

“Please describe the project”

Drinking water in Nova Scotia needs to be kept healthy and safe today and for future generations. Groundwater, used as drinking water by almost half of the province, needs to be carefully managed to make sure it remains clean and abundant. Today, groundwater in Nova Scotia is studied using by the provincially-run Groundwater Observation Well Network. The network collects information about groundwater and drinking water health in un-serviced areas of HRM, such as Fall River. Although there are 35 wells in the province, some areas with high population density do not have a well nearby, in particular there are only two wells in sub-urban HRM and three wells in more rural areas of the municipality. The Ecology Action Centre’s Groundswell Project is creating another, more economical network of monitoring wells which will cover many parts of HRM and the province, and will provide vital water information to many local communities. This year, the project has opened 4 wells in the HRM, but requires funding for these and other data loggers to begin continuous monitoring.

“Who will benefit from this project”

The existing water level data is used by the public, the media, consultants, contractors, university researchers, and government. With further promotion of the Groundswell Project information, the wells could also be used by community planners to help assess development and water supply in areas like Hammonds Plains, Sackville and Tantallon; by municipal councilors in these communities who are making strategies about sustainable development; by citizens who are concerned about industry, mining or other activities which threaten drinking water; and by researchers interested in groundwater health, climate change and the water cycle, mining activities, development, and other issues.

“How will you measure the success of this project”

Groundswell will have two measures of success, (a) establishing monitoring wells in areas threatened by development or industry and also in watersheds lacking a monitoring well and (b) improving access and use of the data collected by the existing wells and Groundswell wells. Groundswell had a goal of establishing monitoring wells in three communities in two years, and we have established five wells in our first year. I feel that a reasonable goal of five wells per year is attainable, and will greatly increase the understanding of groundwater in Nova Scotia. I am currently assessing the statistics on who uses the groundwater level data, and will promote use of the data to appropriate groups and communities.

“Additional Information”

Groundwater monitoring in Nova Scotia currently uses the provincially run Groundwater Observation Well Network (GOWN). Established in 1965, the network measures groundwater quality and levels, to assess the impact of human activities on groundwater and long term trends associated with issues such as climate change. The network consists of 35 monitoring wells distributed across the province. Each well is equipped with electronic data loggers which collect groundwater level measurements every hour. The wells are visited by a field technician twice per year in order to assess the data loggers and compare the manual water level to the digital measurement. Water samples are also periodically collected from the wells to assess groundwater quality.

Nova Scotia Environment provides all of the data collected from these wells to the public using an online database. Users can download long term groundwater data for any of the wells. Additionally, yearly reports are completed to review activities in the network, and highlight water level or quality changes which were recorded at each well.

Currently, provincial monitoring wells are located in 24 of the 42 surface watersheds in the province. Ideal distribution of wells would see at least one well in every watershed, and also in areas of high development. Expanding the provincial network would provide information about groundwater resources in more areas of the province. In particular, some regions like HRM are facing development or industry issues and are in dire need of information about their aquifers. The cost of adding observation wells in every community, installing and maintaining dataloggers in each well, and visiting them regularly, is prohibitive.

Groundswell aims to create a community-based groundwater monitoring network of wells which will cover more of the province, and provide vital watershed information to local communities. By identifying monitoring wells and unused drinking wells which would be appropriate for monitoring, and pairing them with community groups in the local area, a new network of low-cost monitoring is achievable.

Groundswell has identified several community environmental groups who are interested in monitoring groundwater resources in the Halifax Regional Municipality. These groups have been given one or two wells to monitor on a regular basis, and will provide the data to the Groundswell project. Data will be provided on a publicly accessible website, which is supported by Nova Scotia Environment. The website is currently under construction, and will be completed by the fall of 2011. Community groups will visit wells in their area on a regular schedule to assess the data-logger, collect a water level measurement, and upload the data.

The Groundswell project aims to (a) build an awareness of groundwater issues; (b) create a continuous water level dataset for their local area; (c) increase understanding of provincial groundwater aquifers; and (d) increase the number of wells in the province using an affordable maintenance framework.

The purpose of applying for this grant is to purchase data loggers for wells in HRM located in Fall River, Waverley, Beaver Bank, Uniacke, and Hammonds Plains. These wells are scheduled to be brought online in 2011, if funding can supply each well with the loggers required for continuous monitoring. If the funding is not secured by 2011, the wells will be regularly monitored using manual water level indicators (shown above). The data collected manually does not provide long term information which can provide information on groundwater management, but is a starting point for baseline data in small communities which do not have a monitoring station.