Aligning and Standardizing Response Map Products to Community Lifelines

July 31, 2019

National Alliance for Public Safety GIS (NAPSG) Foundation

napsgfoundation.org | @napsgfoundation
Today’s Objectives

• Learn about the Community Lifeline construct and how it can be integrated with your agency's GIS-based decision support tools and dashboards.

• Get a live demonstration of emerging best practices in aligning operational dashboards to the Community Lifelines.

• Develop skills in how to develop standardized response map products to the latest National Response Framework.

• Learn about Open Data through HIFLD that supports the Community Lifelines and how it supports essential elements of information (EEIs) for standardized map products, dashboards, and situational awareness tools.

• Gain access to the latest in resources and tools for use in developing and implementing standardized map products, dashboards, and other situational awareness capabilities aligned with the Community Lifelines.
Why are Standardized Response Map Products Important?

• Improved understanding of cross-jurisdictional products and reporting
  “I can quickly understand maps and information products from partner agencies because we are all speaking the same language”

• Improved understanding of impacts and cascading events
  “I can see where Lifelines are unstable and identify infrastructure in other Lifelines that could be impacted”

• Enhanced coordination and reporting capabilities
  “I can share and report using the same construct, roll up to my state and region, and provide a shared view that can demonstrate the need for federal support”
1300 Introduction

1310 What is the Community Lifelines Construct?
   Jessica Quintanilla, Policy Analyst, Office of Policy and Performance, FEMA Response Directorate

1320 Examples of work being done to move to reporting by Community Lifeline (Part 1)
   • Federal - MDWG – Sid Pandey, Siddharth.pandey@associates.fema.dhs.gov
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1330 Where can I access geospatial resources to give my jurisdiction a jump start? (Demo)
   • Homeland Infrastructure Foundation-Level Data (HIFLD)
   • FEMA’s Preparedness Toolkit – Lifeline Template Maps/Apps

1340 Examples of work being done to move to reporting by Community Lifeline (Part 2)
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   • States and Locals - AZ DEM – Eric Shreve, eric.shreve@azdema.gov

1355 Where to start?
About NAPSG Foundation

Our Vision
A Nation of emergency responders and leaders equipped with the knowledge and skills in applying technology and data to change the outcome for survivors.

• 501(c)(3) Non-profit organization established in 2005
• +20,000 member network: Public Safety leaders, first responders, and GIS practitioners
• Board of Directors comprised of public safety & emergency management industry leaders
Local Focus – National Reach

• 20,000+ member network
• 12 primary national & international associations
• All disciplines
• All levels of government
• Private sector

Virtual Training participants mapped by zip code and contact details redacted. 196 of 200 locations were matched.
From Preparedness through Response and into Recovery

First Responders, Operators, and Decision Makers have access to and know how to use the right actionable information at the right time.
How Do We Do It

Defining and promulgating consistent best practices

Fostering regional collaboration through implementation

Building capacity in using innovative technology

Transferring knowledge and skills

National Guidelines and Standards

Exercises & Simulations

Education & Training

Tech Assistance
Resource Library

Welcome to NAPSG's Resource Library. Here you can access all of the key resources that NAPSG makes available to the community at no cost, to support you and your agency in advancing the use of location enabled decision support tools.

The Resource Library is organized by resource category. Simply click on the category of interest and begin exploring available resources. You can also search for resources by entering in a keyword into the search box in the upper right hand side.

- Best Practices and Standards
- Education and Training
- Event Proceedings and Materials
- Qualifications and Credentialing
- Guidelines and Templates
- Symbol Library
- US National Grid Resources
- Safe & Resilient Toolkit
What is the Incident Symbology Program

• Suite of technical and operational solutions made publicly available
  
  • **Incident Symbology Guideline**: flexible and scalable framework for use in creating and using symbols for public safety maps
    • Guideline and implementation guidance available
  
  • **Incident Symbol Set**: specific symbols that apply the guideline and achieve symbol standardization across the public safety enterprise
    • Harmonizes multiple formal and informal symbol standards
    • Formal stakeholder engagement process representing state/local/federal agencies
    • Served through the NAPSG [Symbol Library Tool](https://www.napsgfoundation.org/all-resources/symbology-library/)

Link: [https://www.napsgfoundation.org/all-resources/symbology-library/](https://www.napsgfoundation.org/all-resources/symbology-library/)
2008
- Formed Incident Symbology Working Group with 20 emergency responders.
- Addressed needs for symbols to support NIMS, ICS, and facility pre-incident planning.

2009
- Released first symbol set and framework for NIMS, ICS, and facility pre-incident planning symbolology.

2010-2011
- Worked w/ first responder agencies to implement the symbology.
- Captured feedback for improvements and requirements.

2012
- Expanded Incident Symbol Set and Framework to include symbology for access hazards, hazardous materials, and others.

2015
- Conducted National Survey on needs and requirements for symbology and implemented findings from survey results.
- Developed symbols for incident types and public alert & warnings.

2016
- Developed initial 100 infrastructure symbols aligned with HIFLD data layers, US&R Symbols, and complete IPAWS event code symbols.
- Released first version of Symbol Library Tool.

2017
- Developed additional 60 infrastructure symbols aligned with HIFLD data layers, and 11 high priority symbols to support disaster / response.

2018
- Developed additional 32 symbols aligned with HIFLD data layers, and 11 high priority symbols to support disaster / response.

2019
- Developing 7 Community Lifeline Icons and 28 Community Lifeline Component Icons.
Community Lifeline Support

Through DHS Geospatial Management Office and Homeland Infrastructure Foundation-Level Data Subcommittee

• 2016 – Developed initial ~100 infrastructure symbols aligned with tier 1 priority HIFLD data layers
• 2017 – Developed an additional ~60 infrastructure symbols aligned with tier 2 priority HIFLD data layers
  *HIFLD Sub-Committee passed the decision to use NAPSG’s infrastructure symbols as the default for HIFLD data
• 2018 –
  • Completed pilot to incorporate NAPSG symbols as the default for data layers hosted directly by HIFLD
  • Developed 32 infrastructure symbols aligned with Community Lifelines or that were Datasets submitted and/or approved to be a part of Esri’s Living Atlas.
  • Completed additional non- HIFLD and some non-infrastructure symbols identified as priority gaps by the community – these included additional Search and Rescue symbols and infrastructure commonly mapped during disasters like Dialysis Centers, Points of Distribution, etc.
• 2019 – Developed recommendations for the 7 Community Lifeline Icons. 28 Component Icons under development.
Community Lifelines Construct

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Community Lifelines Defined
A CONSTRUCT FOR OUTCOME-BASED STABILIZATION EFFORTS

A lifeline enables the continuous operation of critical government and business functions, and is essential to human health and safety or economic security.

- Lifelines are designed to highlight priority areas and interdependencies, focus attention on actions being taken, communicate coordination efforts towards stabilization, and integrate information
  - Each lifeline is comprised of multiple components and sub-components that provide lifeline services to a community
Why a Lifelines Construct?

- Decision-makers must rapidly determine the scope, complexity, and interdependent impacts of a disaster.

- Applying the lifelines construct allows decision-makers to:
  - **Prioritize, sequence, and focus response efforts** towards maintaining or restoring the most critical services and infrastructure
  - Promote a response that facilitates **unity of purpose and better communication** amongst the whole community
  - Clarify which components of the disaster require **cross-sector coordination**
  - Refine **reporting sources and products** to enhance situational awareness, best determine capability gaps, and demonstrate progress towards stabilization
Community Lifelines

Definition
A lifeline enables the continuous operation of critical business and government functions and is essential to human health and safety or economic security.

Purpose
- Root Cause Analysis
- Interdependencies
- Prioritization
- Ease of Communication

Assessing
- Status → What?
- Impact → So What?
- Actions → Now What?
- Limiting Factors → What’s the Gap?

Stabilization
Occurs when basic lifeline services or capabilities are provided to survivors (may be temporary solutions requiring sustainment).
Agenda

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1355 Where to start?
Aligning Federal Emergency Response Reporting with Lifelines

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What is the Modeling and Data Working Group (MDWG)?

An interagency working group appointed by the Emergency Support Function Leaders Group (ESFLG)

- **Mission:** Information Gathering & Sharing
  - Identify **consistent, reliable, and authoritative models and datasets** to enable response planning and operational decision making for catastrophic events

- **Goals:**
  - Identify state-of-the-art capabilities to incorporated into response operations
  - Maintain the **Model and Data Inventory (MoDI)**
  - Identify and fill gaps in data inventory to improve the ability to report information by Lifeline
  - **Improve and encourage disaster information reporting by working with the emergency management community to align their data products and reporting with the lifeline construct**

- **2019 Efforts:**
  - Monthly meetings (**3rd Wednesday of every month**) aligned with the **7 FEMA Lifelines**
  - Familiarize working group with the Lifeline framework and solicit feedback on important reporting criteria and metrics
  - Conduct a pre- and post- **Shaken Fury Exercise** meeting to discuss the use of lifelines framework in response exercise

<table>
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<th>March 20th</th>
<th>April 17th</th>
<th>May 22nd</th>
<th>June 19th</th>
<th>July 17th</th>
<th>August 21st</th>
<th>October 16th</th>
<th>November 20th</th>
<th>December 18th</th>
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<tbody>
<tr>
<td>Communications</td>
<td>Hazardous Material</td>
<td>Pre-Shaken Fury Exercise</td>
<td>Post-Shaken Fury Exercise</td>
<td>Food, Water, Sheltering</td>
<td>Health and Medical</td>
<td>Transportation</td>
<td>Safety and Security</td>
<td>Feedback Session</td>
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Lifeline Spreadsheet

- **Used to:**
  - Guide discussions with various emergency management community members to identify available datasets to use in 7 geospatial lifeline dashboards
  - Define and gather measures to be used to determine the status of a lifeline, and share with data providers, allowing them to provide data in a format that helps indicate the status
  - Gather and provide indicators for stability of the lifeline (Red, Yellow, Green) for the dashboards
Lifeline Dashboards

Purpose:

- To utilize static and real time geospatial data to display impacts to the community lifelines based on the lifeline components and sub-components
  - Piloted during this year’s National Level Exercise – Shaken Fury 2019
- Provide situational awareness for first responders and decision makers and aid in decision making process. Unfortunately, response priorities were not easily determined from these dashboards.
Our Path Forward

- Determine interdependencies and cascading impacts/failures of critical infrastructure and their impacts to the lifelines to help determine response priorities

- Reformat our spreadsheet and approach to solicit feedback from the emergency management community to find:
  - Available static datasets to help model potential impact
    - **Potential sources:** HiFLD (Formerly HSIP) etc.
    - **Potential datasets:** Roads, Power Plants, Power Lines, Hospitals, etc.
  - Available live datasets to depict actual impact or status
    - **Potential sources:** Waze, GasBuddy, ESRI, etc.
    - **Potential datasets:** Road Closures, Power Outages, Hospital Status, etc.
  - Necessary data attributes and requirements to build a standardized schema and metrics for data reporting
Thank you!

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Emergency Manager’s Guide to Crowdsourcing for Situational Awareness

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Crowdsourcing is a participatory approach for gathering ideas, content, or services by soliciting contributions from a large group of people.
Where does Crowdsourced Data come from?

- Social Media
- Internet of Things
- First Person accounts
- Websites / Internet
- News / Media
- Imagery
- Sensors
Various Types of Crowdsourcing

Spectrum of Passive to Active Public Engagement
Typical Misconceptions

→ Crowdsourced data is not accurate, not vetted, and not high-quality

→ Crowdsourcing is like social media monitoring and listening
Emergency Management & Crowdsourcing

Accurate and Timely Situational Awareness
Force Multiplier for EOC Staff
Engage Citizens in Productive Tasks
2017 Hurricane Season - Maria

Responsibilities
- NRCC/RCC Crowdsourcing Unit Leader coordinates crowdsourcing efforts and provides resource and technical support to the Crowdsourcing Specialists in the field.
- Utilizes the Information Collection Plan to determine significant strategic gaps in Information that can be supplemented with crowdsourcing.
- Digital Volunteer Networks assist in media tracking, geocoding, mapping, data cleaning, translation, and social networks monitoring.
- Volunteers working remotely verify and analyze more data from humanitarian teams in the field have the capacity to process.
- Virtual Operations Support Teams (VOSTs) are one specific type of DVM that have official State and Local agency affiliations and can be activated through EMAC.

Proposed Workflow
1. FEMA has significant gaps in obtaining information across affected jurisdiction.
2. Crowdsourcing Unit Leader determines data requirements & requested products from ISD Chief of Staff.
3. Unit Leader coordinates with Crowdsourcing Liaison to review sources and official channels (ex. Satellite pictures).
4. Unit Leader works with DHV or Private Sector to assist with the collection and organization of information.
5. Unit Leader coordinates with the DHV and advises on their questions and guides their product development.

Case Study: Hospital Status
1. 47 of 50 hospitals with no information on status.
2. SPO received with specific data (damaged, how many days of food, opened/closed) - Amigos Online map.
3. Is the hospital gathering any of this information correctly through crowdsourcing? If so, what is the source?
4. Remote coordination between ISD Chief of Staff (ISD) and DHV to identify viability of mission. They agree and a formal request is made using this form.
5. Coordinating on information requirements are established between the Crowdsourcing Unit Leader and the ISD.
6. Do you want all state DHVs to have the capability to verify location to be place?

Operational
- Crowdsourcing Liaison at the RRCC, State, and Local level to ground truth crowdsourcing requests for tactical and operational purposes.
- Monitors emerging trends and identifies opportunities to leverage the crowd for operational needs.

Virtual
- Access to event detection & crowdsourcing tools (i.e. Disaster)
Integrating Crowdsourcing

→ Designate function within ICS
→ Coordinate with partners to reduce duplication
→ Define information management process
Crowdsourcing Methodology for Data Collection

Define a process for how your organization will validate, share, and display crowdsourced data:

➔ Develop a strong data validation process
➔ Be transparent with the source(s) of crowdsourced data
➔ Use common data attributes and data standards
➔ When possible, develop products & tools that allow the opportunity for decision makers to compare traditional & crowdsourced data in one location
Data Framework

• Organize your situational awareness program using the Community Lifelines approach

• Identify Essential Elements of Information (EEIs) required to manage incidents in your organization

• Format the crowdsourced data collected for your EEIs to enable efficient information sharing

• Leverage existing tools & resources to enhance your information collection process
Data Format & Interoperability

1. Does a data standard or model exist?
2. Have common status attributes been identified?
3. Can the data be collected in an editable format?
4. Is it possible to enable real-time data sharing?
Crowdsourcing Considerations for EEIs

- EEIs assist in understanding the breadth of information requirements to ensure good situational awareness.
- Identify which EEIs you can share to reduce duplication and promote unity of effort.
- Use the FEMA Community Lifelines Toolkit, NISC, and NAPSG tools as a starting point.
- How can crowdsourcing inform existing gaps your EEIs?
- Is the data publicly available or does it require a partnership?
- Crowdsourced data can be collected through a combination of Active and Passive platforms.
- What are some unique tools, platforms, and organizations that may have useful data to include in your EEIs?
Mission Scoping

1. What existing crowdsourcing tools & platforms inform your desired EEIs?
2. Is there an emergent group of digital volunteers already collecting the desired EEI?
3. Can a Digital Volunteer Network be activated to collect information from the crowd on the desired EEI?
Tools and Platforms

→ Crisis-Oriented Services
→ Platforms with Crowdsourcing Applications
→ Tools & Resources
Crisis-Oriented Services

Private and non-profit technology companies build services and platforms focused on disaster response and recovery.
Crowdsourced Data Integrated into FEMA Dashboards

Department of Energy (DOE) integrates GasBuddy data into DOE Situation Reports.
Impact to commerce indicating businesses that are open or closed with long or no wait times.
Tools and Resources

→ Organizations develop purpose-built templates, applications, and tools

→ Many resources are open-sourced and are available to use for future disasters without having to start from scratch

→ Commercially and publicly available data sources and applications can be used to support, analyze, and organize crowdsourcing efforts
Digital Volunteer Networks (DVNs)

→ Curate, analyze, and visualize crowdsourced data for emergency managers
→ Comprised of trained volunteers, who often in their professional lives are experts in social media, communication, coding, GIS, etc.
→ Are a force multipliers that provide valuable support when properly integrated into the response structure
Types of DVNs

- Virtual Operations Support Teams (VOSTs) are typically affiliated with government
- Volunteer and Technical Communities are independent groups - most can be activated through Digital Humanitarian Network
- Emergent groups develop during crisis
Code for America Brigades created a map to show the locations of PODs and Salvation Army Feeding sites.

FEMA NRCC Mass Care used the CEDR crowdsourced shelter data to compare with official shelter counts and status updates.
Crowdsourcing Unit Map Journal - Hurricane Barry

https://arcg.is/yKizq
Using Volunteers to Collect Damage Info

Road Obstruction Edit Map
Map of road obstructions used for editing of Road Obstructions during emergency operations.

napsgfoundation.org | @napsgfoundation
The toolkit is designed to guide emergency managers through building their crowdsourcing capability.

➔ Crawl: Look at the free private sector tools to use in EOCs
➔ Walk: Partner with a DVN to support EOC activations
➔ Run: Join or form a VOST (think regionally)

www.CrowdsourceEM.org
Thank you!

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Recent Disasters – T.S. Barry

Geospatial Interagency Coordination Calls

• Story Map Journal with all relevant reports, resources, and impacts and actions by Lifeline

https://fema.maps.arcgis.com/apps/MapSeries/index.html?appid=365eef4fe3aa472d998d093622fab75b
Recent Disasters – T.S. Barry

Region 6 Hurricane Journal

• TIP Organization – Threat / Impact / Posture

• Mapped Community Lifelines to Emergency Support Functions

• Added in additional information on for components covered by Lifeline
Good Practices

• Categorizing Map products and tagging data to the community lifelines
  • Discovery
  • Reporting
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FEMA’s Preparedness Toolkit

• Suite of resources and tools that support implementation of the National Preparedness System.
  • Sample Maps and Apps by Lifeline
  • Best Practices for Geospatial integration and support of National Preparedness System (NPS) Activities

Homeland Infrastructure Foundation-Level Data (HIFLD)

• National Level Publicly Available Data
  • Secure and licensed data by request
• Rest Services and Data Downloads
• Seamless base (static) data to supplement local data and/or provide standard data format for interoperability
• Many datasets already symbolized using standard incident symbology
FEMA’s Preparedness Toolkit

Hazard Explorer Site – Suite of Resources for Exercise Planners, Preparedness Planners, and Geospatial Support Staff for the integration of geospatial tools and data to support National Preparedness Activities

https://preptoolkit.fema.gov/
1. Open Template Web Map

2. Save a Copy and Add Local Data

3. Update with Standardized Symbology
Hands On: View Map Templates

FEMA’s Preparedness Toolkit

Hazard Explorer Tool – Geospatial Application for Exercise Planners and Preparedness Planners to develop realistic exercise scenarios and view a communities hazard exposure and vulnerable populations and infrastructure at risk to hazards.
• Add local data when available
• Add Live Operational data feeds to replace base static data to view status
• Display subcomponents impacted with ability to turn on other datasets
• Use same stop light approach for operational status for Infrastructure

Colors Indicate Lifeline or Component Status

Unknown: Grey
- Impacts are unknown and/or extent of situation or necessary response is unknown

Unstable: Red
- Disruption to services provided by component capabilities is causing significant impacts to response efforts and survivors
- Requirements and solutions are not identified and/or there is no plan to deliver the solutions
- Significant limiting factors may inhibit response

Stabilizing: Yellow
- Disruption to services provided by component capabilities is causing limited impacts to response efforts and survivors
- A solution to the disruption has been identified, and has it been converted into a plan of action, resourced, and implemented
- Limiting factors may inhibit response

Stable: Green
- Minimal or no disruption in services to survivors
- Note: Green components may still be severely impacted

Urban Search and Rescue Mission

- Standardized form with established minimum data collection standards
- Interoperable across platforms via Rest service (dynamic)
- Additional analysis and reporting
  - Community Lifelines Impacted
  - Damage Assessments
  - Situational Awareness across ESF’s

https://survey123.arcgis.com/share/c69bf75ac2c34a23be34511f4bb6083c
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1355 Where to start?
Applying Community Lifelines to Enhance Regional Information Sharing

*Shaken Fury 2019 Case Study*

Erik Endrulat

G&H International

*DHS Science & Technology Directorate contract support*

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Shaken Fury Exercise Overview

**Scenario:** 7.7 magnitude earthquake along the Cottonwood Grove Fault, the southwest segment of the NMSZ, near Memphis, Tennessee. Exercised whole of community response and recovery occurring from rupture to +61d post rupture.

**Participants:** CUSEC State EMAs and local municipalities; Federal Dept’s and Agencies (FEMA Regions/HQ, DOE, USGS); DoD (State NG, NGB, NorthCom); Private Sector; NGOs, Critical Infrastructure and Utilities.
Shaken Fury Exercise Overview

**Interagency Objectives (first 4 for state/regional focus):**

1. Establish **enhanced information sharing practices** across the whole community to improve preparedness, response, recovery, and mitigation in response to a catastrophic incident.

2. Demonstrate the ability of state and federal response and recovery efforts to collaborate with the **whole community** to **adjudicate and allocate critical resources** to affected communities.

3. Demonstrate integrated, **real-time field reporting** capabilities, and incorporate field reports at appropriate scales in EOCs.

4. Validate **mutual aid resource planning** and **tracking** capabilities to improve coordination among whole community partners.
Previous CUSEC EEI and Data Sharing Efforts

**NLE 2011 Exercise EEIs**
- Power Status
- Shelter Status
- Hospital Status
- Transportation Status
- Emg. Communications
- Status
- Fatalities
- EOC Status

**CAPSTONE-14 Exercise EEIs**
- Air
- Rail
- Roads
- Waterways
- Fuel
- Electricity Grid
- Natural Gas Grid
- Water Grid
- Private Sector Infrastructure

13,000 layers of information shared during CAPSTONE-14

**2014 EEI Publication Guidance**

**Post CAPSTONE-14 EEIs**
- EEI Name
- ESF
- Power Status
- Transportation
- Communications
- Fuel
- Shelters
- Hospital Status
- Water Status

**NAPSG Foundation**
Key Components:

1. **Coordinated Information Sharing** - CUSEC Member States and other partners

2. **Information Product Delivery** - RCOP Viewer/Dashboard Series

3. **Automation Scripts** - Data integration, Power Outages, Social Media, etc.

4. **Historical Data Analysis** - Power outages, WebEOC integration

The goal is to provide more awareness/support for RISP activities for further outreach, partnerships to help provide standard information products that support CUSEC states.
CUSEC RISP – Shaken Fury Hub
Lifeline Pages

Community Lifelines
The CUSEC Community Lineline supports outcome-focused collaboration efforts. A lineline enables the continuous operation of government functions and critical business, and is essential to human health and safety, and economic security.

Click the icons below to view information products that are associated with each of the Community Lifelines.

About the CUSEC Shaken Fury Hub

The Central U.S. Earthquake Consortium serves as a coordination point for member states and partners to share regional preparedness and resilience through implementation of regional emergency management planning processes and technology. The Regional Information Sharing Portal (RISP) is designed to provide situational awareness and decision-support capabilities through interactive dashboards and information products that are focused on enhancing the CUSEC member states and partners’ preparedness and response capabilities.

Key benefits of the RISP are:
- Improved information exchange
- Enhanced situational awareness
- Enabled prioritization of resources across the public and private sectors

The Shaken Fury 2019 Exercise simulates the response and recovery to a 7.4 magnitude earthquake scenario near Memphis, Tennessee. CUSEC has partnered with C-HE SET to work alongside states and FEMA Regions to enhance the transition and adoption of technologies that will:
- Enhance situational awareness
- Enable prioritization of resources across the public and private sectors

Energy (Power and Fuel) Lifeline
This page highlights the efforts to develop the information products in support of Essential Elements of Information (EEIs) reporting for the key components of the Energy (Power and Fuel) Lifeline: Power (Grid), Temporary Power, Fuel.

Featured Applications
Dashboards and Web Applications featuring Power and Fuel Status information

GasBuddy Station Tracker Dashboard (Shaken Fury)
GasBuddy created the Emergency Tracker allowing motorists and retailers to report on the availability of gas.

Regional Power Outage Dashboard (Shaken Fury)
An aggregation of outage data from multiple states across the CUSEC region.

NDP Dashboard Series (SHAKEN FURY 2019)
The CUSEC NDP dashboard series provides multiple, focused applications for presenting information.

Energy Lifeline - Power Dashboard
An interactive GUI that allows users to explore and analyze real-time power system data and information.
Aligning State Resource/Mission Requests to Lifelines

TEMAL Mission Command Center Dashboard

KYEM Resource Request Dashboard
Infrastructure Status Updates using Survey123

- Support updates of Infrastructure Status for tactical-level updates of CIKR
- Key Components: Static Infrastructure Layers (e.g., HIFLD), Survey123, and WebMaps configured with Arcade
- Enables historical tracking
- Align both causes of disruption, and overall status of infrastructure to Lifeline

Check out the Shaken Fury 2019 StoryMap here: https://arcg.is/01Kfvm
TEMA – ESF Lifeline Reporting S123/Dashboard

![ESF Lifeline Reporting S123/Dashboard](image-url)
FEMA WebEOC – Tier IV Lifeline Board
FEMA – Tier III Information Products
FEMA WebEOC – Tier I Lifeline Board
Thanks!

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Check out the Shaken Fury 2019 StoryMap here:
https://arcg.is/01Kfvm
Arizona ESF/RSF
Operations Dashboard

Arizona Department of Emergency and Military Affairs
(AZ DEMA)
Department of Emergency and Military Affairs

The Department’s mission is to provide military and emergency management capabilities to citizens of Arizona and the Nation.
Senior GIS Analyst

Eric Shreve
Arizona Department of Emergency and Military Affairs (AZ DEMA)
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Arizona ESF/RSF Operations Dashboard

- Finding a solution that could alleviate the amount of static information PDFs & Screenshots sent through email.
- Finding a way that could funnel/segment raw data into an Emergency Support Function (ESF).
- As well as something that could fall along the roles and responsibilities of the State Emergency Response & Recovery Plan (SERRP).
Arizona ESF/RSF Operations Dashboard

Big/Raw Data

ACOL/Apps/Maps/Dashboards

Package Visualization

Governor/Executive Staff/FEMA Region 9

WebEOC/Crisis information/Boards/ICS Forms

PDFs/Spreadsheets/Static Reports

Operations

Information Sharing

Ready, Responsive, Reliable
- WebEOC connector to ArcGIS Online. (taking tabular data to a mapping visualization).
- Current elements of information that we represent.
  - Communications.
  - EMS.
  - Etc.
- Using Arcade Expressions to configure a popup that reflects the stoplight approach.
- Replacing current status board and replacing the elements of information to lifelines?
## County Infrastructure Status

### Statewide Situational Awareness 2019

<table>
<thead>
<tr>
<th>County</th>
<th>ECC Activation/State of Emergency</th>
<th>Schools</th>
<th>Comms</th>
<th>Debris</th>
<th>Flooding</th>
<th>Hazmat</th>
<th>Emergency Services</th>
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<th>Power</th>
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<th>Roads</th>
<th>Bridges</th>
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</table>

Ready, Responsive, Reliable
County Infrastructure Status Board

AZ ESF/RSF Operations Dashboard

Significant Incidents

Incident: Emergency Management
A fiber line in downtown Tucson was cut in the early morning hours. This affected both external to internal and internal to internal access for a number of Pima County systems including the phone, internet access, and email. The county 911 system is still operational. Currently there is no estimate of repair time. If you need to reach us, please call either Shane Clark 520-528-5219 or Jim Fisher 520-528-5187.

Entry Time: 1/26/2019, 7:14 AM
Status: High

County EOC Status

EOC: Coconino
Status: Full
Update Date: 1/24/2019, 3:27 PM

EOC: Cochise
Status: Closed
Update Date: 6/27/2019, 9:43 AM

EOC: Gila
Status: Closed
Update Date: 6/17/2019, 11:26 AM

EOC: Yuma
Status: Closed
Update Date: 7/25/2019, 12:31 PM

Government Declarations

City of Tucson
City Declaration

County Status Breakdown

Coconino County

State of Emergency
EOC Activation

Communication

Damage

Disaster

Electric

Emergency Services

Flooding

Natural Gas

Hazmat

Infrastructure

Power

Infrastructure

Sewer

Transportation Bridges

Infrastructure

Water

Transportation Roads

Ready, Responsive, Reliable
AZ ESF/RSF Operations Dashboard

Tinder Fire Recovery
(Damage Assessment)
Questions?

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WebEOC Admin  
DEMA CTA  
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david.roby@azdema.gov
1300 Introduction

1310 What is the Community Lifelines Construct?

Jessica Quintanilla, Policy Analyst, Office of Policy and Performance, FEMA Response Directorate

1320 Examples of work being done to move to reporting by Community Lifeline (Part 1)

- Federal – MDWG – Sid Pandey, Siddharth.pandey@associates.fema.dhs.gov
- Federal – Crowdsourcing Unit – Emily Martuscello, FEMA-crowdsourcing@fema.dhs.gov

1335 Where can I access geospatial resources to give my jurisdiction a jump start? (Demo)

- Homeland Infrastructure Foundation-Level Data (HIFLD)
- FEMA’s Preparedness Toolkit – Lifeline Template Maps/Apps

1340 Examples of work being done to move to reporting by Community Lifeline (Part 2)

- Regional – CUSEC – Erik Endrulat, eendrulat@ghinternational.com
- States and Locals – AZ DEM – Eric Shreve, eric.shreve@azdema.gov

1355 Where to start?
Where to start?
Where to start?

- Stay tuned for Community Lifeline Toolkit 2.0 (August 2019)
- Identify Static and Dynamic Data Sources that support the Lifelines in your Community
- Prioritize the development of partnerships where gaps in data exist
- Identify how status information is/will be updated.
- Look out for materials from this session!
What’s Next?

• Next PrepTech Talk: *Get Smart on Information Sharing Standards for Crisis Management* – August 29th - Virtual

• InSPIRE: November 12th – 14th - Galveston, Texas
## Events

### In-Person Events

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Event</th>
<th>Registration</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 21-22, 2019</td>
<td>State of Kentucky EOC, Frankfort, KY</td>
<td>National Mutual Aid Technology Exercise (NMATE)</td>
<td>By invitation only</td>
</tr>
<tr>
<td>November 12-14, 2019</td>
<td>Texas A&amp;M University at Galveston</td>
<td>InSPIRE: Innovation for Preparedness &amp; Resilience</td>
<td>Opening in July</td>
</tr>
</tbody>
</table>

### Virtual Events

**PrepTech Talks**

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Event</th>
<th>Registration</th>
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</thead>
<tbody>
<tr>
<td>July 31, 2019</td>
<td>Virtual</td>
<td>Aligning and Standardizing Response Map Products to Community Lifelines</td>
<td>Register Today!</td>
</tr>
<tr>
<td>August 29, 2019</td>
<td>Virtual</td>
<td>Get Smart on Information Sharing Standards for Crisis Management</td>
<td>Register Today!</td>
</tr>
</tbody>
</table>

## What Should I Expect?

Each workshop is run by a team of state & local public safety & GIS practitioners from each region - through our Regional Leadership Teams. The training sessions offer new insight on how to operationalize geospatial technology to enhance daily operations. Each workshop features presentations on best practices in each region, moderated discussions on challenges, new ideas for information sharing, and networking time to build relationships with your regional community.

Topics include how GIS is used to collect accurate preplan data, analyze risk and assess deployment capability, and access real-time information for incident management. Other benefits of attending include opportunities to:

- Meet and see how public safety professionals are using GIS.

[https://www.napsgfoundation.org/events/](https://www.napsgfoundation.org/events/)
Thank you!

Questions?

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Charlotte Abel cabel@publicsafetygis.org