Emergency Management and GIS:
Leveraging the Advantages of a Common Operating Picture

Presented By:
Brad Connatty, BSc. GISP
Sr. GIS Analyst, Suncor Energy Inc.
Tuesday April 19, 2011
Objectives for this Presentation

• Start to give you some perspective of what is Emergency Management (EM)
• How a Common Operating Picture (COP) facilitates processes in EM
• EM is not just confined to within our own walls
Protection of LIFE

Protection of the ENVIRONMENT

Protection of PROPERTY & CORPORATE ASSETS
An EM Tenant – Circle of Knowledge

Everything else ... hasn’t occurred to you

What you know

What you think you don’t know
EM – A Front Line Lesson

• Berard Terminal
EM – A Front Line Lesson
Learning What is EM

PREPAREDNESS
- Regulations
- Assessment
- Risk
- Hazard
- Compliance

RECOVERY
- Reports
- On going commitments
- Learning’s Investigations
- Process Audit

RESPONSE
- Support
- Events!
- Notifications
- Team Activation

DATA CAPTURE
- Training
- Exercises
- Public & Stakeholder Obligations

Emergency Response Plans
Learning's Investigations
Process Audit
Reports
On going commitments
Cleaning up
Learning’s Investigations
Process Audit
Release

AIR
- SO₂
- Butane
- Propane
- Ethanol

WATER
- Oil
- Diesel
- Ethanol

LAND
- Oil
- Diesel
- Ethanol
Sources
Transportation
The Start of an Idea – A Consortium

Bring together like minded professionals from EM and GIS backgrounds to collaborate and share how GIS technology can be leveraged for EM best practices in Preparation, Response, and Recovery.
## Interest and Participation

<table>
<thead>
<tr>
<th>Company</th>
<th>Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suncor Energy</td>
<td>ERCB</td>
</tr>
<tr>
<td>Husky</td>
<td>BCOGC</td>
</tr>
<tr>
<td>Cenovus</td>
<td>AB-SRD</td>
</tr>
<tr>
<td>Encana</td>
<td>AB-ENVIRO</td>
</tr>
<tr>
<td>Conoco Phillips Canada</td>
<td>AB-AEMA</td>
</tr>
<tr>
<td>Nexen</td>
<td>NEB</td>
</tr>
<tr>
<td>Penn West</td>
<td>esri Canada</td>
</tr>
<tr>
<td>Compton Petroleum</td>
<td></td>
</tr>
<tr>
<td>Pembina Pipeline</td>
<td></td>
</tr>
<tr>
<td>Talisman Energy</td>
<td></td>
</tr>
<tr>
<td>Enerplus</td>
<td></td>
</tr>
<tr>
<td>Shell Canada</td>
<td></td>
</tr>
</tbody>
</table>
Defining River Banks

- Create a baseline emergency management platform (i.e. COP)
- Collaboration (industry companies, regulators, governmental agencies and key vendors)
- Aide in situational awareness
- Web based GIS technology
- Following Incident Command Structure (ICS)
- Cost Sharing
GIS for Emergency Management

Planning & Analysis
Better Decisions

Situational Awareness
Better Visibility

Mobility
Enable the Field

GIS Data Management

CI/SAR
Incidents
RMS
Other Data
Collaboration and Security Foundation

Feeds
What a COP Provides

- Shared situational awareness
- Accurate situational updates
- Ability to add data
- Access to existing information
- Rapid analysis for decision support
- Interactive map user interface
- Information for better response/decisions
Leverage Web Services

- Live Mapping Services
- XML Feeds (GeoRSS, AVL, etc)
- Social Networks, Facebook, twitter, flickr
- Skype, Cellular com.
Proof of Concept
A National Situational Awareness

Governance & Coordination

- Manitoba EM System
- Ontario EM System
- New Brunswick EM System
- Federal PSC GOC RCMP NOC etc
- Regional Content
  - Flood
  - Storms
- National Content
  - Alerts
  - Earthquakes
- British Columbia EM System
  - Ontario EM System
  - New Brunswick EM System
  - Federal PSC GOC RCMP NOC etc
  - Regional Content
    - Flood
    - Storms
  - National Content
    - Alerts
    - Earthquakes
- Manitoba EM System
- Ontario EM System
- New Brunswick EM System
- Federal PSC GOC RCMP NOC etc
- Regional Content
  - Flood
  - Storms
- National Content
  - Alerts
  - Earthquakes
National MASAS Hub II Sandbox
MASAS Hub II Consuming Tool (Flex 2.2)
Emergency Mapping Symbology
http://emsymbology.org/EMS/index.html

- Designed for single and multi-agencies
- Facilitate interoperability and situational awareness
- Community includes: federal, provincial, regional and local organizations
- Used in major events, disasters, emergency help and security situations
Examples of COP Viewer Applications for Public Safety
Consortium – Lots to do …

- Functional requirements gathering
- Mobile GIS
- Data Ownership
- Maintenance
- Community Mapping
Parting Thoughts

- EM (especially during an event) is spatially dependant
- Understand the needs of EM business within petroleum operations (Strategic Purpose)
- An EM-COP can leverage and be leveraged by other business units, partners/other companies, regulatory bodies and the public
- Standardization for across company
- External expectations