

Integration of GIS, Mobile solutions and Satellite Imagery

Abstracts and Biographies

1

Seeing the Forest for the Trees: The District of North Vancouver's Mobile Forest Management System

Mark Brown, District Arborist

Meaghan Taylor, GIS Analyst, District of North Vancouver

Abstract

Today, the notion of managing our eco-systems has become a critical consideration for many local governments. A carefully maintained inventory of environmental assets can not only be a powerful analytical tool but can also serve in asset management, risk management and liability.

In the realm of tree inspections the District of North Vancouver has recently implemented its Forest Management System, or FMS. Integrated with new corporate workflows, the FMS application acts as a mobile inspection solution where data from the field is wirelessly promoted to a geodatabase for further analysis. The FMS is the first step in establishing a larger Natural Resource Management plan for the District of North Vancouver.

Bios

Meaghan Taylor has been with the District of North Vancouver's GIS Department since 2002, after graduating with Honours from Simon Fraser University where she obtained a BSc in Geography and a Certificate in Spatial Information Systems. As a GIS Analyst, Meaghan is largely responsible for the Department's Geodatabase design, implementation and maintenance, deployment of inter-departmental applications such as the Forest Management System, as well as providing continued service to other departments and the public.

Mark Brown

- 1986 -Graduated in forestry and Arboriculture in England. (Yes we do have some trees still) although Captain Vancouver sailed off with at least a thousand Oak trees in the "Discovery"
- 1986 - 88 Two years in New Zealand running experimental Forest thinning project for Marlborough Water authority.
- Ran out of work permits therefore return to the UK, and hired as an Area Manager for Fountain Forestry managing Forests for Wealthy individuals, pension funds and investors.
- Passed academic extension exams at Oxford University 1995 and attained Chartered Forester status.

- Moved to Oban, Scotland - life got dull, started looking for new challenges. !
- Therefore emigrated with extremely clever wife (Alison) in 1999 and joined District of North Vancouver in November 2000.
- New challenges & opportunities abound and am enjoying working with a great team.

2

GIS Data Integration: The Implementation of GIS at the Greater Vernon Water Utility

Leon Gous, General Manager of Community Services, City of Vernon
Tjaart Van den Berg, LandInfo Technologies Inc.

Abstract

Greater Vernon Water (GVW) is a recently formed water utility in the northern Okanagan and consolidates the water utilities of the City of Vernon, District of Coldstream and the North Okanagan Water Authority (NOWA). GVW oversees the supply and distribution of water to both domestic and irrigation clients. One of GVW's first goals was to develop and implement a water network hydraulic model and a decision was taken to make extensive use of GIS to support GVW in this regard.

From a GIS perspective, the first challenge was to integrate the water network data sets available from the three previous water utilities into one continuous data set. GVW also required access to a number of additional data sets such as, water meter readings, billing information, parcel base maps, zoning and land use data that are available from the various local and regional authorities within the Greater Vernon area. In addition, a need for timely and accurate spatial information by operational staff, responsible for the day-to-day maintenance of the water network, was identified.

This presentation describes the implementation of the GVW's GIS and focuses on the integration of the various spatial data sets available to the GVW as well as GVW's goal to implement a cost effective GIS as quick as possible

Bios

Leon Gous is a civil engineer with over ten years of experience in general management, project management, water resource management, management and design of urban water distribution and sewerage collection systems, hydraulic modeling and design for mining projects and energy modeling for hydroelectric projects. He has been responsible for the implementation of the Greater Vernon Water Master Plan as Project Director. As the Assistant Town Engineer (Water and Sanitation Utility Manager), he has been responsible for the management of the water and sanitation department of a dynamic municipality with about 200,000 residents and a large commercial/industrial component. Mr. Gous has an Executive MBA and a postgraduate degree in Urban Engineering. He has also pursued and obtained conventional civil engineering training and experience, including continuing education in cold regions engineering, soil engineering, communication skills and effective report writing. Mr. Gous has been a key member of project teams responsible for conceptual and feasibility studies and final designs of numerous water resource, mining and hydroelectric projects in Canada, the USA, South Africa, the Philippines, Peru and Argentina.

Tjaart Van den Berg is a GIS consultant with LandInfo Technologies Inc. specializing in the planning, design and implementation of Geographic Information Systems (GIS).

During the past 15 years, Tjaart was responsible for the implementation of various GIS applications within local and regional authorities in Canada and internationally. He was involved with the implementation of the Greater Vernon Water Utility's GIS since the beginning of 2003 and currently consults to Greater Vernon Water on the implementation and strategic direction of its GIS.

Tjaart is a qualified Urban Planner and holds a Masters Degree in Urban and Regional Planning.

3

Integrating CAD & GIS in a Municipal Environment

Martin Tilt, Senior GIS Analyst, Engineering Information Services
City of Vancouver

Abstract

The City of Vancouver has been exploring ways of integrating its GIS system with its CAD design system since the early 1990's. Getting the GIS data 'out of the closet' and into the business mainstream has also been a key focus for the City and many organizations. This presentation describes how the City of Vancouver is meeting these goals through its recent implementation of an open spatial database solution and the implementation of tools which allow broad distribution of GIS data to the key Engineering clients who need the data as part of their day to day work.

Bio

Martin is a Senior GIS Analyst in the Engineering Department at the City of Vancouver. Worked with the City since 1985 and became involved in GIS in the early 1990's first as a mapping technician, then as a programmer/developer, and then for the last 7 years as systems analyst and supervisor of Engineering GIS section. City's project lead on the ENGIS project and Engineering's representative on all GIS related projects including VanMap.

4

Spatial Asset Management

Ceri Wisheart, Systems Architect

Evan Schwab, Systems Developer

Geospatial Information Solutions

Accenture Business Services for Utilities

Abstract

Electric, gas and water distribution utilities have assets that are widely dispersed over large distances. This brings challenges for asset management because knowing “where” assets are located is vitally important. Traditionally, asset management systems have been text-based with limitations in spatially representing the assets by only an address and description. Work planning would be done without knowing that there are current jobs or scheduled jobs in the same or adjacent areas. Work packages would be distributed to crews without a map of the location and adjacent assets. Accenture Business Services for Utilities is working to provide improved utility information using spatial technology to better meet the management and maintenance needs of a dispersed asset inventory. Asset management applications including facilities for maintenance history, preventive and predictive maintenance, and work scheduling will leverage the spatial tools and answer the “where” requirement of the assets.

This presentation will look at the benefits and advantages of using spatial technology for asset management. There are obvious benefits to the operations and management of assets such as visually knowing where the assets are located and where maintenance is required. Functions from spatial queries to cluster analysis will improve the ability to analyse assets. GPS technology can be used to acquire real-time crew positioning, as well as to do on-the-fly updates of maintenance records for visual inspections. Existing spatial data sets can be utilised and interfaces made to spatial and non-spatial systems. However, the most important benefit will be the ability to better evaluate the system health and manage the performance of the business through both asset and work optimization.

Bios

Ceri Wisheart is a Systems Architect with the Geospatial Information Solutions group at Accenture Business Services for Utilities. Ceri has over 12 years experience in Geospatial systems, and is currently responsible for the Distribution Analysis & Design system development and maintenance. Ceri was a member of the team that helped BC Hydro earn their 2000 GE Smallworld™ Fast Tracker Award, and 2001 GE Smallworld™ Innovation Award, for their

development and implementation of BC Hydro's EGIS suite of geospatial computing applications.

Evan Schwab is a Systems Developer with the Geospatial Information Solutions group at Accenture Business Services for Utilities. Evan has a BSc in Computer Science from UNBC and has almost 5 years experience in Geospatial systems. He has been responsible for the maintenance and development of GIS systems for Terasen Gas and AT&T Canada as well as done development work for GE Power Systems and Enbridge Gas Distribution. Evan is currently doing analysis and development work for the Distribution Analysis & Design system at BC Hydro.

5

Exploiting the Power of GIS over the Internet

Grant Berry, GIS Solutions Manager, TELUS Geomatics

Abstract

TELUS Geomatics offers a variety of innovative Geographic Information System (GIS) solutions that exploit the power of the Internet. TELUS Geomatics fully managed web-based GeoExplorer application provides access to unique mapping services that display spatial data easily and conveniently, enabling better decision making for municipal, provincial and federal government agencies, energy sector and the business community. This presentation will focus on case studies relating to the integration of web based GIS and Interactive Voice Response systems for public alerting, GPS/Automated Vehicle Location and SPOT satellite imagery.

Bio

Grant Berry is the GIS Solutions Manager of TELUS Geomatics with more than 25 years of expertise and experience in the telecommunications/ Geographic Information Systems industry. His primary role is to manage and support the Geomatics Solutions team of GIS Specialist, while assessing new revenue opportunities in the government, resources, commercial, and industrial sectors. Grant works closely with Sales, Marketing, Business Development and the technology team to ensure Geomatics services and products are market driven and cost effective.

6

Moving Map Technology: Helping Airborne Law Enforcement

Scott Healey, Staff Sergeant, Vancouver Air Section, Helicopter Unit

Abstract

S/Sgt Healey will speak about the process that he has been involved in with installing a moving map system in the RCMP helicopter that is stationed in Vancouver. He will highlight some of the uses of the helicopter and the benefits that the new mapping system will provide. He will also talk about some of the things that he has encountered while trying to get accurate GIS mapping info for the lower mainland area.

Bio

Scott has been in charge of the helicopter unit in Vancouver for the past 4.5 years. Prior to that, he was posted to Comox in 1994 as helicopter pilot but has been flying since 1979. He has been with the Force for 15 years. The RCMP's Vancouver helicopter does approximately 750 hours per year flying.

7

The Current and Future Status of Satellite Imagery and Their Use in Urban Applications

Karl Kliparchuk, Consultant, McElhanney Consulting Services

Abstract

Land observation satellites have been around since 1972 with the launch of ERTS-1 by the United States. Since that time, many satellites from many different countries have been launched with better ground resolution, more views into different parts of the electromagnetic spectrum and other special features, such as stereo imaging. Currently, optical satellites are producing photographic quality images of the earth, competing with aerial photos. We will review the current state of satellites and their imagery, inform you about some upcoming satellites and give examples of urban applications for satellite imagery.

Bio

Karl has more than 15 years of experience in project management, GIS data compilation, satellite image processing, map projections, cadastral compilation and GIS training. He owned and managed a geomatics company, Terratech Mapping Services Ltd, in Burnaby for 9 years before joining McElhanney as Project Manager for GIS and Remote Sensing. Karl has also been teaching GIS courses part-time for over 8 years at BCIT. He has a B.Sc. and M.Sc. in Geography from the University of Alberta. He has worked in North and South America, S.E. Asia, Australia and the Middle East providing geomatics services and training.

PANEL DISCUSSION

Satellite Cities Case Studies Panel

The increase in availability of high-resolution satellite data offers today's city managers an affordable means of maintaining a current aerial orthophoto base of their municipality. In addition, the information products that can be derived from this data offer urban and park planners, municipal engineers and GIS managers a new tool for decision making. Examples of these information products include detailed land cover and use classifications that provide such information as the amount and location of impervious surfaces and green space. A semi-automated approach extracts the different classifications from the multispectral satellite data - a far quicker approach than labour intensive manual digitization.

The first part of the presentation will cover a brief introduction to satellite imaging & available sensors, benefits and costs, and 3 land cover classifications suitable for municipalities - impervious surface mapping, urban green space mapping and change detection. The second and final part of the presentation will consist of a summary of the City of Richmond's Urban Green Space and Impervious Surface Mapping Project and the City of Surrey's Change Detection Project. Both projects use 60cm high-resolution satellite imagery from QuickBird.

1

Stuart Jones, Planner/Analyst, City of Richmond
Mapping Richmond's Urban Green Space

Bio

Stuart Jones academic background includes a Bachelor of Arts Degree in Urban Geography and Economics, a Minor in Mathematics and Statistics, and a Masters of Arts (Planning) at the School of Community and Regional Planning UBC with an emphasis in urban design, transportation and housing. Stuart is an associate member of the Planning Institute of BC and the Canadian Institute of Planners.

Past City Planning experience include the City of Richmond, City of Surrey, City of New Westminster and City of Vancouver Planning Departments. Currently working with the City of Richmond's Policy Planning Department to provide long range community planning policy services that includes research, data management and analytical services to the Urban Development Division and other City departments including Fire and RCMP. These services include the use of GIS that is a major component in providing the research, survey and data management for the City regarding projections - population and other census info; community planning - Zoning, OCP Land Uses, Transportation, Engineering infrastructure, Community Services, RCMP, Fire, Parks and Library.

2

Karen Stewart, Spatial Information (GIS) Manager, City of Surrey
Change Detection Based on Satellite for Planimetric Updates

Bio

Karen Stewart has a Bachelor of Technology Degree in Geomatics, specializing in Geographic Information Systems (GIS), from the British Columbia Institute of Technology (BCIT). She has over 20 years experience in the Municipal/Utility Mapping and GIS fields. Currently the Manager of Spatial Information for the City of Surrey, Karen is also the President of URISA BC and a Member at Large for GITA. She is Canada's representative on the Chapter Relations Committee for URISA International. During her career she has been involved with the implementation of many new GIS and CAD technologies at the City of Surrey and BC GAS. She looks forward to continuing her involvement in the GIS community and anticipates great advances in future GIS technologies. She co-wrote a paper with Kevin Whitlock, titled Using CAD Tools For GIS: Maintaining a Municipal Infrastructure Dataset, which is published in the URISA compendium/book "GIS in Public Works".

3

Tor Henderson, Regional Sales Manager
RADARSAT International

Bio

Tor Henderson works as Sales Manager at RADARSAT International. His focus is on developing municipal information products using high-resolution satellite imagery. Tor holds a Geography degree and an MBA, and has worked 6 years within the GIS/Remote Sensing industry in both Canada and Norway.