

TRCA'S REAL-TIME FLOOD MONITORING NETWORK

Toronto and Region Conservation Authority's (TRCA) Flood Forecasting and Warning Program operates 24 hours a day, 7 days a week to provide notice, information and advice of possible high water levels in rivers that could lead to flooding. When flooding is possible or about to occur, TRCA issues flood messages to designated individuals within municipalities, school boards, the media and members of the public who self-subscribe. Municipalities are responsible for relaying the message to relevant individuals and departments within their organizations and activating municipal emergency response procedures, which includes taking actions to warn local residents.

In order to provide support and advice to municipalities during storms and flood events, TRCA's flood staff require access to current water levels and precipitation amounts in TRCA's watersheds to help them determine the extent of potential flooding. As a result, TRCA has an extensive network of real-time stream and rain monitoring gauges to provide up-to-date and accurate data for the flood forecasting and warning program. The gauges have been strategically placed throughout the jurisdiction in locations with known flood risk, or where more information is needed for daily operations.

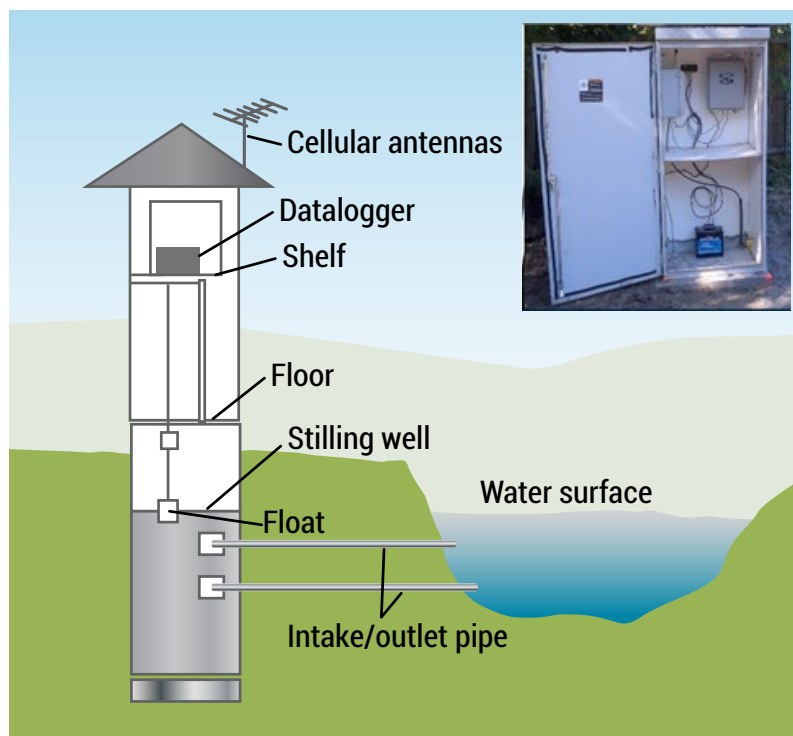
TYPES OF TRCA REAL-TIME MONITORING STATIONS

At TRCA, precipitation amounts and water levels in streams are recorded using equipment known as precipitation (or rain) and stream gauges respectively.

STREAM GAUGE

Stream gauges measure and record water levels (or depth of water) in a river, stream or reservoir typically in meters above sea level.

A typical stream gauge consists of a gauge hut and stilling well which sits adjacent to the stream. As the river level rises and falls, so does the water in the stilling well, where it is measured and recorded.

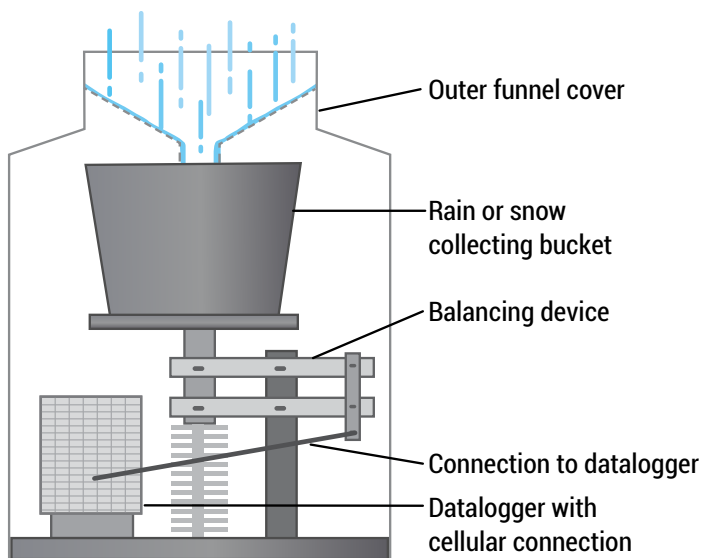


PRECIPITATION GAUGE

Precipitation, or rain gauges, collect and measure the amount of rainfall (or snow in the winter months) in millimeters. At TRCA, two variations of precipitation gauges are used; four-season weigh gauge, and three-season tipping bucket.

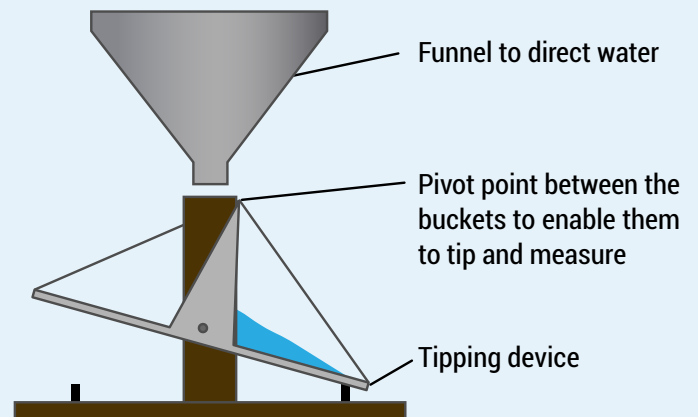
Weigh Precipitation Gauge

A weighing precipitation gauge (shown here) consists of a storage bin, which is weighed to record the mass. As precipitation falls, the change in weight is recorded as a precipitation depth in millimeters. This gauge is able to measure and record rain (liquid) and snow (solid precipitation) amounts all year round (ie. four seasons).



Tipping Bucket Gauge

The tipping bucket rain gauge consists of a funnel that collects and filters the precipitation (rain) into a small seesaw-like container. Once the collected water reaches the limit, the bucket will tip and hit the stop, recording a measurement. The gauge then dumps the collected water until the next tip is recorded. This gauge is only able to measure and record liquid rainfall amounts accurately, therefore is not used during winter months (ie. three seasons).



REAL-TIME GAUGE NETWORK

To provide even greater lead time for potential flood events, TRCA has implemented real time capabilities in several gauges that enable them to transmit the recorded measurements back to TRCA staff in near real time. This specific set of gauges is referred to as the flood monitoring real time gauge network and system. These gauges are connected to a TRCA database and website through a cellular modem which transmits in real time. The system is also able to notify TRCA flood staff with an alert, if water levels become too high, through email and text. Alerts are very location specific and are set below flood stage to provide early warning that flooding is possible.

Do you want to know where TRCA gauges are located?
Visit TRCAGauging.ca.

View real-time water levels in the GTA's local river and streams on TRCA's flood monitoring gauging website which displays TRCA's gauge network data. The network spans the GTA, continually monitoring water levels at TRCA dams and river stations. Limited access to real-time stream flow, water level, and precipitation data is available to the general public at TRCAGauging.ca.

**When flooding is possible or about to occur,
TRCA issues Flood Messages.**

Subscribe to receive Flood Messages from TRCA by email at TRCA.ca/get-flood-messages

Or follow TRCA flood on Twitter at [@TRCA_Flood](https://twitter.com/TRCA_Flood)

