An Incident Management Preparedness and Coordination Toolkit

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OAK RIDGE National Laboratory

Motivation

Geographic Information Science and Technology

- Several projects needed a simple mapping application for use by non-GIS professionals
- Commercial offerings deemed too complicated and costly
- Browser-based offerings had restrictive terms of use and copyrighted data
- Needed the ability to customize the code for each project using simulations and wizards

Requirements

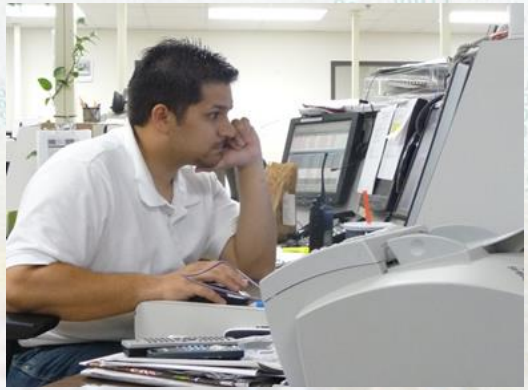
Geographic Information Science and Technology

- Simple to learn (avoid jargon, feature bloat)
- Allow custom map making and data capture
- Support hardware devices (GPS, webcam)
- Run on laptop/tablet PC for mobile operations
- Work with existing GIS
- No cost

Operational Needs

Geographic Information Science and Technology

- **Pre-mission: Download maps and data from networked sites**
- **Field-use: Standalone operation with data capture and viewing**
- **Post-mission: Editing and report generation**

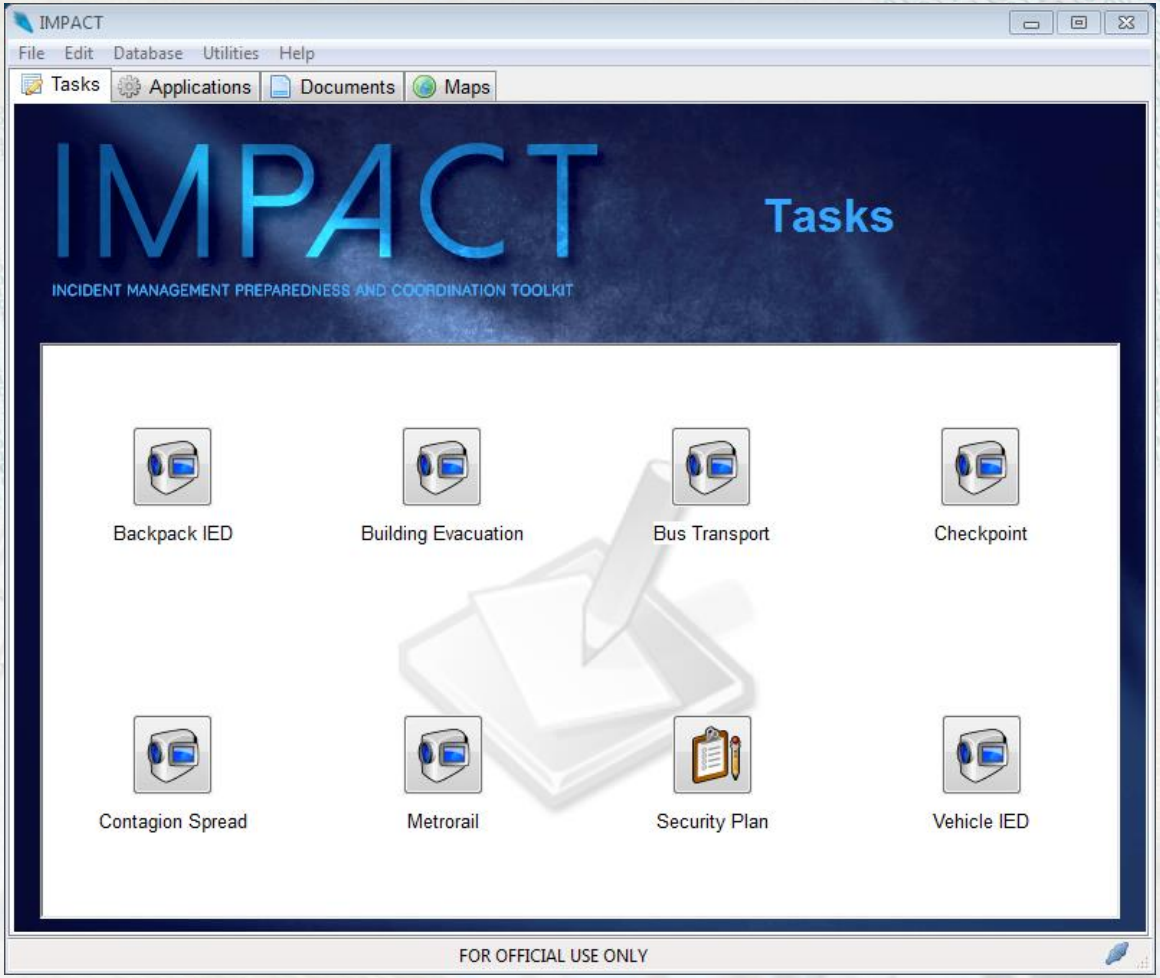


Challenges

- Network connection not always available in the field especially after a disaster
- Laptop must carry the data it needs

- User may need to store unstructured or unanticipated data (photos, reports, scanned maps, floor plans, etc.)
- Operation on Windows, Mac, and Linux

Tasks Panel


IMPACT
File Edit Database Utilities Help
Tasks
Applications
Documents
Maps
IMPACT
Tasks
INCIDENT MANAGEMENT PREPAREDNESS AND COORDINATION TOOLKIT
Backpack IED
Building Evacuation
Bus Transport
Checkpoint
Contagion Spread
Metrorail
Security Plan
Vehicle IED
FOR OFFICIAL USE ONLY

Applications Panel

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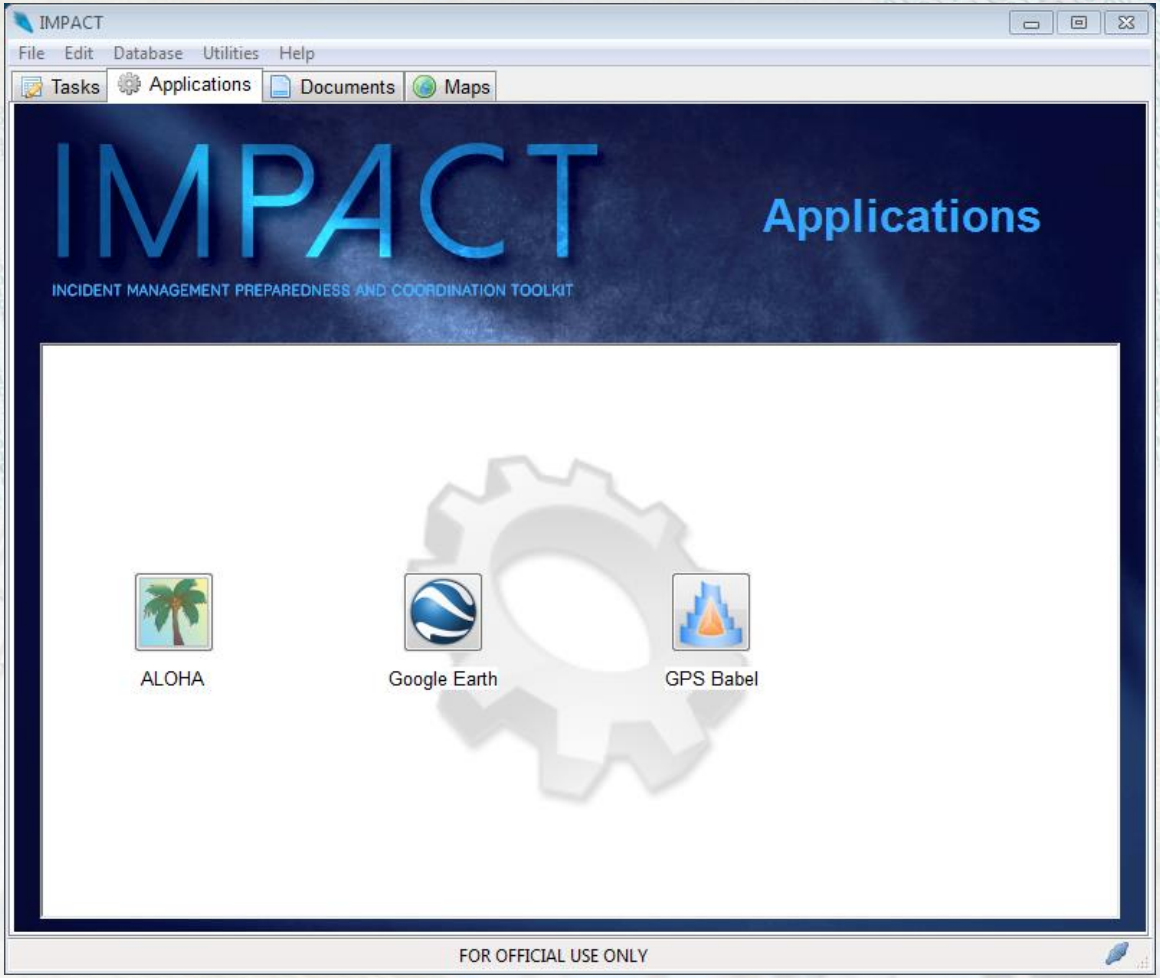

Documents Panel

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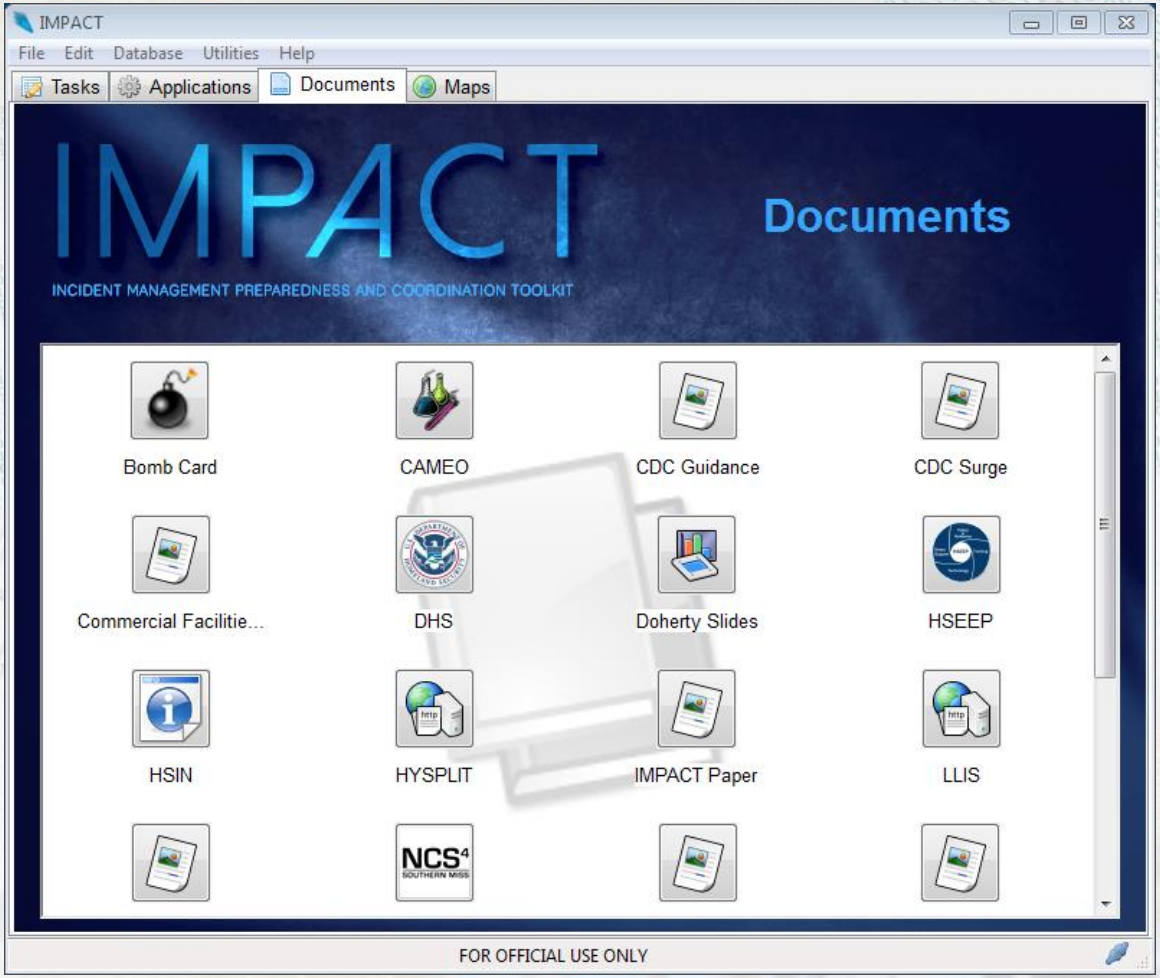

Maps Panel

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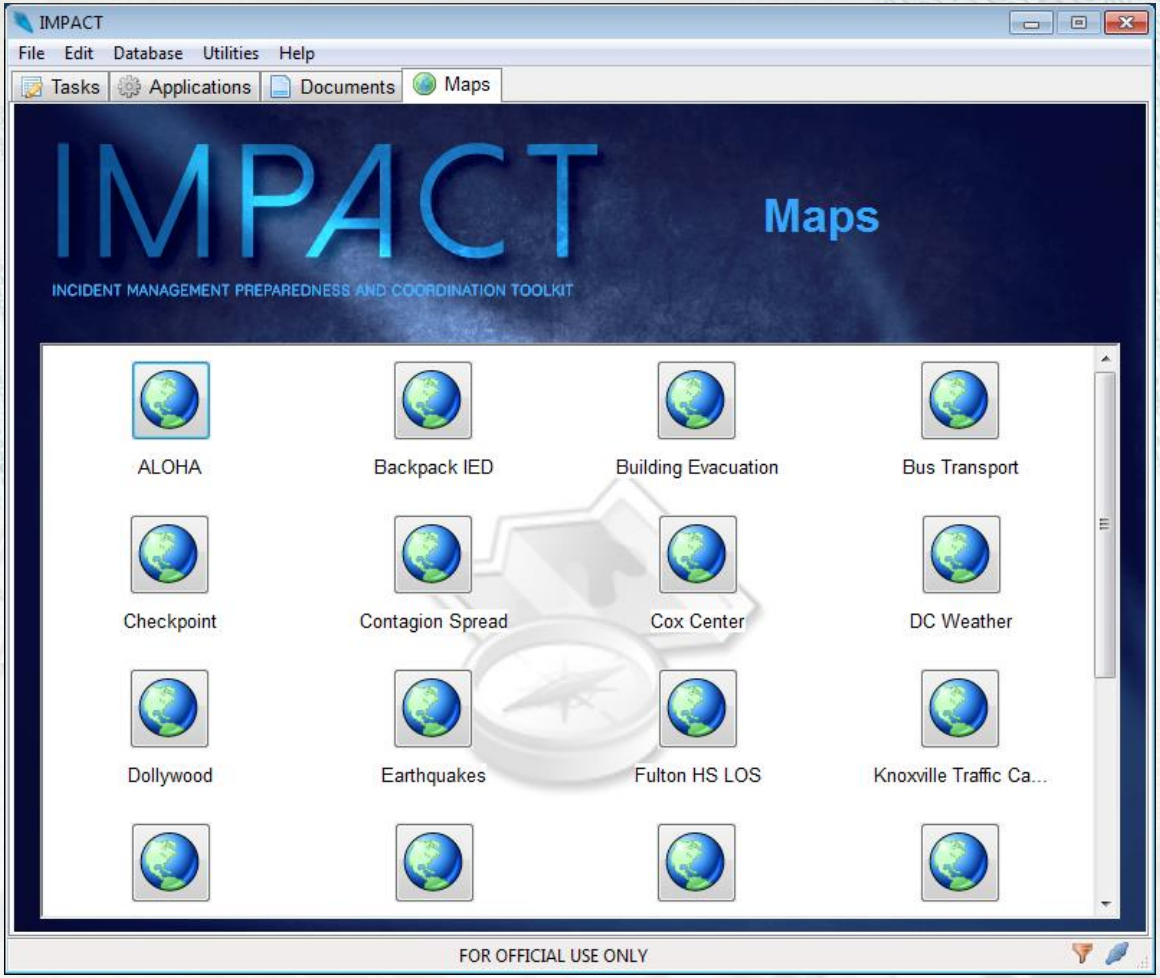
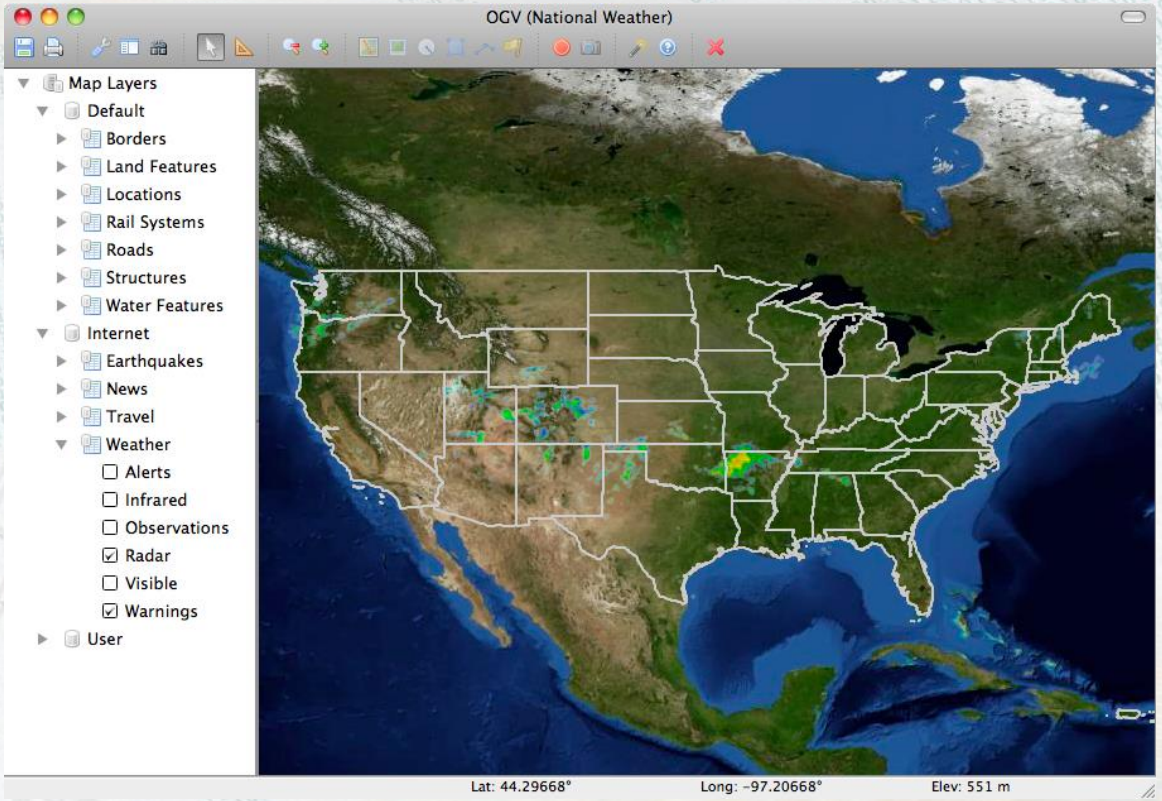


ORNL Geospatial Viewer

Geographic Information Science and Technology



Button bar

Database layers pane can be shown or hidden

Mouse controls pan (drag) and zoom (wheel)

Cursor lat/long/elev

Situational Awareness

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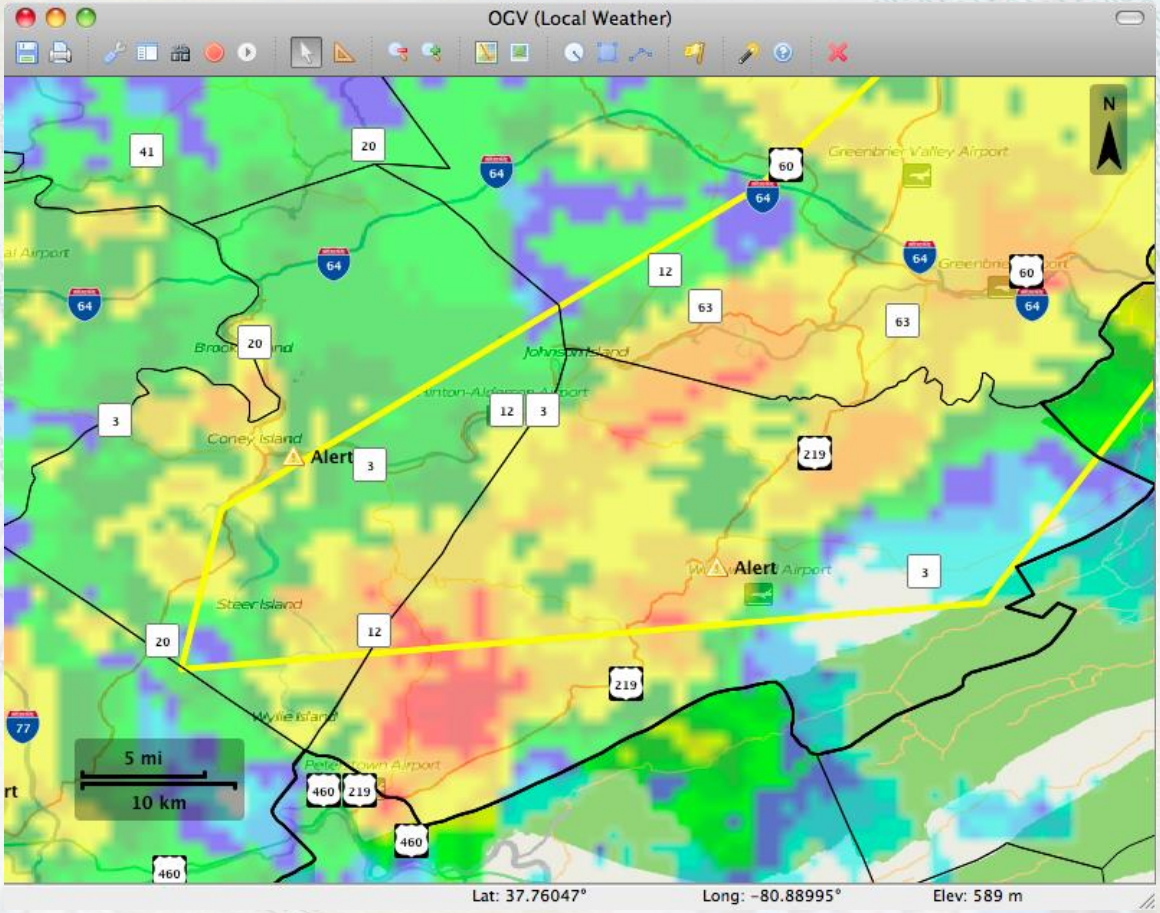

Weather warning polygons

Real-time alerts

Blast Damage

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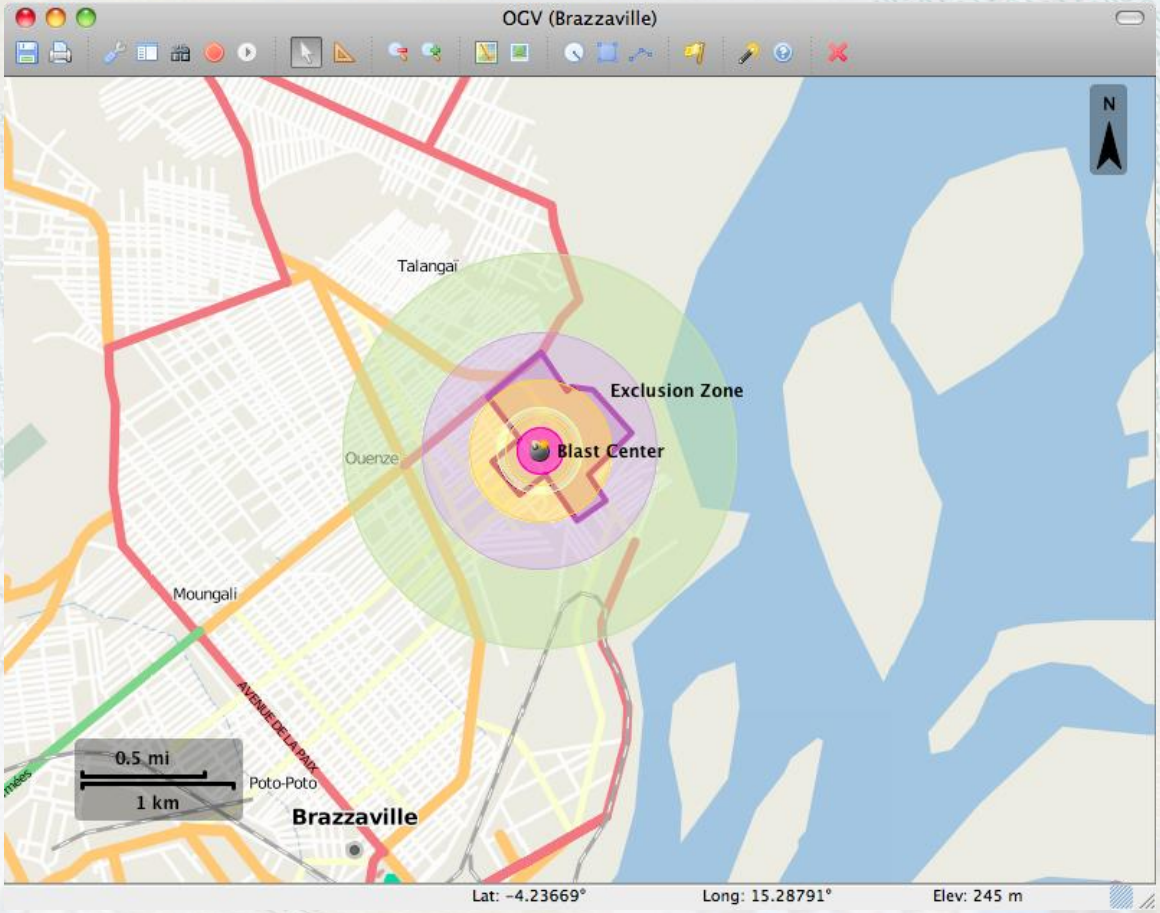

Tornado Track

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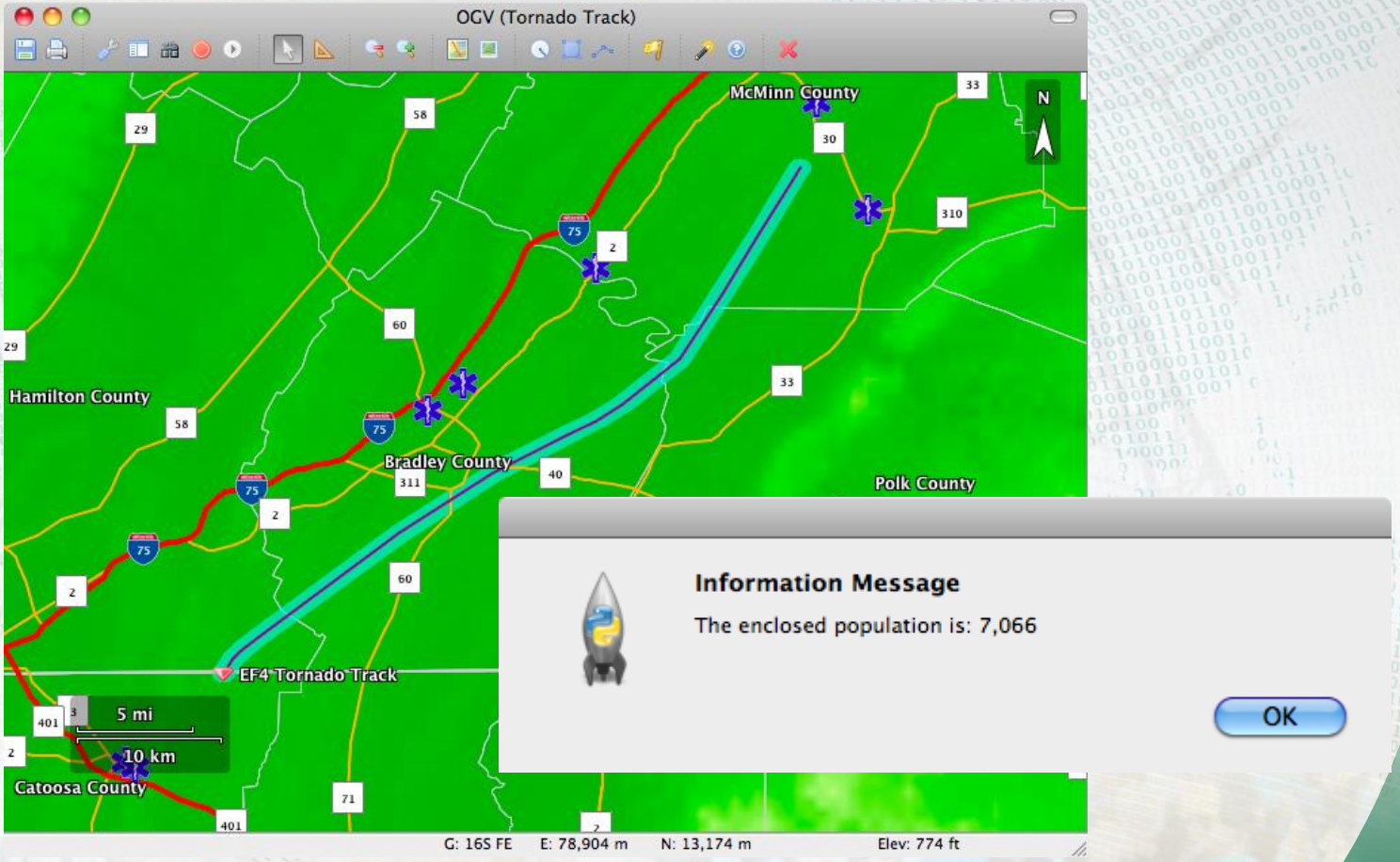

Earthquake Analysis

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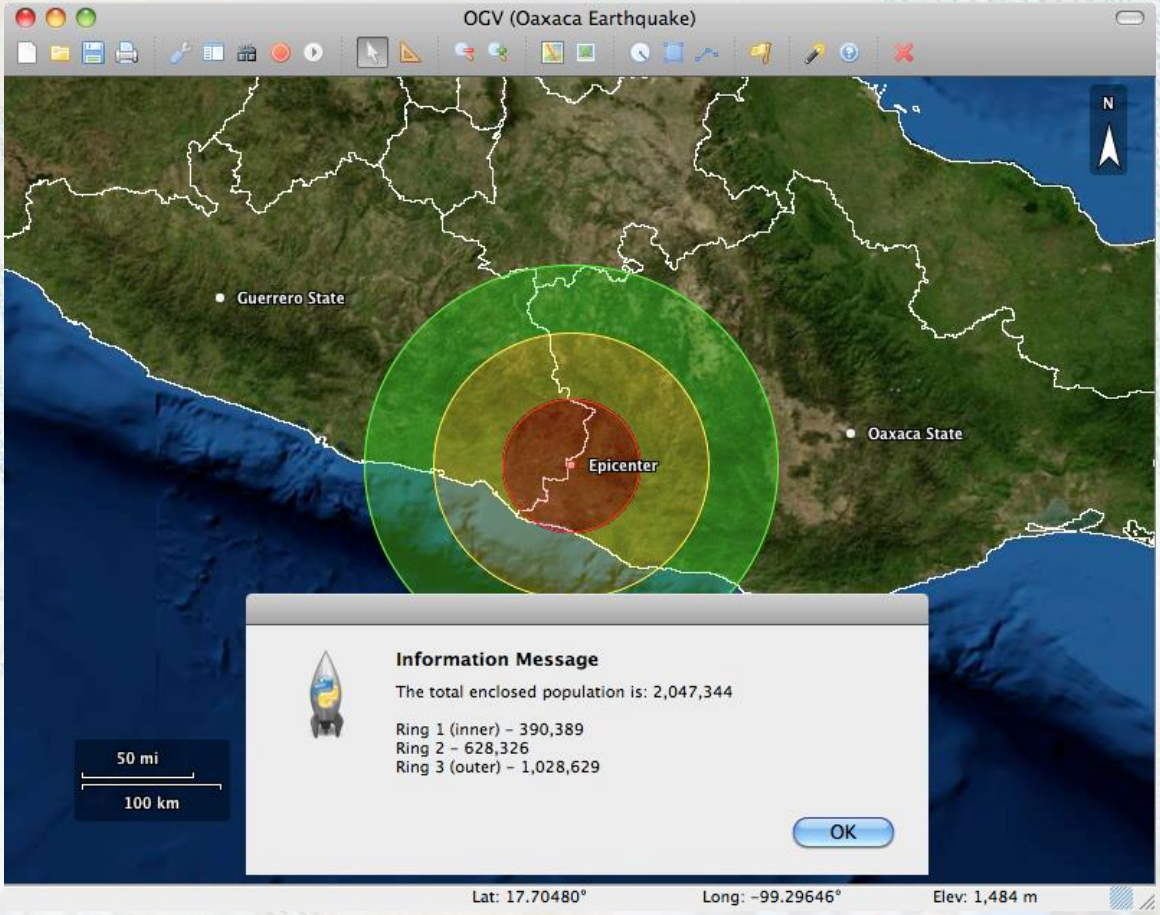

Evacuation Simulation

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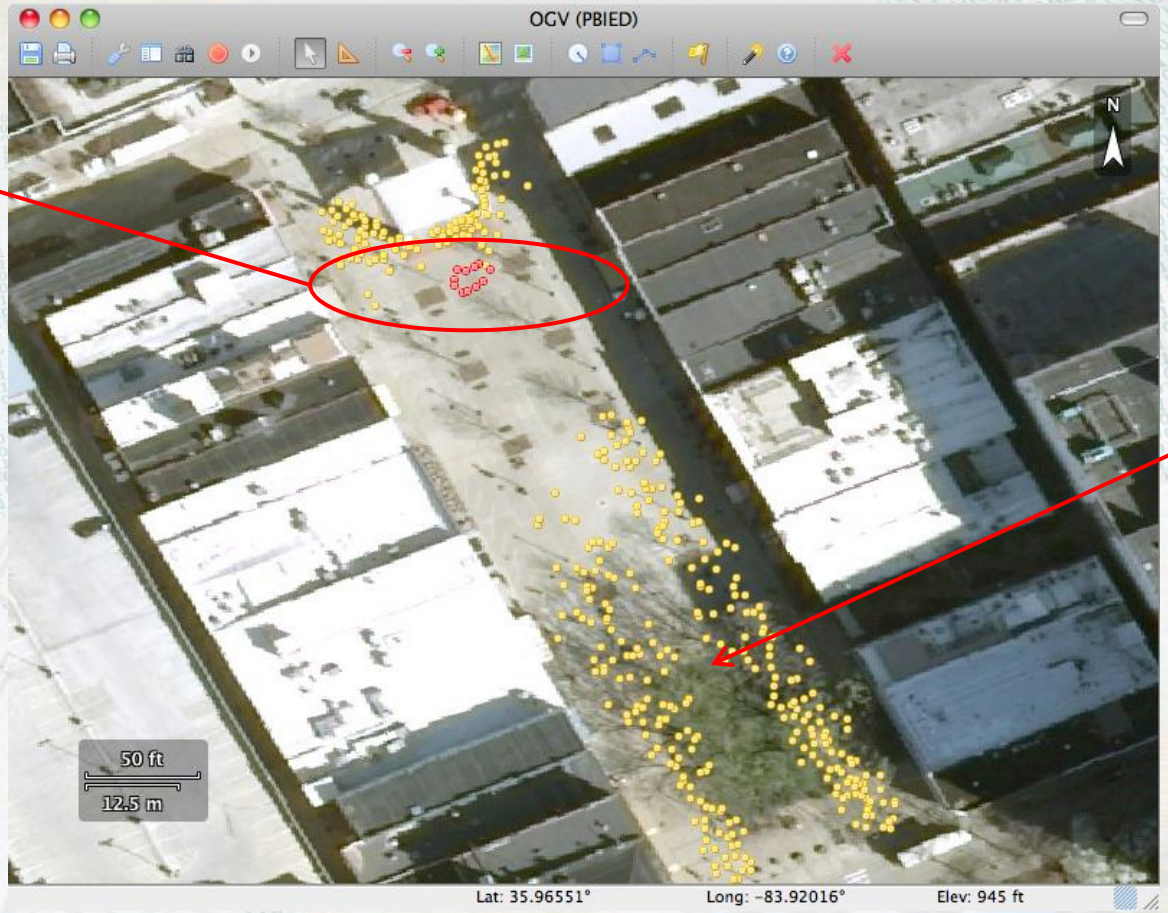

Casualties

Each dot is an agent

Animation showing a suicide bomber incident

Daily Use Suggestions

- Weather monitoring
- Traffic monitoring
- Asset/personnel tracking
- Hazard monitoring (earthquakes, wildfires, accidents, etc.)
- Power outages
- Webcam viewing
- Social media monitoring (Twitter)

GIS for Response

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- Situational awareness and population
- Collecting damage information
- Tracking assets/personnel (geofence)
- Publish/Subscribe for common operating picture (FTP, Dropbox)
- Push/pull data to/from EOC (spreadsheets, shapefiles, KML)
- After-action reports

Distribution

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- **Availability**
  - Now (free)
- **System requirements**
  - Windows XP, Vista, 7, 8
  - MacOS 10.6+
  - Linux
- **Eligibility**
  - Federal, state, or local government and partners

Contact Info

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