



Flooding

Questions & Answers

September 12, 2017

The Town of Lakeshore has received many calls and questions regarding the recent flooding of some homes and streets during the severe overnight storm event on August 28/29.

The following is a list of the most commonly asked questions in recent days, and responses to provide both factual information and explanation.

Why did the flooding occur?

This was a region-wide event designated as a natural disaster by the Province of Ontario

Isolated areas received an intense rainfall over a short period of time. Some rain gages recorded 80 – 200 mm (almost 8") of rainfall in 4-6 hours in the Old Tecumseh Road area. A 100 year storm is 4 inches in 24 hours. Keep in mind that a '100 year storm event' has a 1% chance of occurring at each rain event, not just one in 100 years. Regardless of the statistics, it is clear we are experiencing more frequent, and more severe, storm events which may be attributed to climate change.

Did anything not work?

All Town systems were checked regularly throughout the storm event and were found to be fully functioning without issue.

When did Lakeshore turn the pumps on?

Pumps are always on automatic mechanisms that turn the pumps on based on the amount of water (this is similar to a sump pump in your home). When the water level rises, the pumps automatically run to move the water out at full capacity. The pumps are not turned on (or off) by a person during rain events.

Was there anything the Town of Lakeshore could have done?

All systems were functioning at capacity and as designed. The size and intensity of the storm event far and away exceeded the capacity of regional systems, both in Lakeshore, as well as Tecumseh and Windsor.

Won't bigger pumps and larger sewers help?

The storm water system worked as it should....pumps were operating at full capacity, streets collected storm water as designed, and the entire system cleared within hours of the storm ending.

What did happen was the sheer deluge of water found its way everywhere, including into the sanitary sewer system. This system should not have flowed back into basements during the storm. A review of Inflow and Infiltration ("I&I") of storm water into the sanitary system is essential, both in the public infrastructure, and the homeowner side of the system.

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Why did the sanitary sewer system take on rainwater?

Lakeshore has two separate sewer systems: Sanitary and Storm.

The sanitary system is not completely closed so that in extreme events, rainwater can enter into it. The public infrastructure (street side) is designed for an allowance to handle some rainwater, but not at the extraordinary levels experienced in the recent storm event. There could be infiltration and inflow of storm water from other systems such as leakage in pipes or illegal connections and open clean-out covers in several locations on the home (private side) of the system.

Why weren't the 'gates' open?

Gates at the pump outlets to the lake have nothing to do with the capacity to discharge storm water into the lake. They are opened according to lake water levels. The Town determines the level to ensure high lake levels do not flow back into the municipality and drains. Gates are a backflow preventer from the lake.

Do higher lake levels have an impact?

Lakeshore is a flat municipality and pumps are required to move the water for some of the drainage systems. Higher lake levels are factored into the capacity of pump and gravity outlets of water being released into the lake and higher lake

levels does not directly affect the Town's capacity to pump water or gravity drain water out to the lake.

Is the flooding because of the new development?

No. New developments must retain all storm water typically in retention ponds or within internal sewers and only release at prescribed levels so as not to overburden or flood downstream drainage systems.

Communication

Lakeshore issued the first of several media releases first thing Tuesday morning, hours after the storm subsided.

Where was I supposed to look for notices from the Town?

Communication was posted on the Town's Facebook and Twitter pages along with the Town's website under News. Lakeshore regularly sends information to the local media, however, it is the choice of the media as to what they broadcast or report.

In an emergency or severe weather event, the best source of information is always the local media or weather services who provide regional warnings from Environment Canada and ERCA, for potential flood events. For municipal services and information, residents should follow Lakeshore on Facebook and Twitter as well as visit the Town's website for municipal information.

Why didn't the Town post on Facebook and Twitter on the night of the storm?

The Town's priority was a first response to the rapidly escalating storm situation.

The best and most reliable source for weather information is always local media and weather services.

The Town posts accurate information and will communicate when information is verified and complete. The Town was collecting feedback from staff, ensuring data was accurate and determining best course of action. Information was posted within hours of the storm event subsiding.

Why did the roads flood?

Roads are designed to hold water in large volumes during severe rain events. They provide another facility to hold the water until the sewers can catch up.

Why did some streets drain quicker than others?

The rate of drainage is based on a number of factors such as:

- streets that are higher will drain first before streets in lower areas
- streets upstream at the top end of a sewer system will drain first before downstream sewers
- the variability of intensity of rain across an area results in varying volumes of water on any one particular street.

Why was there a vortex that suddenly opened up in the drains?

Flood waters drain at a constant rate. As flood volumes decrease, system capacity begins to accept water from lower lying lands and streets. Drains are still emptying at the same rate but perception can be deceptive.

Why were sewers spewing water on roadway?

The sewers were surcharged, or pressurized by a level of fluid higher than the roadway surface where the water spewed out of the manhole. The water escapes at any outlet where the surface is lower than upstream levels.

Why were crews out at pumping stations in drains?

Staff continuously monitored pumping stations and drains to ensure they were working. All stations were fully functional.

Will the Wallace Line development make the situation worse?

No. All new development is required to manage their own storm water runoff. New developments are designed to capture, retain and release storm water during rain events only at a level that does not flood downstream systems.

Why did some homes flood again the next day?

Movement of fluids and hydraulic pressures that were still present in sewers the following day could have caused the backflow conditions.

What can be done? What is the Town doing right now?

Unfortunately the problem cannot be solved with one single solution and there a number of factors and causes of flooding on private property and homes. Lakeshore is in the process of organizing a Public Information Centre to provide information to residents on how to protect their home with information on a number of areas:

- a.** How municipal sewer systems work.
- b.** How private systems work.
- c.** What homeowners can do to protect their homes.
- d.** Identify products and services to assist homeowners to safeguard their home.
- e.** Backwater valve subsidy

Lakeshore continues to inspect and invest in the municipal sewer system including ongoing measures to minimize excess inflow and infiltration as part of future budgets as well as consider recommendations for short, medium and long term strategic framework to adapt to climate change.

The Town will review its communication and emergency notification options to ensure the right information is distributed at the right time using the right medium.