

GeoNOVA
Annual Report
2010

GeoNOVA Annual Report 2010

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1.0 Introduction

For many years the GeoNOVA Secretariat has sought to provide the Deputy Minister of Service Nova Scotia and Municipal Relations, and Deputies in other departments, with annual reports highlighting some of the many activities that are underway in the geomatics community within the Government. The GeoNOVA Annual Report is intended to be broad based and inclusive of a larger government wide report. Because of demands upon the Program to provide similar reports to sectors of the industry across the country we have elected to move from a fiscal year based report to a calendar year based report. This will assist us in streamlining our contributions to groups such as the Canadian Council on Geomatics, etc. We aim to show how broad ranging geomatics is in government and how our activities tie together important messages that are not always recognized.

We wish to acknowledge all those that have contributed to this report and applaud their efforts in making geography a decision support tool of choice in the Government of Nova Scotia. In an effort to keep the size of this report to a manageable level this document will concentrate on four areas: Geomatics Activities; specific issues that may have impacted geomatics business in 2010; opportunities for collaboration; and needs into the future.

We would like to note that a huge wealth of “raw” data was collected during the preparation of this report from Provincial Government Departments all of which has been saved and archived.

2.0 Overview of 2010 Geomatics Activities

Not unlike other years, geomatics activity within Provincial Departments and Agencies flourished during 2010. This is a true testament to the hard work and dedication of Provincial geomatics employees and the environment in which they work. Activities were varied, with some Departments/Agencies continuing to focus on development of ‘core’ geomatics databases while others were moving toward analyzing and putting geomatics data to work for them in their decision making processes. The following section outlines key contribution by many sectors of Government.

Service Nova Scotia and Municipal Relations

Contributions from Land Program, GIS Section (GeoNOVA and Nova Scotia Geomatics Centre)

Mandate: *Committed to serving Nova Scotians in the best way possible by making government services more accessible, more convenient, and continuously ensure services improve to better serve people.*

Land/Property Program

2010 activities included:

- Continued Migration into Land Titles from the Registry of Deeds system.
 - Scanning of registry documents remained on track and two more counties (Kings and Hants) joined the 100% E-LAND group.
- The *Land Titles Clarification Act* and *Land Surveyors Act* received royal ascent on December 10, 2010.
 - Closed in on 50% of over 623,000 parcels.

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- Continuous improvement of:
 - Quality and integrity of Property Online
 - Integration of common features between Department of Natural Resources and Land (specifically property boundary lines along wilderness areas).”

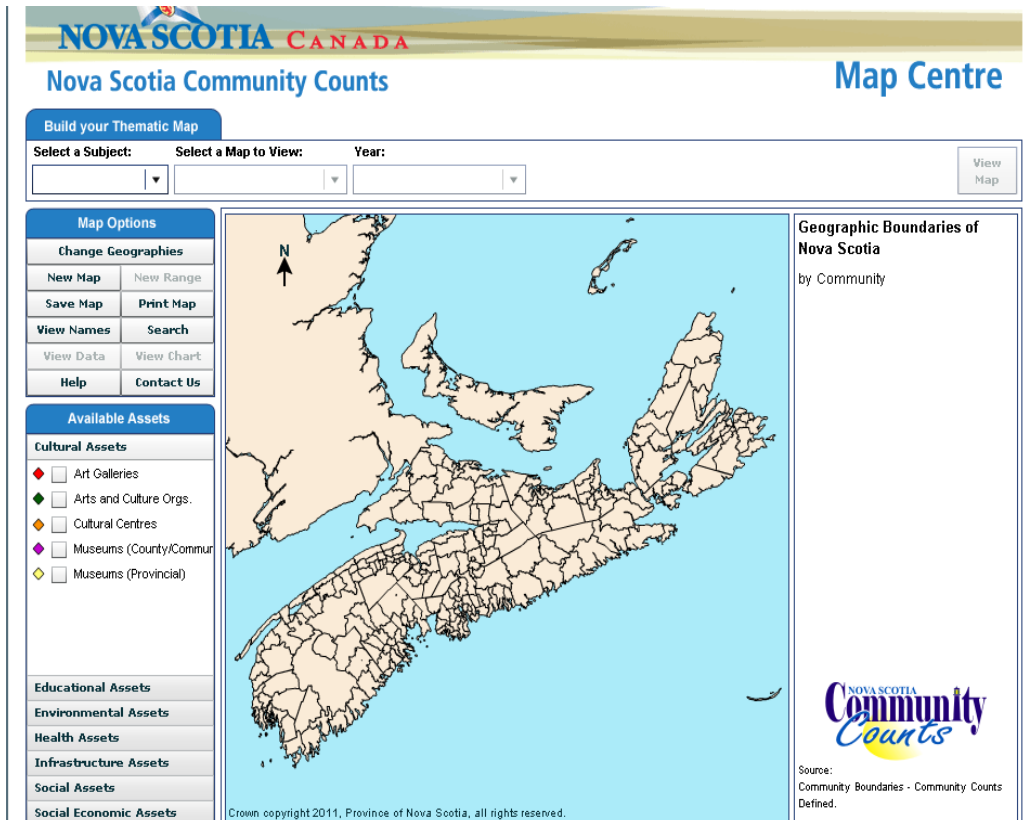
GIS Section (GeoNOVA Secretariat/Nova Scotia Geomatics Centre)

- The Coordinated Geospatial Infrastructure Working Group completed its Phase 1 Draft Report after consulting with 30 mapping-related business areas in GNS. This consult included over 100 geomatics professionals. 500 business and technical requirements were gathered for the Coordinated Geospatial infrastructure.
- Continued participation and input into: the Geomatics Association of Nova Scotia (GANS), Provincial Oceans Network, Nova Scotia Environment Water Strategy Information Management Working Group, Regional Adaptation Committee (NS Environment), and Department of Natural Resources GIS Steering Committee.
- Chairing a LiDAR working group with ongoing efforts focused toward compiling a Lidar Strategy for Government of Nova Scotia.
- Communications efforts focused on: continued redesign of www.geonova.ca; Hosting Spring Into Geomatics Conference in May, 2010 which was attended by over 150 geomatics participants (Keynote: Chief Information Officer for Nova Scotia, Holly Fancy).
- Citizen and Technical web based programs are worked upon including: moving the web based Atlas of Nova Scotia to the Provincial Data Centre and the release of a new version of government’s downloading utility for easier access to geographic data (known as the GeoNOVA Data Download Service).
- 1:10,000 Nova Scotia Topographic Mapping data revisions were completed for 193 sheets (vector and ortho distributable) and 12 sheets at the 1:2,000 Scale. Updated standards are now in place to allow further collaboration with other departments by switching to colour aerial photography.
- Continuous quality improvement for the geographic names Program – upgrading the file (known as the Nova Scotia Toponymic Objects file) and clean up of name delineations on our base maps with a goal of integrating these names into other base mapping content (e.g. Nova Scotia’s Hydrographic Network).
- Overall operation saw the introduction of Process Improvement practices and the implementation of Incident management.
- The Nova Scotia Civic Address File (NSCAF) formalized Quality Assurance and Quality Check routines; and continued work on various automation tools and web services to allow sharing of civic address data with users and to upgrade the notification service.

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- The GIS Section became involved in the Single Address Initiative, lead by Property Valuation Services Corporation with particular focus on Governance Structure and Decisions.
- Film scanning of historical aerial photography and image scanning of historical large format mylar mapping was carried out in the Aerial Photography and Imaging Lab as part of multi-year initiative.

Department of Finance – Statistics Division Community Counts



Mandate: *The mandate of the Department of Finance flows primarily from the Finance Act which includes a leadership role in establishing and administering the fiscal framework and financial controls of the Province, and providing meaningful, transparent reporting, including the provincial budget, forecasts and Public Accounts. The Department assesses and delivers fiscal and economic policy advice on the strategic value of government initiatives, regulates select financial institutions and provides policy oversight to the securities sector. The Department also provides support to all of government through the delivery of statistics, centralized and corporate shared services, and supports the Minister of Finance in overseeing certain crown corporations and agencies, as well as select pension plans for which the Minister has responsibilities.*

2010 activities included:

- Launching a new “Map Centre” about Nova Scotia communities. It utilizes thematic mapping (e.g. population characteristics) and asset mapping (e.g. services and resources).

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Economic and Rural Development and Tourism (Formerly Economic Development)

Mandate: *“The Department of Economic and Rural Development is the provincial government focal point for developing and advancing sustainable prosperity in Nova Scotia. Economic and Rural Development researches, develops and advances corporate policies and strategies, leads key initiatives, makes strategic investments to stimulate a thriving and sustainable economy, builds regional capacity and contributes to a productive and accountable public sector.*”

2010 activities included:

- The Department primarily concentrated on mapping the location of clients for annual reports and presenting economic trends. This type of work included mapping economic indicators on a sub-provincial basis for creating thematic maps that show global trade patterns in a given industry sector.

Economic and Rural Development and Tourism (Formerly Department of Tourism)

Mandate: *The Tourism Division mandate covers planning, development, marketing and operations for the tourism industry in Nova Scotia. [The division provides] tourism operators with the tools and support they need to run successful businesses.*

Although the Tourism division does not employ a full time GIS staff person their geomatic activities include:

- Capturing route information from visitors related to where they travelled and where they stayed overnight.
- Utilizing provincial civic addressing information to assist with location based Tourism activities.

Department of Transportation and Infrastructure Renewal

Mandate: *The Mission of the Department of Transportation and Infrastructure Renewal (TIR) is to deliver quality public infrastructure for Nova Scotia. The Department has the mandate to:*

- Provide a transportation network for the safe and efficient movement of people and goods.
- Serve the building, property and accommodation needs of government departments and agencies.
- Provide quality and effective common services to government departments, agencies, boards and commissions.

2010 activities included:

- Created various GIS datasets which were taken from project descriptions including construction, bridge work, etc.
- Worked on a pilot project for using the Blackberry device as a spatial field data collection tool. The aim is to significantly reduce costs (both hardware & software) and staff training times.

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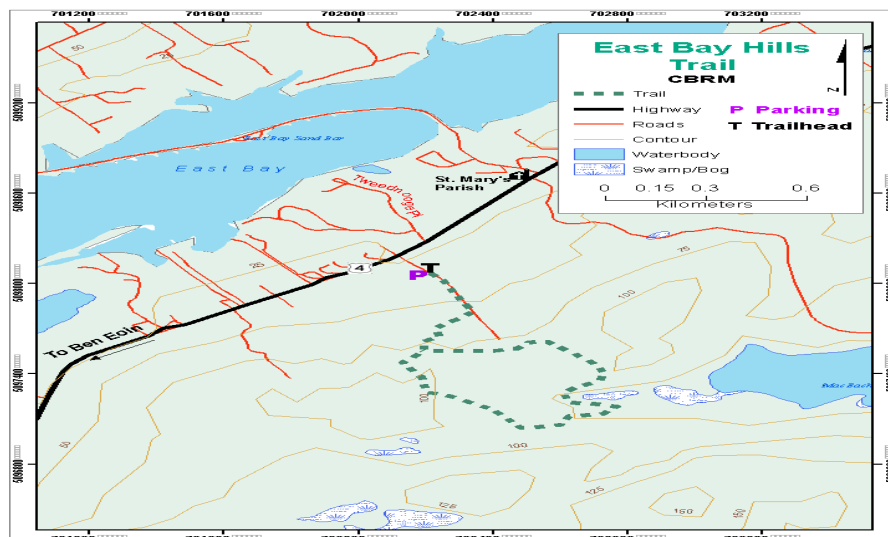
- Service analysis for winter maintenance routes NSTIR Western District. This was an effort to decrease road salt spread/usage and to increase productivity of our winter maintenance efforts through education/awareness of field offices.
- Road Name Reconciliation Project (RNR) to establish one primary name for every road in Nova Scotia, to identify common road name aliases and to ensure the primary name is reflected in the Nova Scotia Transportation and Infrastructure Renewal Road Listing Database (NSTIR RLD), the Nova Scotia Civic Address File (NSCAF) and the road name signage in the field.

Department of Health and Wellness (Formerly Health Promotion)

Mandate: *The Health and Wellness Department has a mission that is set at improving and maintaining the well-being of Nova Scotians by providing a reliable health care system and the promotion of healthy lifestyle.*

2010 activities included:

- A Nova Scotia Trails Summit in Cornwallis, NS in October provided the opportunity for live GIS demonstrations for NS Government Departments and NS Trail Groups.
- A Lyme disease mapping pilot project was conducted by Population Health Assessment and Surveillance.
- A mapping perspective was introduced into the scoping meetings held on the Childhood Obesity Presentation Strategy (COPS).
- District Health Authority (DHA) base maps were developed for the Chief Medical Officer of Health.
- The Nova Scotia Trails Project involving maintaining, updating and verification of the Nova Scotia Trails.
- A Nova Scotia Coastal Water Trails project updated sea kayaking routes/take outs which was incorporated into the NS Trails Website.
- Planning for 2011 Canada Winter Games utilized Geomatics support for downhill skiing venues.
- Provided support to both the Municipal Physical Activity Leadership and the Nova Scotia Lifeguards Supervision Province wide programs.



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Department of Natural Resources

Mandate: *Mission is "To build a better future for Nova Scotians through responsible natural resource management"*

2010 activities included:

- Lands Services Branch moved one step closer to a modernized GIS environment with the launch of the Land Asset Management Project. This project will take advantage of government's Coordinated GIS environment by migrating from the current GIS environment to an enterprise solution. As part of this project, data will be converted into a geodatabase and enterprise GIS tools will be developed.
 - Concentrated efforts on continuous data improvements in the following areas:
 - Marten habitat modeling and Spatial queries for mainland moose habitat work and ecosystem land classification
 - Updating of wetlands and significant habitats inventory
 - Vegetation community classifications using GIS and remote sensing
 - Farm biodiversity mapping
 - Analysis of possible land acquisitions and owner unknown lands for habitat value
 - Mapping plant locations
 - Using remote sensing imagery (Radarsat-2 and Geo-Eye) for locating eelgrass.
 - Mapping PGI (pellet group inventory) data for moose, deer, hare.
-

Department of Environment

Mandate: *Nova Scotia Environment is responsible for delivering effective and efficient regulatory management for the protection of our environment.*

2010 activities included:

- Development and release of an Environmental Assessment Screening Application (EA), working with GeoNOVA and the Chief Information Office. EASA is a project planning and decision making tool that will assist in both the early planning and subsequent regulatory review of large scale development projects that are required to undergo a provincial Environmental Assessment.
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Department of Community Services

Mandate: *The Department of Community Services is committed to a sustainable social service system that promotes the independence, self-reliance, and security of the people we serve. This will be achieved through excellence in service delivery, leadership and collaboration with our partners.*

2010 activities included:

- Improved business process and decision support with the adjustment of the catchment areas of two of its offices. By mapping client locations, the department was able to identify pockets of clients

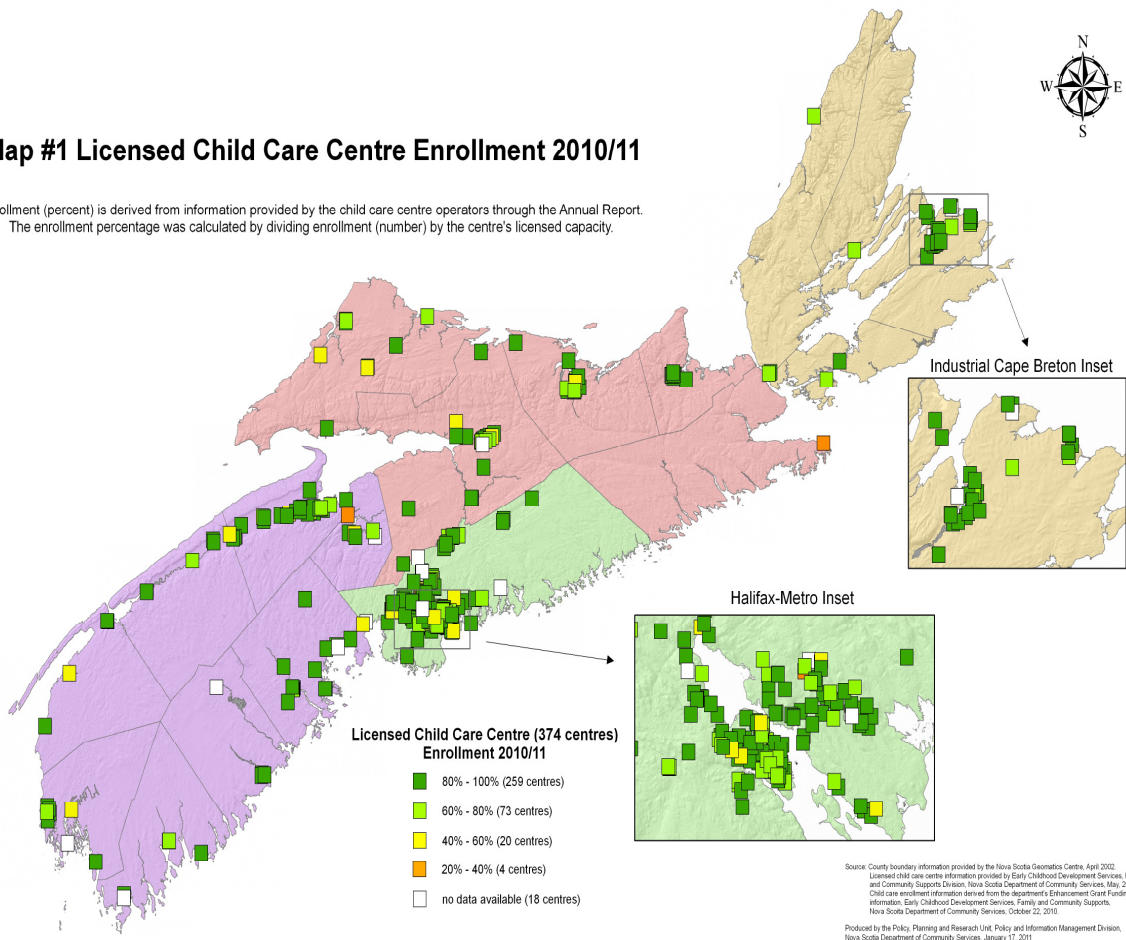
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that could be better served at an office closer to their homes and where staff resources were sufficient to handle the increase in clientele.

- The analysis of the availability and accessibility of child care in Nova Scotia. Looking at child care enrollment and trends, location and capacity of licensed day care facilities and family home day cares, child care closures and openings, population statistics of children and trends, family income, public school enrollment and trends.
- As part of the Child Welfare Redesign project, provided a visual representation of the foster care network in the Western Region. The map demonstrated the location of foster families, their relationship (kinship) with the foster child, the department office they are serviced through, and the status of their application.
- For the French Language Service initiative the production of maps to demonstrate the availability of French Language services in comparison to the location of French Language populations. By identifying the French language service gaps, the department was able to identify the areas requiring more French Language training.
- Produced maps that were utilized by Cabinet which illustrated: a break down of the Income Assistance caseload by county and family type; the depth of poverty and child poverty by county; and location of Housing Authorities and the communities they serve.

Map #1 Licensed Child Care Centre Enrollment 2010/11

Enrollment (percent) is derived from information provided by the child care centre operators through the Annual Report. The enrollment percentage was calculated by dividing enrollment (number) by the centre's licensed capacity.



3.0 Geomatics Issues

Departments were asked to identify any geomatics related issues they faced last calendar year, that might have impacted their efforts, assisted those same efforts or might have impact in the future. These issues have been categorized and summarized under the following headings: Staffing, Data, Policy, Applications.

Staffing

Addressing staffing vacancies in a timely matter continues to be important to the Provincial Government Geomatics Community. Addressing vacancies in a timely manner, have had an impact on operationally critical issues by not being addressed as quickly as perhaps might be dictated by operational need and effectiveness. Some Departments have suggested present staffing levels are stretched to capacity which means that some projects cannot be addressed and this has lead to a reduction in workplan activities. Others Departments that utilize GIS capabilities on a more contractual or “short term” basis continue to see the need for permanent GIS Staff.

It is important to note that some long established GIS usage departments acknowledge there is unlimited GIS work that could be undertaken and thus improving business decisions.

Collaboration efforts and partnerships with various Departments and the Chief Information Office are moving forward utilizing a geomatics infrastructure. Lack of geomatics technical support for the geomatics infrastructure by the Chief Information Office has been seen as an issue.

Training of new GIS staff was also identified as crucial and that training should be carried out in conjunction with the loss of knowledgeable, retiring geomatics staff.

Data

Efforts continue to focus on accessing data and although barriers to data access have improved over the years, emerging users have expressed they continue to experience Provincial Departmental Silos in terms of data access. Some have suggested well established data providers need to take further steps to accommodate data sharing and this was further voiced by members of the GeoNOVA Alliance Working Group as part of their efforts to carve out a Cooperative Data Sharing agreement.

It has been communicated that considerable manual work is still required on geocoded data to check accuracy which is based on civic address and that various data migration issues are still encountered.

Policy

Three key policy related concerns were identified: Delay of a Cooperative Data Sharing initiative called the GeoNOVA Alliance; FOIPOP and confidentiality; and Security Policies. The GeoNOVA Alliance working group suffered a setback when the GeoNOVA Alliance data sharing agreement was unable to receive final approval by Department of Justice staff for implementation. FOIPOP and confidentiality are seen by some as a continued barrier to utilizing the full potential of GIS capabilities.

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Others have strongly suggested that new Service Centre Security Policies are having impacts on GIS operations especially as users adjust to these new policies and resulting procedures.

Applications

Modernization of GIS applications within departments has been identified as an issue and their impact in some cases has been quite large. Startup costs for mapping software were also identified as an issue. Continuing to move toward web-based applications is seen as a positive step forward. Corporate software licensing is seen as critical for the long term. As is evident in the application of geographic data in decision support in some line departments, the software must be placed in the hands of the technical staff and applications put in the hands of decision makers, if informed decisions are to be made.

4.0 Collaboration Efforts

Collaboration is defined as: the act of working with another or others on a joint project. Based on that definition collaborative efforts are far exceeded within the Provincial Government Geomatics community. Some of the key collaboration opportunities that cross Municipal, Provincial, Federal and Academic jurisdiction, as identified by the Province's geomatics community include:

- GeoNOVA continues to lead the way with a complement of 3 staff in regards to collaborative efforts. Future data infrastructure needs, by way of example, have been addressed via a pilot project with Elections Nova Scotia, Environment Nova Scotia, Department of Natural Resources, the Property Valuation Services Corporation and the Chief Information Office. The GeoNOVA Data Download Service Application successfully incorporated Department of Agriculture data as part of one of its first downloadable datasets and a new technology application was successfully piloted based on ESRI's Flex API for ArcGIS Server. This new application provides a user with a simple online mapping experience.
- The Nova Scotia Geomatics Centre continued its efforts to work collaboratively with Natural Resources Canada in terms of data exchange and participation on the Geographic Place Names working group. At the Service Nova Scotia and Municipal Relations departmental level efforts continued on several important initiatives such as the Nova Scotia Business Registry, Rebate Programs and the creation of web services. As well, the Nova Scotia Civic Address File (NSCAF) program continued to foster positive collaborative relationships with Elections Nova Scotia and the Emergency Measures Organization.
- The Land Program within Service Nova Scotia and Municipal Relations continued to take advantage of opportunities for collaboration by working closely with the Nova Scotia Geomatics Centre and the Property Valuation Services Corporation on civic addressing.

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- Department of Natural Resources continued its collaborative efforts especially in terms of data and applications. Accessing data included data from Service Nova Scotia and Municipal Relations, Environment Nova Scotia, Natural Resources Canada, and others as required for operational considerations. DNR also distributed data to internal and external client departments, municipalities, Federal Government departments, Aboriginal groups (Nova Scotia of Office of Aboriginal Affairs, Kwilmu'kw Maw-klusuaqn and The Confederacy of Mainland Mi'kmaq), engineering firms, academia, environmental agencies and others as required. DNR was able to also take advantage of several applications that supplied them with data from Service Nova Scotia and Municipal Relations. The Department also received funding to develop a Provincial Land Asset and Resource Management System (PLARM). This system will be seen as an authoritative source of information for staff and stakeholders when making land use planning decisions and setting priorities; facilitate sharing and linking of land use and resource related data; and contain inventory of all land owned by the Province, related resources, activities and transactions.
- Department of Community Services efforts concentrated on a data collection project titled "Community Asset Mapping System for Children, Youth and Families". This was a joint initiative between Nova Scotia Community Counts (Department of Finance) and the Child and Youth Strategy. It mapped services and resources for children, youth and their families that will be of value to governments at all levels, service providers at the regional and community levels, as well as parents and youth. In 2010 the Department was contacted by the Saskatchewan Ministry of Social Services for examples of how they could utilize GIS capabilities to assist in planning, program design and service delivery. Saskatchewan continues to use the department as an example of a department that has not only cleared the initial hurdles in its use of GIS but has integrated GIS in its decision making with other, more "traditional" tools. Information was shared by the Department to help inform and educate senior staff at the Saskatchewan Ministry of Social Services on the benefits of GIS in their planning and decision making. The Department is also now using the Nova Scotia Civic Address File tool to confirm address information and for home visit planning.

5.0 Needs into the Future

Our Provincial Government contributors to this report have identified four needs that are required into the future which include the following: Geomatics support for Business Intelligence for Decision Making; A Geomatics Vision and Strategy; Staffing resources that are able to respond well to short and long term geomatics efforts; and continued geomatics architecture upgrades.

In terms of the need for Geomatics support for Better Intelligence for Decision Making this was best summarized in the contribution from the Department of Economic and Rural Development and Tourism "The **jobsHere** plan calls for Better Intelligence for Decision Making: 'To grow the economy, government will need to seek out new opportunities and effectively manage those opportunities. The government will increase its capacity to gather intelligence to assess, along with industry and other stakeholders, which opportunities should be pursued. The new Labour Market Information Program will ensure that we have information on current and emerging needs and opportunities; better information about international markets holding the greatest opportunities; and better information about our own sectors

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that seem to hold the greatest potential. Better tools and better data is required to measure progress and to monitor the effectiveness of the work.’ This may involve greater use of geomatics.”

Department of Natural Resources via an evolving Provincial Land Asset management Project also embrace the role geomatics can play in Better Intelligence for Decision Making. They see linkage and sharing of land and resource data with other Provincial Departments as key to future land use planning and setting of Departmental priorities.

The need for Vision and Geomatics Strategy is supported by the following statement from the Land Program at Service Nova Scotia and Municipal Relations “...the ability to view and convert a ‘Knowledge Gap’ to an ‘Opportunity Leap’... requires having a vision that is forward looking, scalable, adoptable, inclusive and comprehensive.” The Department of Community Services further added that “We need an information strategy that promotes the sharing of information and data across the department [Community Services], government, 3rd party service providers, and the general public.”

Other contributors echoed the need for geomatics staffing resources that can respond to changing technologies and staffing levels that allowed for continued focus on data collection and maintenance.

Lastly, it was noted that geomatics architecture needs in terms of application upgrades, storage and access will form an ever increasing focus in the coming years. A collaborative business model between the GeoNOVA office and the CIO is strongly supported and desired by the community.

6.0 Report Contributors

We gratefully acknowledge the contributions the Provincial Geomatics Community have made toward this report and in particular wish to highlight the efforts of the following individuals within that community that kindly gave of their time, expertise and in many cases provided collective insight from their respective business areas.

Mr. Greg Landry, Corporate Strategist, Department of Economic and Rural Development and Tourism

Mr. Peter Geddes, Manager, Environment Nova Scotia

Ms Sarah Lefurgey, Data Distribution Coordinator, Nova Scotia Geomatics Centre, Service Nova Scotia and Municipal Relations

Mr. Anthony Matthews, Program Coordinator, GeoNOVA Secretariat, Service Nova Scotia and Municipal Relations

Mr. Gerard Eddy, GIS Specialist, Land Program, Service Nova Scotia and Municipal Relations

Mr. Adam Holmes, GIS Analyst, Department of Social Services

Mr. Mark Hudson, GIS Officer, Department of Transportation and Infrastructure Renewal

Mr. Ken Lee, Coordinator Geographic Information and Planning, Department of Health and Wellness

Mr. Malcolm Shookner, Manager, (Community Counts), Department of Finance

Ms Jennifer McKeane, Tourism Development Officer, Department of Communities, Culture and Heritage.

Mr. Robert Bowlby, Chair DNR GIS Steering Committee, Department of Natural Resources

Ms Frances MacKinnon, Research – Statistical Officer, Department of Natural Resources