

RESTORATION OF LIFELINES

Capability Definition

Restoration of lifelines is the capability to initiate and sustain restoration activities. This includes the immediate repair/replacement of infrastructure for oil, gas, electric, telecommunications, drinking water, wastewater, and transportation services.

Outcome

Sufficient lifeline services are available to safely support ongoing recovery activities.

Relationship to National Response Plan Emergency Support Function (ESF)/Annex

This capability supports the following Emergency Support Functions (ESFs):

- ESF #1: Transportation
- ESF #2: Communication
- ESF #3: Public Works and Engineering
- ESF #12: Energy

Preparedness Tasks and Measures/Metrics

Activity: Develop and Maintain Plans, Procedures, Programs and Systems	
Critical Tasks	
Rec.C1a 1.8.3	Coordinate credentialing procedures so lifeline personnel have access to critical sites following an incident
Rec.C1a 1.11	Develop contingent contracts and mutual aid agreements
Rec.1.8.2C1a	Identify critical customers and interdependencies
Rec.C1a 1.10	Develop restoration plans
Rec.C1a 1.8.1	Coordinate between lifeline services and government regarding emergency planning and operations
Preparedness Measures	Metric
Credentialing procedures are in place	Yes/No
Contingent contracts and mutual aid agreements are in place	Yes/No
Critical customers and interdependencies are identified	Yes/No
Lifeline services and government have coordinated on emergency planning and operations	Yes/No

Activity: Develop and Maintain Training and Exercise Programs	
Critical Tasks	
Rec.C1a 2.3	Develop a training program based on emergency operations plans
Rec.C1a 2.2.1	Develop an exercise program based on emergency operations plans and training
Rec.C1a 2.2.2	Develop an after action program to correct deficiencies/exercise-findings
Rec.C1a 2.3.1	Conduct a training program based on lifeline emergency operations plans
Rec.C1a 2.4	Conduct an exercise program based on lifeline emergency operations plans
Rec.C1a 2.4.1	Include critical customers and interdependencies in training and exercise programs
Preparedness Measures	Metric
Training program has been developed based on emergency operations plans	Yes/No
Exercise program has been developed based on emergency operations plans and training	Yes/No
After action items from last exercise are addressed/corrected	Yes/No
Training is conducted based on lifeline emergency operations plans	Yes/No
Exercises are conducted based on lifeline emergency operations plans and training	Yes/No
Training and exercise programs include critical customers and interdependencies	Yes/No

Performance Tasks and Measures/Metrics

Activity: Direct Restoration of Lifelines Operations	
Definition: Command and control the restoration of lifelines operations, facilitate the prioritization of facilities and placement of personnel and equipment to maximize the efficiency and effectiveness of restoration activities, and communicate assessment results and continually update restoration status with the EOC and other impacted capabilities. (For exercise purposes only)	
Critical Tasks	
Rec.C1a 3.1.3	Identify entities affected by the loss of lifeline infrastructure
Rec.C1a 3.1.10	Identify resources required to manage and restore lifeline operations
Rec.C1a 3.1.11	Coordinate dissemination of status and priority information
Rec.C1a 3.1.5	Coordinate between lifeline services EOCs and government EOC/JFO
Rec.C1a 3.1.8	Provide and coordinate alternate means for providing critical lifeline services
Performance Measures	Metric
Entities affected by the loss of lifeline infrastructure have been identified	Yes/No

Resources required to manage and restore lifeline operations have been identified	Yes/No
Dissemination of status and priority information has been coordinated	Yes/No
Coordination between lifeline services EOCs and government EOC/JFO has occurred	Yes/No
Alternate means for providing critical lifeline services have been provided	Yes/No

Activity: *Activate Restoration of Lifelines*

Definition: Initiate the process for getting the appropriate personnel and equipment to the disaster locations. (For exercise purposes only).

Critical Tasks

Rec.C1a 4.1	Notify appropriate lifeline personnel
Rec.C1a 4.2	Determine estimated time of arrival of notified lifeline restoration personnel
Rec.C1a 4.3	Mobilize appropriate personnel
Rec.C1a 4.4	Mobilize equipment and resources appropriate for the incident

Performance Measures

Metric

Appropriate lifeline personnel have been notified	Yes/No
Estimated time of arrival of notified lifeline restoration personnel has been determined	Yes/No
Appropriate personnel have been mobilized	Yes/No
Equipment and resources appropriate for the incident have been mobilized	Yes/No

Activity: *Assess and Prioritize*

Definition: Continually assess and evaluate damage using specialized expertise in order to prioritize restoration and deployment of the correct assets to the damaged locations. Coordination between interdependent services recommended. (For exercise purposes only).

Critical Tasks

Rec.C1a 5.1	Assess condition of electric system infrastructure
Rec.C1a 5.5	Assess condition of transportation infrastructure
Rec.C1a 5.2	Assess condition of drinking water infrastructure
Rec.C1a 5.3	Assess condition of wastewater infrastructure
Rec.C1a 5.4	Assess condition of telecommunication infrastructure
Rec.C1a 5.6	Assess condition of oil and gas infrastructure
Rec.C1a 5.1.1	Prioritize restoration needs of electric system infrastructure
Rec.C1a 5.5.1	Prioritize restoration needs of transportation infrastructure
Rec.C1a 5.2.1	Prioritize restoration needs of drinking water infrastructure
Rec.C1a 5.3.1	Prioritize restoration needs of wastewater infrastructure

Rec.C1a 5.4.1	Prioritize restoration needs of telecommunication infrastructure	
Rec.C1a 5.6.1	Prioritize restoration needs of oil and gas infrastructure	
Rec.C1a 5.9	Prioritize lifeline restoration between sectors	
Performance Measures		Metric
Condition of electric system infrastructure has been assessed		Yes/No
Condition of transportation infrastructure has been assessed		Yes/No
Condition of drinking water infrastructure has been assessed		Yes/No
Condition of wastewater infrastructure has been assessed		Yes/No
Condition of telecommunication infrastructure has been assessed		Yes/No
Condition of oil and gas infrastructure has been assessed		Yes/No
Restoration needs of electric system infrastructure have been prioritized		Yes/No
Restoration needs of transportation infrastructure have been prioritized		Yes/No
Restoration needs of drinking water infrastructure have been prioritized		Yes/No
Restoration needs of wastewater infrastructure have been prioritized		Yes/No
Restoration needs of telecommunication infrastructure have been prioritized		Yes/No
Restoration needs of oil and gas infrastructure have been prioritized		Yes/No
Lifeline restoration between sectors have been prioritized		Yes/No

Activity: *Implement Restoration Procedures for Critical Facilities*

Definition: Execute the critical restoration effort using established priorities, in a manner that maximizes the efficiency and effectiveness of the response and recovery process. (For exercise purposes only).

Critical Tasks

Rec.C1a 6.5	Conduct electric system restoration operations	
Rec.C1a 6.9	Conduct transportation restoration operations	
Rec.C1a 6.6	Conduct drinking water restoration operations	
Rec.C1a 6.7	Conduct wastewater restoration operations	
Rec.C1a 6.10	Conduct telecommunications restoration operations	
Rec.C1a 6.11	Conduct oil and gas restoration operations	
Performance Measures		Metric
Electric system restoration operations were conducted		Yes/No
Transportation restoration operations were conducted		Yes/No
Drinking water restoration operations were conducted		Yes/No
Wastewater restoration operations were conducted		Yes/No
Telecommunications restoration operations were conducted		Yes/No
Oil and gas restoration operations were conducted		Yes/No

Activity: Demobilize Restoration of Lifelines Operations

Definition: Account for all assets utilized and return them safely to their original locations and functions. (For exercise purposes only)

Critical Tasks

Rec.C1a 7.2	Implement a demobilization plan
Rec.C1a 7.3	Restore personnel and equipment used for lifeline restoration to normal operations
Rec.C1a 7.4	Document restoration activities, as needed

Performance Measures

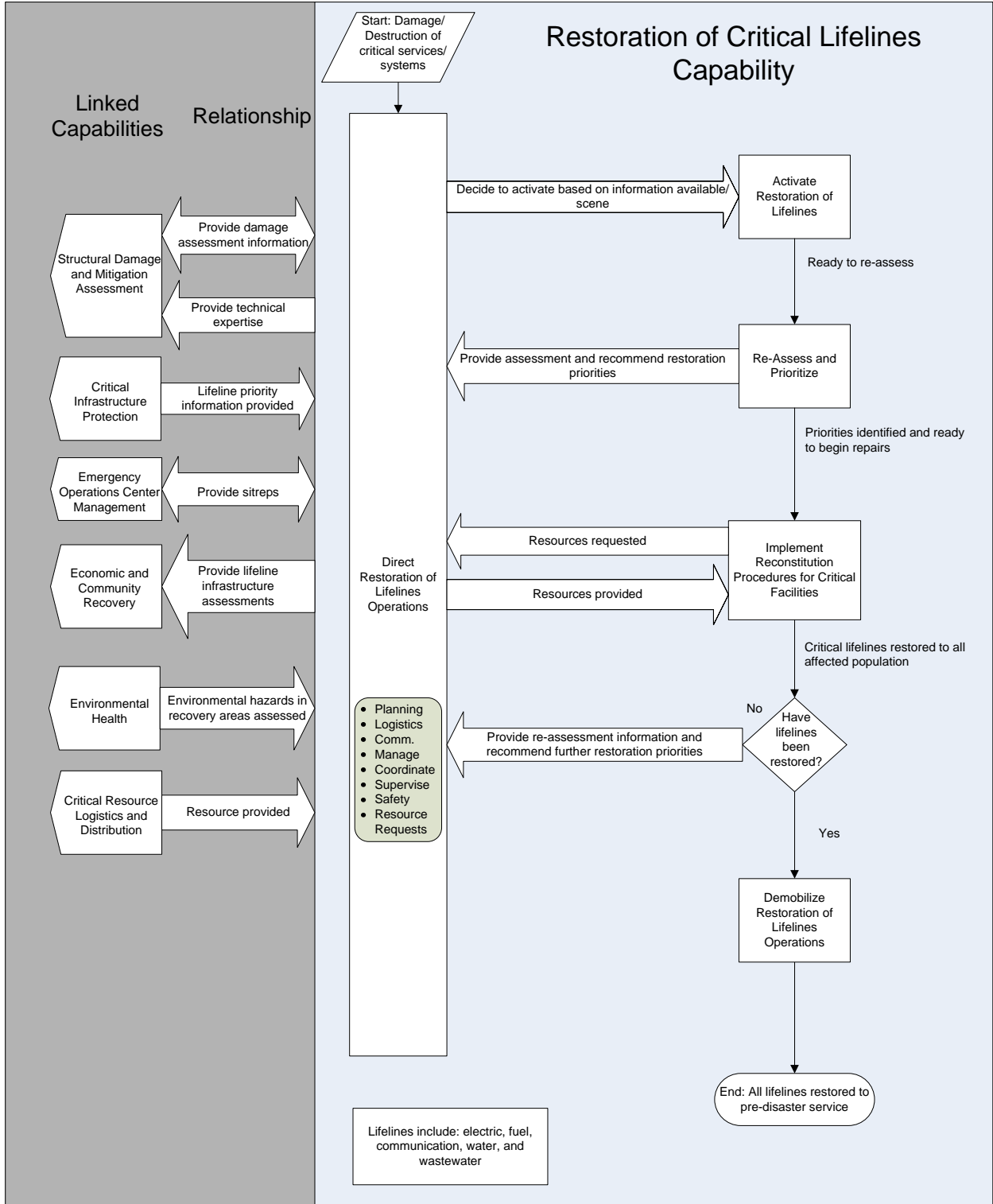
Metric

Demobilization plan is implemented	Yes/No
Personnel and equipment used for lifeline restoration have been restored to normal operations	Yes/No
Restoration activities have been documented as needed	Yes/No

Linked Capabilities

Linked Capability	Relationship
Structural Damage and Mitigation Assessment	Restoration of Lifelines provides technical expertise to Structural Damage and Mitigation Assessment, while Structural Damage and Mitigation Assessment provides initial lifeline damage assessment to Restoration of Lifelines.
Emergency Operations Center Management	Restoration of Lifelines and Emergency Operations Center Management both provide situation reports to each other.
Economic and Community Recovery	Restoration of Lifelines provides lifeline infrastructure assessment to Economic and Community Recovery.
Environmental Health	Environmental Health provides information to Restoration of Lifelines regarding the safety considerations for assessment and repair crews in the impacted area
Critical Resource Logistics and Distribution	Critical Resource Logistics and Distribution provides resource support to the Restoration of Lifelines Capability.
Critical Infrastructure Protection	Critical Infrastructure Protection provides information to assist with the prioritization of restoration activities

Capability Activity Process Flow



Capability Element Description Details

Target Capabilities List

Capability Elements	Components and Description
Damage Assessment Team: Oil and Gas Distribution System	Per NIMS
Damage Assessment Team: Drinking Water and Wastewater	Per NIMS
Damage Assessment Team: Electric Power	Per NIMS
Damage Assessment Team: Telecommunications System	Per NIMS
Transportation Assessment Team	
Drinking Water and Wastewater Restoration Team	
Oil and Gas Distribution System Restoration Team	
Telecommunications System Restoration Team	
Electric Power Restoration Team	Per NIMS, a team of personnel and equipment to coordinate and support resources of energy producers to quickly restore electrical power to afflicted areas
Transportation Restoration Team	

Planning Assumptions

General

- Although applicable to several of the 15 National Planning Scenarios, the capability factors were developed August 29, 2006. The scenarios were reviewed to identify required adjustments or additions to the planning factors and national targets.
- Federal funding was available to eligible applicants of State and local governments, including some -but not all- lifeline services, as a result of a Presidential Disaster Declaration.
- Responsibility for lifeline repairs will be based on ownership of lifeline facilities (public vs. private).
- Ability to communicate with lifeline personnel and obtain additional resources was impacted due to the size and impact of this event.
- Due to previous events, the availability of appropriate resources was limited.

Planning Factors from Analysis of an Actual Event (Hurricane Katrina)

(Under Development)

Resource Organization	Estimated Capacity	Scenario Requirement Values	Quantity of Resources Needed
Damage Assessment Team: Oil and Gas Distribution System			
Damage Assessment Team: Drinking Water and Wastewater			
Damage Assessment Team: Electric Power			
Damage Assessment Team: Telecommunications System			
Drinking Water and Wastewater Restoration Crew			
Wastewater Treatment Plant Restoration Crew			
Oil and Gas Distribution System Restoration Crew			
Telecommunications System Restoration Crew			
Electric Power Restoration Crew			
Transportation Assessment Team			

National Targets and Assigned Levels

(Under Development)

Responsible	Element Resource Unit	Type of Element	Number of Units	Unit Measure (number per x)	Capability Activity supported by Element
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Note: the teams identified below will be generated in response to a specific incident by assembling staff from various locations; they are not dedicated, standing organizations.

Responsible	Element Resource Unit	Type of Element	Number of Units	Unit Measure (number per x)	Capability Activity supported by Element
	Debris Management Team	NIMS typed Resource Organization			
	Damage Assessment Team: Gas Distribution System	NIMS typed Resource Organization			
	Damage Assessment Team: Water and sewer	NIMS typed Resource Organization			
	Damage Assessment Team: Electric Power	NIMS typed Resource Organization			
	Damage Assessment Team: Communications System	NIMS typed Resource Organization			
	Water and Sewer Restoration Team	Non-NIMS Resource Organization			
	Gas Distribution System Restoration Team	Non-NIMS Resource Organization			
	Communications System Restoration Team	Non-NIMS Resource Organization			
	Electric Power Restoration Team	NIMS Type Resource Organization			
	Transportation Assessment Team	Non-NIMS Resource Organization			

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