

CAPSTONE 14 PRECAP



**Welcome
to
PRECAP**



**CUSEC PRECAP
Workshop
21 – 25 October, 2013
Nashville, Tennessee**

**Hosted by
Tennessee Emergency Management Agency
(TEMA)**



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INTRODUCTION

On behalf of the Central United States Earthquake Consortium (CUSEC), hosted by the Tennessee Emergency Management Agency, the eight CUSEC states Emergency Management Agencies of Alabama, Arkansas, Illinois, Indiana, Kentucky, Mississippi, Missouri, and Tennessee participated in a week long workshop known as PRECAP.

The focus was on the transportation information management challenges needed to support a decision making process. This important discussion placed emphasis on a series of outcome based breakout sessions. The discussion included the processes and procedures to define transportation Essential Elements of Information (EElS), the needed GIS data and the information needed in order to build a regional Common Operational Picture (COP). The specific transportation modes for PRECAP consisted of highways, rail, waterway, and air. An additional group addressed the important transportation need for fuel. The following sections contain summaries from each breakout group.



Highways Overview

EEI DEVELOPMENT

The primary EEI for highways was the status of Emergency Service Routes (ESRs). All states concur that they have ESRs. A Roadway Information System was in place for each state. Each state reported that the system was updated within minutes after an incident on highways occurred.

The secondary EEI for highways was a common criteria or “legend” would be a vital piece of information needed to respond to the effects of a catastrophic incident on Emergency Service Routes. Criteria was developed using a color coded system (red=closed, yellow=restricted, with a descriptive dropdown box for comment, green=open). All states concurred on the criteria.

GIS/DATA

All states have geocoding capability for their ESRs. All states are also willing to supply GIS information on their ESRs to be uploaded into an interoperable and connected map. This map could be connected via each state’s Roadway Information System. The information from each state’s Roadway Information System could then be loaded into ArcGIS as well to produce an integrated multi-state map. States will need to notify of any changes in their website URLs to avoid interruptions in data feeds.

COP

Once GIS information was uploaded and an integrated multi-state map developed, continuing requirements for a Common Operational Picture would include assessments of ESRs after the initial earthquake event. ESRs would also need to be reassessed or re-inspected upon the occurrence of each aftershock. ESRs would be closed, or red, immediately post event, and then opened in segments upon inspection or assessment.



DOWN THE ROAD

It was determined that each state defines a highway/bridge inspection differently in terms of criteria and level of inspection required to deem an ESR as passable. Some states required more team certification than others for making particular determinations in order to code ESRs a particular color or safety rating.

Another parking lot issue is the ownership of the ESR status IT information itself. Information on ESR status was generally handled the same way from a logistical standpoint in that IT updated the information. However, the IT department that changes the GIS map information was sometimes located in a different agency than the Department of Transportation (DOT) from state to state. (Example: While most state's highways IT department was located in their DOT, one state reported that the IT department that changes the information in their Roadway Information System was located in their Public Affairs department.)

FOLLOW ON TASKS

One follow on task is to develop a conjoined multi-state map that will not just be used for CAPSTONE, but for everyday incidents as well. Secondly, a determination and list must be made for each state as to who has access to change the route status information map for their individual state.

Rail Overview

EEI DEVELOPMENT

All participants spent a day and a half discussing the major issues facing the private sector rail roads from the large scale Class I to the Short Line companies and what information they have and how they can interact and share it with the CUSEC States. Being that a lot of information for the sector is proprietary, there is a reluctance to make their movements and status "open source". However, the overarching theme was that through a joint effort to build strong relationships



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with the state personnel and the private sector rails in their states, the information flow will start to improve.

Post initial discussion the group decided to break the EEI's into three components: Rail yards, Rail Lines (Main Lines) and Passenger Rail service.

DOWN THE ROAD

Many discussion points or questions that came up during the session were valid and deserved answers, however were not deemed as EEI's so they were placed in the "parking lot" for follow up. Some were answered throughout the day, however a good portion is owed follow up and the information pushed out to participants.

Rivers Overview

EEI DEVELOPMENT

After starting the discussions with three Essential Elements of Information (EEI) and then jumping to eleven, the Rivers Session came to the determination of eight EEIs that they believe should be mapped in the situational awareness platform. The first four are the most critical to be mapped and the last four are less critical.

- Landslide/Ground Failure- Note: this is to show where the impacts are estimated to have occurred based on a USGS model survey after a seismic event. This will allow us to pinpoint the locations of the most critical statuses to track for the seven other EEIs.
- River Mile Status- Note: this was determined to be the most important EEI by the Rivers Session because it will display what river networks are operational and not.
- Port Status



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- Lock Status
- Bridge & Other Crossing Status
- Boat Ramp Status
- Navigation Recovery Boat Status
- Fueling Point Status

GIS/DATA

The datasets determined to create our situational awareness platform come from a variety of available sources. Once the base data is mapped then the IT/GIS breakout session will create a system to track the statuses of those EEIs. Each of the EEIs, besides the first one, will have the status identifier to be mapped by colors: operational (green), partial operational but with caveats (amber), not operational (red), and unknown at this time (white). The Rivers session broke down each EEI by ‘Type of GIS Data’, ‘Source of Base Data’, and ‘Assigned Agency for Status Updates.’

- **Landslide/Ground Failure**
 - Type of GIS Data- Layer Shapefile
 - Source of Base Data- USGS “Soil Amplification Induced by Ground Motion Map”, “Shakemap”, & “Slidemap” (*Produced After a Quake by USGS*)
 - Assigned Agency for Status Updates- USGS
- **River Mile Status**
 - Type of GIS Data- Line Data
 - Source of Base Data- Corps Navigable Inland Waterways Shapefile
 - Assigned Agency for Status Updates- Rivers Industry Executive Task Force & Coast Guard
- **Port Status**
 - Type of GIS Data- Point Data
 - Source of Base Data- Corps &/or Coast Guard Shapefile



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- Assigned Agency for Status Updates- Coast Guard
- **Lock Status**
 - Type of GIS Data- Point Data
 - Source of Base Data- Corps Shapefile
 - Assigned Agency for Status Updates- Corps
- **Bridge & Other Crossing Status**
 - Type of GIS Data- Point Data
 - Source of Base Data- Navigation Charts
 - Assigned Agency for Status Updates- to be determined
- **Boat Ramp Status**
 - Type of GIS Data- Point Data
 - Source of Base Data- Will need to collect from State Conservation & River Patrol Agencies
 - Assigned Agency for Status Updates- State Conservation & River Patrol Agencies
- **Navigation Recovery Boat Status**
 - Type of GIS Data- Point Data
 - Source of Base Data- Will be obtained after an earthquake event, not prior
 - Assigned Agency for Status Updates- to be determined
- **Fueling Point Status**
 - Type of GIS Data- Point Data
 - Source of Base Data- Will need to collect from State Agriculture, Fire Marshall, etc.
 - Assigned Agency for Status Updates- to be determined

DOWN THE ROAD

- The coordination of data collection for the “fueling points” EEI and “boat ramp status” EEI and the determination of who will maintain the statuses. This would require reaching out to all eight states and multiple agencies.



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- The determination of a single, central status update person for the Corps and Coast Guard assigned agencies. Currently the Corps believes their GIS specialist in the Mississippi Valley Division could do this and the Coast Guard will be giving a brief to help find a central point.
- The determination on how to collect “navigation recovery boat” EEI statuses after an earthquake event and who will be doing that.

Air Overview

EEI DEVELOPMENT

The Air Group developed the following EEIs

- **Airport Status**
- **Critical Airport Infrastructure**
 - Material Handling Equipment
 - Fuel, Fixed Base Operations Infrastructure
 - Crash, Fire, Rescue
 - Security, Maintenance
 - Staffing & Hours of Operations
 - Maximum Operations Ground (MOG) & Ramp Capacity
- **NAS - National Airspace System Air Navigation System**
 - Air Traffic Control
 - Airspace Status
 - Temporary Flight Restrictions
 - Flight Tracking
 - Weather - Current & Forecast
 - Notices to Airman NOTAM System
- **Contingency Response Air Support Schedule (CRASS)**
- **Aviation Response Resources Capabilities Based Platform -- Aircraft**
 - Federal
 - State



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- Military
- Commercial
- General Aviation
- **Aviation Support -- Ground Resource Capabilities Military**
 - State
 - Federal
 - Communications

GIS/DATA

Graphical with GIS (selectable) Layers

Airport Authority/County Local Emergency Manager

- AIRPORT STATUS
- CRITICAL AIRPORT INFRASTRUCTURE

Federal Aviation Administration—Leverage Current & future Info Systems/Data

- NAS - National Airspace System Air Navigation System
 - Air Traffic Control
 - Airspace Status
 - Temporary Flight Restrictions
 - Flight Tracking
 - Notices to Airman NOTAM System

National Weather Service/FAA Flight Service Stations

- Weather - Current & Forecast Aviation Weather

Tabular Data Board in WEBEOC

NORTHCOM's 1st Air Force 601st Air & Space Operations Center

- Contingency Response Air Support Schedule (CRASS)



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Graphic GIS Layers & Tabular Data Board in WEBEOC

Multiple Agencies

- Aviation Response Resources Capabilities Based Platform -- Aircraft
 - Federal -- *FEMA*
 - State – *State Emergency Management (SEOC)*
 - Military—*National Guard Joint Operations Center (JOC)*
 - Commercial – *Local FAA Flight Standards District Office, EMAC, GSA*
 - General Aviation – *State Aviation Associations or VOAD Groups*

Multiple Agencies—Recommend RAW II & RAW III be leveraged to collect data

- Aviation Support -- Ground Resource Capabilities Military
 - State
 - Federal
 - Communications

DOWN THE ROAD

During the two days of discussion, it was clear that each of the eight CUSEC State's concept of operations are unique because the infrastructure and population centers vary from state to state. For example, Tennessee expects a significant aviation response involving Federal, State, Private Sector and General Aviation assets will be required following an earthquake, whereas other states such as Indiana are not as dependent on air operations—instead the response focus is heavy on ground transportation with somewhat limited general aviation and rotary wing operations.

The goal of a single generic plan for response (cookie cutter approach) will not properly address aviation response operations required for each of the eight states. Instead, a “coordinated and harmonized planning effort” should be continued with broad representation from all the stake holders to develop a Regional Catastrophic Air Response Plan. This effort should incorporate each of the State's Concepts of Operations, priorities and projected requirements to



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enable effective and timely Federal assistance (given many of the aviation resources will be limited and unable to fulfill all the state's needs)

The Air Group should be brought back together after the GIS system has been developed and receive training on how to utilize the system. As part of the CAPSTONE 2014 exercise, injects designed to specifically test the connectivity of the data displays and coordination should be strongly considered.

Fuel Overview

EEI DEVELOPMENT

Fuel supply is a chain of production and distribution facilities that provides fuel to the end users. Operational status of each link in the chain is considered as essential element of information.

- **Refineries**

Petroleum based fuel is produced by privately owned refineries across the nation. The emergency management community will need to know their operational status for situational awareness of the severity of the supply production problem. Restoration of service to damaged refineries will be done by their owners.

- **Pipelines**

Refineries distribute their product primarily by underground pipelines. These pipelines are privately owned and repair to any damaged pipelines is the responsibility of the owners. Pipeline breaks will cause hazmat situations that will involve public sector response. Pipelines feed fuel terminals that are equipped to load transport vehicles.

- **Fuel Terminals**

Fuel terminals are fixed facilities that combine bulk storage with truck racks for high volume pumps for filling tankers and other fuel trucks such as self-contained



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bob trucks. Tanker owners have business arrangements with terminal owners that determine quantity and frequency of service. Fuel terminals are supplied by pipelines or barge deliveries.

- **Bulk Fuel Storage Sites**

Bulk storage sites are either fixed locations or set up on demand at points of need such as at staging areas, intermodal transfer points, or on specific emergency highway routes. Temporary sites can be tanker farms or other portable

- **Dedicated Emergency Fueling Sites**

These sites are equipped to load various fuels into emergency vehicles. The capacity and frequency of replenishing is dependent on the number of vehicles and the commodity burn rate. Every county in the affected area will need one or more of these sites depending on demand.

Out of service commercial fuel outlets such as truck stops may be secured and dedicated for emergency services vehicles only.

The operational status of normal retail fuel retail outlets in the impacted area will frequently change depending on the amount of panic buying. They will exhaust their “on hand” supply quickly and will replenish depending on their contractual arrangements with the terminals and the terminal supply.

GIS/DATA

Refineries:

Locations: from HSIN data base

Owner: from HSIN data base

Principal Products: from industry sources

Operational Status: from DOE-EIA (Energy Information Agency)



Pipelines:

Locations: from HSIN data base

Owner: from HSIN data base

Principal Products: from industry sources

Operational Status: from DOE-EIA (Energy Information Agency), USDOT

Fuel Terminals:

Locations: from HSIN data base (nationwide coverage)

Owner: from HSIN data base

Principal Products: from industry sources if possible

Operational Status: from industry sources if possible

Bulk Fuel Storage Sites:

Locations: from HSIN data base

Owner: from HSIN data base

Principal Products: from industry sources

Operational Status: from industry sources if possible

Dedicated Emergency Fueling Sites:

Locations: from local and state EMAs post event

Owner: from local and state EMAs

POC: with phone number, radio contact, sat phone etc.

Principal Products: from local and state EMAs

Operational Status: from local and state EMAs



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COP

Fusion interactive map with selectable layers for location and status of refineries, pipelines, fuel terminals, bulk fuel storage and dedicated emergency fueling sites

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State EMAs will have to act quickly in a “no notice” catastrophic event to secure enough gasoline and diesel fuel to sustain emergency responders for the initial 72 hours of the event.

The procurement sections of each EMA should have a “call first list” of fuel suppliers and a list of destinations of pre-determined fixed Bulk Fuel Storage Sites with the shortest delivery time to a Fuel Terminal.

In case of widespread power outages, the procurement section should have secondary and tertiary supply terminal sources identified outside of the impacted areas.

