relative humidity, air movement and temperature – Are the moisture, humidity and temperature levels in your basement optimum to reduce mold and mildew risk? A 30-50% relative humidity reading is taken in the basement. Air circulation is good. A minimum regular temperature above 15C (60F) is maintained.	N/A	Over 60% relative humidity reading is taken in basement OR Air movement is highly restricted OR The temperature is kept below 10C (50F) OR Needs further investigation.	The relative humidity reading is 65. This exceeds the recommended maximum of 50%. Reduce sources of moisture and run one or more dehumidifiers to maintain 30-50% relative humidity. Improve air circulation. Maintain minimum temperature of 15C (60F).

Indoor Sources of Moisture– Are indoor sources of moisture limited to reduce mold and mildew risk? If a bathroom with a shower is present, a fan is present and when it is running it is strong enough to hold a piece of tissue. Fan is run for 30-60 minutes after a bath or shower. Furnace humidifiers do not operate in the summer. Wood is not stored, laundry is not hung, boots are not dried etc. in the basement.	N/A	If a bathroom with a shower is present, a fan is present and when running it is strong enough to hold a piece of tissue. The 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.	No action required.
Hazardous Materials			
Hazardous materials – Are hazardous materials stored in a way that represents a contamination risk during a flood? 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.	N/A	Hazardous materials are not sealed in waterproof containers and/ or are stored on the floor and/or heating fuel tanks are not secured to the floor OR Needs further investigation.	See **G** on **Inside Assessment** diagram. Remove paint, chemicals and other hazardous material from basement or seal hazardous materials in waterproof containers and store at least 30 cm (12") off the floor (or to exceed anticipated flood levels).