

Esri National Security Summit

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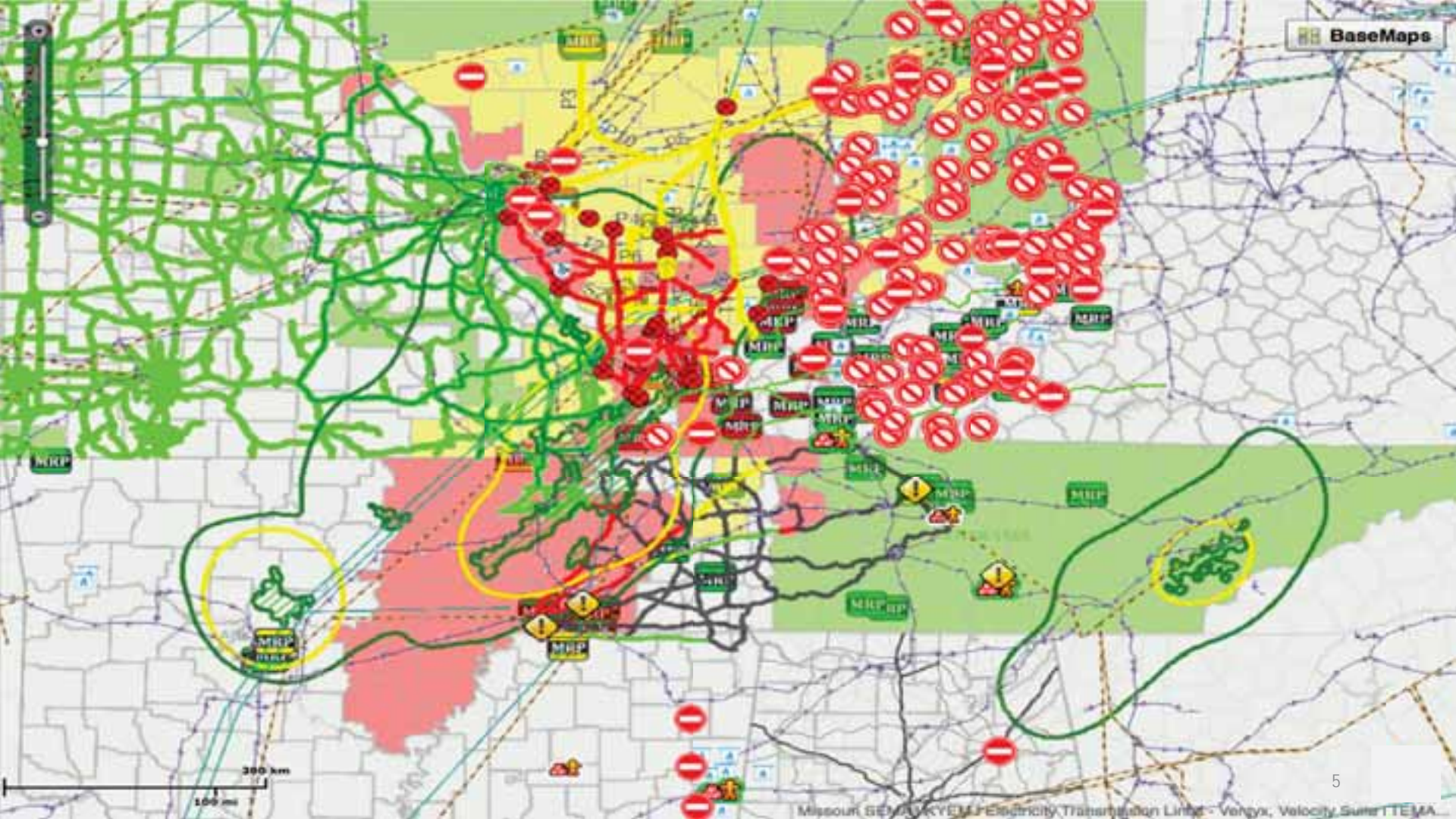


# Sometimes You Eat the Bear, and Sometimes the Bear Eats You: Turning Data into Action

*Dr. Robert Griffin, Deputy Under Secretary (Acting),  
Science and Technology Directorate, U.S. Department of  
Homeland Security*

In a life or death situation...  
*would you turn to GIS?*







**RUN TO  
THE LEFT!**

In order to survive the bear, GIS must inform at the speed of thought.

*The Three "I"s of GIS*

To be operational GIS must be:

*Intuitive*

*Instinctive*

*Interoperable*

*The Three "I"s of GIS*





**TRAIL**  
*Run Like Hell!*

**Location:**  
 To your left



**BEAR HUNTERS R'US**

**Location:**  
 111 Cave Lane  
 Olympic State Park

*Three "I"s of GIS:*  
*Intuitive*  
*Instinctive*  
*Interoperable*

**noise**

**BUNNY SLOPE**

**Location:**  
 Ski Heaven Mountain  
 Olympic State Park



**GRIZZLY ADAMS  
 PEANUT BUTTER &  
 RIFLE SHOP**

**Location:**  
 24 Hibernation Court  
 Olympic State Park

# Understanding the Threat

## Real world threat – New Madrid Seismic Zone

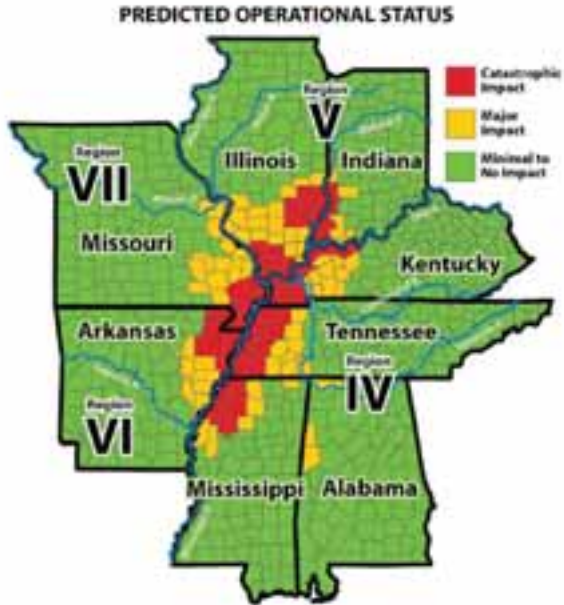


Figure 1: Comparison of the 1895 Charleston, Missouri, earthquake in the New Madrid Seismic Zone with the 1994 Northridge, California, earthquake. The magnitude of the 1895 earthquake was estimated to be between a M6.0-M6.8, based on damage and felt reports. Red indicates area of structural damage, yellow indicates area where shaking was felt.

# Operational Metrics

- Emergency Management professionals identified **18 essential elements of information (EEI)** that were deemed critical for response and recovery.
- In the four day exercise, **13,104 EEI status reports** from **450 of 666 counties in 7 states** were reported live.
- **Over 2,000 GIS data layers** shared using the Virtual USA data sharing models and publication guidance, leveraging ArcGIS Online as a backbone for information sharing.
- EEI content from ArcGIS Online was downloaded **~18,000 times in the month of June.**
- **143 Mission Ready Packages** were deployed and tracked.

# 18 Essential Elements of Information

1. Electricity Grid Status
2. Natural Gas Grid Status
3. Public Water Grid Status
4. Road Status (including bridges)
5. Rail Network Status (including bridges)
6. Navigable Waterways Status
7. Air Transportation Infrastructure Status
8. Area Command Location Status
9. Staging Areas Status
10. Points of Distribution Status
11. Joint Reception, Staging, Onward Movement and Integration (JRSOI) Sites Status
12. Evacuation Orders Status
13. Injuries and Fatalities Status
14. Shelters Status
15. Private Sector Infrastructure Status
16. U.S. Geological Survey Data Status (e.g. Prompt Assessment of Global Earthquake for Response (PAGER))
17. Communications Status (Public Safety and General Public)
18. Hospital Status

# 18 EEIs published by 7 states

Figure 1: County Level Reporting from 7 States on Day 4



Figure 2: Road Status



# Cross-Sector Engagement

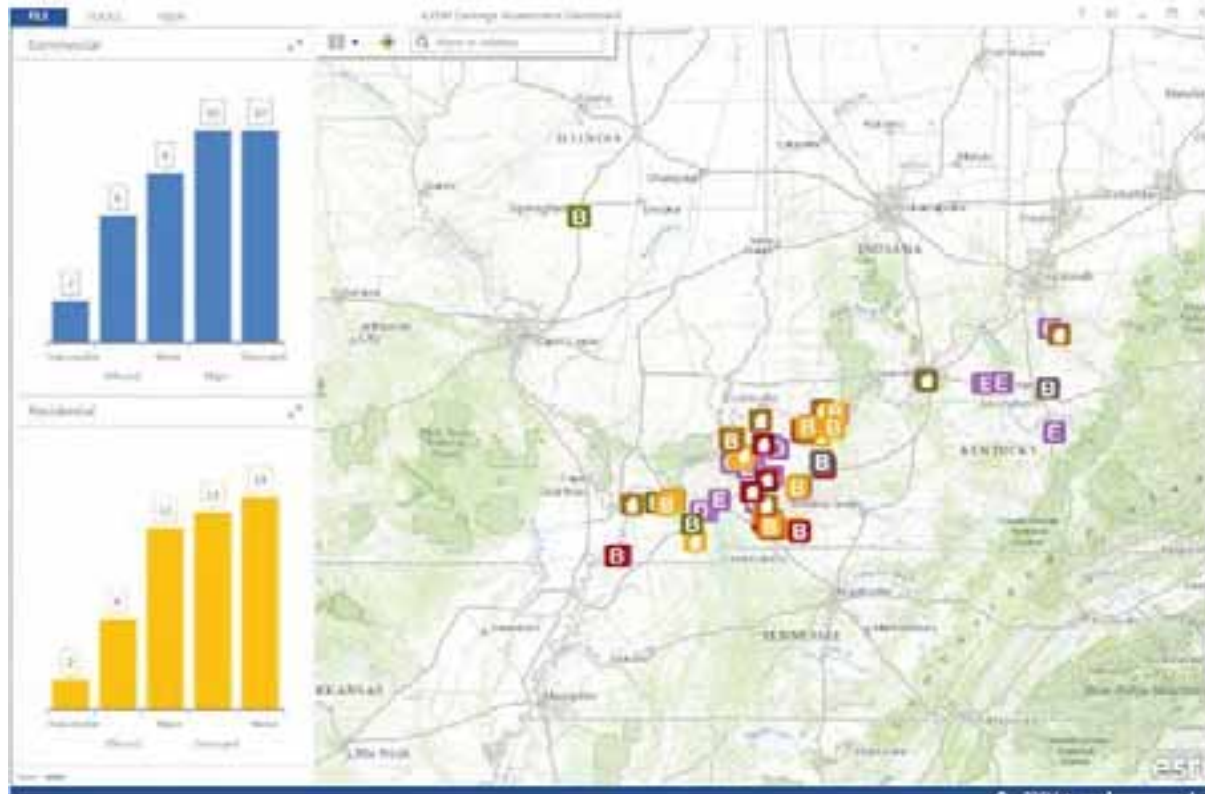
Figure 1: Resource Movements from National Guard, Private Sector, and State EMAC



Figure 2: Private Sector Situational Awareness through the vBEOC

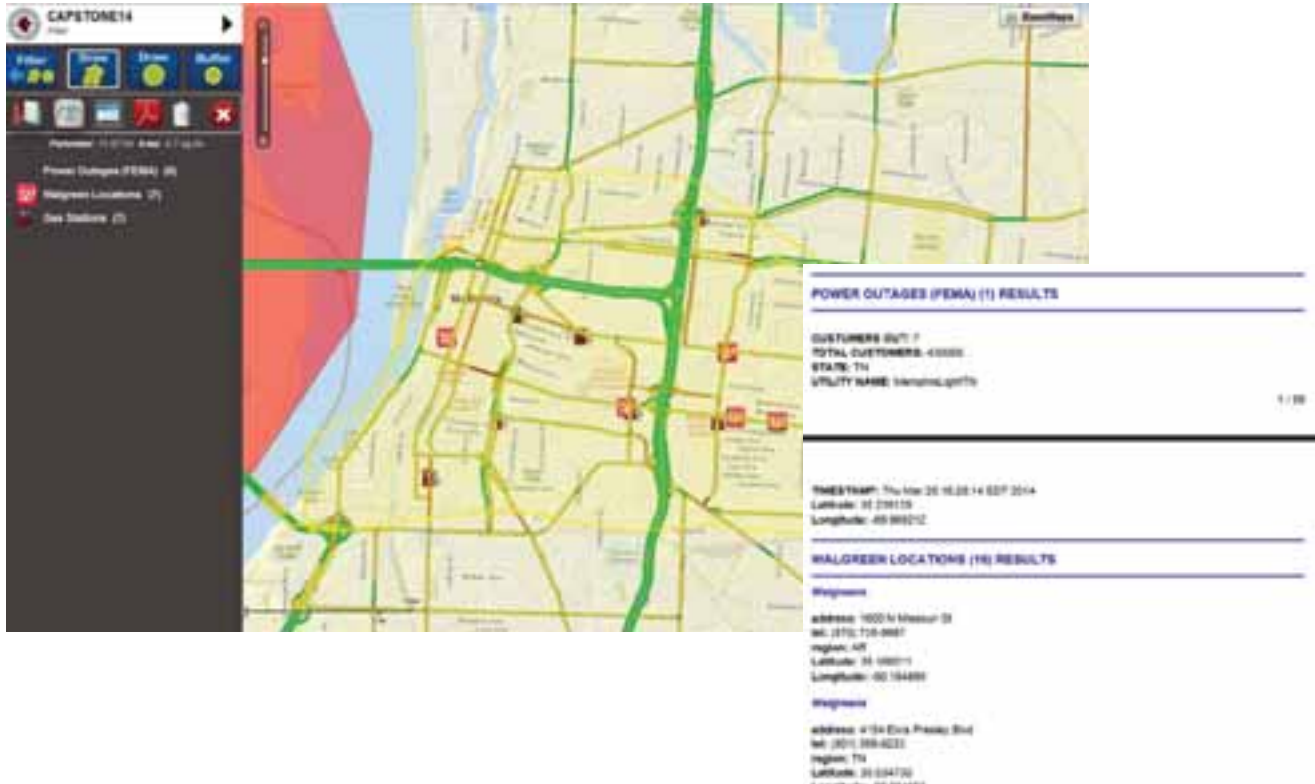


# Mobile Damage Assessments



20 counties in Kentucky created 120 damage assessments valued at ~\$49M during the exercise.

# Filtering Signal From the Noise





# Better Decision Making

One example among hundreds...

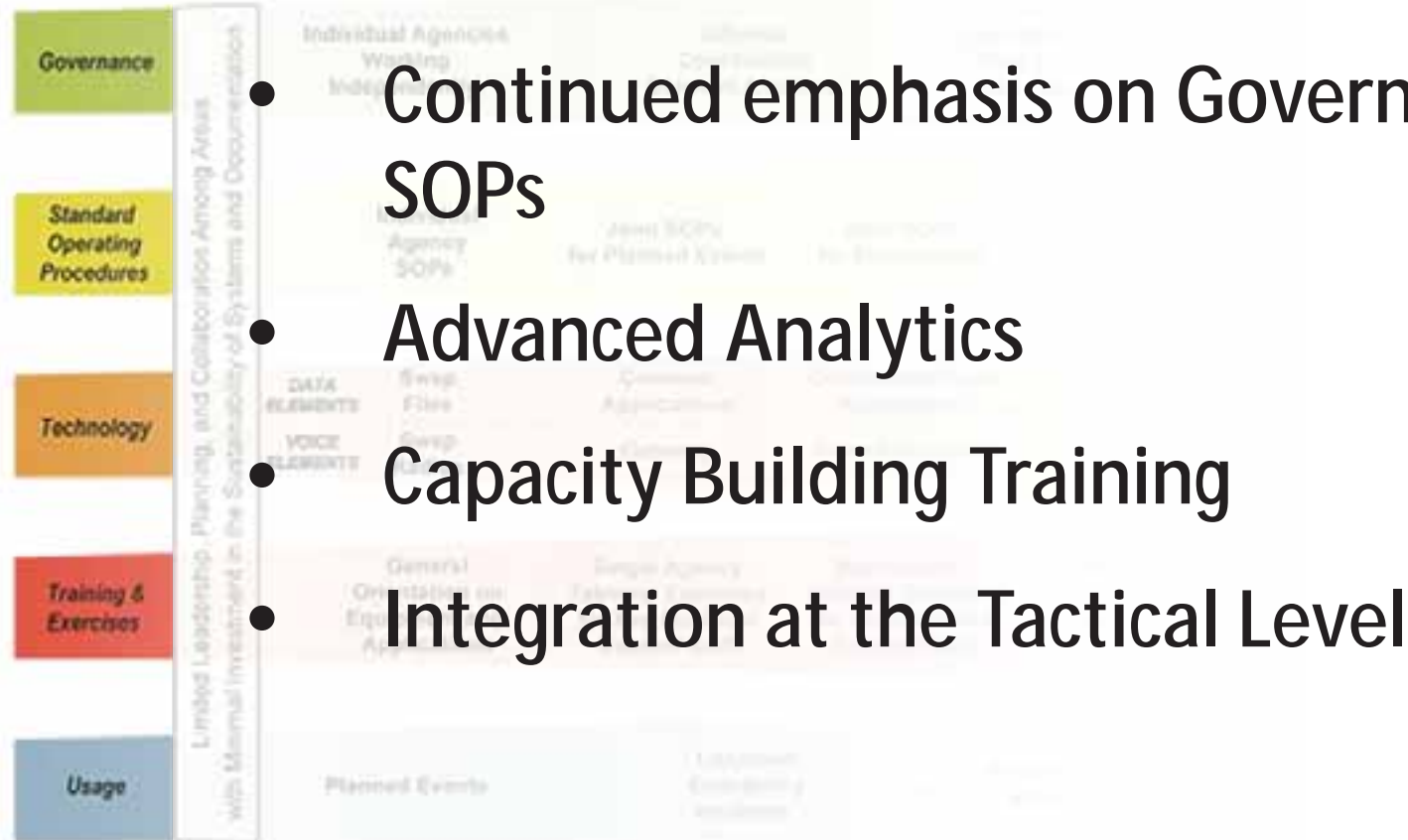
- States shared road status by county with the private sector
- States shared real-time status of emergency service routes
- Private utilities reprioritized service restoration to communities



# How you can do it...



# How we plan to tackle it...



CURRENT

TRANSITION  
Indefinite Time Frame

**The Challenge**

DESIRED EVOLUTION  
Long Term



**First Responder of the Future**

Advanced Integrated Voice and Data Sensors and Information Technologies

So the next time you are in  
a life or death situation...

*That bear will be all yours...*

