LAKEHEAD REGION
CONSERVATION AUTHORITY

PROVINCIAL GROUNDWATER MONITORING NETWORK (PGMN)

July, 2017

The Lakehead Region Conservation Authority (LRCA) participates in the Provincial Groundwater Monitoring Network (PGMN), a partnership program with the Ministry of Environment and Climate Change (MOECC) which monitors groundwater levels and water quality. The network was initiated in 2001 and includes approximately 500 monitoring wells across the province. The Provincial Groundwater Monitoring Network is designed to gather long-term baseline data on groundwater quantity and quality in key aquifers across Ontario. The LRCA has participated in the program since 2005, via the execution of Agreements which have a typical term of four years. The current Agreement expires on March 31, 2016. The province provided the capital funds for the installation of the wells.

Monitoring Wells

The LRCA operates and maintains a network of nine groundwater monitoring wells located throughout the watershed. Wells are currently installed in the Municipality of Oliver Paipoonge (Kakabeka and Murillo fire halls), Municipality of Shuniah (Loon Lake and Birch Beach), Township of Dorion (MNRF Fish Culture Station), City of Thunder Bay (Jackpine Community Centre and Neebing River Streamflow Gauge Site) and the LRCA owned property at Hazelwood Lake Conservation Area and Wishart Forest.

Monitoring wells are instrumented with datalogging equipment which collects hourly groundwater level information. Water level data is downloaded and sent electronically to the MOECC four times a year. Water quality sampling for general chemistry and metals is undertaken annually, occurring every fall. Staff use a submersible pump to collect water samples from the wells and the samples are submitted and analyzed at an MOECC laboratory.

The MOECC compares the water quality data to the Ontario Drinking Water Standards and notifies the Conservation Authority and the Health Unit of any exceedances per the established exceedance protocol. The Conservation Authority is then responsible to notify the owner and the Municipality of the observed exceedance. The Health Unit is responsible for any health related notifications to residents near the sampling location.

Water Quality Parameters Sampled at PGMN Wells

General Chemistry: Chloride, Fluoride, Sulphate, Dissolved Solids, Conductivity, pH, Alkalinity, Nitrogen, Phosphorus, Carbon, Silicon, Calcium, Magnesium, Sodium, Potassium, Hardness

Metals: Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Molybdenum, Nickel Selenium, Silver, Strontium, Thallium, Titanium, Uranium, Vanadium, Zinc

Why Do We Monitor Groundwater Data?

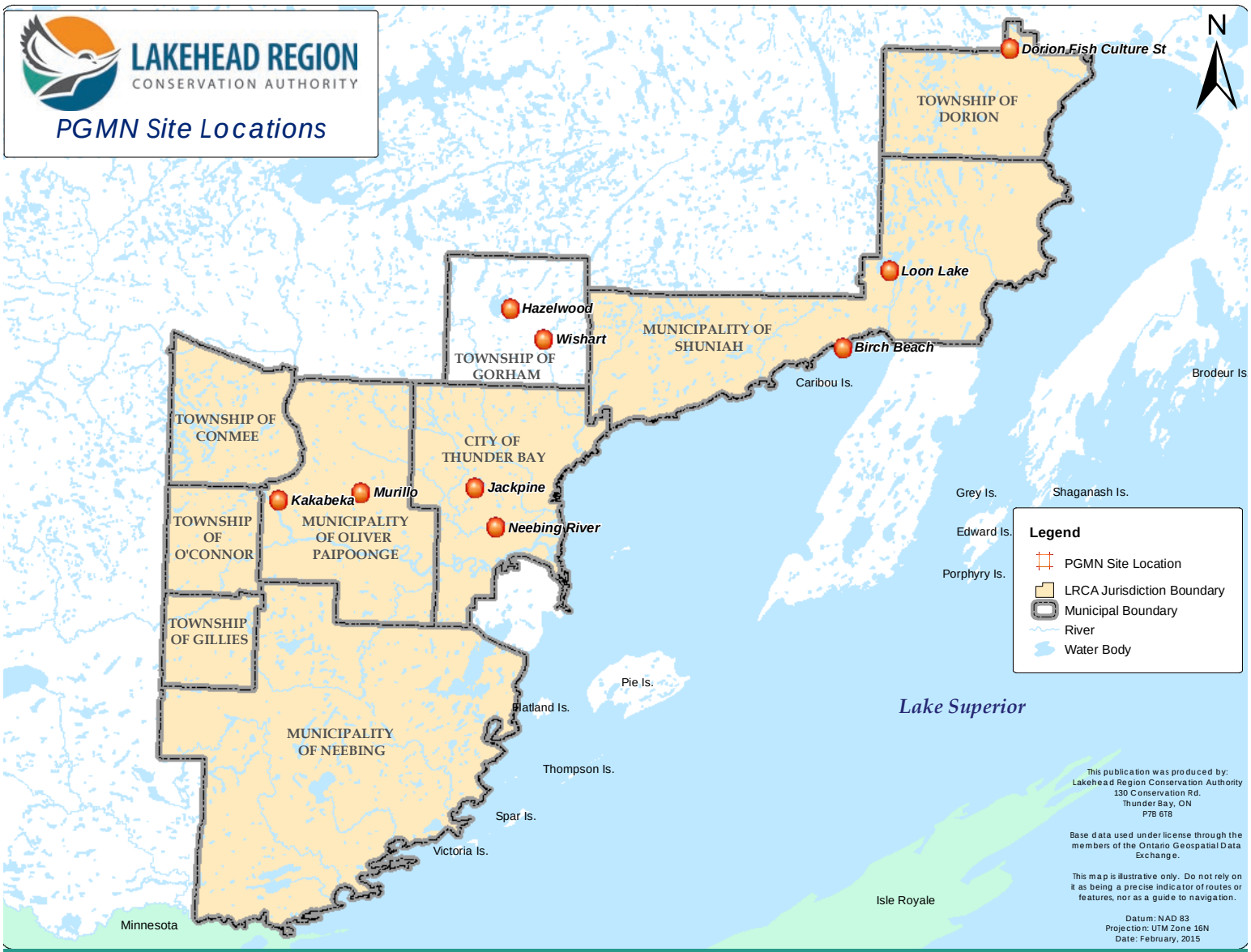
Groundwater monitoring allows us to track changes in groundwater quantity over time and identify potential contaminant sources. The data collected from these wells and across the province enables an accurate assessment of current groundwater conditions. It provides an early warning system for changes in water levels, as well as, provides for an early warning system for changes in water quality from natural or man-made causes. The data also provides a base for making informed resource management decisions.

Neebing River Climate Change Monitoring Station

In 2011, a new monitoring well was installed at the Neebing River Climate Change Monitoring Station in the City of Thunder Bay as part of the Canada-Ontario Agreement Climate Change Integrated Monitoring Program. The Neebing River Gauge Station provides information to assess the effects of climate change on groundwater, surface water and water quality. Parameters monitored at the station include: streamflow, precipitation, ground water quality and level, surface water quality, turbidity, soil moisture, and both air and water temperature. The station is one of only a few in the province and provides data for Northern Ontario.

PGMN Data Results Location

To view groundwater level data and chemistry data from PGMN monitoring wells visit:
https://www.ontario.ca/environment-and-energy/map-provincial-groundwater-monitoring-network



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