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<tr>
<th>Date</th>
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<tr>
<td>Monday</td>
<td>9:00 am to 4:30 pm</td>
<td>Workshops</td>
<td>Various</td>
<td>Various</td>
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<tr>
<td>September 23, 2013</td>
<td>9:00 am</td>
<td>Welcome Address</td>
<td>Yves Léger, CIG New Brunswick Chair and GAC2013 Conference Chair</td>
<td>Canada: Leading Geomatics Innovation</td>
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<tr>
<td>September 23, 2013</td>
<td>9:15 am</td>
<td>Keynote Address</td>
<td>Dr. Mohamed Abousalem, Chief Executive Officer, TECTERRA Inc.</td>
<td>Canada: Leading Geomatics Innovation</td>
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<tr>
<td>September 23, 2013</td>
<td>10:00 am</td>
<td>Refreshment Break with the Exhibitors</td>
<td>Sponsored by CBCL Limited</td>
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<tr>
<td>September 23, 2013</td>
<td>10:30 am</td>
<td>Paper Presentation</td>
<td>Eddie Oldfield, Spatial Quest Solutions</td>
<td>New Directions for Open Map Standards in Health and Energy</td>
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<tr>
<td>September 23, 2013</td>
<td>11:00 am</td>
<td>Paper Presentation</td>
<td>Karine LeBlanc Gagnon, New Brunswick Health Council</td>
<td>My Community at a Glance</td>
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<tr>
<td>September 23, 2013</td>
<td>11:30 am</td>
<td>Paper Presentation</td>
<td>Konrad Dramowicz, Centre of Geographic Sciences</td>
<td>Fifteen Years of Major Research Projects in GIS for Business at COGS</td>
</tr>
<tr>
<td>September 23, 2013</td>
<td>Noon</td>
<td>Lunch on your own</td>
<td></td>
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<tr>
<td>September 24, 2013</td>
<td>1:30 pm</td>
<td>Paper Presentation</td>
<td>Emad Mousavi, University of New Brunswick</td>
<td>Cloud Computing: Applications and Impacts on Data Processing in GIS</td>
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<tr>
<td>September 24, 2013</td>
<td>2:00 pm</td>
<td>Paper Presentation</td>
<td>Corey Tucker, Tamarack Geographic Technologies Inc.</td>
<td>Overcoming the Tyranny of the Map Viewer</td>
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<tr>
<td>September 24, 2013</td>
<td>2:30 pm</td>
<td>Paper Presentation</td>
<td>Simon Rockel, Natural Resources Canada</td>
<td>Canadian Geospatial Data Infrastructure and Practical Geospatial Policies - Resolving Operational Issues</td>
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<td>September 24, 2013</td>
<td>3:00 pm</td>
<td>Paper Presentation</td>
<td>Trevor Robar, Landmark Geographic Solutions Inc.</td>
<td>A Collaborative Rural Approach to GIS and Planning Municipal Shared Services - The Story of the Local Information Utility</td>
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<td>George Kouroupis, ESR Canada</td>
<td>The GeoFoundation Exchange - Building Block of the Community Map of Canada</td>
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<td>September 24, 2013</td>
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<td>Paper Presentation</td>
<td>Bernie Connors, Service New Brunswick</td>
<td>GeoNB - Recent Accomplishments and Future Plans</td>
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<tr>
<td>September 24, 2013</td>
<td>5:00 pm to 7:00 pm</td>
<td>Social Event with the Exhibitors</td>
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<td>Social Event with the Exhibitors</td>
</tr>
<tr>
<td>Wednesday</td>
<td>9:00 am</td>
<td>Paper Presentation</td>
<td>Tim Webster, Centre of Geographic Sciences</td>
<td>Advanced Mapping and Monitoring Within the Coastal Zone to Support Sustainable Harvesting and Coastal Development</td>
</tr>
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<td>September 25, 2013</td>
<td>9:30 am</td>
<td>Paper Presentation</td>
<td>Tony St-Pierre, XEOS Imaging Inc.</td>
<td>Photogrammetric Point Clouds as a substitute for LIDAR in Forestry, Mining and Powerline Vegetation Management</td>
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<tr>
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<td>Marcelo Santos, University of New Brunswick</td>
<td>A View of the New Canadian Vertical Datum</td>
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<tr>
<td>September 25, 2013</td>
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<td>Patrick Adda, University of New Brunswick</td>
<td>Empirical Validation of Large Spatial Datasets</td>
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<td>September 25, 2013</td>
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<td>Paper Presentation</td>
<td>Alaeldin Suliman, University of New Brunswick</td>
<td>A Polygon-Based Filtration Technique for Building Objects' Detection</td>
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<td>William Jones, exp. Services</td>
<td>Coastal Erosion and Sea Level Rise Assessment</td>
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<td>Matthew Gudger, Caris</td>
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<td>September 25, 2013</td>
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<td>Paper Presentation</td>
<td>Raid Al-Tahir, University of New Brunswick</td>
<td>Unmanned Aerial Mapping: the Possibilities and the Challenges</td>
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<td>Paper Presentation</td>
<td>Roger Dick, NB Department of Natural Resources</td>
<td>The New Brunswick Hydrographic Network</td>
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<tr>
<td>September 25, 2013</td>
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<td>Paper Presentation</td>
<td>Marco Mancini, NOKIA</td>
<td>HERE Maps</td>
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Monday

Unlocking Data from GeoNB and Leveraging the GIS Cloud - Full-Day Workshop (9:00 am to 4:30 pm):

Service New Brunswick will highlight the functionality of GeoNB through a series of hands-on style tutorial exercises. Participants will navigate the GeoNB REST services directory which will demonstrate the large variety of data available. Participants will learn how to display vector maps from GeoNB on Google Maps and Google Earth, how to connect to GeoNB Map Services with ArcGIS for Desktop, ArcGIS Explorer and AutoCAD as well as how to connect to the maps on GeoNB with mobile devices. Participants will build a web map application that integrates feature services on ArcGIS Online and maps from GeoNB. There will also be an exercise which highlights the GeoNB Coordinate Transformation Service.

Esri Canada will focus on showing how to utilize GeoNB's data, maps and web services in the ArcGIS Platform. An introduction to the Community Maps program and the GeoFoundation Exchange will be completed to show participants how these programs can benefit their organizations and the GIS community. Using GeoNB's data and services Esri Canada will lead participants through a series of demonstrations and tutorials highlighting the functionality and flexibility of ArcGIS Online through a number of different use cases such as GIS user, non GIS user, decision maker and developer. The exercises will focus on administration and management of an ArcGIS Online account, working with groups, finding and sharing content, building and maintaining web maps and applications, publishing hosted services and developing with ArcGIS Online.

At the end of the morning and afternoon sessions there will be time for a question and answer period for the participants as well as some time for further discussion on presented topics.

Workshop Objectives:

After attending this workshop, participants will be able to:

- Navigate GeoNB and connect to GeoNB's map services with different types of software and devices.
- Be able to use ArcGIS Online to manage geospatial content using the cloud and will be able to create informative web maps and apps that can be used inside and outside an organization and across different platforms.

Workshop Materials:

Each participant of the workshop will have access to a laptop computer that will be connected to the internet and will be equipped with ArcGIS for Desktop and ArcGIS Online. Each participant will receive a handout which includes the material presented, step by step instructions for the tutorials and information on how to find any demonstrations that are shown during the workshop.

Workshop Presenters:

Bernie Connors, P.Eng, BSc Eng, Manager of Spatial Data Infrastructure, Service New Brunswick
Julie McKay, BSc Eng, B Ed, Project Manager, Service New Brunswick
Karen Li, MSA, Location Analytics, Esri Canada

Presenter's Biographies:

Bernie Connors and Julie McKay both hold Bachelor of Science degrees in Surveying Engineering from the University of New Brunswick and together have over three decades of experience in the Geomatics sector. Bernie and Julie currently work in the Land Information unit at Service New Brunswick where they continue to expand the GeoNB initiative to create a Spatial Data Infrastructure for New Brunswick.

Karen Li holds a Masters of Spatial Analysis from Ryerson University. Honours Bachelor of Environmental Studies from the University of Waterloo and a Diploma in GIS from Fanshawe College. Karen has over 10 years of experience using Esri software, including ArcGIS Desktop, ArcGIS Server; Business Analyst and 6 years of experience training clients on technical and non-technical GIS-related courses. She has built and customized courses, such as Introduction and Advance GIS for Health management. She also specializes in workflow modeling with implementation experience using Model Builder and Python, especially in the planning sector which is supported with her GIS and Planning background. Presently, she specializes in Location Analytics, helping clients enrich their business intelligence in a geospatial context.
Tuesday morning

**New Directions for Open Map Standards in Health and Energy**

(E. Oldfield, Spatial Quest Solutions)

This presentation will provide keys to an enabling environment, facilitate understanding of OGC www.opengeospatial.org standards, web service interoperability, open distributed processing, geospatial data discovery, integration and visualization, service oriented architecture, to advance scientific and economic objectives in health and energy domains. This presentation will focus on the evolving state of OGC Open Map Standards for integration, exchange, visualization, and analytics, in the health and energy verticals: two emerging markets with complex needs, and some in common: e.g., privacy. This presentation will outline efforts to develop location standards internationally as part of the OGC Health Domain Working Group ad-hoc and Energy and Utilities DWG. I will highlight key findings from my research for Health Canada, focused on methods to develop, validate, and implement health related vulnerability indexes, for spatially explicit approaches to adaptation and resilience planning. I will also highlight key findings from my research for Natural Resources Canada - a comprehensive study on energy utility and municipal consumer requirements for interoperable web map services. To illustrate how Open Map Standards may be applied within Health and Energy markets (horizontally), I will illustrate a few international, national and sub-national applications supporting health and energy community-of-practice requirements, identify emerging applications in the market and future areas of applied research. Key market drivers and user needs will be aligned with a conceptual model of Service Oriented Architecture Enabling Environment (or Network Enabled Platform), Spatial Data Infrastructure, and web-services brokerage (SaaS), as food for thought in addressing priority needs in these domains. The goal is to make interoperable spatial data infrastructure an integral part of Atlantic Canada’s smart energy distribution, smart community and smart health care infrastructure – where standard repeatable web processes may provide a measurable and significant return on investment, both for the providers and consumers of geospatial products.

**My Community at a Glance**

(K. LeBlanc Gagnon, New Brunswick Health Council)

The New Brunswick Health Council (NBHC) has created community profiles that provide community level information about the people who live, work and take part in activities in New Brunswick. This collection of each of our communities is a collection of information about the physical environments, social and economic factors, health behaviours, and health care, all of which can influence the quality and length of life of the people who live in our various communities. Putting the different pieces of the puzzle together provides a clearer picture that can be leveraged in developing planning and assessing impacts of strategies, policies, programs that affect New Brunswickers on a daily basis whether it be at the local, municipal or provincial level. The broader understanding or our many New Brunswick communities will also support the province’s vision for a stronger economy and an enhanced quality of life while living within our means. The province has been divided into 28 communities (with the three biggest urban cores subdivided) to ensure a better perspective of the many regional and local differences. Each of these communities has an individual profile that provides the most up-to-date information about their population (approximately 250 measures). The profiles for each community will be updated every 3 years.

**Fifteen Years of Major Research Projects in GIS for Business at COGIS**

(K. Drnovozic, Centre of Geographic Sciences)

The boom of business applications in GIS started in the middle of 90s and has gone through much turbulence. The term Business Geographics had been very hot in those years but recently almost disappeared. GIS for business at the present time is one of the most important areas within GIS, including also socio-economic, demographic, and health applications. However, the number of businesses using GIS is still relatively limited. This results from the high cost of more sophisticated software, data, and rigorous use of the return on investment before implementing GIS. However, for Business has been present at the Centre of Geographic Sciences as a separate advanced diploma program or as a concentration for the last fifteen years in response to the growing demand for this type of expertise in Atlantic Canada and beyond. Each GIS for Business student has to complete a two-term major research project for real world sponsors representing private or governmental sectors at national or local levels. Some of these sponsors are key players in Canadian economy giving our students real problems to solve and sharing their confidential business data. One hundred major research projects have been completed in these fifteen years. The distribution of projects and their sponsors by major areas of applications, their location, and used tools and methods are discussed in this presentation. Many of these projects were extremely interesting, unique, and innovative, and some of them represented a truly pioneering approach. This presentation reviews briefly the most interesting examples.
The first component of all geospatial information systems is data, and alongside developments in Geomatics and GIS field and the increasingly important role of data, so has increased the size of data. With the everyday increase in size of data used in geospatial information systems, the need for faster processing and better analyzing of the data has also increased, different solutions have been proposed, the latest and the best solution for this problem by far is cloud computing. Cloud computing now days has proven to have an undeniably great impact on big data processing, especially geospatial data processing.

In this presentation, the concept of cloud computing is elaborated and the innovations based on cloud computing in processing and analyzing big data in GIS field are studied, the known architectures of cloud computing are investigated for their application in processing data in GIS environments and also advantages and disadvantages of each architecture is discussed.

Finally based on specific application in GIS and the type of data used in the system and also type of the processing demanded to run, each architecture of cloud computing is studied, and in the end recommendation for using the each architecture with regards to the data type, data size and the geoprocessing has been made.

Overcoming the Tyranny of the Map Viewer
(S. Riopel, Natural Resources Canada)

GeoConnections (www.GeoConnections.NRCan.gc.ca), a national partnership initiative led by Natural Resources Canada, focuses on developing and enhancing the Canadian Geospatial Data Infrastructure (CGDI) and its components: framework data, policies, standards and technologies, needed to complete Canada’s SDI. Since 2010, GeoConnections has researched and developed a series of operational policy resources intended to help Canadian organizations in their interactions with spatial data infrastructures (SDIs) from an operational perspective. These resources encourage organizations to consider issues beyond the technological scope of an SDI, such as licensing, strategies for adoption and implementation of CGDI operational policies. Strategies for adoption and implementation of CGDI operational policies.

Canadian Geospatial Data Infrastructure and Practical Geospatial Policies — Resolving Operational Issues
(S. Riopel, Natural Resources Canada)

Reaching the ideal of a complete Canadian spatial data infrastructure is a major challenge for Canada, and the organizations that contribute to or use the CGDI. GeoConnections invites you to learn more about the CGDI, and the strategies for adoption and implementation of CGDI operational policies.

Tuesday afternoon
Cloud Computing: Applications and Impacts on Data Processing in GIS
(S.E. Mousavi, University of New Brunswick)

A collaborative rural approach to GIS and Planning municipal shared services. The story of the Local Information Utility.
(T. Robar, Landmark Geographic Solutions Inc.)

A small group of municipalities in Southwest Nova Scotia have come together to build a collaborative approach to GIS and Planning shared services and are building a regional GIS from neighbouring rural municipalities. LGS Inc., using the latest Esri ArcServer 10.1 web technology and an innovative private cloud solution we have been able to foster municipal collaboration, an open data relationship, student projects, and have assisted staff and the public in accessing spatial information anywhere, anytime. We call the solution the Local Information Utility (LIU).

The LIU is an innovative multi-service approach to combining the latest GIS and server technology that will enable any local government to keep pace to changing GIS and IT technologies of today. Like a water utility or electric utility, an information utility can provides real time, easy to access information services via the web. These information services are delivered from a central service location where many communities can collaborate in sharing in managing and interacting with common spatial data, creating common services to serve the public good, all within a single IT scenario.

The Local Information Utility has always been about inspiring policymakers with the opportunities for data and analytics to transform public service for rural municipalities. The technology is present and affordable to implement a GIS system that is smart, flexible, scalable, and mobile. The LIU technology is reducing duplication of effort, paperwork, connecting departments, speeding up data retrieval, allowing for future trending, and revealing easy access GIS for front-line staff that provide information services to their citizens. The LIU is reducing data quality issues and allows an entire authority to manage their GIS, without being a GIS professional.

For our clients that have a GIS professional on staff, the LIU alleviates the pressures of delivering information in traditional formats like hard copy maps and excel reports. The GIS core can move forward with management and enhancing their GIS to deliver efficiency to the authority.

The GeoFoundation Exchange – Building Block of the Community Map of Canada
(G. Kouroupis, ESRI Canada)

This program is underway to build and maintain an authoritative basemap of Canada at all scales. The availability and exchange of high quality basemap information across jurisdictions (Federal, Provincial, Municipal) is required to streamline countless operational systems and aid in decision making. As we live in an ever-changing world, distributed maintenance through a community of participants is the only manner to accomplish a monumental task such as this. This presentation will cover the GeoFoundation Exchange Project objectives its current status, as well as demonstrations in its operation including the usage of the Canadian Municipal Government Data Model (CMDM).

GeoNB – Recent Accomplishments and Future Plans
(B. Connors, Service New Brunswick)

GeoNB is a collaborative initiative of the Government of New Brunswick led by Service New Brunswick. The growth of GeoNB can be attributed to the partnerships that have been developed with national, provincial and municipal stakeholders. These partnerships have resulted in increased cooperation and sharing of data, information and applications. The primary goals of GeoNB are:

- Providing all users with easy access to geographic data, value-added applications and maps;
- Reducing duplication and costs through collaboration and the sharing of geographic data and infrastructure;
- Promoting and increasing the use of geographic data and maps.

GeoNB first launched the GeoNB Map Viewer in November 2009, nearly four years ago. Over the past few years the list of applications, maps, data sets and services has been continually expanded. And our user base continues to grow. This presentation will outline a brief history, recent accomplishments, immediate plans, and the road ahead for GeoNB.

Keeping GeoNB users informed of our plans and enlightening prospective users of the advantages of GeoNB.

Hosted by
Canadian Institute of Geomatics
Association Canadienne des Geomatiques
New Brunswick Branch
Abstracts

Wednesday morning

Advanced Mapping and Monitoring Within the Coastal Zone to Support Sustainable Harvesting and Coastal Development

T. Webster, Applied Geomatics Research Group, NSCC

The Nova Scotia Community College (NSCC) has been awarded a Canada Foundation for Innovation infrastructure grant to support sustainable harvesting and coastal development in Canada through the innovative use of bathymetric lidar. The Applied Geomatics Research Group (AGRG) has demonstrated innovative uses of airborne and ground-based lidar to map flood risk and erosion in the coastal zone and estuaries. AGRG's experience in the coastal zone and with lidar technology provide the foundation to work with companies to research the innovative aspects of new, lower cost, bathymetric lidar which can also be used as a mobile mapping system. The bathymetric lidar sensor is unique as it can be mounted in an aircraft or mounted on a boat and orientated to image the coastline and associated infrastructure using an eye-safe laser and will allow companies to measure the change in the coastline more rapidly. Under this CFII, NSCC is partnering with Acadia Seaplants, GeoNet, Nova Scotia Power, McGregor GeoScience, and Leading Edge Geomatics. Airborne and ship-based surveys will be completed along the coastal zones, estuaries, rivers and lake reservoirs that are of strategic importance to our partners. The purpose of the surveys will be to conduct research into mapping the coastline, near-shore bathymetry and the composition of the seabed for the purposes of:

1. Determining more of accurate rates of erosion to assist stakeholders to make more informed decisions about placement and protection of critical infrastructure;
2. Enhancing mapping of aquatic vegetation and varieties to improve sustainable exploitation and management of Canada’s economic and ecologically significant natural resources;
3. Improving mapping of hydroelectric reservoirs to allow increased efficiency of power generation;
4. Enriching river channel mapping to facilitate more accurate watershed run-off models to predict and mitigate flooding.

Photogrammetric Point Clouds as a substitute for LiDAR in Forestry, Mining and Powerline Vegetation Management

(M. Poirier, XEOS Imaging)

Over the last 3 years, XEOS Imaging has developed performing algorithms to produce very clean photogrammetric point clouds. These point clouds are now used as a substitute to LiDAR in many applications for forestry, mining and powerline vegetation management. The result is a reduction of 75% of the budget for an equivalent LiDAR work and reduction of delays to acquire the data. The presentation will show some examples of real applications in each field of work.

A View of the New Canadian Vertical Datum

(M. Santos, University of New Brunswick)

The federal government plans to release the new Canadian Gravimetric Vertical Datum (CGVD2013), to be released in November 2013. Even though this represents an improvement vis-à-vis the current vertical datum it will cause a change in height values and in how heights are being reached in practice. This presentation overviews the main characteristics of the CGVD2013 and how it may impact a few height-dependent applications in New Brunswick.

Empirical Validation of Large Spatial Datasets

(P. Adda, University of New Brunswick)

In this presentation, we discuss the effects of LiDAR mapping errors on mapping applications. We investigate some major challenges involved in determining the accuracy of large LiDAR datasets, major blunders that could be encountered in the process and how to avoid them. Using a recent research project as an example, we will explore vendor and end-user blunders that can result in errors as high as two metres and as low as 1 cm at different locations of the same dataset. To prevent such blunders, the checkpatching method will be proposed. Checkpatching helps to detect errors in large spatial datasets using a sampling method employing randomly selected patches instead of the conventional method of using randomly selected checkpoints. The Checkpatching method also accounts for varying topography and ground cover - possible error sources overlooked by methods that simply use point elevations from ground surveys to check interpolated elevations at the same (x,y) location.

Wednesday afternoon

Coastal Erosion and Sea Level Rise Assessment, Indian Island First Nation, Indian Island, New Brunswick

(W. Jones, exp Services Inc.)

A coastal erosion assessment of the Indian Island First Nation (IIFN) Band lands, located in the Richibucto area of southeast New Brunswick was completed in 2010. The work included consultation with Band members concerning coastal land and loss based on the community’s oral history, review of coastal erosion (and deposition) along the Band coast line, a site visit to document coastal geomorphology, and assessment of coastal erosion rate(s) using historical digital aerial photography. A screening of potential sea level and flood inundation based on a consideration of existing and projected sea level rise (e.g. year 2100) and related storm surge was also completed. A Digital Elevation Model generated from airborne LiDAR data was used to develop simple flood risk models. Review of historical aerial photography revealed the expected presence of a dynamic environment with changing areas of deposition and accretion over time. For the 71 year period from 1930 to 2001 the estimated total land area lost to erosion processes was approximately 8,600 m2 and the total land area gained through deposition processes was approximately 4,500 m2, for a net loss of 4,100 m2. Along the northwest shoreline, erosion rate for the 71 year period was estimated at 0.10 m/year; within the range of rates reported in the literature for representative sections of the main southeastern New Brunswick shoreline. Assuming erosion at a similar rate for the next 71 years, an additional 7.8 m of shorefront would be lost. Sea level inundation plots under projected ongoing sea level rise and related storm surge (extreme water level) events were prepared. A representative scenario for the 1 in 100 storm return period using data projected for 2100, suggested flood water elevation to 3.14 m, which would impact a significant portion of Band lands which range in elevation from 0 to 5 m, presentation, some new techniques and software tools developed by CRC-AGIP Lab which have had a global impact or have the potential for a global impact will be presented.

Kayak Bathymetry Mapping Project

(M. Gudger, Cans)

Have you ever looked at a lake and wondered how deep it was? Is it ten metres, twenty metres, bottomless? A hydrographic survey, using GPS and an echosounder could be the answer. This would provide geographic positions and depths of the lake. Unfortunately the cost of such a survey would shy most people away from finding an answer to their question. Technology is growing fast and prices are getting more affordable, so a solution may be closer than you think. GPS receivers are found everywhere in our daily lives now and echo sounders can be found in the fishing section your local sporting goods store. While searching the website of COGS’ Instructor Paul Illissey a solution had been identified, Kayak surveying! Taking a kayak and mounting a fish finder with a built in GPS to use as a single beam sounder. This paper will discuss some small lake surveys conducted of the past year. From planning a survey, to data collection and finally processing a simple TIN model from the data. The surveys were completed using a prototype sounding system consisting of a 10 foot open cockpit kayak, Humminbird 788ci HD depth sounder and a 12v power supply. The surveys have ranged between 2-4 hours of collection time and consist of approximately 2,000-4,000 data points which were used in the creation of a depth models for the lakes. The data was imported and processed using CARIS BASE Editor. Shore line data has been traced from aerial photos or imported from provincial GIS websites and used to complete the extent of the data sets.
The use of Unmanned Aerial Vehicles (UAV) in civilian applications has increased greatly over the last few years. Likewise, UAVs have gained tremendous interest as a platform for surveying and mapping. UAVs provide a viable and affordable alternative for the airborne and space borne sensors for the medium/large scale mapping. Especially for small area coverage, such a system has the advantages of being more flexible, rapid, and reliable method of collecting 3D data. Additionally, being easily transportable, UAVs can respond quickly to demands to collect site specific images and data in a very cost-effective way.

In addition, this paper presents a method for the automatic generation of photo mosaics using Scale Invariant Feature Transform (SIFT) approach for the automatic key point detection and matching problem. The results will demonstrate a suitable approach to the automated processing of UAV images and further promote the applicability of this technology to the acquisition of geospatial data for natural hazard and disaster management.

The New Brunswick Hydrographic Network
(R. Dick, NB Department of Natural Resources)

The Department of Natural Resources, Service New Brunswick and Department of Environment & Local Government have collaborated to produce and maintain this comprehensive water database of the province. The entire project was envisioned as a collaborative effort within government with custodial and steward departments integrating the NBHN creation and maintenance into their core business processes. This was seen as the best hope for assuring the currency and accuracy of the NBHN into the future.

DNR accepted the role of custodian to be responsible for the production and maintenance. The integration of the NBHN involved the imposition of a new data model for the existing water features and new data structuring requirements. This had to be done while not affecting the primary mission of the DNR forest inventory mapping process that had been ongoing since the early 1980's.

The network includes surface drainage features for rivers, streams and lakes, islands, watershed boundaries, obstacles and names for many of the water features. Features were formed into networks within watersheds all flowing from source first order streams to their drain points. Ultimately sub-drainages connect to flow to their termination at the ocean. Feature names were added according to the Canadian Geographic Names Database. Obstructing features such as falls, rapids, dams, dykes and structures such as wharfs and breakwaters were incorporated with the network. Features were derived from many sources both inside and outside of government.

A series of automated and interactive processes were created to reform the hydrographic features. This was done during the annual forest interpretation maintenance cycle. DNR staff with years of interpretation experience were able to implement the NBHN while preserving forest management application requirements.

The NBHN is fundamental to many applications and business development opportunities within government and the public which rely on accurate water resource information.

Unmanned Aerial Mapping: the Possibilities and the Challenges
(R. Al-Tahir, University of New Brunswick)

Unmanned Aerial Mapping; the Possibilities and the Challenges
(R. Al-Tahir, University of New Brunswick)

The Road to a Full and Complete Utility Infrastructure Database - The Approach at Halifax Water
(H. MacNeil, Halifax Water)

Halifax Water has been building and using its GIS for more than 20 years now. The combined water, wastewater and stormwater utility currently has an active Corporate Data plan initiative with an end goal of completing the build of all infrastructure data (water, wastewater and stormwater) in the geodatabase. In the meantime new subdivision and capital projects, data gaps and data corrections are being addressed by the internal updating team. Along with this, the existing applications are being enhanced (re-built) to accommodate both an upgrade of the ArcGIS server software (9.3 to 10.0) and application environment at HRM including schema changes to the database. This presentation gives a current status for this project as well as the issues involved with juggling this multi-pronged approach to data and application upgrades.

The New Brunswick Hydrographic Network
(R. Dick, NB Department of Natural Resources)

The Department of Natural Resources, Service New Brunswick and Department of Environment & Local Government have collaborated to produce and maintain this comprehensive water database of the province. The entire project was envisioned as a collaborative effort within government with custodial and steward departments integrating the NBHN creation and maintenance into their core business processes. This was seen as the best hope for assuring the currency and accuracy of the NBHN into the future.

DNR accepted the role of custodian to be responsible for the production and maintenance. The integration of the NBHN involved the imposition of a new data model for the existing water features and new data structuring requirements. This had to be done while not affecting the primary mission of the DNR forest inventory mapping process that had been ongoing since the early 1980's.

The network includes surface drainage features for rivers, streams and lakes, islands, watershed boundaries, obstacles and names for many of the water features. Features were formed into networks within watersheds all flowing from source first order streams to their drain points. Ultimately sub-drainages connect to flow to their termination at the ocean. Feature names were added according to the Canadian Geographic Names Database. Obstructing features such as falls, rapids, dams, dykes and structures such as wharfs and breakwaters were incorporated with the network. Features were derived from many sources both inside and outside of government.

A series of automated and interactive processes were created to reform the hydrographic features. This was done during the annual forest interpretation maintenance cycle. DNR staff with years of interpretation experience were able to implement the NBHN while preserving forest management application requirements.

The NBHN is fundamental to many applications and business development opportunities within government and the public which rely on accurate water resource information.

HERE Maps
(M. Mancini, NOKIA)

Throughout the course of this presentation, the speaker will go into detail on the map making process that Nokia goes through in order to maintain quality and a complete database of all roads in the world. Our GIS tools and software will be demonstrated and described. The speaker will also explain the various methods of acquiring data – field data collection, sourcing and the new community project. Finally, the speaker will describe and demonstrate in detail Nokia's MapCreator tool, which is essential in building maps.

Abstracts