

Community Lifelines in Operational Coordination



Following Hurricanes Harvey, Irma, and Maria, as well as wildfires in California in 2017, FEMA identified the need to better balance concurrent large-scale operations and create a more structured prioritization and response concept (FEMA IS-2901). Thus, the Community Lifelines construct emerged as an “outcome-driven approach that promotes the importance of situation awareness, prioritization of response efforts, and decision-making processes to stabilize an incident” (FEMA IS-2901).

Definition

- “Community Lifelines are the most fundamental elements in the community (e.g. fire, police, hospitals, gas, etc.) that enable a functioning society.”



(FEMA IS-2901) 

“Community lifelines are those services that enable the continuous operation of critical government and business functions and are essential to human health and safety or economic security. Lifelines comprise integrated networks of resources and services that are used day-to-day to support the recurring needs of the community” (FEMA IS-2901).

“The National Response Framework (NRF) sets the strategy for how communities deliver services (or core capabilities) identified in the National Preparedness Goal. The 4th Edition of the NRF emphasizes the unity of effort between the government and the private sector through better coordination and collaboration, with the unified goal of stabilizing lifelines” (FEMA IS-2901).

Community Lifelines

- Safety and Security
- Food, Water, Shelter
- Health and Medical
- Energy
- Communications
- Transportation
- Hazardous Materials



Each lifeline contains several components and sub-components that encompass infrastructure, assets, and services that are essential to incident stabilization.

Components

1. Safety and Security

- Law Enforcement/Security
- Fire Service
- Search and Rescue
- Government Service
- Community Safety

2. Food, Water, Shelter

- Food
- Water
- Shelter
- Agriculture

3. Health and Medical

- Medical Care
- Public Health
- Patient Movement
- Medical Supply Chain
- Fatality Management

4. Energy

- Power Grid
- Fuel

5. Communications

- Infrastructure
- Responder Communications
- Alerts, Warnings, and Messages
- Finance
- 911 and Dispatch

6. Transportation

- Highway/Roadway/Motor Vehicle
- Mass Transit
- Railway
- Aviation
- Maritime

7. Hazardous Material

- Facilities
- HAZMAT, Pollutants, Contaminants



As you can see, here is each Lifeline with it's components.

Subcomponents



Law Enforcement/Security	Fire Service	Search and Rescue
<ul style="list-style-type: none">▪ Police Stations▪ Law Enforcement▪ Site Security▪ Correctional Facilities	<ul style="list-style-type: none">▪ Fire Stations▪ Firefighting Resources	<ul style="list-style-type: none">▪ Local Search and Rescue
Government Service	Community Safety	
<ul style="list-style-type: none">▪ Emergency Operation Centers▪ Essential Government Functions▪ Government Offices▪ Schools▪ Public Records▪ Historic/Cultural Resources	<ul style="list-style-type: none">▪ Flood Control▪ Other Hazards▪ Protective Actions	



<https://www.fema.gov/sites/default/files/2020-05/CommunityLifelinesToolkit2.0v2.pdf>



Each component is then broken down further into subcomponents. On the screen you will see the components for the Safety and Security Lifeline (in blue) and the subcomponents that comprise each component.

Lifelines and Emergency Management

- Relationship between Lifelines, Emergency Support Functions (ESFs), and Core Capabilities
- ESFs work with leadership to improve preparedness for collaboration and support the delivery of Core Capabilities, to stabilize Lifelines
- “Ends, Ways, and Means”



(FEMA IS-2301)

To delve deeper into the relationship, we can think about the interactions as Ends, Ways, and Means. Ends: Lifelines describe the services within a community that must be stabilized or re-established (the ends) to alleviate threats to life and property. We can think of this as our goal, to re-establish those critical services to the community. Ways: Response core capabilities describe the grouping of actions that can be taken to stabilize and re-establish lifelines. The Ways are how we plan to achieve our goal of re-establishing those Lifelines. Means: ESFs and other organizing bodies (the means) make up the organizational structure across departments, agencies, community organizations, and industries to enhance coordination and integration to deliver the response core capabilities. The Means are the tools that we have to help carry out our plan to re-establish the lifelines.

Operational Coordination is the core of this relationship. All sectors and organizations working together re-establish lifelines after an incident.

Lifelines and Emergency Management

- Ensure the delivery of critical services
- Alleviate threats to life and property during a disaster
- Provides responders with an outcomes-based approach
 - Situational awareness
 - Status reporting
 - Planning
 - Operational decision-making



(FEMA IS-2901) 

“Through community lifelines, incident information is reframed and operationalized to: Rapidly determine the scale and complexity of a disaster; Identify the severity, root causes, and interdependencies of impacts to basic, critical lifesaving and life-sustaining services within impacted areas; Prioritize operational objectives that focus response efforts on the delivery of these services; Communicate disaster-related information across all levels of public, private, and non-profit sectors using a commonly understood, plain language lexicon; and Guide response operations to support and facilitate integration across mission areas” (FEMA IS-2901).

Incident Stabilization Phases



On the screen you are seeing the Hazardous Material Lifeline icon with several different colors surrounding the icon. These colors indicate the condition that lifeline is during an incident. The far-left icon that is all blue is for administrative purposes only and does not indicate a condition. This could be used in presentations and briefings, like it has been used up until this point, in this PowerPoint. The next icon in grey indicates the extent of disruption and impacts to lifeline services is unknown. The middle icon in red indicates the hazardous materials lifeline is unstable; lifeline services have been disrupted and no solution has been identified for how to restore the lifeline and there is no solution in progress. The yellow icon indicates the lifeline is stabilizing; lifeline services have been disrupted; however, a solution has been identified and is in progress with an estimated time for stabilization of the lifeline. And finally, the green icon represents the lifeline services are stabilized, re-established, or not impacted.

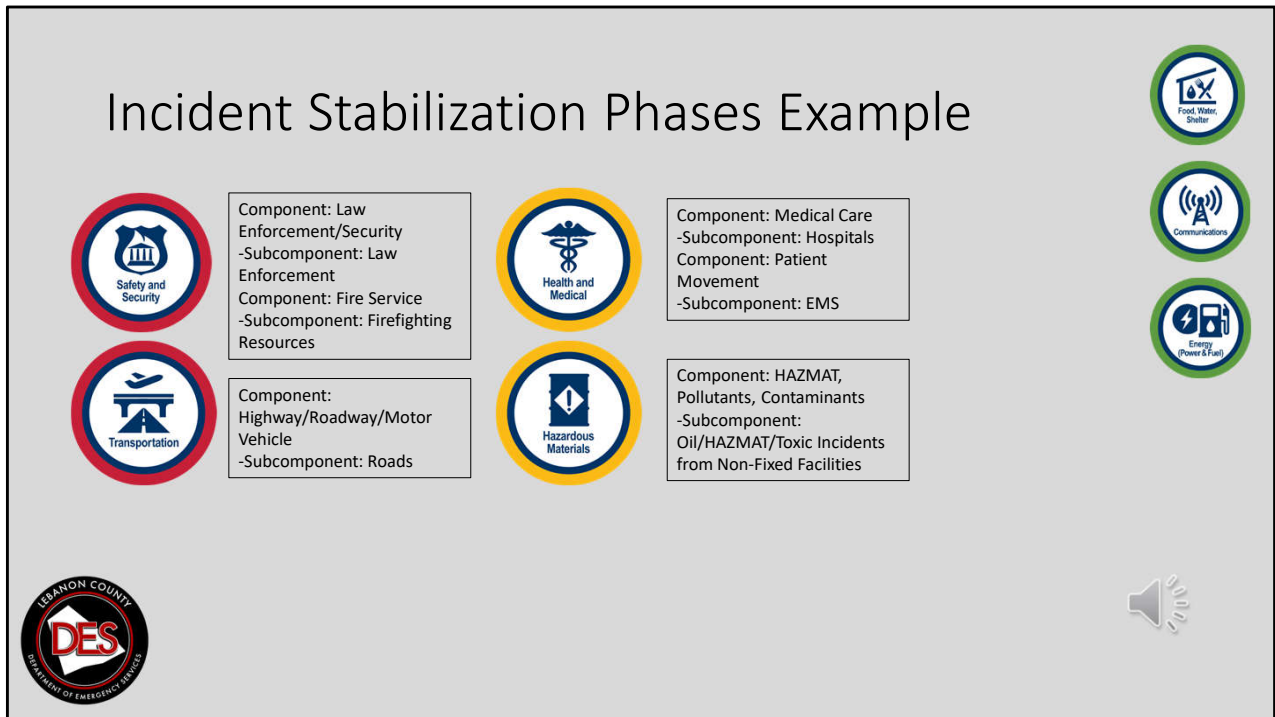
Community Lifelines can be used by all levels of government and other partners to facilitate operational coordination and drive response outcomes. At the County level, we will be using them as a tool in our EOC, to determine which ESFs need to be activated, to help restore the impacted lifelines.

Incident Stabilization Phases Example



So let's go through an example of how this could work. Calls come into the 911 center for a multi-vehicle crash on the interstate. Initial estimates for the number of vehicles involved are 50 vehicles, including tractor trailers, and initial estimates for number of people injured are 10.

Initially we are able to determine the Food, Water, Shelter Lifeline, the Energy Lifeline, and the Communications Lifeline are not impacted as a result of the incident. The Safety and Security Lifeline is potentially impacted within the Law Enforcement and the Fire Service components. The Health and Medical Lifeline is potentially impacted within the Medical Care and Patient Movement (EMS) components. Transportation is unstable because the interstate has to be shut down, and there is not a timetable for it to reopen. And lastly, initially, it is unknown if there are any hazmats.



As the incident progresses, first responders and EMS arrive on scene. This draws law enforcement and fire resources to the scene, away from the rest of the community, without a timetable for their return, so the status goes to red. Health and Medical goes to yellow because of the need for a large number of ambulances that are needed on scene, depleting resources in other areas of the County. The accident has also caused an influx of patients to local hospitals. Transportation is still red because there is no timetable for the return of normal operations, tow trucks and heavy wreckers are on the way to the scene. The fire department has identified that several tractor trailer are leaking diesel fuel, so they request Hazmat to the scene.

With these initial Lifeline Conditions, we can set response targets. An example could be we want the road cleared of debris and accessible. As the incident progresses, we can refine those targets to be more specific. We want the road cleared of debris and accessible in 6 hours.

Incident Stabilization Phases Example



Component: Law Enforcement/Security
 -Subcomponent: Law Enforcement
 Component: Fire Service
 -Subcomponent: Firefighting Resources



Component: Medical Care
 -Subcomponent: Hospitals
 Component: Patient Movement
 -Subcomponent: EMS



Component: Highway/Roadway/Motor Vehicle
 -Subcomponent: Roads



Component: HAZMAT, Pollutants, Contaminants
 -Subcomponent: Oil/HAZMAT/Toxic Incidents from Non-Fixed Facilities



Further into the incident, EMS transports the patients to the hospitals and the contaminated areas are identified and secured, so we change the status of those Lifelines to green, because they are now stable. Tow trucks and heavy wreckers are on scene and have begun clearing the wrecked vehicles. Any law enforcement and fire resources that are not needed are able to return to their stations. Command and PennDOT determine that the interstate should be opened in about 4 hours. Because there is a timetable to our response and there is progress towards stabilization, the Safety and Security Lifeline and the Transportation Lifeline move into the yellow condition.

Incident Stabilization Phases Example



Component: Law Enforcement/Security
-Subcomponent: Law Enforcement
Component: Fire Service
-Subcomponent: Firefighting Resources



Component: Highway/Roadway/Motor Vehicle
-Subcomponent: Roads



All fire and law enforcement have returned to their stations. The roadway is open to regular traffic. The Safety and Security Lifeline and Transportation Lifeline return to a stable state.

Perspective

- The Community Lifelines concept is being used at a national level and it is going to be integrated into PEMA, as well.

Heavy Rain and Flooding – California – FINAL

Current Situation: The recent round of rain and mountain snow ended early today in northern and central California but another atmospheric river event will arrive later today through Wednesday bringing more widespread rain, heavy mountain snow, and gusty winds. Planning is underway for potential cascading impacts that may occur next week. California reports no shortfalls or unmet needs.

Lifeline Impacts: (M-3592-CA 3/8 as of 3/8 10:30, 9:48 a.m. ET)

Safety and Security: Mandatory Evacuations Orders: 10k residents; Evacuation Warnings: 49k (+ 1k) residents

Health and Medical: 5 confirmed storm-related fatalities

Food, Water, Shelter: 21 (+3) shelters open / 582 (+26) occupants

Energy: Minimal power outages (more as of 3/8 a.m. ET)

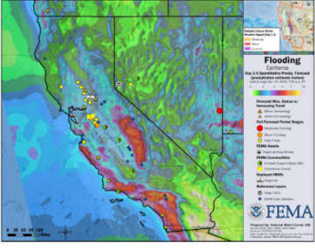
Transportation: Multiple road closures due to flooding, estimated time of restoration TBD

State / Local Response:

- CA EOC in Full Activation (COVID-19, Seismic Activity, Flooding); Governor declared a state of emergency for 43 counties
- NV EOC at Partial Activation (COVID-19); Governor declared a State of Emergency for 13 counties and 1 tribe

FEMA / Federal Response:

- NWC and Region IX RMC in coordination with CA & NV EOCs continue to monitor
- Region IX IMAT-1 / IMAT-2 deployed to CA EOC
- National IMAT Red deployed to CA EOC; FEMA Region VII IMAT deployed to CA EOC
- ISB / SMT deployed to CA EOC / SMT deployed to NW
- MERS assets deployed to Sacramento, Tracy, and NAS Lemoore, CA
- USAR Red IST restored and prepared to deploy; USAR resources with full water rescue capability are available to support as required
- Emergency Declaration FEMA-3592-EM-CA approved on Mar 10 for 43 counties
- No further reporting anticipated; the NWC will continue to monitor in coordination with regional and federal partners and website reporting, if warranted.



National Watch Center



Not all states have integrated Community Lifelines into their emergency management programs, however here is an example of state that has incorporated them into their reporting structure.

Reference

- FEMA. IS-2901: *Introduction to Community Lifelines*. Retrieved April 28, 2023, from <https://training.fema.gov/is/courseoverview.aspx?code=IS-2901&lang=en>
- FEMA. (2019). *Community Lifelines Implementation Toolkit*. Retrieved April 28, 2023, from <https://www.fema.gov/sites/default/files/2020-05/CommunityLifelinesToolkit2.0v2.pdf>

