ANNEX A: Emergency Management

ESF #5 and #7
Information, Planning, and Resource Management

Introduction

Emergency management (or disaster management) is the discipline of dealing with and avoiding risks. It is a discipline that involves preparing for disaster before it occurs, the response to the disaster (e.g., emergency evacuation, quarantine, mass decontamination, etc.), and supporting and rebuilding the infrastructure after natural or human-made disasters have occurred. In general, any scenario that involves the emergency management process is an ongoing process by which all individuals, groups, and communities manage hazards in an effort to avoid or ameliorate the impact of disasters resulting from the incident. Any actions, whether reactive or proactive, depend in part on accurate assessments of risks to the potentially affected population or the infrastructure. Effective emergency management, therefore, relies on the seamless and thorough integration of emergency plans at all levels of government and non-governmental organizations. Traditionally, it has been commonplace to affix accountability and responsibility for governmental emergency management with the institutions within the conventional structure of the emergency services. Contrary to the belief, emergency management actually starts at the *lowest* level, and only increases to the *next higher* organizational level after the resources at the current level have been severely depleted or exhausted.

Any catastrophic event or incident, whether immediate or impending, can only be satisfactorily negotiated and resolved through the use of a well-planned, well-designed, well-integrated, and well-executed emergency response protocol(s). The overall effectiveness with which this emergency response is implemented, therefore, is predicated on the existence of a fluid, dynamic plan that reflects recent and critical information about the nature and extent of the incident itself.

Under the umbrella of Emergency Management, there are two critical interrelated functions that contribute to the operational effectiveness in the incident management process. The fact that these two functions are highly fluid and dynamic in the Emergency Management process cannot be over-emphasized.

The ***Information and Planning*** function is responsible for the collection, evaluation, and dissemination of operational information regarding the incident. In addition, the Information and Planning function maintains information and intelligence on the current and forecasted situation, as well as the status of the resources that are allocated to the incident. In addition, this function is also responsible for the preparation and documentation of the Incident Action Plans, and the dissemination of incident maps. Finally, the Information and Planning function is responsible for gathering and disseminating actionable information and intelligence critical to the incident. Depending on the nature and extent of the incident itself, the following units may be incorporated under the overarching umbrella of the Emergency Management function.

- ☐ The *Resource Unit* ensures that all assigned personnel and resources have checked in at incident site or other pre-assigned or pre-designated location. The *Resource Unit* is also responsible for monitoring and tracking in real-time mode the current location and status of all incident-based resources and assets. It also maintains a master list of all resources actually committed to the incident as well as those which are awaiting potential deployment.
- ☐ The *Situation Unit* collects, processes, and organizes ongoing situation information, prepares situation summaries, develops projections and forecasts of future events related to the incident, prepares maps, and gathers and disseminates information and intelligence for use in the Incident Action Plan.
- ☐ The *Documentation Unit* maintains accurate and complete incident files, including a complete record of the major steps taken to resolve the incident. The *Documentation Unit* also compiles and publishes the Incident Action Plan (IAP) and maintains the files and records that are developed as part of the overall IAP and incident planning function.
- ☐ The *Demobilization Unit* develops an Incident Demobilization Plan that includes specific instructions for all personnel and resources that will require demobilization, as applicable, once the incident has been resolved.

These four functional units are designed to operate in an integrated and seamless fashion throughout the incident management process.

In terms of the **Resource Management** function, the Logistics Section is accountable for the provisioning and deployment of all support needs related to the incident, such as ordering resources and providing facilities, the deployment of assets, supplies, transportation, equipment maintenance, fuel, food services, communications, and medical services for the incident personnel. This section can be augmented to support the incident through six functionally distinct but interdependent units.

- ☐ The *Supply Unit* orders, receives, processes, stores, inventories, and distributes all incident related resources and supplies, per request or incident command directive.
- ☐ The *Facilities Unit* sets up, maintains, and demobilizes all facilities used in support of incident operations, per incident command.
- ☐ The *Ground Support Unit* maintains the primary function of maintaining and servicing vehicles and mobile equipment. It also has the additional responsibility of maintaining a transportation pool for major incidents.
- ☐ The *Communication Unit* develops the Communication Plan (ICS 205), to make use in the most effective manner the use of communication equipment and facilities assigned to the incident.
- ☐ The *Food Unit* determines food and hydration requirements of the responders.
- ☐ The *Medical Unit* is responsible for the effective and efficient provision of medical services to incident personnel, and reports directly to the Logistics Section Chief.

Similar to the functional units that comprise the Information and Planning function, these six functional Resource Management units are designed to operate in an integrated and seamless fashion throughout the incident management process.

Roles and Responsibilities

Emergency Management officials at all levels of government are responsible for planning, organizing, directing and controlling the coordination, allocation, and deployment of resources and assets so that they may be brought to bear on the incident itself. Accordingly, the following roles and responsibilities are typically associated with the emergency management function relative to the collection, analysis, and dissemination of incident-based information.

Information and Planning

- ☐ Establish a duty roster and telephone tree of Emergency Operations Staff and response partners.
- ☐ Accurate and effective collection of information and intelligence critical to the incident, inclusive of meteorological forecasts.
- ☐ Gather, process, and display information relevant to the incident to keep response partners and stakeholders abreast of situation.
- ☐ Report incidents of an emergency nature to the State Warning Point at the Florida Division of Emergency Management (FDEM) in a timely manner.
- ☐ Keep county stakeholders informed of situation and any and all emergency preparedness and response activities underway or being taken.
- ☐ Coordinate public release of information through the established joint information center (JIC).
- ☐ Anticipate potential response needs that will be requested and or needed by partners.
- ☐ Track, update, and save situational reports of incident progress, issues, and strengths through the life-cycle of the incident.
- ☐ Facilitate EOC meetings.

Resource Management

- ☐ Stage resources near the impacted/emergency areas, when possible.
- ☐ Anticipate available resources and facilities that will be necessary to respond to an emergency. Ensure they are pre-identified and assessed for possible deployment.
- ☐ Assist, facilitate, and coordinate needed contractual services.
- ☐ Provide accurate and up-to date listing of all supplies ordered and en-route to staging areas for Incident Action Plan.
- ☐ Understand the needs of the incident and process for obtaining needed resources.[1]
- ☐ Understand the National Incident Management System resource typing methodology.
- ☐ Employ a mechanism to track incident resources effectively.

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[1] Failure of Initiative: A Failure of Initiative: Final Report of the Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina. (2006)

Table 1
ESF #5 (Information and Planning)

Level	Primary Agency	Support Agencies
National	Department of Homeland Security/Emergency Preparedness and Response/Federal Emergency Management Agency	Department of Agriculture Department of Commerce Department of Defense Department of Education Department of Energy Department of Health and Human Services Department of Homeland Security Department of Housing and Urban Development Department of the Interior Department of Justice Department of Labor Department of State Department of Transportation Department of the Treasury Department of Veterans Affairs Environmental Protection Agency Federal Communications Commission General Services Administration National Aeronautics and Space Administration Nuclear Regulatory Commission Office of Personnel Management Small Business Administration Tennessee Valley Authority U.S. Postal Service American Red Cross
State	Division of Emergency Management	Department of Military Affairs, Florida National Guard, the Florida Wing of the Civil Air Patrol, Florida Department of Transportation, and the Florida Fish and Wildlife Conservation Commission.
Regional		
Citrus	Citrus County Emergency Management Section	All ESF Primary Agencies
Hardee	Hardee County Office of Emergency Management (OEM), IT, and GIS Departments	Hardee of Public Works Hardee County Administration Municipal Administrations
Hernando	Hernando County Emergency Management	Hernando County Clerk of the Circuit Court State of Florida Division of

Level	Primary Agency	Support Agencies
		Emergency Management
Hillsborough	Emergency Management /EOC staff	Civil Action Center (CAC) Communications Department Information & Technology Services The GIS section of the Real Estate Department Hazard Mitigation Section of the Planning & Growth Management Department Emergency Dispatch Center (EDC)
Manatee	Manatee County Emergency Management Division	Manatee County Planning and Building Departments Manatee County Information Services Office Manatee County Intergovernmental Relations Office Manatee County Community Services Department Manatee County Financial Management Department
Pasco	Pasco County Office of Emergency Management	CERT members Pasco County Growth Management Pasco County Environmental Land Acquisition and Management Program (ELAMP) Pasco County Geographic Information System (GIS) Pasco County Document Processing Department
Pinellas	Department of Emergency Management	All ESF's
Polk	Emergency Management Division	All ESF's

Table 2
ESF #7 Resource Management

Level	Primary Agency	Support Agencies
National	General Services Administration	Department of Agriculture Department of Commerce Department of Defense Department of Energy Department of Homeland Security Department of Labor Department of Transportation Department of Veterans Affairs National Aeronautics and Space Administration National Communications System Office of Personnel Management
State	Division of Emergency Management	Florida Department of Management Services Florida Department of Banking and Finance, Office of the State Comptroller Florida Department of Military Affairs - National Guard Bureau Florida Department of Agriculture & Consumer Services - Division of Forestry
Regional		Regional Domestic Security Task Forces
Citrus	Citrus County Emergency Management Section	Citrus County Board of County Commissioners Citrus County Sheriff's Office City of Crystal River Finance Department City of Inverness Finance Department Citrus County Road Maintenance Operations Division Citrus County School Board Citrus County Utilities Division Citrus County Department of Development Services
Hardee	Hardee County Emergency Management	Hardee County Purchasing Department

Level	Primary Agency	Support Agencies
Hernando	Hernando County Purchasing Department	Hernando County Clerk of the Court- Finance Department Hernando County Public Works Department Hernando County Community Services Hernando County School Board
Hillsborough	Department of Procurement Services	Management & Budget Department Human Resources (Volunteer Center) United Way/Volunteer Center of Tampa Bay (Volunteer Center)
Manatee	Purchasing Division of Financial Management	Manatee County Community Services- Transit Division Manatee County Human Resources Department Manatee County Facilities Management Department
Pasco	Pasco County Fleet Management Pasco County Purchasing Department	Office of Management and Budget Department Pasco County Facilities Management Pasco County Personnel Department
Pinellas	Department of Emergency Management	Resource Management Group: Assistant County Administrator Planning Department Purchasing Department Development Review Services
Polk	Support Services Group (Purchasing Division)	Public Safety Department (Emergency Management Division) Support Services Group (Fleet Management Division) Financial And Strategic Planning Department (Office Of Budget And Management Services) (Information Technology Division) Neighborhood Services Dept (Leisure Services Division) Central Florida Development Council
Sumter	Sumter County Emergency Management	Clerk of the Circuit Court (Lead Support Agency) All Primary and Support Agencies

Basic Emergency Management Functions and Responsibilities

There are four fundamental functional processes generally involved in emergency management: mitigation, preparedness, response, and recovery.

Mitigation efforts attempt to prevent hazards from developing into disasters altogether, or to reduce the effects of disasters when they occur. The mitigation phase differs from the other phases because it focuses on long-term measures for reducing or eliminating risk. The implementation of mitigation strategies can be considered a part of the recovery process if applied after a disaster occurs. Mitigation measures can be structural or non-structural. *Structural* measures use technological solutions, like flood levees. *Non-structural* measures include legislation, land-use planning (e.g. the designation of nonessential land like parks to be used as flood zones), and insurance. Generally speaking, mitigation is the most cost-efficient method for reducing the impact of hazards.

An activity that is actually a predicate condition to the mitigation effort itself is the identification and assessment of risks, whether actual or potential. Physical risk assessment refers to the process of identifying and evaluating hazards. The hazard-specific risk combines both the probability and the level of impact of a specific hazard. The magnitude of the hazard multiplied by the populations' vulnerability to that hazard produces a calculable level of risk. In general, the higher the risk, the more urgent that the hazard specific vulnerabilities are targeted by mitigation and preparedness efforts. However, by virtue of the same logic, it also stands to reason that if there is *no* vulnerability, then there will be *no* risk.

Preparedness is a continuous and on-going cycle of planning, organizing, training, equipping, exercising, evaluating, and improving activities to ensure effective and sustained coordination of the emergency response. Preparedness also involves the enhancement of capabilities to prevent, protect against, respond to, recover from, and mitigate against natural disasters and catastrophes, acts of terrorism, and other man-made disasters. Another aspect of preparedness is casualty prediction, the study of how many deaths or injuries to expect for a given kind of event. This gives emergency planners an idea of what resources need to be in place to respond to a particular kind of event.

It is in this particular preparedness phase that plans of action are developed in order to manage and offset incident-based risks. Also integral during this phase is taking the appropriate action to establish the necessary capabilities that are necessary to implement such plans. Common preparedness measures include:

- Viable communication plans with easily understandable terminology, methods, and protocols for information collection and dissemination;
- Proper maintenance and training of emergency services personnel and emergency services providers (such as community emergency response teams);
- Development and implementation of emergency population warning methods that are seamlessly integrated with emergency shelters and evacuation plans;
- Stockpiling, inventory, and maintain disaster supplies and equipment that will be needed in order to mitigate the incident or disaster;
- Develop organizations of trained volunteers among civilian populations since professional emergency personnel may be rapidly overwhelmed in mass emergencies.

Emergency managers in the planning phase should be flexible, and all encompassing - carefully recognizing the risks and exposures of their respective regions and employing unconventional,

and even atypical, means of support. Depending on the size of the region and the event – public and private sector emergency services can rapidly be depleted and heavily taxed over a short period of time. Non-governmental organizations that offer desired resources, i.e., transportation of displaced homeowners to be conducted by local school district buses, evacuation of flood victims to be performed by mutual aide agreements between fire departments and rescue squads, should be identified in the early stages of the planning process.

The *response* phase includes the mobilization of the necessary emergency services, resources, and first responders in the disaster area. This is most likely to include a first wave of core emergency services personnel, such as firefighters, police and ambulance crews. When conducted as a military operation, it is termed *Disaster Relief Operation* (DRO) and can be a follow-up to a non-combatant evacuation operation (NEO). They may be supported by a number of secondary emergency services, such as specialist rescue teams.

Organizational response to any significant catastrophe or disaster, whether natural or man-made, is based on existing emergency management organizational systems and processes: the Federal Response Plan (FRP) and the Incident Command System (ICS). These systems are solidified through the principles of Unified Command (UC) and Mutual Aid (MA).

In responding to a disaster, there is a need for both discipline (structure, doctrine, process) and agility (creativity, improvisation, adaptability. Combining that particular need with the demand to build a leadership team quickly to coordinate and manage efforts as they grow beyond first responder capabilities indicates the need to devise and implement a disciplined and cumulative set of response plans that may be adapted to changing conditions and information as the event or catastrophe unfolds.

The aim of the *recovery* phase is restorative in nature. Its principle objective is to return the affected area to its previous pre-catastrophe/pre-incident condition. It differs from the response phase in its mission since recovery efforts are concerned with issues and decisions that must be made after more immediate needs and demands are addressed. Recovery efforts are primarily concerned with actions that involve rebuilding destroyed property, re-employment, and the repair of other essential infrastructure elements. A guiding principle in the recover phase is to "build back better", aiming to reduce the pre-disaster risks inherent in the community and infrastructure. A critically important aspect of effective recovery efforts is to take advantage of a 'window of opportunity' for the implementation of mitigative measures that might be unpopular under different conditions. Citizens of the affected area are more likely to accept more mitigative-style changes when a recent disaster is in fresh memory. In the United States, the National Response Plan dictates how the resources provided by the 2002 Homeland Security Act will be used in recovery efforts. It is the Federal government that often provides the most technical and financial assistance for recovery efforts in the United States.

Any catastrophic event, whether immediate or impending, can only be satisfactorily negotiated and resolved through the use of a well-planned, well-designed emergency response. The effectiveness with which this emergency response may be implemented, in turn, is predicated on the existence of a fluid, dynamic plan that reflects recent and critical information about the nature and extent of the incident itself.

Existing MOUs/MOAs

Information Planning

County Emergency Management Office support the Emergency Management Assistance Compact (EMAC)[2]. The EMAC is a congressionally ratified organization that provides form and structure to interstate mutual aid. Florida Statewide Mutual Aid Compact[3] also provides the structure for intrastate mutual aid.

Suggested Support Partners:

Information and Planning within Emergency Management is supported by all Emergency Support Functions. However, it is imperative to the mission that GIS and Information Technology units support disaster response planning efforts if they do not already do so.

Basic Planning Assumptions – Emergency Management[4]

1. A catastrophic incident may result in large numbers of casualties and/or displaced person, possibly in the tens to hundreds of thousands.
2. The nature and scope of a catastrophic incident will immediately overwhelm State and Local response capabilities, this requires that counties understand and be able to clearly articulate their resource needs.
3. A detailed and credible common operating picture reflecting critical, urgent needs and requirements may not be achievable for 24 to 48 hours after the incident. Accordingly, county response activities must begin without the benefit of a detailed or complete situation and critical needs assessment.
4. Loss of city power will only be partially met by auxiliary power sources.
5. The response capabilities and resources of the local jurisdiction (to include mutual aid from surrounding jurisdictions and response support from the State) may be insufficient and quickly overwhelmed. Local emergency personnel who normally respond to incidents may be among those affected and unable to perform their duties.
6. The assets outlined in response strategies may not be available at the time of a catastrophic event due to needs at their home institution, family requirements, etc.
7. A catastrophic incident will present a dynamic response and recovery environment requiring that response plans and strategies be flexible enough to effectively address emerging or transforming needs and requirements.

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[2] Through EMAC a disaster impacted state can request and receive assistance from other member states quickly and efficiently, resolving two key issues upfront: liability and reimbursement.
http://www.emacweb.org/

[3] http://www.floridadisaster.org/Response/Operations/EMAC/documents/SMAA_PDF%20FORM-20090212.pdf

[4] Catastrophic Incident Supplement to the National Response Plan (2005)

8. County and State must commence immediately in order to save lives, prevent human suffering, and mitigate severe damage.
9. The majority of deployment-dependent Federal response resources are not likely to provide significant lifesaving or life-sustaining capabilities until 18-36 hours post event.
10. Adequate water supplies may be compromised. Similarly, loss of city power will only be partially met by auxiliary power sources.
11. The response capabilities and resources of the local jurisdiction (to include mutual aid from surrounding jurisdictions and response support from the State) may be insufficient and quickly overwhelmed. Local emergency personnel who normally respond to incidents may be among those affected and unable to perform their duties.
12. The assets outlined in response strategies may not be available at the time of a catastrophic event due to needs at their home institution, family requirements, etc.

Additional Issue Points[5]

Information Planning

Incident "command and control" are key elements in emergency management. According to Hurricane Katrina response after-action reports[i], one of the major findings was a loss of command centers or the inability to establish and maintain unity of command over time.

☐ What resources are needed within the Information Planning function to support sustained command and control efforts during and post catastrophic event?
☐ What is the mechanism to share information between and amongst response partners, including local, state, and federal agencies, both leading up to, during, and after the event when communication infrastructure may be damaged, degraded, or compromised completely?
☐ What is the redundant system in place to support information system overload during response efforts post catastrophic incident?
☐ What is the mechanism to handle resources that show up without request and/or coordination?
☐ Are the staff and designated personnel that will support catastrophic planning adequately trained in the roles and responsibilities of the position? What about back-up staff?
☐ How will the Information Planning function coordinate with field operations which will both fluid and dynamic in nature?
☐ What is the command and control structure post-event, and how does this differ from day-to-day operation and/or smaller incidents?
☐ What role does the Regional Coordinator play in Information Planning function?
☐ Understanding that plans are living documents[ii], what is the mechanism to ensure that plans have been allocated and disseminated to response partners to ensure they understand their roles and responsibilities during emergency events?

Resource Management

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[5] *Failure of Initiative: Final Report of the Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina,* 2007 and the *Florida Catastrophic Plan (Draft)* 2008

Logistics is the crux of all successful response efforts. Anticipating your areas needs allows for baselines assumptions to be taken and requests to be submitted ahead of chaos. *See Discussion notes (Attachment A-1)*

☐ Has owning agency identified areas special needs populations[iii]? Have the existing databases been coordinated? What is the definition of those special needs populations that have been cataloged?

☐ What is the mechanism to track whether resources have been assigned to a request from local to state?

☐ Has owning agencies pre-identified potential asset needs? What is the process to request resources?

☐ Is it clear what the responsibilities are operationally for all response partners (Local, State, and Federal)?[6]

☐ Does owning agency enter into contracts ahead of event or are contracts finalized post event?

☐ Is staff and back up staff trained in resource tracking adequately?

☐ Do resource management annexes distinguish between smaller/regional disasters and the requirements of large-scale or catastrophic incidents?

Catastrophic Incident Response Phases

1. Assess Impacts

Table 3
Assessment Parameters

Essential Information Needed	Examples of Specific Information Needed	Methodology/Source	Responsible Entity	Products
1. **Preliminary needs and damage assessment**	• Geographic limits of damage • Description of the severity of damage • Estimated percentage of population evacuated or in need of evacuation	METHODOLOGY: • Predictive modeling • Remote/overhead sensing • Aerial reconnaissance SOURCE: • Media • Assessment teams • On-scene reports • Special Needs Database	Operations: ESF 1,ESF 2,ESF 3,ESF 4,ESF 6,ESF 8,ESF 9,ESF 10,ESF 11,ESF 12,ESF 13,ESF 14 Planning/ESF 5: County Geographic Information Systems (GIS) Division • Situation Unit	• Geographic Information System (GIS) products • Updated impact maps • Updated information board messages • Situation report • Status briefing

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[6] National Response Framework (2009).

Essential Information Needed	Examples of Specific Information Needed	Methodology/Source	Responsible Entity	Products
2. **Priorities for community support activities**	• Local operational, priorities: water, food, power, medical, evacuation, search and rescue, communications • State and Federal operational priorities	SOURCE: • Remote Sensing/aerial reconnaissance • ICP/EOC/JFO reports • Assessment team reports • Community relations field reports • ESF reports	EOC Operations Coordinator Policy Group	• GIS products • Updated impact maps • Situation report • Status briefing • Inventory of available resources
3. **Status of critical infrastructure and facilities**	• Status of potable and non-potable water and sewage treatment plants/distribution systems • Status of medical facilities (hospitals and nursing homes) • Status of schools and other public buildings • Status of fire and police facilities • Status of waterways—SWFMD/U.S. Army Corps of Engineers, U.S. Bureau of Reclamation, DWR	METHODOLOGY: • Predictive models • Remote sensing • Aerial reconnaissance SOURCE: • SWFWMD • ESF3 • ESF8 • ESF12 • U.S. Army Corps of Engineers • Public Health • Department of Energy	Operations: • ESF 1 • ESF 2 • ESF 3 • ESF 8 • ESF 12 Planning/ESF 5: • County Geographic Information Systems (GIS) Division • Situation Unit Logistics • Facilities Unit	• GIS products • Updated impact maps • Situation report • Status briefing
4. **Community support impact assessment**	• Estimated population affected • Number of shelters open/population • Potential unmet shelter requirements • Number of homes affected (destroyed, damaged) • Percentage of banks functioning • Percentage of grocery stores open and able to meet the needs of the public • Percentage of pharmacies open and able to meet the needs of the public	METHODOLOGY: • Predictive modeling (including HAZUS) • GIS SOURCE: • Assessment teams • Reports from SEOC and regional EOCs • News media and other open sources • Volunteer agency reports • ESF6 reports • ESF 8 reports • ESF 14 reports	Operations • ESF 6 • ESF 8 • ESF 14 • ESF 15 • ESF 18 Planning/ESF 5 County Geographic Information Systems (GIS) Division • Situation Unit	• Reporting • Displays • GIS products • Updated impact maps • Updated shelter information report • Situation report • Status briefing

Essential Information Needed	Examples of Specific Information Needed	Methodology/Source	Responsible Entity	Products
5. **Demographics**	• Population of impacted areas • Demographic breakdown of population, including income levels, information on special needs populations, the elderly and children • Number/type of housing units in impacted areas • Level of insurance coverage • Unemployment levels • Foreign languages spoken in greater than 1 percent of the population	METHODOLOGY: • Predictive modeling • GIS SOURCE: • Commercial products • Census data	Operations • ESF6 • ESF8 • ESF9 Planning/ESF 5 • County Geographic Information Systems (GIS) Division	• Jurisdiction profiles • GIS analysis • Regional analysis and summary
6. **Hazard-specific information** **Hazardous, toxic, and radiological issues** **Safety hazards**	• Extent of fires • Potential for (or extent of) flooding • Number/estimate of collapsed structures potentially requiring urban search and rescue • Actual or potential for release of hazardous materials • Actual or potential radiological incidents • Affected locations and what they contain • Actions being taken under the USCG's National Contingency Plan, if any. • Personal safety issues • Public health concerns	SOURCE: • Assessment Team reports • EOC Reports • Predictive modeling • Florida Department of Health • Bureau of Radiation Control • Nuclear Regulatory Commission • Florida Department of Environmental Protection • Occupational Safety and Health Administration • Centers for Disease Control • U.S. Environmental Protection Agency • Coast Guard	Operations Planning/ESF 5 • County Geographic Information Systems (GIS) Division	• GIS products • Daily intelligence summary • Updated impact maps • Updated information board messages • Situation report • Status briefing • Safety briefings
7. **Weather**	• Forecast post-incident and implications for impeding operations	SOURCE National Weather Service National Oceanic and Atmospheric Administration (NOAA)	Planning/ESF 5 • Situation Unit	• Daily intelligence summaries • Impact analysis • Situation report • Status briefing

Essential Information Needed	Examples of Specific Information Needed	Methodology/Source	Responsible Entity	Products
8. **Status of remote sensing operations**	• Remote sensing missions that have been requested • Target areas • Data availability • Whether a rapid assessment is being conducted • Areas that are being assessed • Report availability and format • Whether the Civilian Air Patrol has been activated • Where over-flights are being conducted • Other aerial reconnaissance missions in progress • Commercial remote sensing sources availability	SOURCE • Private-sector entities • U.S. Coast Guard • U.S. Geological Survey • DOD • National Aeronautics and Space Administration	Planning/ESF 5:	• Remote sensing imagery derived products (satellite imagery, aerial maps, etc.) • Remote sensing data stream (water levels in feet, wind speed, etc.)
9. **Predictive modeling**	• What U.S.-Hazards (HAZUS) models show for damage impacts and casualties	SOURCE: • HAZUS outputs	• FEMA Mapping and Analysis Center	• GIS products
10. **Status of the transportation infrastructure in the disaster area**	• Status of major/primary roads • Status of area airports • Status of critical bridges • Status of railways • Status of ports • Status of evacuation routes • Status of public transit systems • Status of pipelines • Accessibility to most severely impacted areas	METHODOLOGY • Predictive modeling • Remote/overhead sensing • Aerial reconnaissance SOURCE: • Media • Assessment teams • On-scene reports • EOC reports • FDOT reports • US Army Corps of Engineers	Operations • ESF1	• GIS products • Updated impact maps • Updated ESF1 action log • Situation report • Status briefing

Essential Information Needed	Examples of Specific Information Needed	Methodology/Source	Responsible Entity	Products
	• Assessment of flooding, debris etc. on major roadways and bridges			
11. **Status of communications**	• Status of telecommunications service (including Internet and infrastructure, including towers) • Reliability of cellular service in affected areas • Potential requirement for radio/satellite communications capability • Status of emergency broadcast (TV, radio, cable) system and ability to disseminate information	SOURCE: • ESF2 • News media/open sources • Landline service provider/telephone companies • Wireless service provider/telephone companies • Internet service provider/telephone companies • National Communication System member agencies	Operations • ESF2	• Situation report • Status briefing
12. **Status of energy system**	• Status of electrical generating facilities and distribution grid • Households/people without electric power • Status of natural gas transmission facilities and distribution pipelines • Households/people without natural gas • Types of work crews (specialists in overhead, underground or transmission), materials (wire, connectors, cut outs and fuses), and equipment (bucket trucks, digger derricks, and chainsaws) needed	METHODOLOGY: • Remote sensing SOURCE: • ESF12 • Investor-owned utilities (e.g., TECO) and municipal utility districts • Department of Energy reports • Nuclear Regulatory Commission reports	Operations • ESF12	• GIS products • Updated impact maps • Situation report • Status briefing

Essential Information Needed	Examples of Specific Information Needed	Methodology/Source	Responsible Entity	Products
13. **Status of Emergency Operations Centers**	• Status of EOCs in the region • Status of State Emergency Operations Center (SEOC) • Status of JFO	SOURCE • SEOC/UCG Reports • ESFs/other Federal Agencies • Regional EOCs	Planning/ESF 5 • Critical Resources Unit	• GIS products • Updated impact maps • Situation report • Status briefing
14. **Status of ESF activations**	• ESFs that have been activated Major mission assignments that have been authorized	SOURCE: • Operations • Mission assignment lists	Operations	• Situation report • Status briefing • ESF action logs
15. **Status of State and local operations**	• State and local priorities • Major State operations in support of the local jurisdictions • Status of support received under EMAC	SOURCE: • SEOC/UCG reports	Operations	• Situation briefings • Situation reports

2. Calculating Resource Needs

In order to calculate resource needs following a catastrophic incident, a gap analysis must be conducted on available personnel versus the variety of activities that need to occur to gain control over the situation. Ground assessments will need to be conducted to determine the level, extent and degree of impact and the amount and type of resources needed.

In order to calculate the amount of personnel needed, Geographic Information System (GIS) impact maps, situation reports, and status briefings must be collected to determine the geographic spread of damage according to square mileage, parcel, or a similar unit of measure. In addition, the magnitude of damage and the types of hazards that are present need to be taken into account in order to request the proper resource type. Both of these objectives can be met through the post-disaster zoning techniques recommended by FEMA (see Table 4). Zoning is an efficient way of rapidly categorizing disaster areas according to the level of physical damage in a given area following a natural hazard and according to the level of risk in a given area following a CBRNE incident involving materials that may pose a further threat.

Zoning, according to natural hazards, is accomplished using a color scheme that utilizes the colors green, yellow, and red. The green zoning classification is used to represent locations that have received low to moderate damage. Green zones are areas where the utilities have been restored or are in service, the potential for crime is low, and there is normal patrol presence by law enforcement. The yellow zoning classification represents areas that have received moderate to high damage. Yellow zones include areas where road debris is a problem, humanitarian relief is needed, and increased patrol presence is needed. Red zones are used to

classify areas where there is extreme devastation. These areas have substantial road debris, no utilities or other public services, and security is a high priority.

Zoning a CBRNE hazard follows a similar 3-zone scheme that is used to categorize an area as either being a cold, warm, or hot zone. Within this scheme, cold zones represent areas where there is no risk from secondary exposure. The cold zone is an ideal location to establish an incident command post and/or staging area for resources that will be deployed into warm and hot zones. Warm zones represent areas where there is a minimal risk of secondary contamination or injury. The warm zone can be used as a triage area for survivors and a decontamination area for responders that are entering or leaving the hot zone. The hot zone is the actual incident site where the potential for secondary contamination still exists. Access to the red zone will likely be limited to emergency personnel and require the use of personal protective equipment.

Beyond calculating resource needs, zoning plays an important role in selecting the most ideal areas to repair versus areas that are best redeveloped or demolished.

Table 4: Natural Hazard Vs. CBRNE Zoning

Natural Hazard	**Green Zone** – low to moderate damage to structures and infrastructure; utilities have been restored or are in service; low crime potential; normal patrol presence by state and local law enforcement.	**Yellow Zone** – moderate to high damage to structures and infrastructure; some road debris; some humanitarian relief needed; increased patrol presence necessary.	**Red Zone** – extreme devastation; substantial road debris; no utilities or other public services; highest priority for additional security.
CBRNE Hazard	**Cold Zone** – area outside warm zone where the incident command post, support resources and safe refuge are staged. This area should pose no risk of secondary contamination or injury.	**Warm Zone** – area between the actual incident and incident command post. This zone has a minimal risk of secondary contamination or injury and is used as a decontamination area for emergency personnel entering and leaving the hot zone.	**Hot Zone** – actual incident site where only emergency personnel with specialized personalized protective equipment are permitted. The possibility of secondary contamination or injury exists.

There are a series of Microsoft Excel spreadsheets that can be used to determine how many resources are needed to perform a given activity. Specifically, Emergency Services Resource Matrices, Search and Rescue Resource Needs, Human Services Resource (Evacuation, Mass Care, and Sheltering) Needs, and Medical Evacuation Resource Needs are spreadsheets located in the Appendices of this document that can be used to calculate the number of personnel needed to complete a given task.

3. Ordering Tactical Resources

An effective response requires local jurisdictions to identify and have strategies to obtain, track, and deploy major equipment, supplies, facilities, and systems in sufficient quantities to perform assigned missions and tasks. The mobilization, tracking, use, sustainment, and demobilization of physical and human resources require an effective logistics system.

The County Emergency Management agencies rely on different (WebEOC and E-TEAM) collaborative information communications systems that provide real-time information sharing to facilitate decision-making during an EOC activation. WebEOC and E-TEAM can be used to display damage assessments, create situation reports, and inventory resources among other things. One of the limitations of these systems is that it cannot be used to track resources in real time. In order to track critical resources in real time, the emergency management offices will rely on the T-Card, or similar limited-technology system.

In addition the local emergency management agencies use the web-based portal, EM Constellation, to request state resources. All resource requests submitted to the State EOC through ESF 7 must originate from the County EOC. Requests should contain specific information about the resource needed including: 1) county name; 2) name and phone number of the person calling in the request; 3) name of the resource requested; 4) how much/many of a resource is needed; 5) address for delivery to include city, street address, landmarks, longitude and latitude; 6) name and phone number of the on-scene contact person; 7) when the resource is needed and for how long. Once a request is received and processed by the State EOC, the resource requested will be given a mission number that can be used to track the departure of the resource from its respective agency to its arrival at the County EOC. Tracking beyond this is the responsibility of ESF 5.

Upon activation of the County EOC, ESF 7 will be assigned and given the responsibility of cataloging all resource requests made through EM Constellation. This includes coordinating and tracking all mutual aid requests (see Figure 3). In addition, ESF 7 should assist ESF personnel with the ordering process and ensure that the status of the resource request(s) is kept current.

The SEOC will assign a Response Liaison to review all incoming missions and resource requests to ensure that the information contained is accurate and complete. The Response Liaison should serve as the point of contact for ESF 7. The Response Liaison will also be responsible for assigning missions and resource requests to the appropriate Section or Branch (Logistics, Finance Administration, etc.). ESF 7 should provide status reports on missions and resource requests to the EOC Coordinator as required and in accordance with Multi-Agency Coordination (MAC) principles.

After state and federal resources have arrived at the County EOC, ESF 5 will be responsible for tracking the operations of critical resources within the county. The criticality of resources may change over time as response activities evolve and additional resources arrive. All resources that are not considered critical at a given time will be tracked by supervisory staff through the normal chain of command and not through ESF 5.

For a list of available federal response teams as well as their missions and contact information, refer to Attachment 3.

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[i] Failure of Initiative: A Failure of Initiative: Final Report of the Select Bipartisan Committee
to Investigate the Preparation for and Response to Hurricane Katrina. (2006)
[ii] Hurricanes Katrina and Rita After Action and Improvement Plan. (2006)
[iii] Nationwide Plan Review Phase 2 Report. (2006)
Pasco County Catastrophic Annex, 2010