

# Grand River Conservation Authority

**Report number:** GM-03-25-21

**Date:** March 28, 2025

**To:** Members of the Grand River Conservation Authority

**Subject:** Water Quality - Update on Nitrates

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## **Recommendation:**

THAT Report Number GM-03-25-21 – Water Quality – Update on Nitrates be received as information.

## **Summary:**

Elevated nitrate levels in groundwater and surface water are an issue of concern in the Grand River watershed, with implications for drinking water supply and wastewater treatment. Over the past year the Grand River Conservation Authority (GRCA) has enhanced monitoring, facilitated inter-agency discussions, engaged university researchers, secured additional funding for stewardship programs, and gathered information to support an amendment to the Grand River Source Protection Plan. Work will continue under the source water, water quality, and watershed services programs to engage partners in developing collaborative strategies to address the issue.

## **Report:**

Report GM-06-24-52 described the sources of elevated concentrations of nitrate in the surface waters and groundwaters of the Grand River watershed, and the roles and responsibilities of the GRCA, municipalities, and provincial agencies. The GRCA's roles are to:

- Monitor and report on surface and groundwater quality at the watershed scale,
- Update the Grand River Source Protection Plan and Assessment Report to identify threats to drinking water sources and policies to manage threats,
- Facilitate inter-agency problem solving through the Grand River Water Management Plan (WMP) and engagement of the Water Managers Working Group, and
- Deliver a watershed-wide stewardship program providing financial support to rural landowners for projects that protect or improve water quality.

Over the past year, the GRCA has taken action to improve the state of knowledge about nitrate, secured funding to improve monitoring and expand the reach of stewardship programs, and engaged municipalities up and down the watershed in addressing the issue.

## **Monitoring and reporting**

- Installed a second real-time nitrate sensor in the Grand River at Bridgeport. Coupled with the sensor at Brant, the information from these sensors supplements the data gathered from sampling at 34 sites across the watershed.
- Gathered and analyzed wastewater treatment plant effluent data through the Watershed-wide Wastewater Optimization Program to help inform point and nonpoint source loading of nitrates to the Grand River during rainfall events.
- Updated analysis of surface and groundwater quality data to characterize nitrate concentrations, trends, and potential source areas. This information has been shared with municipal, First Nations, provincial, and academic partners.
- Secured new funding from the Ministry of the Environment, Conservation and Parks (MECP) for a one-year project to sample an additional 8 tributary sites and 27 wells for nitrates, to inform understanding of potential source areas.

### **Source water protection planning**

- Gathered municipal data to assess trends in municipal water supply wells with identified nitrate Issues under the *Clean Water Act, 2006*, to support annual reporting on the Grand River Source Protection Plan (SPP).
- Assembled municipal and GRCA nitrate data to support identifying a nitrate Issue for surface water intakes on the Grand River (Region of Waterloo, City of Brantford, Six Nations of the Grand River, Haldimand County (emergency intake)) through a future update to the SPP. Municipal source protection staff are being engaged to determine technical and policy next steps.

### **Fostering collaboration**

- Co-hosted a meeting with City of Brantford to share information about nitrate conditions and impacts and gather input from university researchers. Participants included the Region of Waterloo, Six Nations of the Grand River, MECP, Ontario Ministry of Agriculture, Food and Agribusiness, and academics from the University of Waterloo and Wilfrid Laurier University.
- Held a half-day focus session on nitrates with the Water Managers Working Group. Thirty-four water managers from 16 organizations participated, receiving presentations from the Region of Waterloo, City of Brantford, Haldimand County, and the GRCA. The session illustrated the water supply and wastewater treatment implications of elevated nitrate levels. Haldimand reported on their recent work with the MECP to develop a nitrate limit for a new Caledonia Wastewater Treatment Plant. This is a direction we may see applied in other areas of the watershed in the future.
- Met one-on-one with staff from 11 municipalities to discuss initiating a scoped update of the collaborative Grand River Water Management Plan (WMP, 2014). Renewal of the plan will include review and update of strategies to address point and nonpoint source pollution.

### **Stewardship**

- Secured new federal funding for continued implementation of cost-share grant programs for rural water quality projects. These new funds support some best practices known to be effective for nitrates (e.g., cover crops) and will support projects where municipal grants are limited, targeting one of the known source areas for nitrates (Nith River).
- Secured provincial funding to develop outreach materials and deliver water quality stewardship activities to children's water festivals.

Over the coming year, the GRCA will initiate a review of the water quality strategies of the WMP, advance identification of a nitrate Issue for drinking water intakes, and continue to engage municipal, First Nations, provincial, federal, and academic interest holders in collaboratively addressing elevated nitrate levels in the Grand watershed.

### **Financial Implications:**

The GRCA's water quality programs are Category 2 programs funded under municipal Memorandums of Agreement, except for the provincial monitoring networks, which are Category 1 programs funded by municipal apportionment. The drinking water source protection program is a Category 1 program funded by the MECP.

### **Other Department Considerations:**

Not applicable.

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### **Approved by:**

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