

City of Toledo
Guidance for managing rainwater & groundwater on residential properties

Prepared By: Department of Public Utilities, Division of Engineering Services
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Rainwater in the Yard

The drainage of rainwater on residential property is at the discretion of the homeowner. Rainwater that has fallen on the property will either run off to the street or neighboring property, soak in, or collect in the low spots in the yard. If the existing low spots are problematic for the owner, it is up to the owner to make changes in the grades and landscaping to provide more appropriate locations for the rainwater to collect. A good location should be out of the way, planted with water-loving vegetation, not up against the sides of buildings and a good distance from buildings with basements.

Grading a property to allow rainwater to run off to neighboring properties is unacceptable as it could present a nuisance or cause damages to the neighbor's property.

Good Strategy: Take a look at where water stands in the yard following a rainstorm. Consider landscaping changes if water is standing against your home other buildings.

Things to avoid: While adding dirt to low areas may help, it is also good to plan where the low spots will be and lower those areas too. Soil that is removed from planned low spots can reduce the need to haul in dirt to fill in the unwanted low spots. Avoid making changes that would allow water to run off to neighboring property.

Downspout Discharge

When reviewing the drainage on your property, pay particular attention to rainwater discharged from a roof gutter/downspout collection system. These sources discharge much more water than the rainwater falling on the rest of the yard.

Good strategy: Plan the landscaping to move the water to the preferred low spots in the yard. Collect rain water in rain barrels if you would like to use it for watering plants later.

Things to avoid: If your landscaping does not allow water to move away from the house, a long downspout extension will help somewhat, as long as the yard doesn't slope back towards the house. Do not direct downspouts towards neighboring property or ground that slopes toward neighboring property.

Sump Pump Discharge

Like downspouts, this source discharges a concentrated flow and should be directed to a convenient location on the property. From the discharge outlet, most of the water will be soaking back into the ground.

Good Strategy: The sump pump discharge outlet location needs to be far enough removed from your house to prevent it from soaking back into your foundation drain tile.

Things to avoid: Discharging sump pump water too closely to your basement will allow too much of the water to soak back through the ground into the foundation drain tile. This results in an unintended “short-circuit” that keeps the sump pump running too much because most of the discharge never leaves the system. Avoid a discharge point which will run off to neighboring property.

The City does not regulate the placement of the discharge. The placement is the owner’s discretion. However, the City of Toledo does require dedicated use sump pump discharges to be below grade, as defined here:

Dedicated use sump pump: The pump sits in a crock that receives ground water drainage. Collected ground water has no other outlet than to be pumped out of the house.

Emergency use sump pump: The pump is used as a backup in case water levels in the basement rise during wet weather. During normal dry weather flow, ground water flows into a floor pit which then flows by gravity out a lower pipe.

Dedicated use sump pump discharge locations are regulated by the Department of Neighborhoods. A June 30, 2008 memo provides the best guidance on this issue and is shown in the following figure. The City does not regulate the configuration of emergency use sump pump discharge lines.

Infiltration Pits

To meet requirements or for a clean looking configuration, an owner may wish to discharge rainwater sources to an infiltration pit. It is an underground chamber or stone-filled pit that holds water during the time it takes for the water to soak into, or infiltrate, the ground. Infiltration pits must be properly located to avoid short-circuiting with the house foundation drainage tile.

Good Strategy: The infiltration pit should be at a lower spot in the yard so that the infiltrated water is less likely to travel back towards the basement’s groundwater collection system.

Things to avoid: An infiltration pit in a higher spot in the yard or too close to the basement, which allows infiltrating ground water to move towards the basement instead of infiltrating the ground.

Sump Pump Discharge with infiltration pit and above ground overflow route.

The City of Toledo regulates neither the volume nor the construction of the infiltration pit. The volume of sump pump discharge varies by such factors as soil conditions, groundwater height, basement depth, efficiency of the basement drainage tiles, and downspout locations among other things. The owner would typically want the pit to accommodate normal sump pump flows during dry weather. Sump pump flows during wet weather would be difficult to accommodate for all storms. An overflow device may be installed with infiltration pits should the sump pump discharge volume exceed the volume of the infiltration pit. The overflow allows excessive water to come up to the ground surface. Clay soil limits infiltration rates.

Good Idea: Design the overflow to come up where landscaping allows the water to pond in a good location or to travel overland to a good location.

Things to avoid: Landscapes that allow infiltration pit overflow to move closer to a building with a basement.

**Image: Department of Neighborhoods Ruling on sump pump discharge.
Applies to: Dedicated Use Sump Pumps Only.**

CITY OF TOLEDO

Department of Neighborhoods

Kattie Bond
Director



Division of Building Inspection

Chris J. Zervos
Acting Commissioner

**CARLETON S. FINKBEINER
MAYOR**

March 31, 2008
Revised June 30, 2008

To: Staff in Dept. of Neighborhoods Nuisance Abatement and Building Inspection Divisions
From: Chris J. Zervos, Acting Commissioner of Building Inspection and Code Enforcement
Re: Sump Pump discharge

The following opinion and directive is a ruling by this office to address the discharge of residential sump pumps installed as a result of replacement foundation drainage tiles. While the directive addresses the management of storm water drainage, it also recognizes environmental concerns of water conservation. Further, it complies with the 2006 Residential Code of Ohio and the 2005 Ohio Plumbing Code and builds upon the precedent ruling of this office on June 1, 2007, in "Basement Waterproofing In Existing Residential Structures (Christopher J. Young, CBO Toledo) stating:

...Replacement foundation drainage tiles can no longer drain to "daylight" exterior of the building envelope. It is recommended that the foundation drainage tile be re-installed by gravity "as originally installed." If a sump pump is utilized or preferred, the discharge shall be underground to a properly sized and installed dry well or directly connected to the combination sanitary/storm sewer exterior of the structure.

In such cases, when a sump pump is chosen to collect foundation storm water run-off, collected in newly installed foundation tiles and directed to an integral sump pump crock, the discharge must be accomplished by direct underground connection to and discharge into the storm sewer, when available, or to the combination sanitary/storm sewer. In both cases, a back-flow prevention system, or check ball valve, must also be installed. As stated in the June 1, 2007 Young ruling, discharge into a properly sized dry well is also an acceptable means of releasing storm water run-off. Further, underground discharge into a contained landscaped area, such as a rain garden or retention pond, is acceptable. The discharge may not cause flooding to adjacent properties.

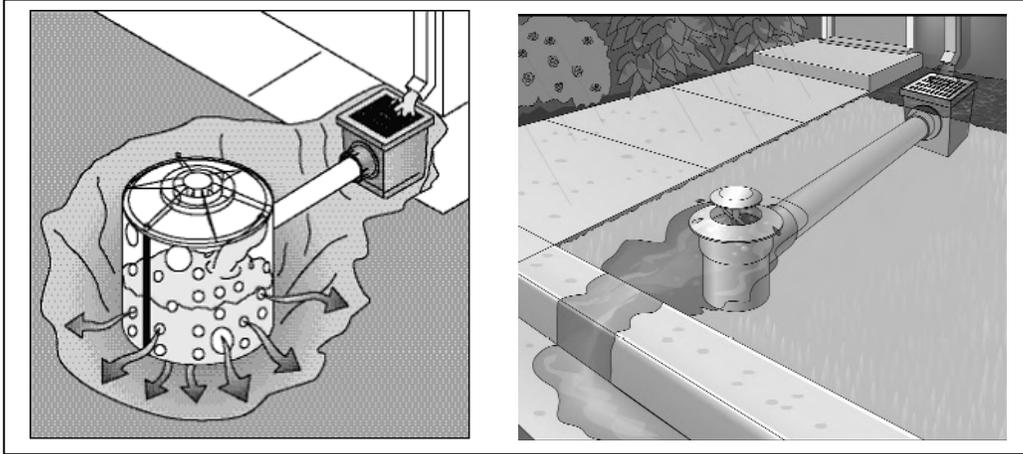
Discharging storm/surface water contents from a sump pump to the surface of the public right-of-way is a public nuisance and a menace to the public safety as defined in Toledo Municipal Code §1726.01 (a)(1). Property owners identified as violating this code section with systems installed since June 1, 2007 will be cited by the Department of Neighborhoods general inspectors. The property owner shall be allowed up to thirty (30) days to correct the violation per TMC §1743.04 (a) (5).

Downspouts to Infiltration Pits

Routing a downspout to an infiltration pit is similar to the use for sump pump discharge but is a much larger amount of water to address. Clay soil limits infiltration rates. An overflow capable of a high flow rate would be necessary to avoid problems during heavy storms.

Good Idea: The second picture shows an alternative to a downspout infiltration pit.

Things to avoid: An infiltration pit with inadequate overflow could lead to the downspout lines backing up, water coming out seams or breaks in the line, and running down the side of the basement wall.



Where does the rainwater go?

Most of the rainwater that falls on your yard travels downstream through the watershed until it reaches a waterway. Some water that won't reach the waterway will evaporate, infiltrate into groundwater, and/or be collected in the sanitary sewer collection network instead.

Most properties in the City do not have their own connection line to the City's storm sewer system. That means that for most properties, transporting the rainwater above ground towards a City Storm Sewer System Drain (street curb drain) is an efficient way to move water down the watershed.

Some neighborhoods are not serviced by a storm sewer network, but have swales in the front yards. A swale is a shallow trough that collects and transports the runoff water. Swales must be kept free of blockages.

Connecting to the City Storm Sewer System

The City of Toledo Division of Engineering Services must approve any proposed physical connection to the storm sewer system. This includes connections through the street curb. Connections to a storm sewer pipe or inlet structure require a permit and construction inspection.

For More Information: City of Toledo Engineering Services, Phone 419-245-1315.

For one example of a catalog of products such as those shown or described:
http://www.ndspro.com/cms/files/Drainage_Jan08.pdf