

## **Suggestions to deal with basement flooding**

Basement flooding can be a serious problem. The following are some causes and suggested solutions for property owners to assist them in dealing with basement flooding.

### What causes basement flooding?

There are various reasons as to how and why water enters basements. Most likely, water enters a basement during a period of heavy rainfall or when the snow melts rapidly during a thaw in spring season.

In such cases, a basement can get wet due to:

- Lack of gutters
- Lack of proper gutters
- Plugged gutters and/ or downspouts
- Downspout discharge located too close to house
- Poor drainage around house
- Crack or leak in the basement walls
- Foundation drains crushed or plugged
- No sump pump in sump pump pit
- Sump pump not large enough
- No battery back up for sump pump

Basement flooding can also occur due to:

- Wastewater back-up into basement

However, the majority of the City of Jordan's sanitary sewer system is new, and less than 2% of the pipes are more than 30 years old. The City also completes cleaning and maintenance of the sanitary sewer system annually. If you do believe your basement flooding is due to a sanitary sewer backup, please notify City Hall. The City owns and maintains all sanitary sewer mains in the street, and property owners are responsible for maintaining the service line from the main to their structure.

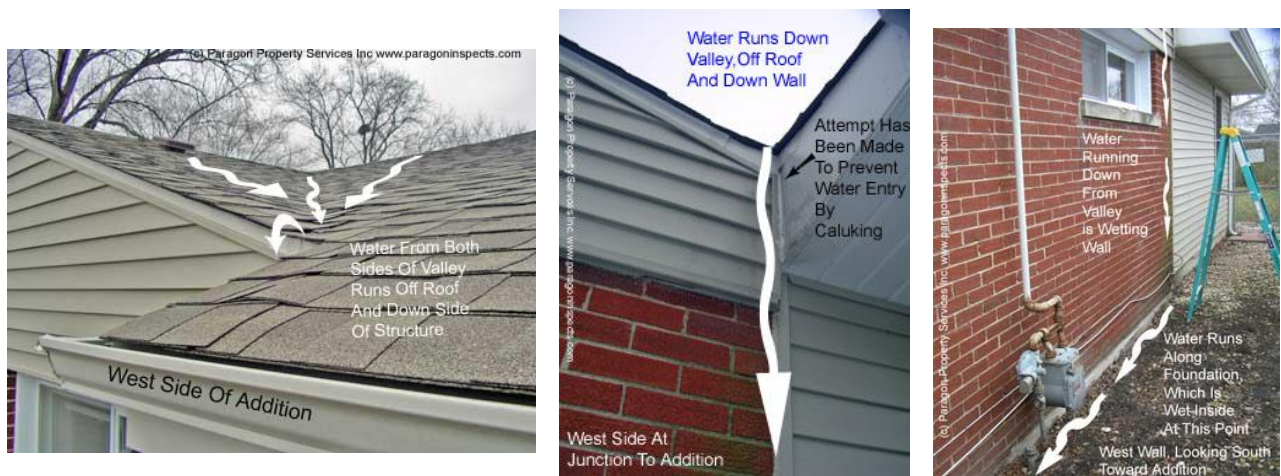
### Preventing basement flooding

Problems related to basement flooding are best diagnosed by working your way down from gutters, to downspouts, to the foundation, to the grade at the foundation, to the home's underground drainage system.

## Gutters, Downspouts and Eavestroughs

One common cause of basement flooding is the lack of gutters. Without gutters, runoff from the roof areas is allowed to fall next to the building's foundation. Water has a tendency to flow through and saturate loose fill material that was previously excavated for the basement foundation construction more readily than through undisturbed virgin soil. The soil in the previously excavated area around the house can become saturated very quickly, and water can easily be forced into the home's drain tile system and / or exert great pressure on the basements walls.

Another problem area to check is where eaves troughs are discharged. Not only should they be properly located, but they should be cleaned and maintained regularly. The following pictures illustrate these potential problems.



It is also important to make sure that the downspouts and sump pump discharge pipes extend at least 8 feet away from the basement wall. If the downspouts are allowed to discharge close to the foundation wall, the water will enter the home's drainage system and possibly inundate it. Also ensure that the discharge from your downspouts doesn't adversely impact your neighbor's basement walls. In most of the downtown areas that have been reconstructed and some of the newer developments in Jordan, a sump pump service has been provided that is connected to the storm sewer system. For areas of the City that don't have a sump pump service, the discharge should drain toward the street away from the house, toward a drainage swale along a side yard, or toward the rear yard if it slopes away. If the downspouts are connected to the home's foundation drain, disconnect the downspouts and provide a discharge as described above.



## Lot Grading

If the land in and around the home starts sloping towards the foundation, rainwater is diverted to the foundation drains causing the home's drainage system to overload. As homes age and the ground around them settles, it may be necessary to add fill around the foundation to restore the grade so that it slopes away from the home. Another common mistake is to place plastic under landscaping rock without making sure the grade drains away from the home. Often a plastic landscaping border will be installed to hold the rock in place. The plastic and the plastic border trap water in the rock, and ensures that the water is diverted into the foundation drain which again can overload the homes drainage system.

It is also important to make sure that all driveways, decks, patios and sidewalks adjacent to the foundation of the home drain away from the foundation wall. If this is not the case, this can either cause water to drain back towards basement walls and the foundation drains or settle over time and eventually allow water to reach the basement walls and/or foundation drains.

Proper lot grading results in:

- Reduction in water seepage into home through cracks in basement walls or through basement windows
- Maintain stable moisture content of the soil under and around the house so as to decrease cracking and shifting chances.
- In case the water collects next to basement, it could make its way to footings supporting the basement walls. This moisture can then cause the footings to settle or heave.
- It can extend the life of your sump pump by decreasing the amount of work it has to do.

## Basement Walls

Make sure to patch or fill any cracks in the basement walls. Smaller cracks can be filled with caulk or mortar. Larger cracks should be dealt with by a qualified contractor.

## House drainage system

The drainage system of a home includes foundation drains around the outside of the basement walls, a sump pit usually set into the floor of the basement, a sump pump, and a discharge pipe. The sump pit starts collecting water from the basement's foundation drains. Using a discharge pipe, the pump pushes water outside the house.

The sump pump discharge pipe should be placed such that:

- If there is a sump pump service available, it is connected to the City's storm sewer system via underground pvc piping.
- If there is not a sump pump service available, it discharges water at least 8' away from the foundation wall of the house and should drain toward the street away from the house, toward a drainage swale along a side yard, or toward the rear yard if it slopes away.
- It does not direct water onto neighboring properties.

### Sump Pit

Each year, after freeze up, make it a point to clean the pit. The foundation drains may carry a small amount of debris, roots or soil into the pit. If water remains in the pit for an extended period of time, it may cause a musty smell. If this is the case, flush the pit with clean water until the pump removes the stale water.

### Sump Pump

Each spring, test and check your pump before the spring melt and the rains start. To trigger the pump's operation, simply stream water into the pit.

At least once a year, remove and clean your pump. Before cleaning or handling, it is important to disconnect the pump from the power source. Most pumps contain a screen that covers the water intake. It is important to make sure the screen is clean.

You may want to have a qualified plumber inspect the sump pump regularly to ensure proper operation. For more safety guidelines and detailed information, check the sump pump's owner's manual.

### Back up Sump Pump

Severe storms can be accompanied by power blackouts. Property owners may want to consider installing a sump pump with a back up battery or a backup sump pump powered by a battery to address this situation. The additional sump pump could also provide extra pumping capacity should it be needed.

### Foundation drains

If you notice there just isn't water coming into your sump basket like it used to in a similar event in the past, your foundation tile may be plugged. It is best to contact a certified contractor to have them determine if the drains are plugged and need to be cleaned.