

The Role of Land Information Ontario

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Ten years ago, at the beginning of 1999, Land Information Ontario (LIO) hired its first staff and opened its offices in downtown Toronto. It was the culmination of years of studies, reports, and debates by individuals and organizations in Ontario's public, private and non-governmental sectors. It was a time when Geographic Information Systems (GIS) seemed to hold untold promise, if only the right data could be made available at the right time. LIO was to be a three-year project under the Ontario Ministry of Natural Resources, to put in place an infrastructure that would support the province-wide sharing of geospatial data. Specifically, LIO's Vision was to see that *"Ontario's land information is well managed, accessible, easy to integrate, and affordable"*. At the end of the project phase, LIO was continued as a program to operate and manage the infrastructure that it had created.

Historically surveyors have played a fundamental role in geospatial information by opening up the province for settlement and establishing the base framework on which much of our geospatial data are referenced. AOLS members remain in this foundational role today by offering a particular skill set that enables the integration of data and the evaluation of resulting accuracies, thus making the information much more accessible, usable and reliable. Land Information Ontario relies on the AOLS membership to meet its mandate and has been pleased to see the members themselves taking advantage of access to a whole host of data sets that have become discoverable and accessible through LIO.

Has LIO realized its vision? Is LIO's vision still appropriate? What should be LIO's role as it begins its second decade?

LIO is a combination of people, physical elements, data sets, policies, programs, processes and procedures. This infrastructure is integrated with the Canadian Geospatial Data Infrastructure (CGDI) coordinated by the Government of Canada through GeoConnections, and it is used on a daily basis by thousands of individuals in more than 800 organizations. Almost two-thirds of LIO's annual budget is spent on providing ongoing support for the Ontario Road Network (ORN), Ontario Parcel (OP), Ontario Imagery, and the Ontario Geospatial Data Exchange (OGDE).

LIO works with federal agencies, provincial ministries, municipalities, public health units, agencies such as



"Geospatial data has become mainstream".
Photo courtesy of the Ministry of Natural Resources.

Conservation Authorities and Hydro One, universities and colleges, boards of education, the private sector such as public and private utilities, resource companies, Geomatics companies, land developers, and non-governmental organizations. It is these organizations, rather than LIO, that work directly with the general public. LIO has tended to remain behind the scenes helping these organizations do their important work.

Has LIO realized its Vision? At its heart, LIO's vision required bringing about a change in outlook and a change in behaviour among Ontario's Geomatics users and providers. Although people outside the world of GIS often view the issues as technical, they are not, and never have been. It is about convincing individuals and organizations to catalogue their data, to share their data, and to understand that others, in completely different fields of endeavour, could be using their data. Despite its many awards, LIO's success has not been its extensive technical

achievements, but in its work with people. Through its active participation in organizations such as URISA, GITA, AOLS, and various Ontario Government committees, sitting on working groups, in providing advice and education, and especially in providing coordination for major data initiatives, LIO has indeed made much more of Ontario's data well-managed, accessible, easy-to-integrate, and affordable.

In January 2009, the Ontario Council of University Librarians (OCUL), in a letter to the Ontario Ministry of Training, Colleges and Universities, stated,

"We would like to extend our thanks and support to Land Information Ontario for their efforts in coordinating the acquisition of imagery and geospatial data across Ontario. Millions of public sector dollars have been saved as a result of the leadership and coordinating role that LIO has played in developing funding partnerships across Ontario."

Today, there is an Ontario Road Network actively maintained by dozens of municipalities who see this as in their interest; the Ontario Parcel is the de facto standard for ownership and assessment parcels; Metadata is seen by the geospatial community as an essential component of good information management; and, LIO is seen as an effective agent for coordinating the collection of imagery on behalf of hundreds of partners.

Is LIO's vision still appropriate? Geographic information, especially in digital format, is used today by virtually every organization in every sector, and at every level and discipline within Ontario. Although each organization needs different information about the same places, there is a tremendous advantage to all organizations using the same underlying framework and standards so as to be able to work with common data sets. The ideal approach sees data captured once and used many times; assembled and maintained closest to source; available in known, common, useful standards; and, accessible to those individuals that need them, when they need them. No single set of geographic data will ever meet all the needs of prospective users. It remains important for users to determine whether a given data set is appropriate for the purpose for which it is being considered, to actively work towards making data sets intended for specific purposes be usable for multiple purposes, to encourage data managers to align their data sets with the data sets of others, and to work towards reducing costs for data users and data managers alike so that the best information for the purpose at hand is used whenever possible.


What is LIO's role as it begins its second decade? The early LIO years were spent in building an effective infrastructure: organizations like OGDE, data distribution tools like the LIO Warehouse, the Data Directory, and Web Services, and critical data sets like the Ontario Road Network and the Ontario Parcel. The subsequent years

were spent in making this infrastructure better and more sensitive to the evolving needs of LIO's partners and clients, and in helping new users of geographic information develop and enhance their own capabilities and wherewithal. These years were also spent in helping national and international organizations better understand their own tools and requirements based on Ontario's extensive experience.

Geography is, quite literally, everywhere. You step on it all the time. However, explaining and evaluating geography requires the use of a special language or, more correctly, a "spatial" language, which includes a reference to location. Most people use this language every day: an address is more than just a phrase and the name of a city is more than just a word. Although the representation of geography is traditionally in maps, the art of cartography today is imbedded in software, like MapQuest or Google Maps. However cartography, whether in the old map-making days or today, still requires formatted information.

Geospatial Information is a catchall phrase for raw data, new data derived through the analysis or filtering of raw data, online dynamic maps and images, maps embedded in documents, and the knowledge required to infer significance to geographic facts. It is used in all professions and virtually all aspects of life, either directly or indirectly. Geospatial information is used to protect health and life, to support educational activities, to promote economic development and tourism, to plan the use of land, and to see the patterns over space and time that hint at what the future will bring.

The day-to-day use of geospatial information is now mainstream and commonplace. However, it remains expensive to create and time-consuming to maintain. Sharing this expense and effort reduces the time required to acquire information and permits more time to be spent on the subject area itself. A municipality or province's fire, ambulance and police services, for example, should all be able to use the same digital road network to dispatch their emergency vehicles. This does not happen spontaneously.

Geospatial experts, especially AOLS members with their varied expertise, and organizations like Land Information Ontario, will be needed more than ever over the next decades to make sure that the ever-growing demand for good and useful data will be met efficiently and effectively through partnerships, education, and standards. 

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