GIS In The Emergency Operations Center

Highlighting Examples Of GIS Support For The EOC

City Of Greensboro, NC.

Presented By
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Greensboro Geography
Greensboro Vulnerabilities

Hurricanes
Greensboro Vulnerabilities
Tornadoes
Greensboro Vulnerabilities

Ice Storms

>1 Inch of Ice Accumulation!
Greensboro Vulnerabilities
Flash Flooding

3.08 Inches of Rain in a Two Hour Period!
Greensboro Vulnerabilities
HAZMAT/Civil Disaster

- Distribution Hub for Colonial and Plantation Pipelines.
- Chemical Plants.
- Terrorist Activity.
- In Vicinity of 2 Nuclear Power Plants.
- 4 Interstate Highways and Rail Corridor.
GIS - ESF 5 Information & Planning

► Activation by Emergency Support Function (ESF)

► GIS is ranked as ESF-5 in the National Incident Management System (NIMS)

► GIS Personnel on call 24/7/365
  - Activation by ESF need via pager
  - 2 GIS Staff on Call at all times
  - All GIS Staff NIMS Certified
How It Works

Overview

► Pre-deployment and Maintenance of:
  ▪ Servers
  ▪ Infrastructure
  ▪ Data

► Communications
  ▪ Radio
  ▪ Telephones
  ▪ Pagers

► Redundant Systems
  ▪ Servers (Everyday Production and EOC)
  ▪ 2 Laptop Computers
How It Works
The EOC

EOC Site:

- Located away from population centers at Public Safety Training Facility
- Dedicated Fiber to offsite EOC location
- Server stored on site available on VPN with separate Internet
- Generators for 3 days of off grid operation
- Telephone Bank
- Radio, Cell, and Satellite communications
How It Works
The GIS

► 2-4 Laptops loaded with ArcInfo Concurrent License (license manager on EOC server), Spatial Analyst, and 3D Analyst
► 2 LCD Projectors
► Data:
  ▪ If network available, Production SDE Geodatabase is used
  ▪ No Network – EOC Server Loaded with SDE backup, Personal Geodatabases, and Shapefiles
  ▪ No Network or EOC Server – Laptops are loaded with SDE backup, Personal Geodatabases, and Shapefiles
  ▪ No Network, EOC Server or Laptops - ??? RUN!
How It Works

Preplanning The Data

► EOC Basemap - Data Refreshed Monthly Using Model Builder Scripts

- Flood Prone Areas
- Pipelines
- Congregate Areas
- HAZMAT Information
- Standard Municipal Features
- “Template” Feature Classes Always Available
Recent Activations
And Training

► Average: 1 Formal Activation and 2 Drills Annually
  - “911”
  - 2 Ice Storms
  - Straight-Line wind event
  - Hurricanes (Floyd, Fran, Katrina, Isabel, Ophelia)
  - Partial Activation following High Wind Event
  - Gas Crisis following Katrina

► Biannual Enterprise Drills/Simulations

► Annual Drills for GIS Staff
Automated Real-time Data

“Leveraging Existing Technology”

► Contact Center (*Call Center*) and 911 calls are captured in Real-Time

► ODBC connection to SQL Server established in the 911 dispatch system (*OSSI*) (Real-Time)
  ► Any call that comes into 911 is displayed in ArcMap as soon as the dispatcher enters the call

► ODBC SQL Server connection to Contact Center Application (Near-Real-Time)
  ► Citizen non-emergency phone number “373-CITY”
  ► Information is displayed in the same ArcMap application
Real-time Data Connections
911 Center
911 Center Data

Definition Query on 911 SQL Server table to return only valid EOC call types
911 Center Data

► Predefined Unique Value Symbology Assigned to valid EOC Call Types
Contact Center Application

Model run to establish a “Template” for table joins from the Contact Center.
Contact Center Application

Customer Service Representative enters calls: “Trees Down”, “Debris Removal”, etc…
Other EOC Resources

CAD Resource Monitor

Guilford Metro 911 Dispatch Viewer
Other EOC Resources

WeatherTAP©

Commercial Near Real Time RADAR and Satellite Viewer
Other EOC Resources

Hurrevac

Hurricane Tracking and Advisory Viewer
Other EOC Resources
Consequences Assessment Tool Set (CATS)

Large Canister of Chemical Agent Model
Small Canister of Anthrax Model

Plume Modeling for Natural and Technological Disasters
GIS In The Emergency Operations Center

Questions?

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