Campbell County Office of Emergency Management

ANNEX C - COMMUNITY LIFELINES

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Director

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Campbell County has adopted the Federal Emergency Management Agency's (FEMA) seven community lifelines into our prevention, protection, response, recovery, and mitigation activities. Lifelines are services that enable the continuous operation of critical government and business functions and are essential to human health and safety or economic security.

Stabilizing community lifelines is the primary effort during response activities.

ESFs deliver core capabilities to stabilize community lifelines for an effective response.

The seven community lifelines represent only the most basic services a community relies on and which,when stable, enable all other activity within a community. The lifelines are designed to enable emergency managers, infrastructure owners and operators and other partners to analyze the root causeof an incident impact and then prioritize and deploy resources to effectively stabilize the lifeline. This construct maximizes the effectiveness of federally supported, state managed and locally executed response.

Similar to the ESFs, other whole community organizations can work together to stabilize lifelines and meet disaster needs. The community lifelines do not directly cover all important aspects of community life that can be affected by an incident, including impacts to natural, historical, and cultural resources. For example, financial and economic issues important to the life and safety of affected individuals may also arise indirectly from impacts to lifelines during an incident. If disrupted, rapid stabilization of community lifelines is essential to restoring a sense of normalcy. Recent disasters have illuminated two underlying features of community lifelines that highlight opportunities to strengthen response planning and operations.

First, community lifelines are interdependent and vulnerable to cascading failures. For example, communications and electric power systems rely on each other to function; severe damage to one will disrupt the other. Most lifelines also rely on complex supply chains. Water and wastewater service depend on the resupply of a broad array of chemicals and—if power goes out—fuel for emergency generators. However, in a severe natural or human-caused incident, those supply chains themselves may be broken.

Second, community lifeline stabilization relies on businesses and infrastructure owners and operators who have the expertise and primary responsibility for managing their systems in emergencies. Accordingly, Indiana is working with developing planning coordination mechanisms needed to enable the private sector to play a larger, more comprehensive role in preparedness and response activities. The community lifelines are composed of multiple components that encompass infrastructure, assets, and services.

FIGURE 16. COMMUNITY LIFELINE COMPONENTS AND SUB-COMPONENTS

ALL COMMUNITY LIFELINE COMPONENTS AND SUB-COMPONENTS		
Multiple components establish the parameters of and key assessment elements for each of the lifelines; component-level analysis is required to determine if each lifeline is stable		
SAFETY AND SECURITY	**FOOD, WATER, SHELTERING**	**HEALTH AND MEDICAL**
▪ Hazard Mitigation ▪ Law Enforcement / Security ▪ Responder Safety ▪ Search and Rescue ▪ Fire Services ▪ Government Service	▪ Evacuations ▪ Food / Potable Water ▪ Shelter ▪ Durable Goods ▪ Water Infrastructure ▪ Agriculture Infrastructure	▪ Medical Care ▪ Patient Movement ▪ Public Health ▪ Fatality Management ▪ Medical Industry
ENERGY	**COMMUNICATIONS**	**TRANSPORTATION**
▪ Power (Grid) ▪ Temporary Power ▪ Fuel	▪ Infrastructure ▪ 911 & Dispatch ▪ Responder Communications ▪ Alerts, Warnings, Messa	▪ Highway / Roadway Motor Vehicle ▪ Mass Transit ▪ Railway ▪ Aviation ▪ Maritime ▪ Pipeline
HAZARDOUS MATERIAL		

- Facilities
- Incident Debris, Pollutants, Contaminants
- Conveyance

FIGURE 17. LIFELINE, ESF AND CORE CAPABILITIES CROSSWALK

LIFELINE SYMBOL	COMPONENTS	SUPPORTING ESF PLANNING TEAM	RELATED CORE CAPABILITIES
	**Safety and Security** ▪ Law enforcement, security ▪ Search and rescue ▪ Fire services ▪ Government service ▪ Responder safety ▪ Imminent hazard mitigation	▪ ESF 13* ▪ ESF 1 ▪ ESF 4 ▪ ESF 5 ▪ ESF 7 ▪ ESF 9 ▪ ESF 12 ▪ ESF 14 ▪ ESF 15 ▪ INNG ▪ Private security	▪ Planning ▪ Public Information and Warning ▪ Operational Coordination ▪ Environmental Response/ Health and Safety ▪ Fire Management and Suppression ▪ Mass Search and Rescue Operations ▪ On-scene Security, Protection, and Law Enforcement ▪ Situational Assessment
	**Food, Water, Sheltering** ▪ Evacuations ▪ Food, potable water ▪ Shelter ▪ Durable goods ▪ Water infrastructure ▪ Agriculture	▪ ESF 6* ▪ ESF 1 ▪ ESF 3 ▪ ESF 5 ▪ ESF 7 ▪ ESF 11 ▪ ESF 13 ▪ ESF14 ▪ ESF15 ▪ VOAD ▪ INNG	▪ Planning ▪ Public Information and Warning ▪ Operational Coordination ▪ Critical Transportation ▪ Infrastructure Systems ▪ Logistics and Supply Chain Management ▪ Mass Care Services ▪ Situational Assessment
	**Health and Medical** ▪ Medical care ▪ Patient movement ▪ Public health ▪ Fatality management ▪ Healthcare supply chain ▪ Fire service	▪ ESF 8* ▪ ESF 1 ▪ ESF 4 ▪ ESF 5 ▪ ESF 7 ▪ ESF 14 ▪ ESF 15 ▪ INNG	▪ Planning ▪ Public Information and Warning ▪ Operational Coordination ▪ Environmental Response/Health and Safety ▪ Fatality Management Services ▪ Logistics and Supply Chain Management ▪ Public Health, Healthcare, and Emergency Medical Services ▪ Situational Assessment

LIFELINE SYMBOL	COMPONENTS	SUPPORTING ESF PLANNING TEAM	RELATED CORE CAPABILITIES
	**Energy** ▪ Power (grid) ▪ Temporary power ▪ Fuel	▪ ESF 12* ▪ ESF 3 ▪ ESF 5 ▪ ESF 7 ▪ ESF 14 ▪ ESF 15	▪ Planning ▪ Public Information and Warning ▪ Operational Coordination ▪ Infrastructure Systems ▪ Logistics and Supply Chain Management ▪ Situational Assessment
	**Communications** ▪ Infrastructure ▪ Alerts, warnings, messages ▪ 911 and dispatch ▪ Responder communications ▪ Financial services	▪ ESF 2* ▪ ESF 5 ▪ ESF 7 ▪ ESF 13 ▪ ESF 14 ▪ ESF 15 ▪ INNG	▪ Planning ▪ Public Information and Warning ▪ Operational Coordination ▪ Infrastructure Systems ▪ Operational Communications ▪ Situational Assessment
	**Transportation** ▪ Highway, roadway ▪ Mass transit ▪ Railway ▪ Aviation ▪ Maritime ▪ Pipeline	▪ ESF 1* ▪ ESF 5 ▪ ESF 7 ▪ ESF 13 ▪ ESF 14 ▪ ESF 15 ▪ INNG	▪ Planning ▪ Public Information and Warning ▪ Operational Coordination ▪ Critical Transportation ▪ Infrastructure Systems ▪ Situational Assessment
	**Hazardous Material** ▪ Facilities ▪ Hazardous debris ▪ Pollutants ▪ Contaminants	▪ ESF 10* ▪ ESF 4 ▪ ESF 5 ▪ ESF 7 ▪ ESF 3 ▪ ESF 14 ▪ ESF 15	▪ Planning ▪ Public Information and Warning ▪ Operational Coordination ▪ Environmental Response/Health and Safety ▪ Situational Assessment
*** = Coordinating Unit**			

PLANNING

Planners are integrating the lifelines concept into the following planning functions:

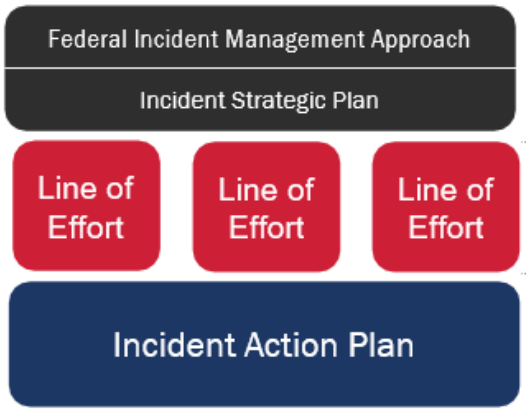
FUTURE PLANNING:

Incorporate lifeline concept into deliberate planning products, including defined stabilization targets for each lifeline.

INCIDENT ACTION PLANNING:

Analyze impacts to the various lifelines and develop priority focus areas for each operational period. Support the development of strategy, operational priorities, and objectives.

Lifelines enables the measurement of planning.



STRATEGIC LEVEL: Strategy sets goals, tasks to achieve the goals, the resources required and any risks.

OPERATIONAL LEVEL: Operational priorities request and direct specific resources to execute strategy.

TACTICAL LEVEL: Objectives provide visibility on the progress stabilization efforts

PLANS AND REPORTING

Lifelines reporting aims to provide situational awareness for:

- Taking a strategic approach to Incident Management and Incident Support
- Executing lines of effort to achieve lifeline stabilization.
- Establishing a concept of logistics support

It also provides guidance for and informs:

- Incident Management and Incident Support resource deployment decisions (e.g., contracts, RRFs, Mission Assignments and FEMA personnel requests)
- Establishment of Incident Management Task Forces and Incident Support Crisis Action Planning Teams
- Builds in metrics for internal performance and metrics for effectiveness.
- Development of Incident Management objectives

Community lifelines can be used by all levels of government and the private sector to facilitate operational coordination and drive outcome-based response. Figure 13 below

shows how community lifelines are applied to emergency management support decision making.

EXAMPLE OF IMPACTS ON FINANCIAL SERVICES AFTER A COMMUNITY LIFELINE DISRUPTION

A tornado has caused massive devastation in a rural town. Among the major impacts to community lifelines is the community's inability to access money.

- Power outages have kept several bank branches closed and automated teller machines (ATM) inoperable and merchants who are open despite the power outagesare only able to accept cash transactions.
- Some merchants, ATMs and bank branches are already open and have been energized through grid or generator power. However, communications outages prevent them from accessing systems to process an electronic transaction.
- Transportation issues (road closures and blockages) limit survivors' ability to travel tothe limited merchants, ATM locations and bank branches in the area, as well as responders' ability to provide assets to stabilize critical infrastructure.

These cumulative effects, while incredibly disruptive to the community, are caused by a confluence of impacts to specific lifelines. By using the community lifeline construct and root cause analysis, emergency managers can assess that the major limiting factors restricting community access to money are through the power, transportation, and communications lifelines. Accordingly, a local emergency manager may alleviate the situation by considering options, such as prioritized route clearance for emergency accessby power and communications crews, generators for temporary power, or deployment of mobile cell towers, for establishing connectivity until other infrastructure is restored.

FIGURE 18. APPLICATION OF COMMUNITY LIFELINES TO SUPPORT EMERGENCY MANAGEMENT

INCORPORATING COMMUNITY LIFELINES INTO RESPONSE

FEMA After-Action Reports (AARs) identified the need to create a new operational prioritization and response tool which would:

- Characterize the incident and identify the root causes of priority issue areas in order to create effective solutions.

- Distinguish the highest priorities and most complex issues from other incident information

COMMUNITY LIFELINE IMPLEMENTATION

The community lifelines reframe incident information to provide decision-makers with impact statements and root causes. This construct maximizes the effectiveness of federally supported, state managed and locally executed response.

Incorporating the lifelines primarily impacts how incident information is organized and reported during response.

Response operations procedures such as NIMS and ICS remain fundamentally the same.

Some changes may include:

- How we understand, prioritize, and communicate incident impacts.
- The structure and format of decision-making support products (e.g., briefings).
- Planning for incident impacts and stabilization both prior to and during incidents.

The interrelationship of Lifelines, Core Capabilities and ESFs can be thought of in terms of **means, ways** and **ends.**

ESFs and other organizing bodies—**the means**—are the way we organize across departments and agencies, community organizations and industries to enhance coordination and integration to deliver the Response Core Capabilities.

Response Core Capabilities describe the grouping of response actions—**the ways**—that can be taken to stabilize and re-establish the lifelines. FEMA executes Lines of Effort (LOE) to operationalize the Core Capabilities (the ways) for response and recovery planning and operations.

Lifelines describe the critical services within a community that must be stabilized or re-established—**the ends**—to alleviate threats to life and property.

DECONSTRUCTING THE LIFELINES

Each lifeline is comprised of several components that represent the bucketing of critical Essential Elements of Information (EEIs). The EEIs are the questions we must answer to determine the status of a lifeline.

Components includes key capabilities or services that are essential to stabilizing an incident and in providing resources to survivors.

Components are assessed individually to determine the seven lifelines' status and

Note: Not every incident will impact all of the lifelines or components.

FIGURE 18. ORGANIZATION AND BREAKDOWN OF EACH LIFELINE

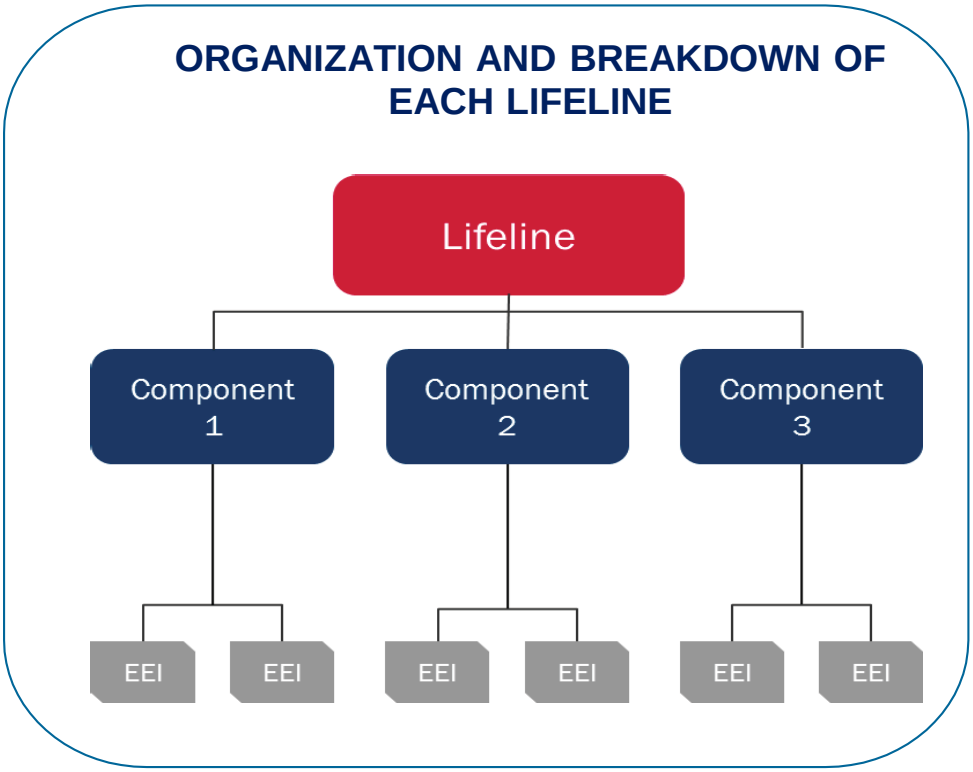


FIGURE 19. LIFELINE COMPONENTS AND ESSENTIAL ELEMENTS OF INFORMATION (EEI'S)

LIFELINE SAFETY AND SECURITY	DEFINITION
	Law enforcement and government services, as well as the associated assets that maintain communal security, provide search and rescue, evacuations, firefighting capabilities and promote responder safety.

COMPONENTS AND ESSENTIAL ELEMENTS OF INFORMATION (EEIS)	
HAZARD MITIGATION overall progress of incident response.	**LAW ENFORCEMENT/SECURITY**
▪ Status of flood risk grants ▪ Status of area dams, levees, reservoirs	▪ Evacuation routes ▪ Force protection and security for staff ▪ Security assessments at external facilities ▪ Damaged law enforcement or correctional facilities.
RESPONDER SAFETY	**SEARCH AND RESCUE**
▪ Safety hazards affecting operations. ▪ Requirements for personnel protective equipment ▪ Security issues or concerns ▪ Availability and distribution of equipment ▪ Billeting and sustenance for responders ▪ Onsite training and policy	▪ Number and location ofmissing survivors ▪ Life threatening hazards toresponders and survivors ▪ Availability and resources ofsearch and rescue teams ▪ Status of animal assists, structural assessments, and shelter in place checks
FIRE SERVICES	**GOVERNMENT SERVICES**
▪ Location of fire ▪ Percent of fire contained. ▪ Fire's rate and direction of spread ▪ Weather conditions ▪ Availability and resources of fire services	▪ Status of governmentoffices and schools ▪ Status of continuity of government and continuityof operations ▪ Curfew

▪ Evacuation routes	

LIFELINE FOOD, WATER, SHELTER	DEFINITION
	Support systems that enable the sustainment of life, such as water treatment, transmission, and distribution systems; food retail and distribution networks; wastewater collection and treatment systems; as well as sheltering and agriculture.

COMPONENTS AND ESSENTIAL ELEMENTS OF INFORMATION (EEIS)

FOOD/POTABLE WATER	EVACUATIONS	SHELTER
▪ Status of Points of Distribution (PODs) ▪ Operating status of supermarkets, neighborhood markets and grocery stores ▪ Operating status of restaurants ▪ Impacts to the food supply chain. ▪ Operating status of public and private water supply systems ▪ Operating status of water control systems (i.e., dams, levees, storm drains) ▪ Food/water health advisories	▪ Mandatory or voluntary evacuation orders ▪ Number of people to evacuate. ▪ Evacuation routes ▪ Evacuation time frame ▪ Risk to responders and evacuees ▪ Food, water, shelter availability	▪ Requirements for emergency shelter ▪ Number of open shelters and location ▪ Current population in shelters ▪ Transitional Sheltering Assistance options ▪ Potential future sheltering requirements

WATER INFRASTRUCTURE	DURABLE GOODS	AGRICULTURE INFRASTRUCTURE
▪ Operating status of public wastewater systems and private septic systems ▪ Operating status of wastewater processing facilities ▪ Operating status of public and	▪ Need for PODs ▪ Pre-designated POD locations ▪ Operating status of PODs ▪ Resource distribution at	▪ Status of area agricultural infrastructure ▪ Status of area supply lines

private water infrastructure	PODs	

LIFELINE HEALTH AND MEDICAL	DEFINITION
	Infrastructure and service providers for medical care, public health, patient movement, fatality management, behavioral health, veterinary support and health or medical supply chains.

COMPONENTS AND ESSENTIAL ELEMENTS OF INFORMATION (EEIS)

MEDICAL CARE

- Status of acute medical care facilities (i.e., level 1 trauma center)
- Status of chronic medical care facilities (i.e., long term care centers)
- Status of primary care and behavioral health facilities
- Status of home health agencies
- Status of VA Health System resources in the affected area

PATIENT MOVEMENT

- Status of state and local EMS systems
- Active patient evacuations
- Future patient evacuations

PUBLIC HEALTH

- Status of pharmaceutical supply chain
- Public health advisories

MEDICAL INDUSTRY

- Status of state and local health departments

FATALITY MANAGEMENT

- Availability of mortuary and post-mortuary services
- Availability of transportation, storage, and disposal resources
- Status of body recovery and processing
- Descendant's family assistance

LIFELINE ENERGY (POWER & FUEL)	DEFINITION
	Service providers for electric power infrastructure, composed of generation, transmission, and distribution systems, as well as gas and liquid fuel processing, transportation, and delivery systems. Disruptions can have a limiting effect on the functionality of other community lifelines.

COMPONENTS AND ESSENTIAL ELEMENTS OF INFORMATION (EEIS)		
POWER (GRID)	**TEMPORARY POWER**	**FUEL**
▪ Status of electrical power generation and distribution facilities ▪ Number of people and locations without power ▪ Estimated time to restoration of power ▪ Number of electrically dependent persons ▪ Status of nuclear power plants ▪ Status of nuclear power plants within 10 miles ▪ Status of natural gas and fuel pipelines in the affected area	▪ Status of critical facilities ▪ Availability of temporary power resources	▪ Status of commercial fuel stations ▪ Responder fuel availability ▪ Status of critical fuel facilities ▪ Status of fuel supply line

LIFELINE COMMUNICATIONS	DEFINITION
	Infrastructure owners and operators of broadband Internet, cellular networks, landline telephony, cable services (to include undersea cable), satellite communications services and broadcast networks (radio and television). Communication systems encompass a large set of diverse modes of delivery and technologies, often intertwined but largely operating independently. Services include elements such as alerts, warnings, and messages, as well as 911 and dispatch. Also includes accessibility of financial services.

COMPONENTS AND ESSENTIAL ELEMENTS OF INFORMATION (EEIS)

INFRASTRUCTURE	ALERTS, WARNINGS and MESSAGES	911 AND DISPATCH
▪ Status of telecommunications service ▪ Reliability of internet service ▪ Reliability of cellular service ▪ Requirements for radio/satellite communication capability	▪ Status of the emergency alert system (TV, radio, cable, cell) ▪ Status of public safety radio communications ▪ Options for dissemination of information to the whole community ▪ External affairs and media communication	▪ Status of phone infrastructure and emergency line ▪ Number of callers and availability of staff and facilities ▪ Status of responder communications ▪ Availability of communications equipment

RESPONDER COMMUNICATIONS

- Status of EOC(s) and dispatcher communications
- Availability of responder communications equipment

LIFELINE TRANSPORTATION	DEFINITION
	Multiple modes of transportation that often serve complementary functions and create redundancy, adding to the inherent resilience in overall transportation networks. Transportation infrastructure generally includes highway/roadways, mass transit, railway, aviation, maritime, pipeline and intermodal systems.

COMPONENTS AND ESSENTIAL ELEMENTS OF INFORMATION (EEIS)		
HIGHWAY / ROADWAY MOTOR VEHICLE	**MASS TRANSIT**	**RAILWAY**
▪ Stats of major roads and highways ▪ Status of critical and non-criticalbridges ▪ Status of maintenance and emergency repairs	▪ Status of public transit systems including underground rail, buses, and ferry services	▪ Status of area railways and stations
AVIATION	**MARITIME**	**PIPELINE**
▪ Status of area airports ▪ Status of incoming and outgoing flights	▪ Status of area waterways ▪ Status of area ports	▪ Status of natural gas and fuel pipelines

LIFELINE HAZARDOUS MATERIALS	DEFINITION
	Systems that mitigate threats to public health/welfare and the environment. This includes assessment of facilities that use, generate and store hazardous substances, as well as specialized conveyance assets and efforts to identify, contain and remove incident debris, pollution, contaminants, oil, or other hazardous substances.

COMPONENTS AND ESSENTIAL ELEMENTS OF INFORMATION (EEIS)

FACILITIES	INCIDENT DEBRIS, POLLUTANTS, CONTAMINANTS	CONVEYANCE
▪ Status of hazardous material facilities ▪ Amount, type, and containment procedures of hazardous materials ▪ Reported or suspected hazardous material/toxic release incidents ▪ Status of hazardous material supply chain	▪ Debris issues affecting the transportation system. ▪ Status of debris clearance operations ▪ Reported or suspected hazardous material/toxic release incidents ▪ Actual or potential radiological or nuclear incidents ▪ Monitoring actions planned or underway for HAZMAT incidents.	▪ Amount and type of hazardous material to remove. ▪ Availability of resources to support conveyance. ▪ Status of transportation, especially freight and pipeline

INCIDENT STABILIZATION

The lifeline construct is used to focus response actions on incident stabilization; thus the expected outcome is to stabilize all lifelines

- Stabilization occurs when immediate threats to life and property are anticipated, resourced, and managed and basic lifeline services are provided to survivors
  - Lifeline stabilization is dynamic and may require sustained resources and continuous evaluation
- Restoration implies a permanence to re-established critical infrastructure
- A dynamic stabilization target—the desired end-state of response—for each lifeline is created during the deliberate planning process and modified on a per-incident basis to match incident circumstances
- The target should be created collaboratively with key stakeholders:
  - Local response personnel
  - State response personnel
  - FEMA regional and/or national personnel
  - Other Federal response personnel

EXAMPLE

An incident destroys the cell towers in an area disrupting communications.

- **Stabilization** occurs when responders provide temporary service through mobile cell sites (e.g., Cell on Wheels)
- **Sustainment** occurs when the mobile cell sites are continuously resourced
- **Restoration** occurs when the cell towers are rebuilt

DETERMINING LIFELINE STATUS

During an incident, response personnel assign a status to each lifeline and component by integrating situational awareness reports and impact assessments from state, tribal, territorial, local, regional, federal, private sector, and non-profit or community partners

Applying the following questions and understanding the incident is critical in determining the status of a lifeline or component:

- Did the incident disrupt services to survivors provided by component capabilities?
- What is the extent of the disruption and impact on response and survivors?
- Has a solution to the disruption been identified?
- Has that solution been converted into a plan of action?
- Has that plan of action been resourced?
- Are there limiting factors that are preventing stabilization? To what extent are they limiting services?
- Have the services to survivors been stabilized? If not, how long to reach stabilization?
- Are there services enabling stabilization? How long will these services be provided to sustain stabilization?
- Have circumstances changed since the lifeline was last assessed?

FIGURE 20. EXAMPLE OF HOW LIFELINES DRIVE RESPONSE

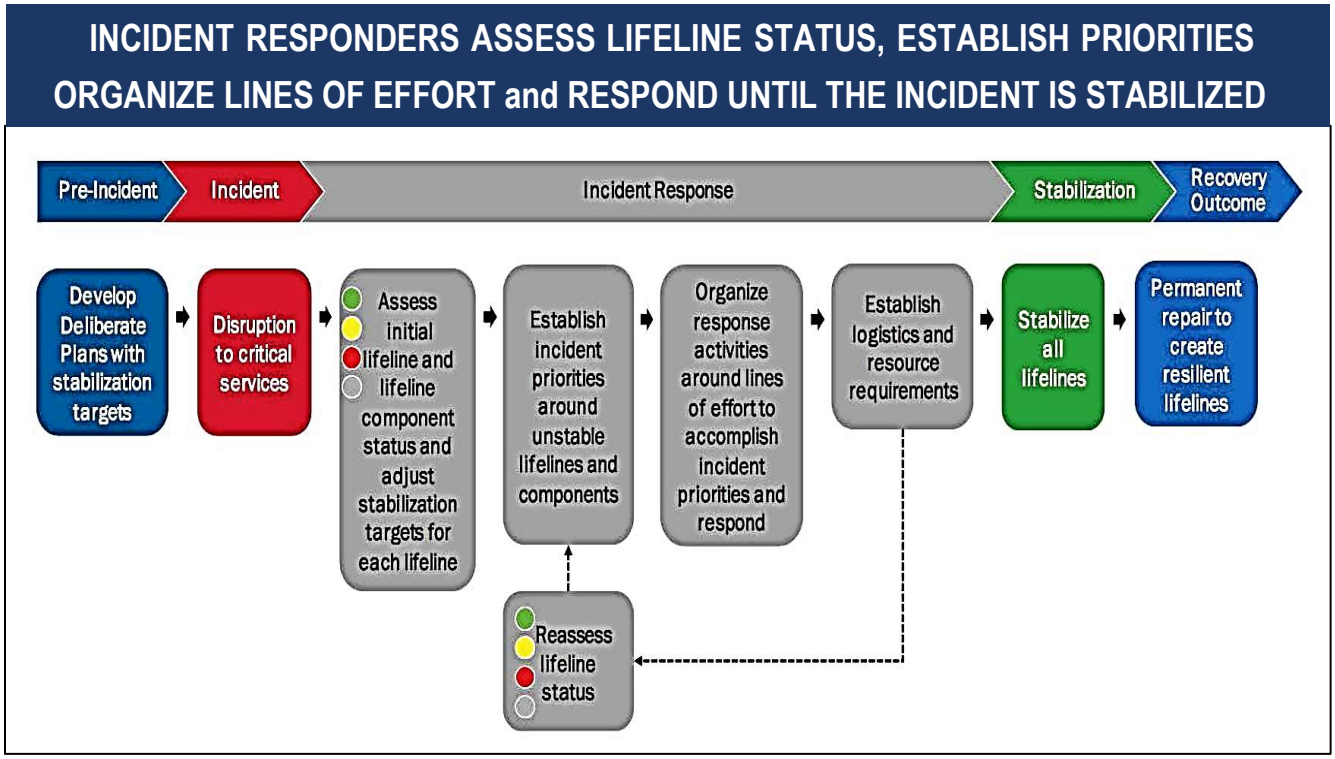
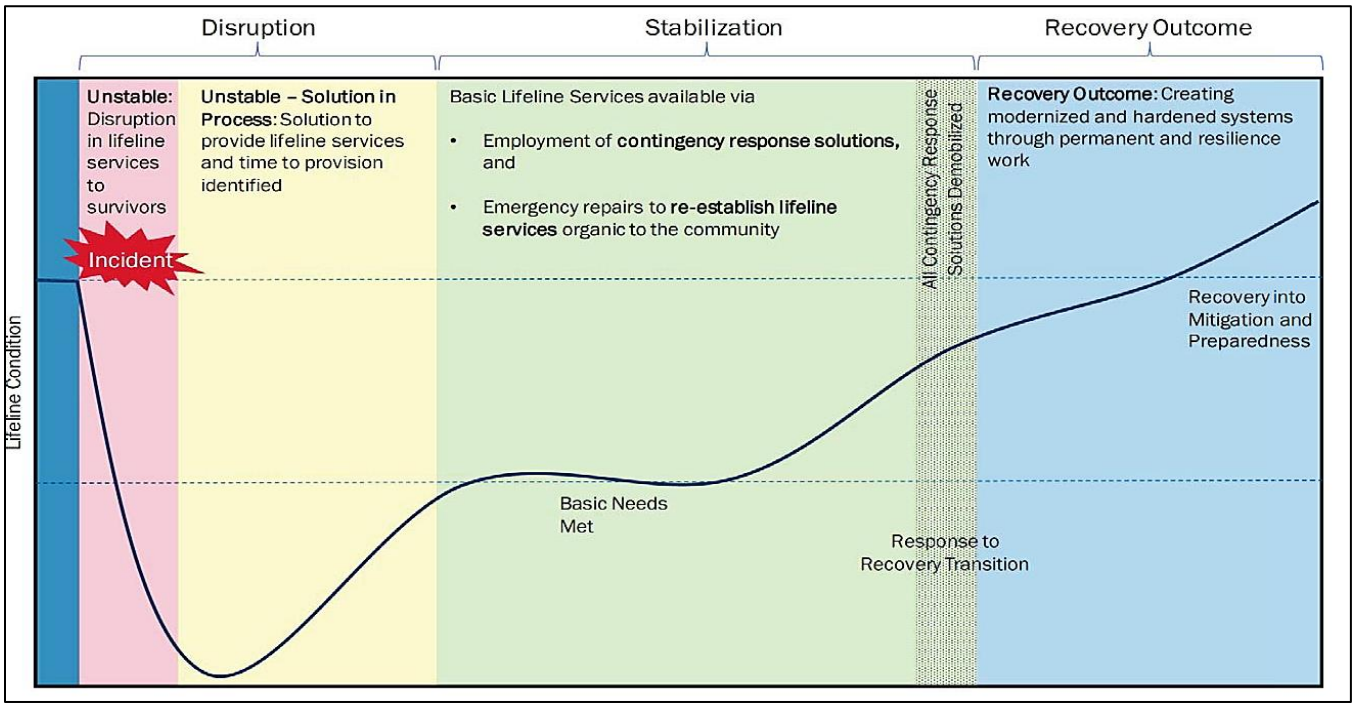


FIGURE 21. PROGRESSION OF LIFELINE CONDITIONS BEYOND STABILIZATION INTO RECOVERY



COLORS INDICATE LIFELINE OR COMPONENT STATUS

STABLE: Green

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

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.

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.

UNKNOWN: Grey

- Impacts are unknown and/or extent of situation or necessary response is unknown.

ASSIGNING A STATUS

Assign lifeline statuses as incident circumstances evolve and through the course of response operations.

Stabilization targets will provide the baseline against which lifelines can be compared.

The flowchart shows an example of how responders may think through assigning lifelines a color status.

FIGURE 22. STATUS ASSIGNMENT FLOWCHART