PRESENTATION ABSTRACTS – November 20th, 2014

Emergency Preparedness and Risk Mitigation: Deploying GIS in the Field

Presented by Jonathon McIntyre, i-Open Technologies

Geospatial data is an important part of risk mitigation and emergency preparedness but it is often locked away in various departments and systems within organizations. The City of Port Alberni has been working to integrate their various data sources and make them available to staff in the field. Updated contact information from Finance and Planning, water and drainage flow directions, shut-offs and valves from Engineering, and Hydrant details and maintenance information from the Fire Department makes this cross department collaboration very powerful. The fact the system has been designed to make the data available without a network facilitates its use in emergency situations when infrastructure may have been damaged or in locations where wireless can't penetrate. With access to spatial data and associated attributes as well as the ability to capture and markup conditions in the field the City is better able to manage and assess current as well as potential risk. Some pre-analyzed data allows for utilization of displays such as driving times from key municipal facilities (hospitals, public works, City Hall), potential impact zones from tidal flooding, and key transportation routes.

The BC Coroners Service's Enhanced Identification Geographic Information System

Presented by Randy Dalit, Office of the Chief Coroner

In this presentation, GIS Analyst, Randy Dalit will be demonstrating the BC Coroners Service's Enhanced Identification GIS, which is a relational database management system that integrates spatial, temporal, biological and other forensic descriptors on missing persons and unidentified human remains cases. This model gives BCCS investigators the ability to: 1. perform one-to-many comparisons on unidentified human remains cases; 2. analyze forensic descriptors within a relational database; and 3. solve cases within days, rather than weeks. When this model was first launched in 2009, it was the first program in Canada to utilize GIS technology specifically for missing persons & unidentified human remains comparisons. Since then, the Enhanced Identification GIS has been featured on various publications including the Vancouver Sun, the Montreal Gazette and Directions Magazine, and has become a key tool in aiding coroner investigations in British Columbia.

3D Laser Scanning Applications - Municipal EMS Services

Presented by Scott McKever, Canyon Logics

Emergency Management Services face ongoing challenges to capture as-built data of both industrial/commercial and public structures, as well as critical information on questionable structures such as derelict buildings and hazardous sites. New 3D laser technology is being used to capture such data and present that data in an intelligent manner for visual and measurable evaluation. 3D laser scanning has a wide variety of applications and uses for EMS personnel. With its integration with 3D modelling software, 3D scanning becomes a valuable tool in providing not only an evaluation and assessment tool but also as a raining and collaborative tool.

The presentation will cover work completed for a municipal EMS Services related to the evaluation and assessment of derelict structures owned by the city. Using one building as an example, the process to evaluate and assess the building for its structural integrity, accessibility, and safety using 3D laser scanning will be discussed. You will be walked through the process used, shown examples of the laser scans and subsequent analysis from those scans. Possible applications identified from the work will be reviewed and discussed. In addition, other municipal infrastructure applications will be discussed, and a wide variety of work completed in municipal and other government contracts will be presented – such as municipal dam, bridges, hotel, fortifications and municipal space planning applications.

Emergency Event Map Viewer System

Presented by Robert Darts, E-COMM 911

E-Comm developed the Emergency Event Map Viewer or E2MV system as a geospatial decision support system starting in 2008. The system enables the sharing of near-real time event and unit information between E-Comm and its partners in public safety.
E2MV provides users with an intuitive, custom web map viewer of emergency events and units, and incorporates functionality for supporting dispatch workflow if a dispatch system is unavailable. My presentation will focus on how our public safety partner agencies use the existing E2MV system as well as new functionality that is being added. At a high level E2MV provides the following functionality:

- **Situational Awareness:** E2MV provides the capability to view all current events and units imported from multiple dispatch systems from Police, Fire and Ambulance. In addition, E2MV provides access to the Multi Agency Situational Awareness System (MASAS). MASAS is a multi-stakeholder federally-led initiative that provides other location-based situational awareness information such as road closures, weather alerts and power outages. We are also in the process of adding Live Streaming video feeds from Ministry of Transportation;
- **Dispatch System Back-up:** The capability to create, manage, close and generate reports on incidents in the event of a dispatch system service interruption;
- **Address Verification:** An intuitive secondary address verification process, providing the most current street data available, and;
- **Data Distribution:** Filtering and providing Common Operation Picture data to other approved entities, such as the Vancouver 2010 Integrated Security Unit, the British Columbia Ministry of Transportation & Infrastructure and municipal Emergency Operations Centers and;
- **Automated Alerting:** E2MV users are able to receive real time notifications of incidents based on location and / or user defined criteria. New filtering capability and options are being added as part of our upgrades as well.

Utilizing Modern Tablets and Mobile Devices for Search and Rescue and other Emergency Responses

Presented by Andy Muma, Skeena Region Smithers

This presentation will be on utilizing modern tablets and off the shelf applications for mapping, navigation, and spatial and attribute data collection for both Search and Rescue and other emergency response situations.

Tablets have the potential to replace multiple field devices and can stream line mapping, navigation, and data collection processes in emergency response situations. This results in shorter response times, better on site information, better communication and situational awareness for emergency field responders and command centre personnel.

Andy will share his personal experiences implementing iPad tablets for his small Search and Rescue group in Houston BC and how the technology and tablet use has caught on and expanded throughout the northern region.

Natural Disasters NYC – Hurricane Sandy

Presented by Colin Spikes, Socrata

Natural disasters and other emergencies are affecting communities around the world with increasing frequency and intensity. More than ever, Emergency Managers need to quickly and efficiently disseminate information to citizens about what areas will be affected by disasters and where they can go to find shelter, food, and medical attention. Increasingly, citizens expect digital sources of information to be accessible on our mobile devices and the internet. Unexpectedly faced with Hurricane Sandy, a storm of unprecedented scale and damage, New York City needed to quickly provide information about evacuation zones and emergency shelters to millions of citizens. New York City decided to take an innovative approach to publishing this information using an interactive map created and published on their Socrata Open Data Portal. Within a matter of minutes, an Emergency Manager created a multi-layer map depicting NYC's evacuation zones and emergency shelters and published this to citizens to access on their mobile devices and internet helping them make better decisions about how to protect their families and property.

Using GIS for assessing risks from earthquakes

Presented by Nicky Hastings, Natural Resources Canada

The west coast of Canada is the most earthquake prone region in Canada. In the last two years, more than 50 earthquakes greater than a magnitude of five were recorded off the coast of British Columbia. As communities in western Canada continue to grow and develop there is an increased need to understand the potential impacts from a damaging earthquake and to develop plans and strategies that can lessen these consequences before a damaging earthquake takes place.

In 2009, Natural Resources Canada partnered with the District of North Vancouver, the North Shore Emergency Management Office, the University of British Columbia, and Defence Research and Development Canada, to adapt and validate the loss estimation program Hazus, an ArcGIS based application. The presentation will explore the inputs, outputs and capabilities of the Hazus loss estimation methodology and demonstrate how a risk assessment can help inform policy makers to take action in reducing earthquake risks in a community.

Mining Municipal Data to Support Emergency Response

Presented by Adam Chadwick, City of Kamloops

Support for Emergency Operations Centre (EOC) activities can take two forms: reactive (which is sometimes the only option), and proactive. After reviewing the GIS services provided to the City of Kamloops' EOC for the 2012 high water freshet, it was determined that three areas of response could be pre-planned: infrastructure preparation to prevent flooding, flood mitigation controls, and evacuation population determination.

By processing non-traditional municipal data sets, data was mined to facilitate analysis using GIS to derive both graphic and non-graphic data products to accurately determine, 1) efficient sequencing of catch basin/manhole sealing/unsealing, 2) the most appropriate height and location to construct temporary river bank berms, and, 3) on the fly property-based population calculation based on time of day, day of week and time of year. These three resultant data products have significantly improved the City of Kamloops' ability to respond to flooding and evacuation events.