Canada-Ontario Hydrometric Agreement: Provincial Review 2018

June, 2019

Ontario's Hydrometric Network: Quick Facts

The hydrometric monitoring network in Ontario is part of the Canada-wide National Hydrometric Program (NHP) which provides accurate, timely and standardized data on current and historic surface water conditions. In Ontario, the network is co-managed and co-funded by the Ministry (MNRF) Surface Water Monitoring Centre (SWMC) in partnership with the Water Survey of Canada (ECCC-WSC). The hydrometric network in Ontario has close to 600 stations that continuously monitor water levels and stream flows across the entire province. All data produced by this network is publicly available via the ECCC-WSC webpage. MNRF partners also have access to this data and more via the SWMC extranet applications.

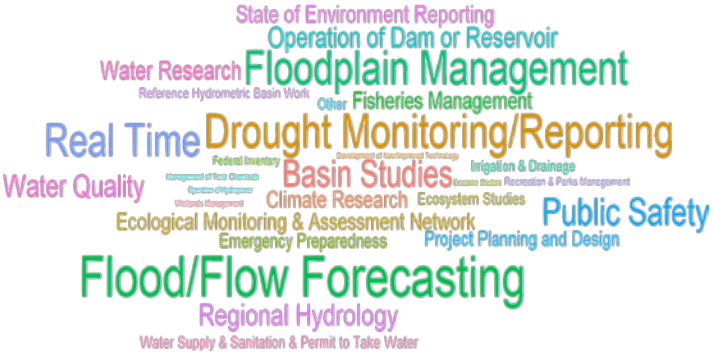

Figure 1 – Uses of Ontario's Hydrometric Network.

2018 Provincial Review

SWMC regularly connects with local partners to discuss network operation including how stations are being used, the effectiveness of the network and the challenges that they encounter. In 2018 SWMC structured a project to undertake a comprehensive review of the network in Ontario, part of which included a station-by-station review of hydrometric stations. The National Hydrometric Program Coordinating Committee's (NHPCC) Hydrometric Network Review Standardized Approach (Draft 2017) was used to guide this review. This framework included guidance for a station-by-station survey. All conservation authorities and MNRF districts were invited to complete this survey. This flyer summarizes the key findings from the 2018 survey.

Hydrometric Network Uses

SWMC and all local partners rely on the network to support flood and drought activities. The results of the 2018 survey clearly show that the hydrometric network is being used to support a wide range of other activities! Figure 1 illustrates the programs and projects supported by the hydrometric network and it can be seen that the uses stretch far beyond floods and drought. When the uses of the hydrometric network are plotted spatially it can be seen on Figure 2 that the hydrometric stations are used across Ontario for a number of uses. The density and the number of uses per station are notably greater in southern Ontario, where population is most dense.

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Importance to Key Programs

In the survey partners ranked the importance of specific hydrometric stations in regards to 4 programs that the MNRF is involved in – Daily Operations, Flood Forecasting, Flood Response and Drought. The majority of stations were ranked as very important in regard to these four functions (Fig. 3). The questions asked in the survey were mutually exclusive.

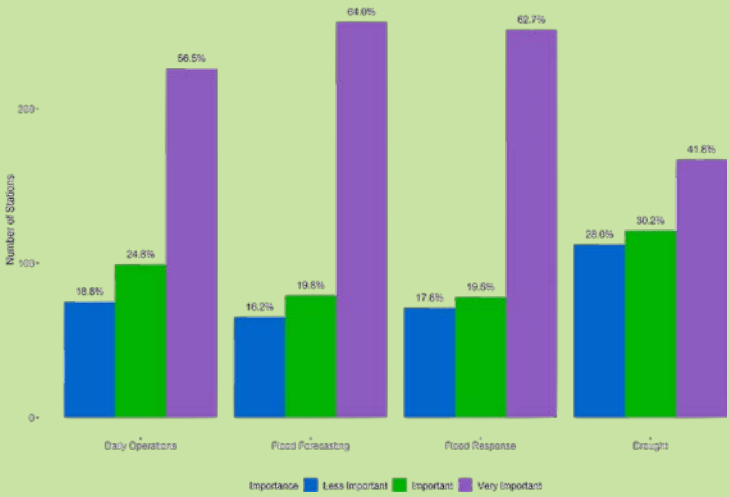

Figure 3 –importance of hydrometric network for four MNRF programs.

Network Opportunities

Users of the hydrometric network don't have to wait for a survey to voice their concerns. Users are encouraged to contact their WSC technician or any member of the Ontario Hydrometric Coordinating Committee (OHPCC) with any question or concerns. The survey results indicated that rating curve instability is the largest concern at WSC stations, however this is thought to affect under 5% of stations in Ontario.

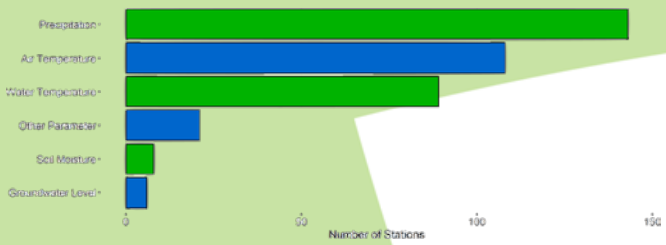

Figure 4 – Additional climate parameters at hydrometric stations.

Enhanced Climate Monitoring

Many stations within the network act as platforms for further environmental monitoring. This network allows local partners to build off of existing hydrometric stations, using them as stepping stones to collect additional parameters. This creates a series of comprehensive climate monitoring stations in Ontario. Figure 4 shows the number of parameters that are being recorded at stations. What is not captured here, but was determined through a series of engagement sessions, is that these sites are often selected for water quality monitoring or special projects because of the comprehensive record of flow or water level.

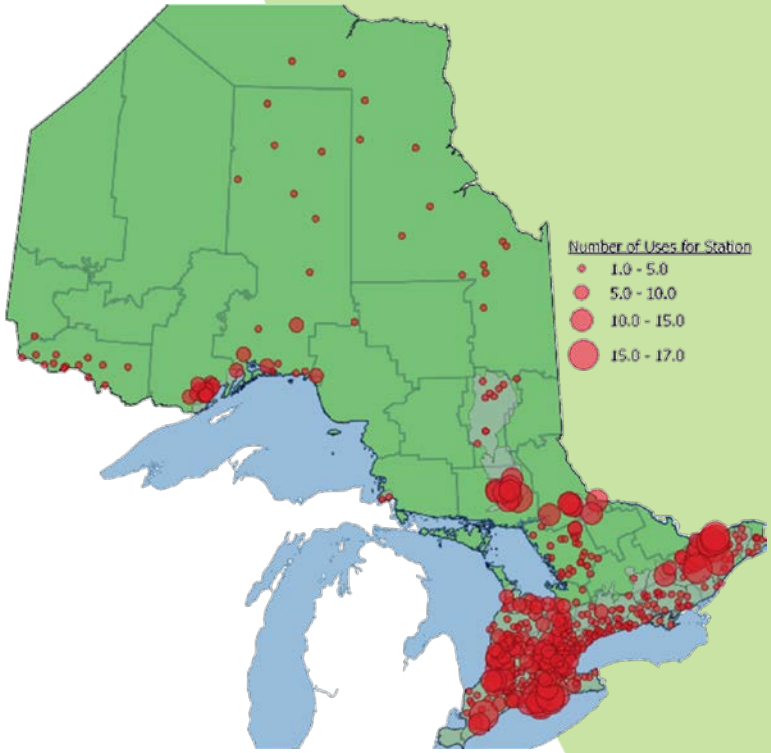

Figure 2 – Number of uses per station.

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