

2016 Surveyor General's Report

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O.L.S. Surveyor General

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Ministry of Natural Resources and Forestry

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The Ministry of Natural Resources and Forestry (MNR) continues to achieve positive results on several pan-government initiatives including climate change, business growth, digital government and the modernization of public service delivery. MNR priorities include supporting forestry, guiding land use planning, managing aggregates, leading conservation, strengthening biodiversity and minimizing the impact of invasive species.

The Mapping and Information Resources Branch (MIRB) is an essential partner in the management of Ontario's natural resources, enabling resource management decisions that are supported by the best possible advice, data and information through leadership in surveying, geomatics and information management.

Some of the information in this document may not be compatible with screen reader software. If you need the specific information in an alternate format, please contact: susan.macgregor@ontario.ca

Accomplishments

The Office of the Survey General (OSG) includes two units: Crown Land Surveys and Parcel Mapping and Georeferencing.

OSG provides professional legal surveying, mapping and georeferencing advice and services to a number of clients including:

- Ministry of Natural Resources and Forestry (MNRF)
- Ministry of Indigenous Relations and Reconciliation (MIRR)
- Ministry of Northern Development and Mines (MNDM)
- Ministry of Municipal Affairs (MMA)
- Ministry of the Attorney General (MAG)
- Municipalities
- Surveying and mapping industry

Survey and mapping work:

- Reviewing and approving Crown Location Plans of Survey
- Providing professional survey advice and supporting the MNRF in court and tribunals
- Supporting First Nations land negotiations by mapping and reviewing land claim areas
- Reviewing Reserve Boundary Confirmation Plans
- Preparing Regulation Plans for planning areas, local services boards and provincial parks
- Maintaining Crown parcel and other cadastral and administrative data including the geographic township and lot fabric improved datasets

In 2016, OSG:

- Provided advice on land issues within 33 First Nation reserves and communities
- Responded to over 2,000 requests for comments and/ or cadastral survey opinions to MNRF staff, other ministries, surveyors and lawyers
- Commented on 42 Land Titles Applications and six Boundaries Act Applications
- Received and reviewed 216 Crown Locations
- Processed over 925 requests for survey plans and records
- Completed 12 Perimeter Survey Instructions and prepared over 15 mining claim descriptions
- Prepared 21 Provincial Park Plans
- Scanned nearly 13,000 vital records bringing the total of digital records to 120,000
- Issued 12 contracts with a total value of \$285,000

For more information e-mail: rob.martin@ontario.ca or visit our [website](#).

Progress on multi-year projects:

- Municipal Survey Decision #884 issued, now under appeal
- Work with the Ministry of Government and Consumer Services (MGCS), MAG and the survey community to:
 - Address concerns relating to “beaches” in front of registered plans of subdivisions
 - Provide a strategy to clarify issues and reduce complaints through better understanding of existing legislative requirements within the *Surveys Act*

- Participate with MIRR on 15 files including:
 - Discussions on the Treaty 3 flooding claims potentially impacting over 50 Reserves
 - Wikwemikong Islands Claim in Lake Huron
 - Algonquin Land Claim
 - Mississauga Highway Flooding Claim
 - Parry Island First Nation (Wasauksing)
- Work with MMA on the proposed “Growing the Greenbelt” legislation by providing regulation plans to describe areas which are proposed to be added or removed from the existing area.
- Survey support related to the introduction of proposed legislative amendments to Bill 39, the *Aggregate Resources and Mining Modernization Act*, which will enable licensed prospectors to register claims by selecting pre-set cells from an online grid reference frame that covers the province. If passed, the regulation governing surveying of mining claims will be updated to reflect modern survey practices.
- Progress on the Vital Records Project. Ontario covers over one million hectares and almost 87% of the province is unpatented Crown land. OSG is responsible for administering the surveys on these lands and preserving survey documents. These records, some dating back to the mid-1730s, are kept in a climate controlled room. The OSG continues to digitally scan these records to curtail further deterioration and allow future generations to access, use and disseminate these important records.
- Supporting MNRF's regional operations with survey and land tenure training.

Geodetic Activities

The COSINE (COntrol Survey INformation Exchange) database is the official source for provincial, federal, and municipal control survey information in Ontario. Recent changes ensure COSINE Online better meets Accessibility for Ontarians with Disabilities Act (AODA) requirements, eliminated the need for user accounts and offers improved symbology.

More than 120 federal, provincial, municipal and other agencies contribute to COSINE. The municipalities of Stouffville, Peterborough, and Oshawa added 80 new horizontal control stations and vertical benchmarks to COSINE. Ministry of Transportation also contributed projects for highways near Arnprior, Dryden, Cornwall, Eganville, Haliburton, Manitoulin and the North Shore areas, Mattawa, Muskoka, Ottawa, Prescott, Sault Ste. Marie, Thunder Bay, Vaughan, Vermilion Bay, and Wawa which added 1,200 new horizontal control stations and vertical benchmarks.

The Height Modernization Working Group recommended the adoption of the new vertical datum Canadian Geodetic Vertical Datum 2013 (CGVD2013) over a five year period.

To support the adoption of CGVD2013, approximately 20,000 heights rigorously computed by the Canadian Geodetic Survey for first and second order benchmarks were loaded to COSINE. In addition, nine older vertical control projects associated with the Ontario Basic Mapping (OBM) program were reviewed and re-loaded. This resulted in the review of over 500 benchmarks and their vertical elevations being re-computed or confirmed in COSINE in relation to CGVD28. These projects will later be re-computed and re-loaded to CGVD2013.

In 2015, OSG staff developed a Geodetic Strategy in consultation with our partners to guide and focus MNRF's geodetic activities for the next five to seven years:

- Horizontal and vertical datums and height modernization
- Physical standards (precise EDM calibration baselines and GPS/GNSS basenets)
- Provincial standards and specifications documents
- Geodetic software and database
- Web presence
- Relationships with partners and stakeholders
- Future partnerships, trends and special projects

While the bulk of this year's work focused on preparing vertical networks in anticipation of Height Modernization, progress was made on an improved web presence, increased feedback from partners on monument status and preparation for re-observation of Electronic Distance Measurement (EDM) baselines at Belleville, London, Conestoga and Shirley's Bay. Values will be posted to COSINE upon completion. Work continues to update the COSINE legacy software.

Geodetic staff attended the annual Canadian Geodetic Reference System Committee (CGRSC) meeting in Ottawa. The CGRSC includes geodetic representatives from each of the provinces and the Canadian Geodetic Survey of Natural Resources Canada.

For more information e-mail: morgan.goadsby@ontario.ca

Both the COSINE On-Line Ontario view and Toronto view are available on our Geodesy [website](#).

Geographic Names

The Ontario Geographic Names Board met three times and considered 42 names cases resulting in three new names, two name changes and two name corrections. The remaining cases were either denied or deferred.

With the assistance of MNRF staff, the Board continues to look for new opportunities to engage communities, businesses and Ontarians about geographic names through MNRF's social media channels.

To comment on current names proposals visit our [web page](#) or follow #HaveYourSay on Twitter and Facebook.

Geographic Names staff handled over 600 naming requests, including one request involving over 4,000 names for a research project.

MNRF's database contains more than 57,000 official names for water and land based geographic features. To find official names on a map visit our [website](#) and click on the link "Find official names on a map".

Geographic Names staff represented Ontario at the annual Geographic Names Board of Canada (GNBC) meeting in Regina, Saskatchewan. The Geographic Names Board of Canada includes representatives from federal and provincial naming authorities and has naming authority over pan-Canadian names, offshore and underwater features.

Work continues to inventory MNRF's extensive historical records, including information on more than 200,000 geographic names, maps and correspondence files dating back many generations.

For more information e-mail: morgan.goadsby@ontario.ca or visit our [website](#)

Foundation Geospatial Data

The Mapping and Information Resources Branch delivers professional surveying, geomatics and information services to MNRF, other ministries and Ontarians. The branch provides leadership to capture, create and maintain foundation geospatial data for Ontario including:

- Roads
- Water
- Utilities
- Wetlands
- Elevation data
- High-resolution imagery

Much of this data is available for direct download from the Land Information Ontario (LIO) [website](#).

Use the interactive [Make a Topographic Map](#) application to view the best available data and imagery for Ontario.

For more information e-mail: lio@ontario.ca

Ontario Road Network

The Ontario Road Network (ORN) contains information on more than 277,000 kilometres (kms) of roads across the province and is maintained by all three levels of government.

In 2016, geometry and attributes were added for more than 2,500 kms of new roads. The ORN is used to update Canada's National Road Network, Statistics Canada Road Network and to improve the 2016 census geography.

For more information e-mail: lio@ontario.ca

Ontario Parcel

The Ontario Parcel is a province-wide, standardized database that contains over 9.75 million assessment, ownership and Crown land parcels. Parcel boundaries, assigned civic addresses, Assessment Roll Numbers and Property Identification Numbers are also available. In 2016, over 33,800 assessment parcels and 36,800 ownership parcels were added, deleted or modified.

For more information e-mail: carla.jordan@ontario.ca

Ontario Imagery

Land Information Ontario coordinates partnerships to acquire current high-resolution imagery for the province.

The partnership approach provides significant cost savings to all parties. Partners typically pay less than 20 percent of the total cost of acquiring the imagery.

A number of surveying firms took advantage of a subscription option available to private sector organizations. Organizations contribute a minimum \$1,000 contribution to an acquisition and can select imagery on an as needed basis for up to three years after the imagery is delivered. The imagery is multi-spectral with a resolution of 20 centimetre (cm). Ground control is established for each project area that results in a horizontal accuracy of 50 cm “on the ground”. Stereo data is also available to partners at no additional cost.

These products are available for purchase:

- Southwestern Ontario (2015)
- Eastern Ontario (2014)
- South Central Ontario (2013)
- Central Ontario (2016) (available spring 2017)

The 2017 project partners are finalizing plans to acquire imagery for over 20,000 kms in Northwest Ontario. Partnership opportunities are still available.

Elevation data generated from these imagery projects will include a 40 cm digital surface model point cloud and a 2 metre (m) raster digital elevation model. Both of those products will be available as open data.

As new imagery becomes available, it can be viewed on the [Make a Topographic Map](#) application.

For more information e-mail: imagery@ontario.ca or visit our [website](#).

Strategic Directions

As baby boomers continue to retire from the survey and mapping industry, our organization has not been immune to staffing change. Significant effort has been spent planning, re-organizing, hiring and training to ensure mapping and surveying staff are available to fulfill our mandate.

The Ontario Parcel agreement between MNRF, the Municipal Property Assessment Corporation (MPAC) and Teranet Enterprises Inc., to create and maintain a standardized digital parcel database for Ontario, will expire in May 2017. MNRF continues to consult with Ontario ministries to determine their need for parcel data in the future.

A strategic review of Ontario's foundation geospatial data is underway. MNRF is in discussion with the federal government on potential changes to support roads and elevation data. MNRF recently collaborated with the Ministry of Agriculture and Rural Affairs over the collection of LiDAR data for portions of Southern Ontario. While targeted for soils mapping, this data has useful applications within government, business and the public. The data will ultimately be available as [Open Data](#). This project could form the basis for a wider and more strategic program for imagery and elevation data acquisition.

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Appendix A

Websites

Office of the Surveyor General- ontario.ca/page/office-surveyor-general

Geodesy Ontario - ontario.ca/page/geodesy

Geographic Names - ontario.ca/page/geographic-names

Land Information Ontario - ontario.ca/lio

Make a Topographic Map - ontario.ca/page/topographic-maps

Open Data - ontario.ca/page/sharing-government-data