

Frequently Asked Questions Stormwater Runoff

What is stormwater runoff?

Stormwater runoff is the rain water you see flowing over parking lots and roadways, or gushing out of a downspout, during a storm. In areas that are undeveloped, such as forests and meadows, rain water will usually seep into the ground or be captured by the leaves of trees and other plants. Areas that are developed with buildings, parking lots, and roadways are said to be *impervious* - that means that these buildings and paved surfaces prevent rain water from seeping into the ground. As a result, the rain water “runs off” these surfaces and flows downhill.

At times when the ground is already saturated from a lot of rainfall, stormwater runoff will occur from undeveloped lands as well, contributing more volume of runoff to that coming from the impervious, developed areas.

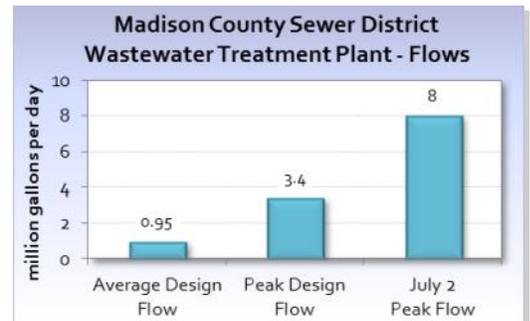
Why should I be concerned about stormwater runoff?

As stormwater runoff flows downhill, it joins with stormwater runoff from other areas. The volume of stormwater runoff increases downhill, and can result in localized flash-flooding. Flash floods cause damage by eroding land and inundating property and can create hazardous conditions. Runoff that collects in low-lying areas also causes flooding that can damage property. In addition, stormwater runoff that flows into the sanitary sewer system through improper connections can cause problems at the wastewater treatment plant.

How does stormwater runoff cause problems at the wastewater treatment plant?

Wastewater treatment plants are designed to treat a certain volume of wastewater. When stormwater runoff flows into the sanitary sewer system, the wastewater treatment plant can be inundated with more water than it was designed to handle. As a result, in some extreme circumstances the combined wastewater and stormwater may have to *bypass* the treatment plant. A bypass occurs when the untreated combination of wastewater and stormwater is released directly into the environment to protect the treatment plant from serious damage and to keep sewage from backing up to flooding basements or streets.

On July 2, 2013, a storm event caused considerable stormwater runoff in Cazenovia. The Madison County Sewer District Wastewater Treatment Plant recorded flows exceeding the level for which the plant was designed. Fortunately, a bypass was avoided. But this extreme event highlights the importance of separating the stormwater runoff from the sanitary sewer.



Comparison of treatment plant design flows (average and peak) with the extreme flow event on July 2, 2013.



How does stormwater get into the sanitary sewer system?

The Village of Cazenovia historically has had separate systems for stormwater runoff and for wastewater. Unfortunately, over time illegal hookups in residential and commercial buildings connected sump pumps to the sanitary sewer line in the basement. Roof drains on flat-topped buildings were connected to the sewer vent system. Stormwater catchments in roadways or on property were connected to nearby sewer lines instead of to the stormwater system. Older pipes in the sanitary sewer system have developed cracks which may allow water outside of the pipe to get in.

Example of an illegal hookup of a sump pump to a sanitary sewer line.

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What is the Village doing about this issue?

According to the Village Code, it is illegal to connect sump pumps or roof drains to the sanitary sewer system. Presently, there is no penalty for having an illegal hookup. However, the Village Board is proposing to institute a penalty, along with a six-month amnesty program. During the six-month amnesty, any property owner who comes forward to report their own violation of this law will avoid the penalty and will have whatever assistance the Village can provide to correct the problem. The Village is also committed to seeking out and addressing municipal stormwater management problems.

No person shall discharge or cause to be discharged any stormwater, surface water, groundwater, roof runoff, subsurface drainage, cooling water, swimming pool water or unpolluted industrial process waters to any sanitary sewer.

(Article VI, §136-32 of the Village Code)

There has been a lot of flooding and rainfall lately. Why? Could this be climate change?

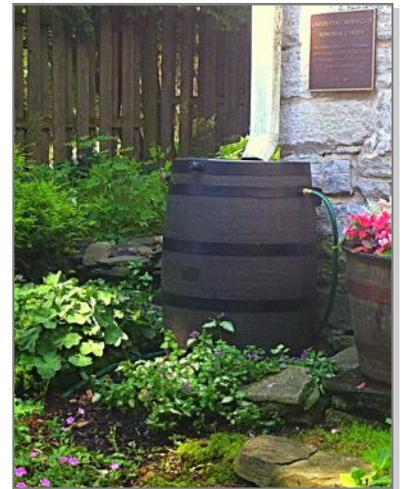
Rainfall for the past three months (April through June) was about 23% higher than the 30-year average. This weather has resulted in the flooding we have seen recently, but in the short term is not evidence of climate change. However, in a 2011 report by NYSERDA¹, heavy downpours have increased in frequency over the past 50 years. This trend is projected to continue, causing more localized flash flooding and more combined sewage overflow events. The climate models cited in the NYSERDA report predict annual average precipitation will increase by 5 to 10% by 2080; the frequency of heavy rainfall events (downpours) is projected to increase as well.

To address the issue of increasing precipitation and downpour frequency in the long term, the NYSERDA report recommends municipalities adopt stormwater infrastructure and management practices, and upgrade combined sewer and stormwater systems to reduce pollution.

What can I do?

To help the Village control stormwater runoff and prevent runoff from reaching the wastewater treatment plant, you can take these precautions:

- Check your basement to see if you have a sump pump connected to the sewer line. Remember, there will be a six-month amnesty before the Village institutes a penalty. If you report this to the Village within the six-month amnesty period, they will assist you to get your sump pump discharging properly away from the sewer line and you will not be penalized for the illegal hookup.
- Divert your roof gutters into a garden or a rain barrel. Rainwater captured in a rain barrel can be re-used to irrigate your gardens, water your plants, or wash your car. Not only will this help control stormwater runoff from your property, but it will also save on the Village drinking water you would otherwise use from your household tap.
- Use porous surfaces for sidewalks, driveways or walkways on your property. These surfaces will allow rainwater to soak through and into the ground rather than runoff and potentially contribute to flash-flooding downhill.



A rain barrel located in the Cazenovia Garden Club Memorial Garden behind the Library.

¹ Rosenzweig, C., W. Solecki, A. DeGaetano, M. O'Grady, S. Hassol, P. Grabhorn (Eds.). 2011. *Responding to Climate Change in New York State: The ClimAID Integrated Assessment for Effective Climate Change Adaptation*. Technical Report. New York State Energy Research and Development Authority (NYSERDA), Albany, New York. <http://www.nyserdera.ny.gov/climaid>

For more information about how you can help control stormwater runoff:

Contact the Village of Cazenovia (315) 655-3041, Public Works Administrator Bill Carr



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