

Beneath the Surface

ORMGP 2025 ANNUAL REPORT

25 years of ORMGP: By the numbers

Records



2.5

billion dollars
worth of data

33 million+ climate
records



180 million+ water
levels



1.5

million+ pumping
records

100

numerical models

Over

660

thousand wells/
boreholes

15,641 library
documents

3.3 terabytes of
digital files



5.7

million+
streamflow
records

Partnerships

14

local municipalities
with web portal
accounts

11



Ontario universities
with web portal
accounts

3

provincial
ministries with
web portal accounts



677

consultants
with web portal
accounts

26

partner consulting
companies

477

partner agencies
with web portal
accounts

15

partner agencies

Outreach

74



professional talks delivered

53



published papers, journals,
and abstracts

Message from ORMGP

Smart land use and water-related decisions depend on clearly seeing what lies beneath the surface—and that’s groundwater. 25 years ago, the Oak Ridges Moraine Groundwater Program (ORMGP) was the solution to a gap in vital water data that left municipalities, planners, developers and conservation authorities guessing. Not anymore.

Today, ORMGP is taking the guesswork out of planning. It is south central Ontario’s most thorough, trusted database built by users for users who rely on groundwater data and analyses. This platform brings easy-to-access data into one place, including both historical and current data and reports, cross-sections and interpretations, along with tools and training videos to help users along the way.

In 2025, ORMGP took this platform to a new level by redesigning the database to make it even easier to find answers on what’s below the surface, in addition to creating new tools and launching new projects to grow our ability to provide groundwater data and insights. An undertaking of this size cannot be done alone.

Over the past 25 years, our ORMGP team has been supported in many ways by numerous staff from our municipal and conservation authority partners, as well as by various consultants and provincial and federal staff. Of particular importance has been the ongoing commitment of the Central Lake Ontario Conservation Authority. Starting

in 2015, CAO Chris Darling followed in his predecessor Russ Powell’s footsteps in helping to champion and support the program, allowing it to grow into the leading-edge groundwater management program that it is today. On Thursday, September 24, ORMGP will mark 25 years with our partners, funders, and members. We hope you will save the date and watch for more highlights on what to expect at this evening of celebration.

Thank you for your support.



Steve Holysh
Program
Manager/Senior
Hydrogeologist



Dr. Rick Gerber
Program
Manager/Senior
Hydrogeologist

Beneath Our Feet: 25 Years of Groundwater Leadership

Water shapes every community in south central Ontario—but much of the water we depend on is invisible, flowing beneath our feet. In fact, about 99% of Earth’s freshwater (excluding ice caps and glaciers) is groundwater.

Groundwater is often overlooked simply because we can’t see it. For 25 years, the Oak Ridges Moraine Groundwater Program (ORMGP) has helped change that.

It all started in the late 1990s, when urban growth pushed north from the Toronto area. Municipal leaders in York, Peel, and Durham recognized the need to better understand the role of groundwater, and for access to environmental data. Public meetings revealed widespread concern about uncurtailed development, and the need for protecting the Oak Ridges Moraine, particularly improving access to groundwater information. Those conversations led to the ORMGP.

Today, the program has grown into south central Ontario’s most trusted groundwater data platform, built in partnership with five municipalities—York, Peel, Durham, Toronto, and Halton—and 10 conservation authorities.

ORMGP manages more than \$2 billion worth of geological and hydrogeological data and knowledge collected over decades. For governments, consultants, and researchers, that information is invaluable. By providing reliable data on subsurface geology, groundwater levels, water takings, water quality, climate, and streamflow, ORMGP helps remove the guesswork from planning—saving both time and significant cost.

Working with partners, ORMGP collects, analyzes, and shares water resource data and knowledge to support responsible stewardship and informed water-related decision-making across the region.

What Makes ORMGP Unique

- **A focus on the long term (>100 years):** ORMGP has a focus on passing hidden groundwater stories and knowledge on to future technical staff.
- **Holistic water management:** Climate, groundwater, and streamflow data are collected and interpreted together.
- **Continuous data improvement:** Active use and quality control ensure errors are corrected and the database keeps improving.
- **Model custodianship:** ORMGP maintains a unique collection of nearly 100 verified numerical groundwater models.

25 years later, ORMGP continues to make the invisible visible—helping to manage and protect the groundwater that communities depend on today and for generations to come.

Dive in to learn more at oakridgeswater.ca

ORMGP Through The Years

2001

ORMGP launches.

2002

Program receives provincial Ministry of Environment funding for municipal groundwater studies, initiating modelling and the database.

2003

Program receives provincial OGS funding under the Groundwater Resource Inventory Program—dedicated funds to fill data gaps, and boreholes are drilled at High Park and Centreton.

2004

ORMGP is officially a long-term program and releases the database to partner agencies, and a governance paper *Towards a Sustained Long Term Program*.

ORMGP contributes to the Technical Experts Committee for Source Water Protection.

2005

ORMGP releases Watershed Planning – *From Recommendations to Municipal Policies: A guidance Document*.

2006

ORMGP launches program partner website

Release of the seminal numerical modelling report *Groundwater Modelling of the Oak Ridges Moraine Area*.

2007

Database expands to include three SWP areas.

ORMGP receives invitation to sit on Council of Canadian Academy's (CCA) expert panel on Sustainable Management of Groundwater in Canada.

2008

ORMGP signs first Memo of Understanding.

2009

Ministry of Environment funds ORMGP to undertake project on groundwater recharge, and the team releases the CCA Report – *The Sustainable Management of Groundwater in Canada*.

2011

10 Years and going strong—time for massive database cleanup.

2012

ORMGP oversees International Association of Hydrogeologists Congress – *Confronting Global Change in Niagara Falls*, drawing 900 International delegates.

2014

Initiated numerical model management and ORMGP publishes *Groundwater knowledge management for south central Ontario: An example from the Oak Ridges Moraine*.

2015

Launch of first public website.

2017

Release of *A guide for actively managing watershed-scale numerical models in Ontario*.

2019

Groundwater knowledge sites and data imports from partner streamflow and climate stations are live on the website.

2022

Particle tracking is live on the website and a new report *Estimation of direct groundwater discharge and salt (NaCl) Loading to the north shore of Lake Ontario* is available.

2025

Raven water budget modelling for Conservation Halton is available.

2018

Consultants become ORMGP partners and website users.

Release of *Conceptual hydrogeological model of the Yonge Street Aquifer, south central Ontario: a glaciofluvial channel-fan setting*.

2021

Halton Region joins program and online database manual is available.

2023

Light Detection and Ranging surface data live on website.

2024

Launch of new website.

2026

ORMGP celebrates 25th anniversary.

Making Waves

2025 was a year of highlights—telling our story more broadly, developing new tools to support our partners and users, and reflecting on how to celebrate our 25th anniversary. These are just a few examples of how ORMGP made waves in 2025.

Telling the ORMGP Story: A Year of Outreach and Impact

With ORMGP, current and historical water resource data for the Oak Ridges Moraine are just a few clicks away. Through sophisticated web-based tools, users can retrieve and analyze geological and hydrogeological information—reducing the guesswork in local and regional assessments and saving significant time and cost.

Yet the ORMGP team recognized that many subscribers were not using the platform to its full potential—and some were not aware of it at all.

That began to change in 2023, when, with support from the Greenbelt Foundation, ORMGP launched a redesigned website and database, along with new outreach and marketing tools to better tell its story and highlight the platform’s capabilities.

Members can now expect to see and hear from ORMGP much more—through conference presentations, regular newsletters, and updates that keep users informed about new features and insights.

A New Tool for Understanding Watershed Water Balance

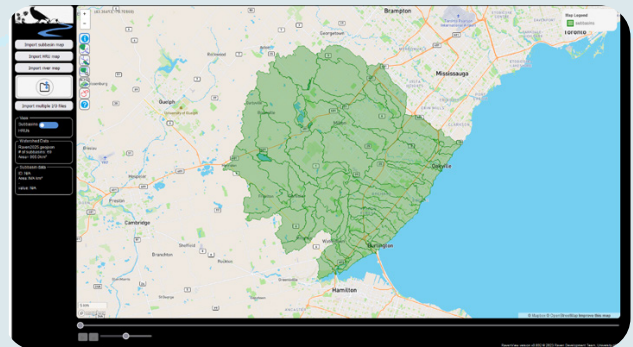
In 2025, ORMGP partnered with Conservation Halton on a pilot water budgeting study across the watershed.

This project benefited both organizations. Conservation Halton now has an in-house modelling tool to support watershed-scale water quantity assessments, while ORMGP staff are testing Raven, an emerging and flexible hydrologic modelling platform.

Using ORMGP-hosted climate data, watershed characteristics, and observed streamflow, the model estimates key components of the water balance, including runoff, evapotranspiration, and groundwater recharge.

Designed to support scenario analysis and future updates related to climate and land-use change, the framework provides a consistent basis for conservation planning and water quantity assessment.

As a result, Conservation Halton now has a powerful tool to evaluate how environmental changes may affect water resources across the watershed, and ORMGP has valuable insight into Raven’s potential for future water budget modelling across its study area.



The above map shows the extent of the Conservation Halton Raven model. The subwatershed delineations are shown.



SAVE THE DATE

25 years of Extraordinary

Join the ORMGP on the evening of September 24, 2026 to celebrate 25 years of going beneath the surface to uncover current and historical water resource and geological data.

- Hear from world renowned hydrogeologist Dr. John Cherry, and welcome back to Canada newly minted University of Toronto hydrogeology professor Dr. Richard Taylor (currently at University College London)
- Take a tour through the Canada's largest timber structure, a leading edge environmentally sustainable building, and the newly constructed home of TRCA and ORMGP
- Re-connect with old and new colleagues and enjoy a selection of fine food and drink. Join us for an evening of comradery under a warm fall evening

Thursday, September 24, 2026

The Village at Black Creek
1000 Murray Ross Pkwy
Toronto, ON M3J 2P3

For more details, add your name to the list on our website:
[oakridgeswater.ca/
save-the-date/](https://oakridgeswater.ca/save-the-date/)



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SPECIAL THANKS



Possibility grows here.

Special thanks to the Greenbelt Foundation for their support.



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