

Mid-Atlantic Technology,
Research & Innovation Center

MATRIC

Life-Changing Innovation

**WVCOP
July 10, 2011**



Chemical, Energy and Environmental
Technologies



Health and Life Sciences



Advanced Systems
Technologies

Vic Baker

Vic.Baker@matricresearch.com

800-611-2296 x909

Topics

- About MATRIC
- Project Sponsors
- Stakeholders
- Advanced Role Based Security
- Situational awareness
- Chips-Sweaters
- LNO SITREP/SigActs
- Advanced Routing
- UICDS
- Modeling & Simulation



MATRIC

- **MATRIC is an independent, nonprofit, 501(c)(3) research corporation headquartered in WV.**
- **Specializing in Advanced Systems Technologies, Chemical and Environmental Technologies, and Health and Life Sciences research.**



Project Sponsors

- **Army Armament Research, Development and Engineering Center (ARDEC)**
 - The Homeland & Battlespace Transformation Systems Directorate
 - Recognized center where Warfighter technologies are implemented into first responder tools
- **System of Systems Security (SOSSEC) Consortium**
 - Homeland Security focused
 - 30+ members



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Stakeholders

- **WVNG GIS Working Group**

- **WVNG**
- **DOT**
- **DHSEM**

- **Additional Stakeholders**

- **WV Intelligence Fusion Center**
- **WV State Police**

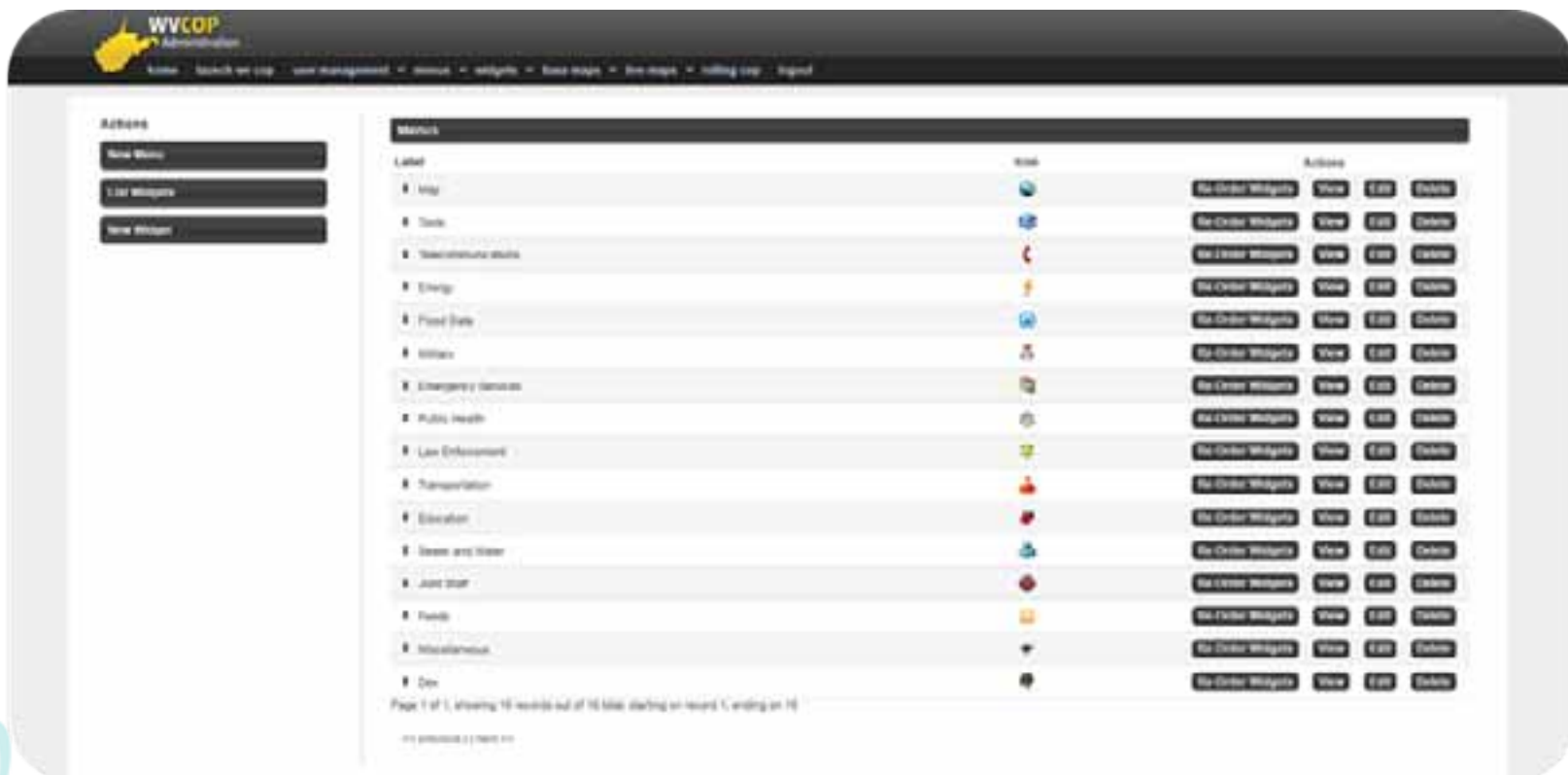
- **WVCOP is in its 4th operational release**



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Advanced Role Based Security

- Create users and define their role(s)
- Associate specific widgets to roles



The screenshot displays the WVCOP Administration interface. On the left, there is a sidebar with the heading "Actions" and three buttons: "New Widget", "List Widgets", and "View Widgets". The main content area is titled "Widgets" and contains a table with the following columns: Label, Icon, and Actions. The table lists various widgets such as "Map", "Data", "Weather/Forecast", "Energy", "Food Data", "Utilities", "Emergency Services", "Public Health", "Law Enforcement", "Transportation", "Education", "Green and Water", "Joint Staff", "Parks", "Miscellaneous", and "Dev". Each row in the table includes a "Label" column with a dropdown arrow, an "Icon" column with a small icon, and an "Actions" column with buttons for "No Order Widgets", "View", "Edit", and "Delete".

Label	Icon	Actions
Map		No Order Widgets View Edit Delete
Data		No Order Widgets View Edit Delete
Weather/Forecast		No Order Widgets View Edit Delete
Energy		No Order Widgets View Edit Delete
Food Data		No Order Widgets View Edit Delete
Utilities		No Order Widgets View Edit Delete
Emergency Services		No Order Widgets View Edit Delete
Public Health		No Order Widgets View Edit Delete
Law Enforcement		No Order Widgets View Edit Delete
Transportation		No Order Widgets View Edit Delete
Education		No Order Widgets View Edit Delete
Green and Water		No Order Widgets View Edit Delete
Joint Staff		No Order Widgets View Edit Delete
Parks		No Order Widgets View Edit Delete
Miscellaneous		No Order Widgets View Edit Delete
Dev		No Order Widgets View Edit Delete

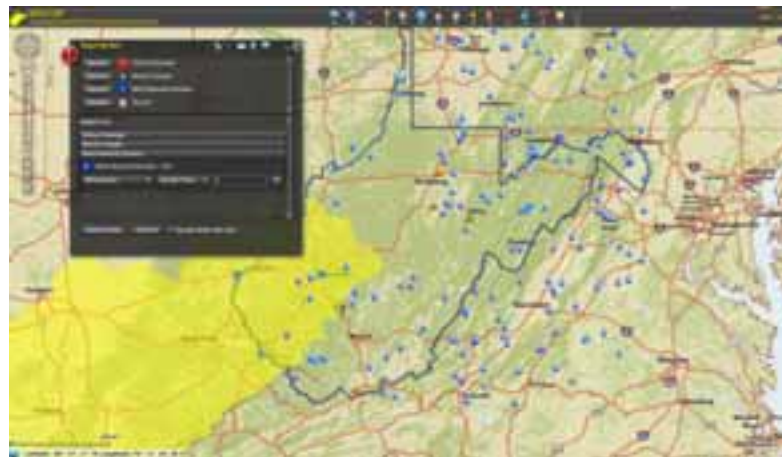
Page 1 of 1, showing 10 records out of 10 items starting on record 1, ending on 10

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Situational Awareness

Automated Alerts

- User defined alert criteria for live feeds
 - Schools
 - Stream Gauges
 - Wind Speed & Direction
 - SigActs

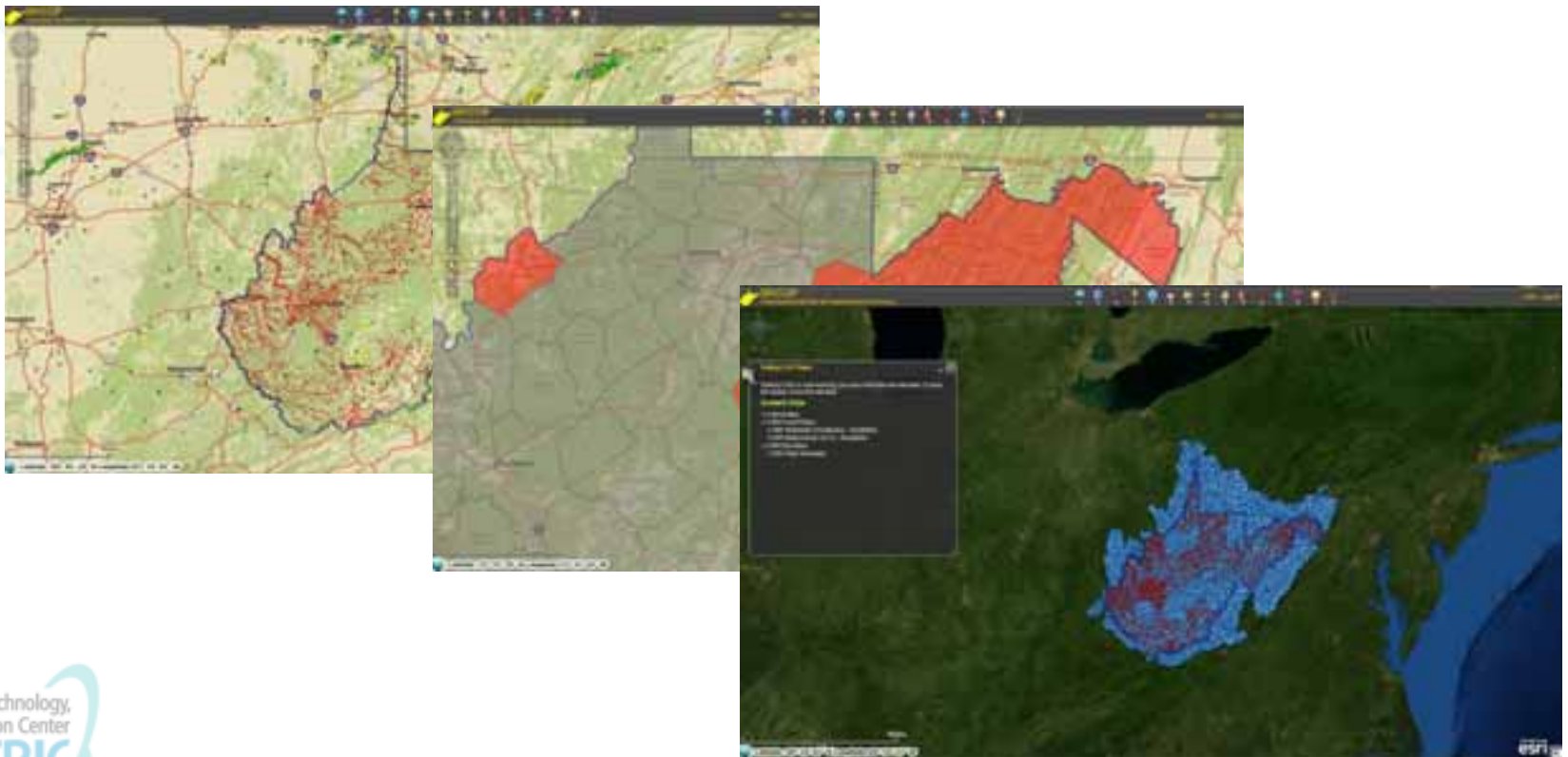


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Situational Awareness (cont.)

- **Rolling COP**

- **Automatically cycle through user defined layers of interest**



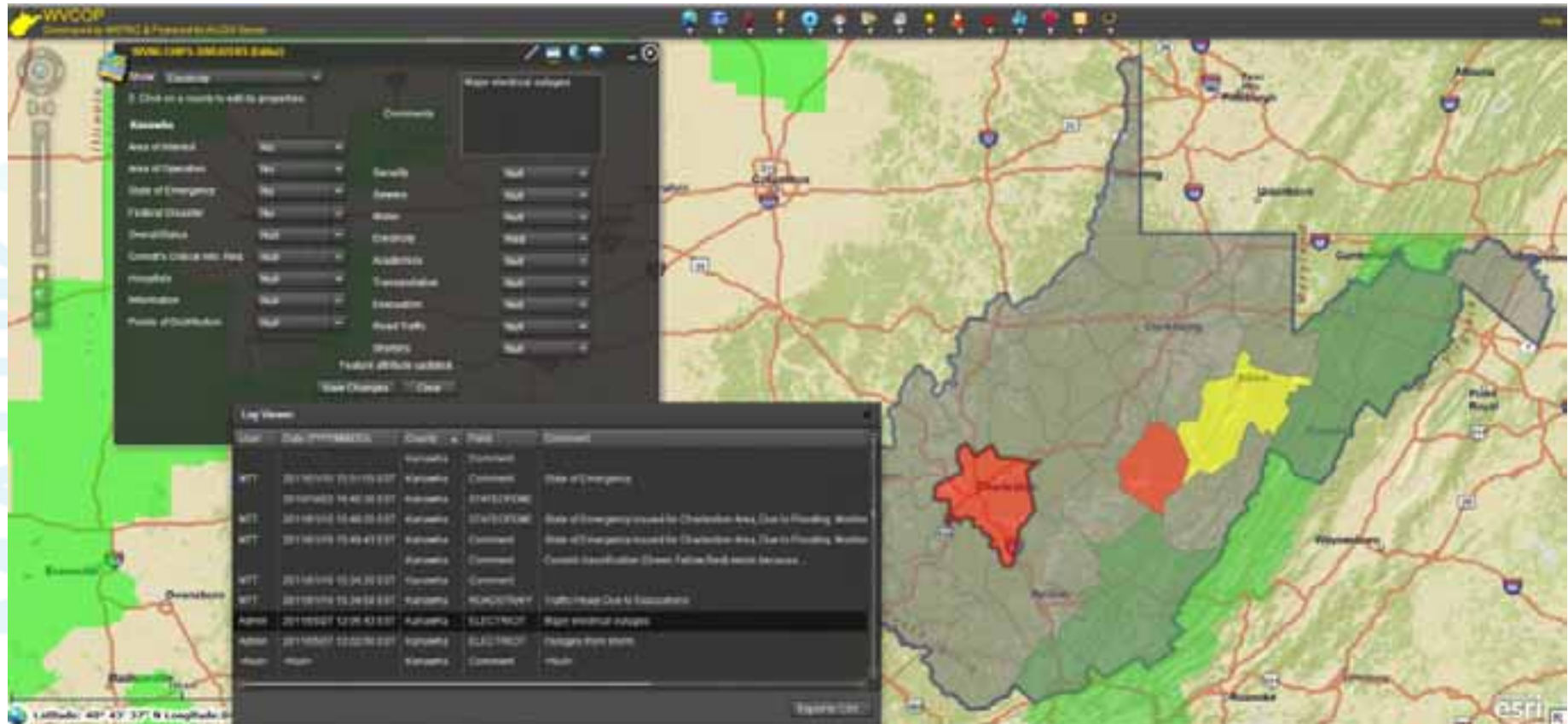
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CHIPS-SWEATERS

- Commander's Critical Information Requirements
- Hospitals
- Information
- Points of Distribution
- Security
- Sewers
- Water
- Electricity
- Academics
- Transportation
- Evacuation
- Roads
- Shelters

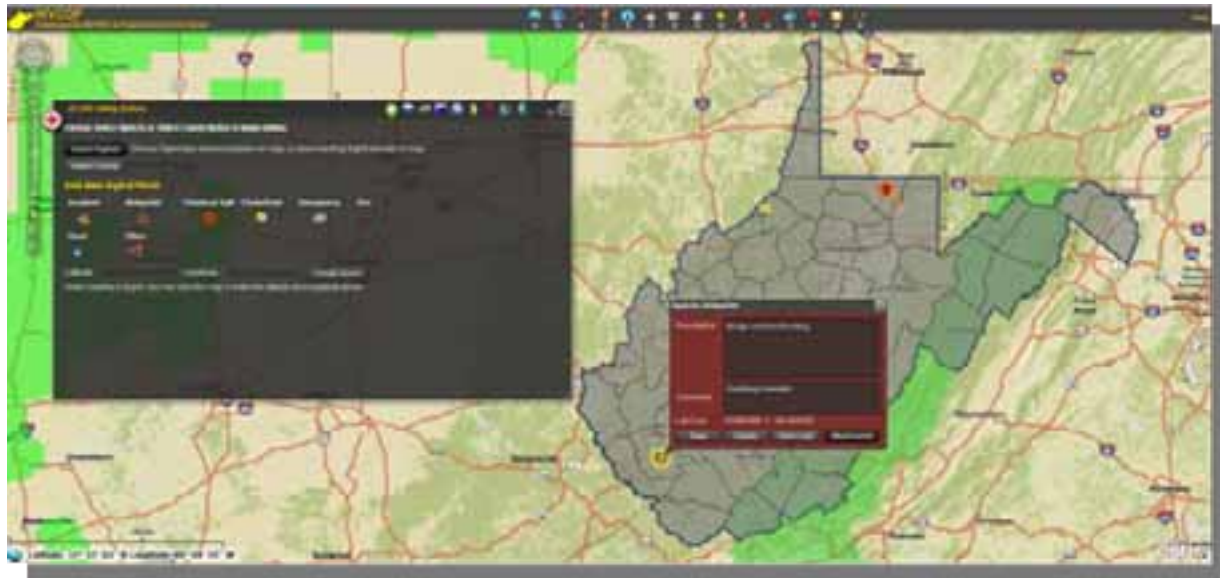


CHIPS-SWEATERS



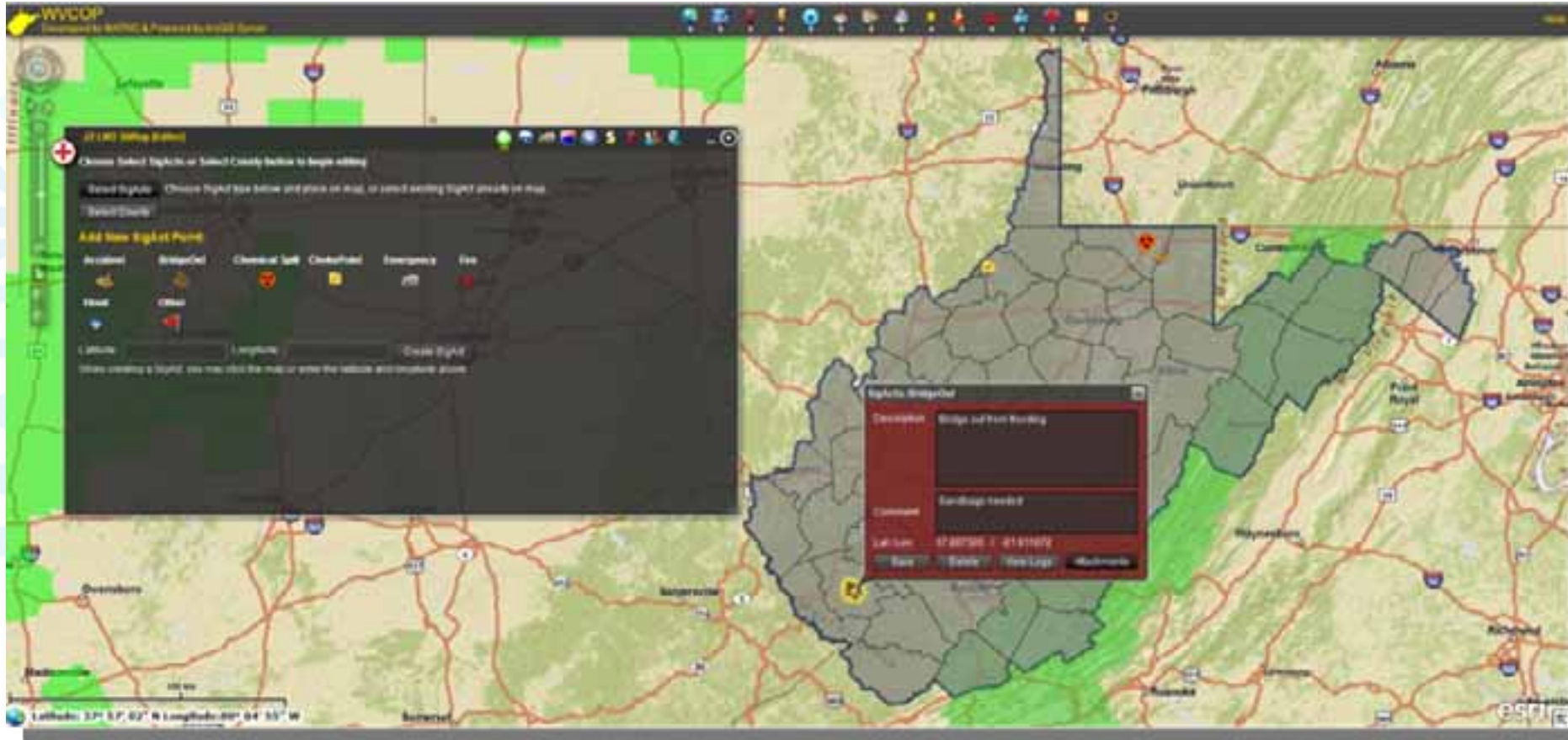
LNO SITREP / SigActs

- Real-time Updates
- Persistent Changelog
- File Attachments



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LNO SITREP / SigActs



Advanced Routing

● Bridge Capacity

- Specify vehicle height and weight

● Precipitation

- Compute time delays based on current weather

● Convoy speed

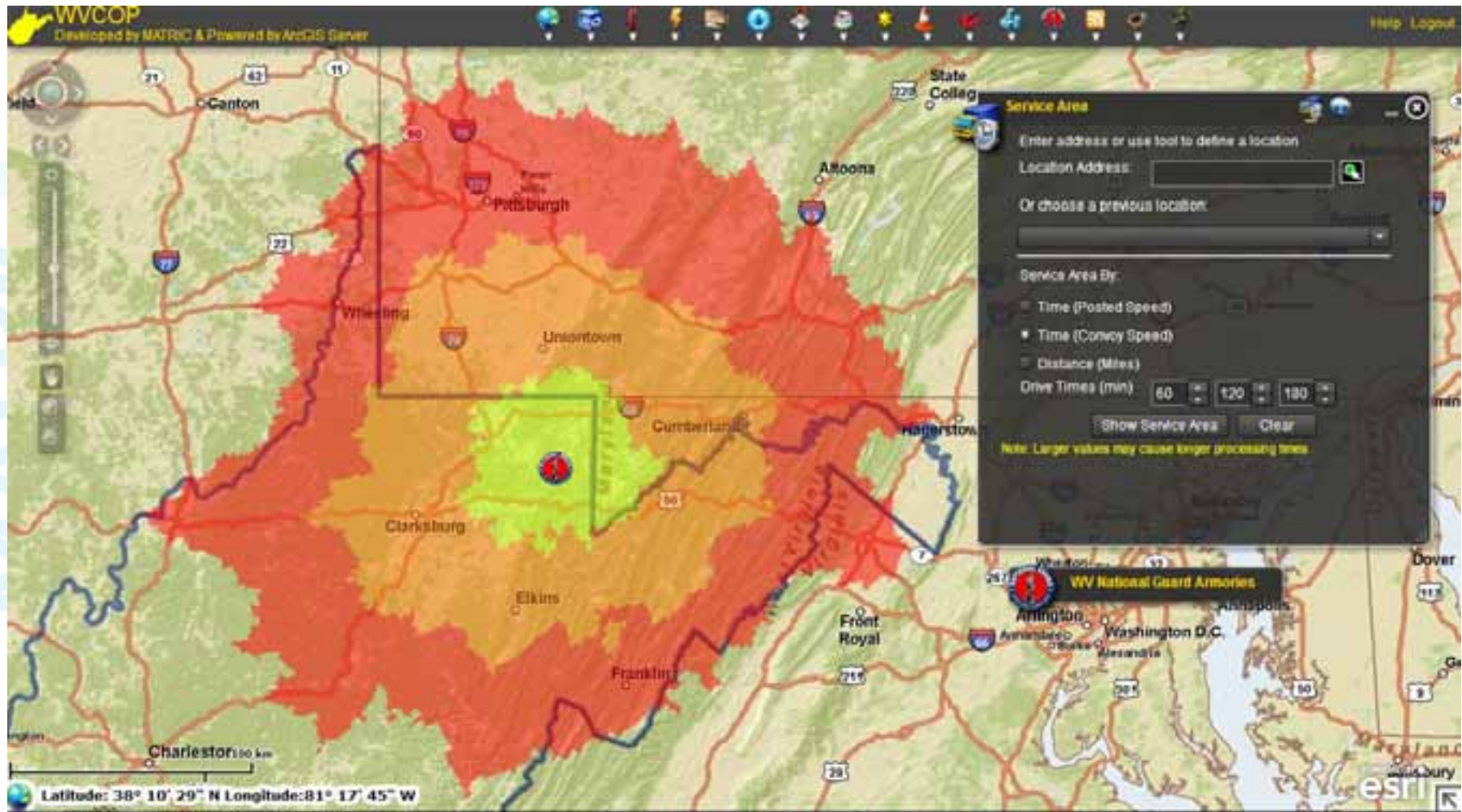
- Restricts max speed to 45 mph

● Linear buffering

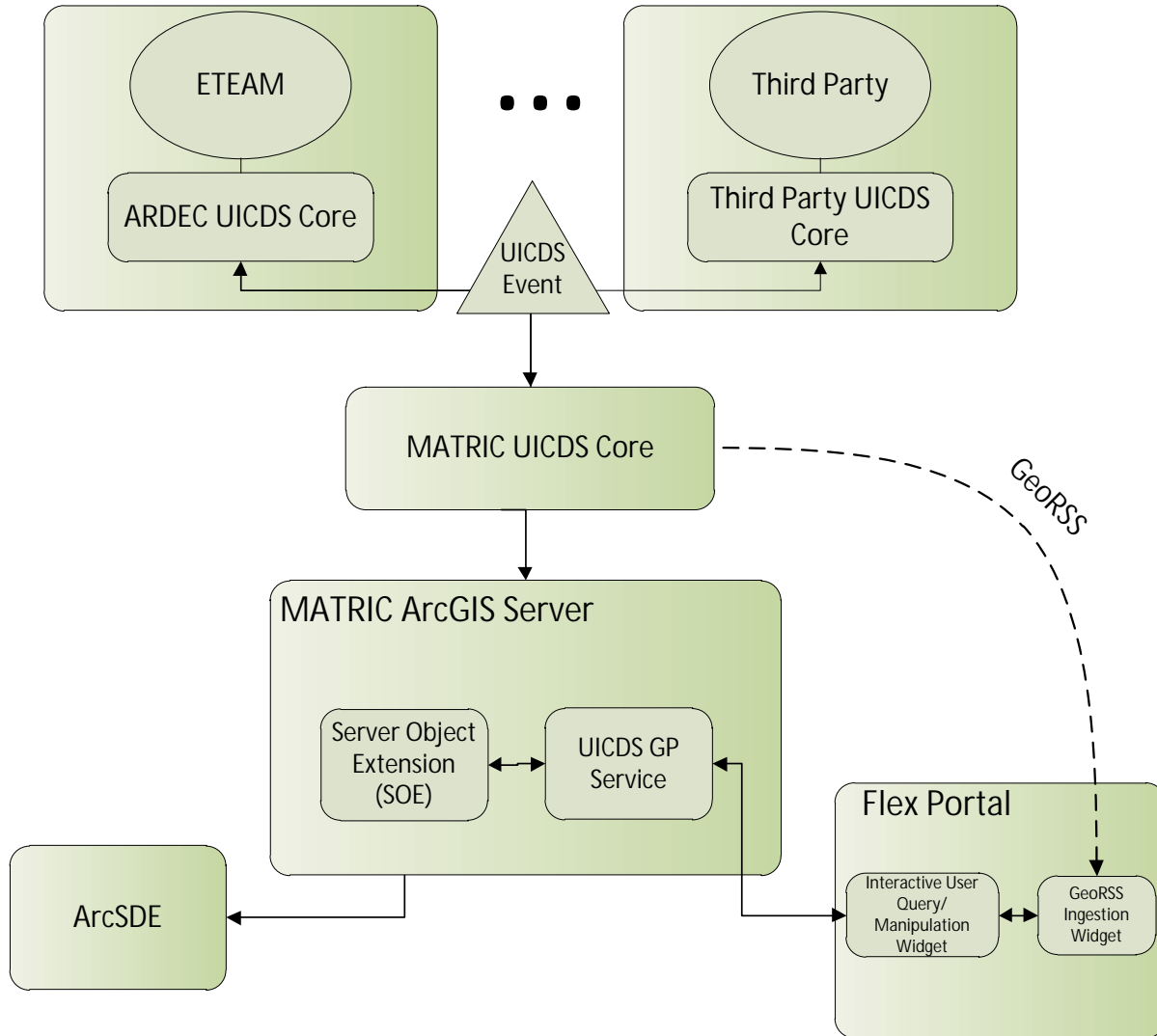
- “RBE” along generated routes



Convoy Speed Service Area



UICDS



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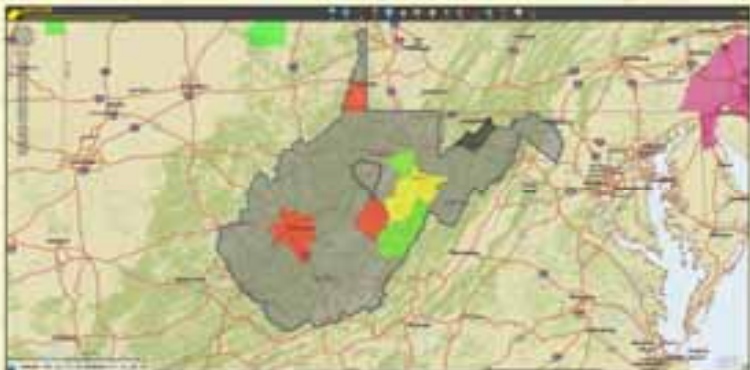
Modeling & Simulation

- Depicts the impacts of a catastrophic evacuation upon critical infrastructure and resources
- Gives emergency planners the “power to imagine” to design and run dynamic “what-if” simulations
- Four initial resources (fuel, water, shelter, medical)
- Extensible for other regions, resources and parameters
- Time Aware
- Browser based



CHIPS-SWEATERS

Display most recent county status reports updated by LNOs



Live Feeds

Overlay multiple data feeds, i.e. NOAA Weather Radar



LNO SigActs

- Real Time Updates
- Provide SitReps
- Persistent Changelog
- File Attachments



Situational Tools

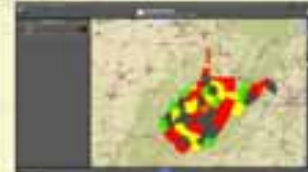
- Role Based Authentication
- Automated Alerts
- School Closing/Delays
- Rolling COP
- Directions
- Demographics
- Shared Drawing
- Spatial Awareness

Data Feeds

- NOAA Weather Radar
- Wind Speed & Direction
- USGS Stream Gauges
- USGS Earthquake Data
- Communication Coverage
- Twitter
- Flickr

Mobile

- View and report data from the field using Windows Mobile, iPhone, iPad devices



Contact Information

- **Vic Baker**
 - Vic.Baker@matricresearch.com
- **WVCOP**
 - wvcop@matricresearch.com
- **Modeling & Simulation**
 - www.massevacsim.com
 - modsim@matricresearch.com

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