

# National Incident Management System (NIMS) & Water Utilities: Planning & Emergency Operations



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# Objectives

- Understand how NIMS fits into the National Preparedness System
- Provide a refresher of the doctrine, concepts, and principles of the National Incident Management System (NIMS) with a focus on the Incident Command System (ICS).
- Understand the importance of standard ICS organization positions, titles, symbology and plain language.
- Present an introduction on the Multiagency Coordination System (MACS).
- Understand the Importance of Resource Typing



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# NIMS Program History

- Developed in Southern California in 1970 as the National Interagency Incident Management System NIIMS
- Designed to include all levels of government, including agency / organization executives
- Used extensively in wild fire fighting and in some urban fire fighting (USFS, USF&W)
- 1988 – 1997: limited use within some Federal agencies
- 1998: USCG adopted nationwide
- 2003: HSPD-5 requires use of NIMS by all Federal agencies and states using DHS federal grants
- 2004: Initial NIMS Doctrine released
- 2008: NIMS Doctrine update



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# NIMS Program History cont.

- **PPD-21: Critical Infrastructure Identification, Prioritization, and Protection** established the U.S. policy for “enhancing protection of the Nation’s critical infrastructure and key resources.”
- **Post-Katrina Emergency Management Reform Act of 2006** established provisions regarding FEMA’s mission. Section 402 of the act states that FEMA is required to use NIMS as part of the framework for domestic emergency response and incident management. The bill also required establishment of the FEMA National Incident Management System Integration Center.
- **PPD-8: National Preparedness** directed DHS to develop a common, unified approach to “strengthen the preparedness of the United States to prevent and respond to threatened or actual domestic terrorist attacks, major disasters, and other emergencies.”



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# Presidential Policy Directive 8 (PPD-8), National Preparedness and NIMS



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# PPD-8 National Preparedness

Aimed at “strengthening the security and resilience” of the U.S. through “systematic preparation for the threats that pose the greatest risk to the security of the Nation” (March 30, 2011).

- **National Preparedness Goal**
  - Sets the overall strategic vision for national preparedness, and establishes core capabilities that will be used to drive preparedness activities nationwide
- **National Preparedness System**
  - Takes into account all of the programs, processes, and tools available to build, sustain, and deliver capabilities across the Nation
- **National Planning Frameworks**
  - Prevention, Protection, Mitigation, Response, and Recovery



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# NIMS and the National Prep System

- NIMS is part of a system that facilitates national preparedness including:
  - National Preparedness Goal
  - National Preparedness System
- NIMS guidance results in an integrated planning and preparedness approach across the whole community.
- NIMS Integrated processes provide benefits such as:
  - Standardized resource typing practices.
  - Guidance for various processes (e.g. single command structure, set of positions, set of Incident Action Plan processes).



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# National Preparedness Goal: Core Capabilities

- NIMS concepts and principles directly influence the successful delivery of many of Core Capabilities under the National Preparedness Goal.
  - NIMS applies mostly to RESPONSE MISSION AREAS



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# Core Capabilities List



PREVENT	PROTECT	MITIGATE	RESPOND	RECOVER
Planning	Planning	Planning	Planning	Planning
Public Information and Warning	Public Information and Warning	Public Information and Warning	Public Information and Warning	Public Information and Warning
Operational Coordination	Operational Coordination	Operational Coordination	Operational Coordination	Operational Coordination
Forensics and Attribution	Access Control and Identity Verification	Community Resilience	Critical Transportation	Economic Recovery
Intelligence and Information Sharing	Cybersecurity	Long-Term Vulnerability Reduction	Environmental Response / Health and Safety	Health and Social Services
Interdiction and Disruption	Intelligence and Information Sharing	Risk and Disaster Resilience Assessment	Fatality Management Services	Housing
Screening, Search and Detection	Interdiction and Disruption	Threats and Hazard Identification	Infrastructure Systems	Infrastructure Systems
	Physical Protective Measures		Mass Care Services	Natural and Cultural Resources
	Risk Management for Protection Programs and Activities		Mass Search and Rescue Operations	
	Screening, Search and Detection		On-Scene Security and Protection	
	Supply Chain Integrity and Security		Operational Communications	
			Public and Private Services and Resources	
			Public Health and Medical Services	
			Situational Assessment	



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# National Incident Management System (NIMS) Refresher



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# NIMS Components:

- Preparedness
- **Command and Management**
- Communications and Information Management
- Resources Management



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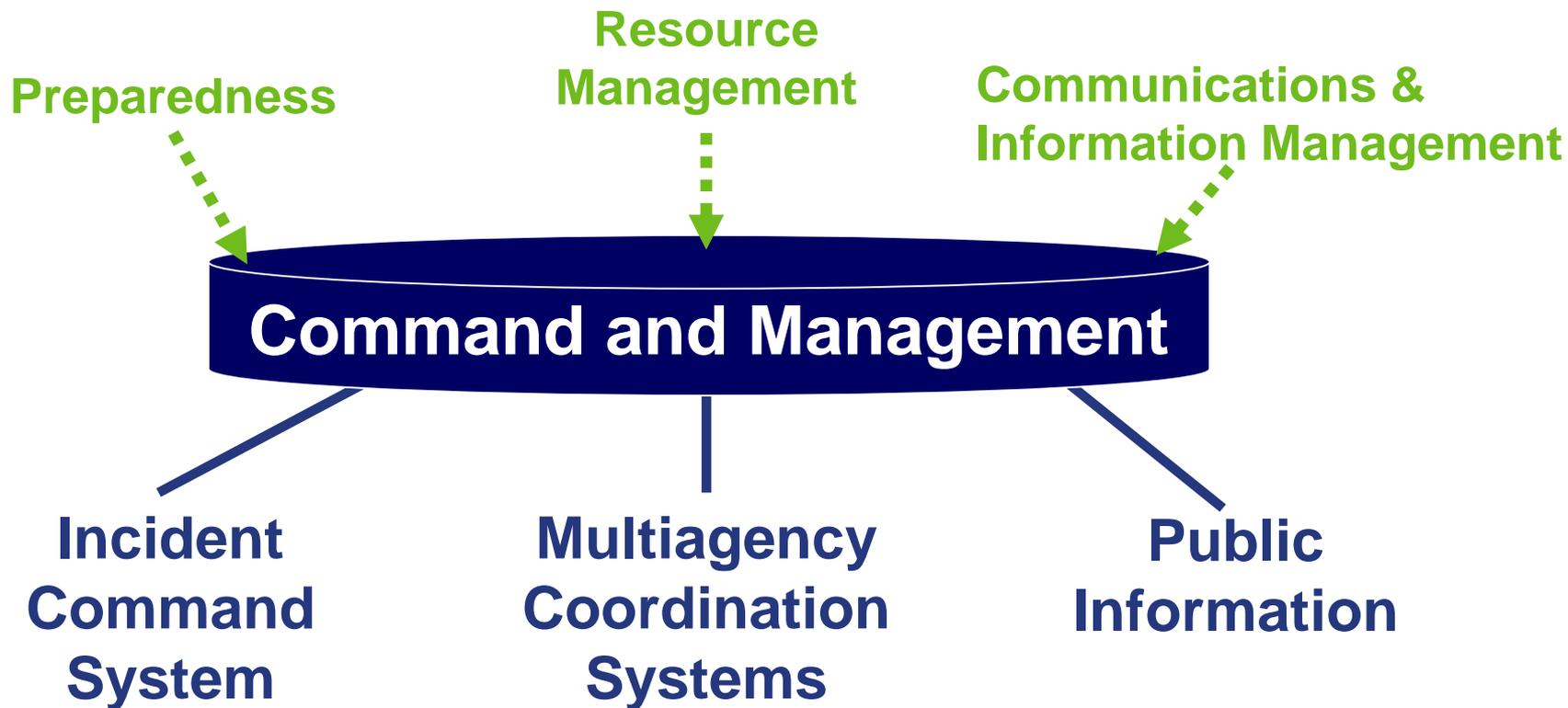
# Effective ICS must have:

- Doctrine
- Planning
- Strong agency support
- Intensive training and exercises
- Evaluation / corrective action process
- Thorough system documentation
- Strong interagency ties



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# Command and Management Elements



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# ICS Overview

- Primary ICS
- Functions



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# ICS Features

- Standardization
  - Common terminology
- Command
  - Establishment and transfer of command
  - Chain of command and unity of command
  - Unified command
- Planning/Organizational Structure
  - Management by objectives
  - Incident Action Plan (IAP)
  - Modular organization
  - Manageable span of control



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- Facilities and Resources
  - Comprehensive resource management
  - Incident locations and facilities
- Communications/Information Management
  - Integrated communications
  - Information and intelligence management
- Professionalism
  - Accountability
  - Dispatch/Deployment

# What Is ICS?

## ICS:

- Is a standardized, on-scene, all-hazard incident management concept.
- Allows its users to adopt an integrated organizational structure that matches the complexities and demands of incidents.
- Permits seamless integration of responders from all jurisdictions.
- Can be used for incidents of any type, scope, and complexity.



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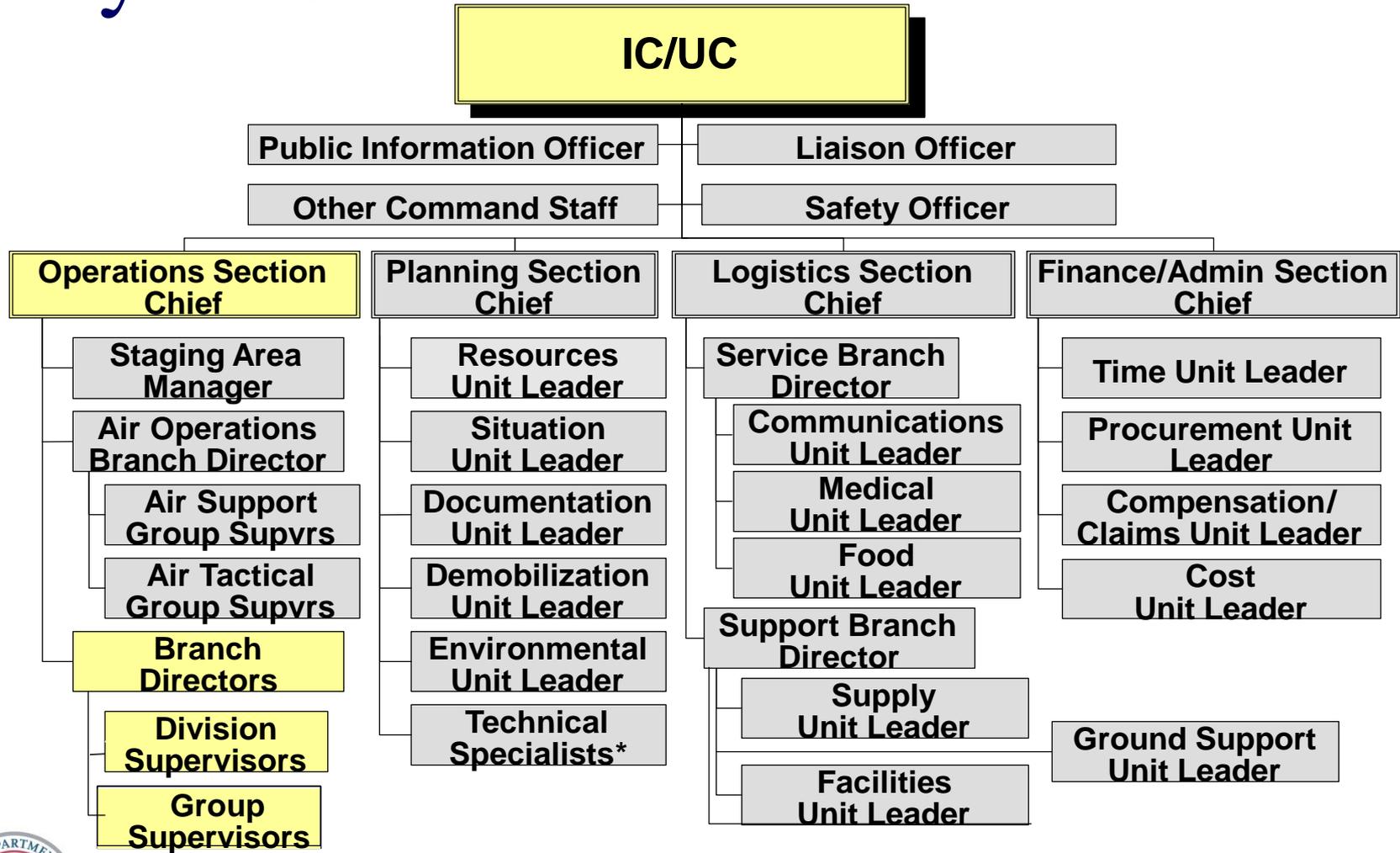
# Management by Objectives

- Agency policies
- Incident objectives & priorities
- Appropriate strategies
- Appropriate tactics
- Measure accomplishments



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# Unity & Chain of Command



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# Incident Command Functions



**Incident Command**



**Operations**



**Planning**



**Logistics**



**Finance/  
Administration**



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# Incident Commander



- The Incident Commander:
  - Provides overall leadership for incident response.
  - Delegates authority to others.
  - Takes general direction from agency administrator/official.



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# Incident Command Post

- The Incident Command Post is:
  - The location from which the Incident Command directs operations.
  - Generally located at or in the immediate vicinity of the incident site.



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# Command Staff



It may be necessary for the Incident Commander to designate a Command Staff that:

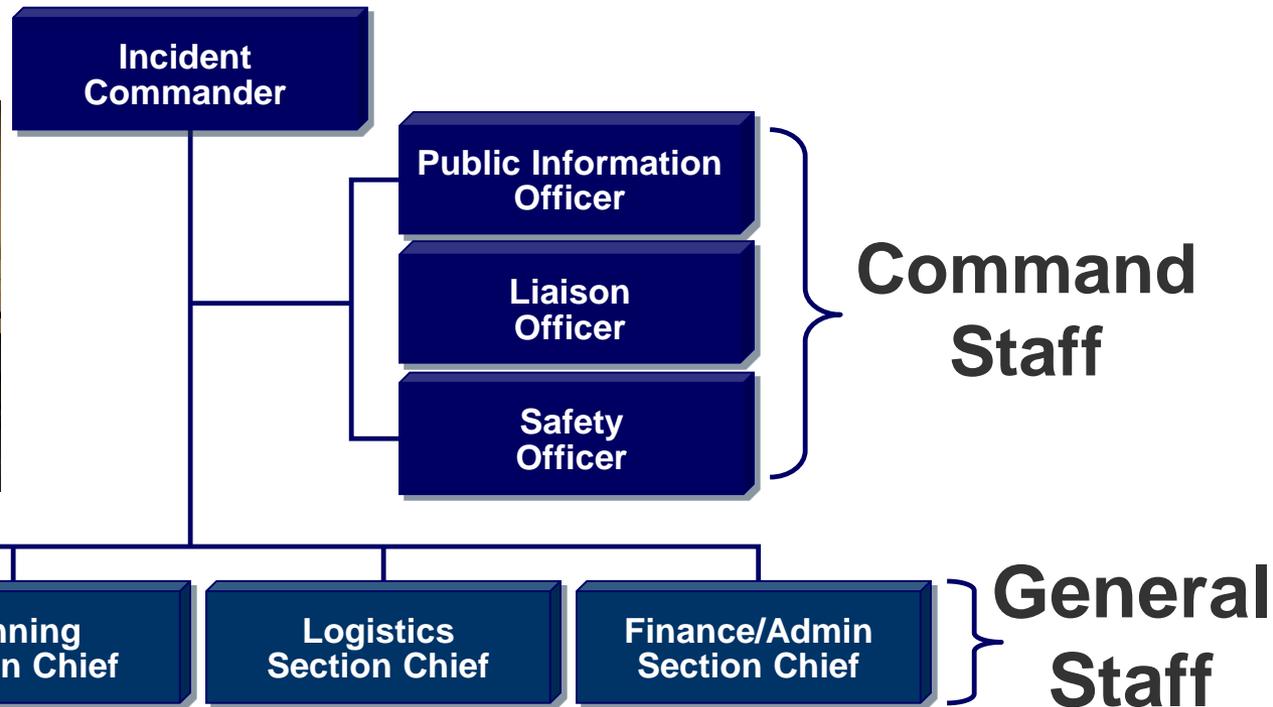
- Provides information, liaison, and safety services for the entire organization.
- Reports directly to the Incident Commander.



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# General Staff (Section Chiefs)

- Incident management personnel organized according to function and reporting to the Incident Commander.



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# Who Does What?

## Command:

Overall responsibility for the incident. Sets

Incident Commander

## Finance/Admin:

Monitors costs related to the incident. overall fiscal guidance.

Operations Section

Planning Section

Logistics Section

Finance/Admin Section

## Operations:

Develops the tactical organization and directs all resources out the Incident Action Plan.

## Planning:

Develops the Incident Action Plan to

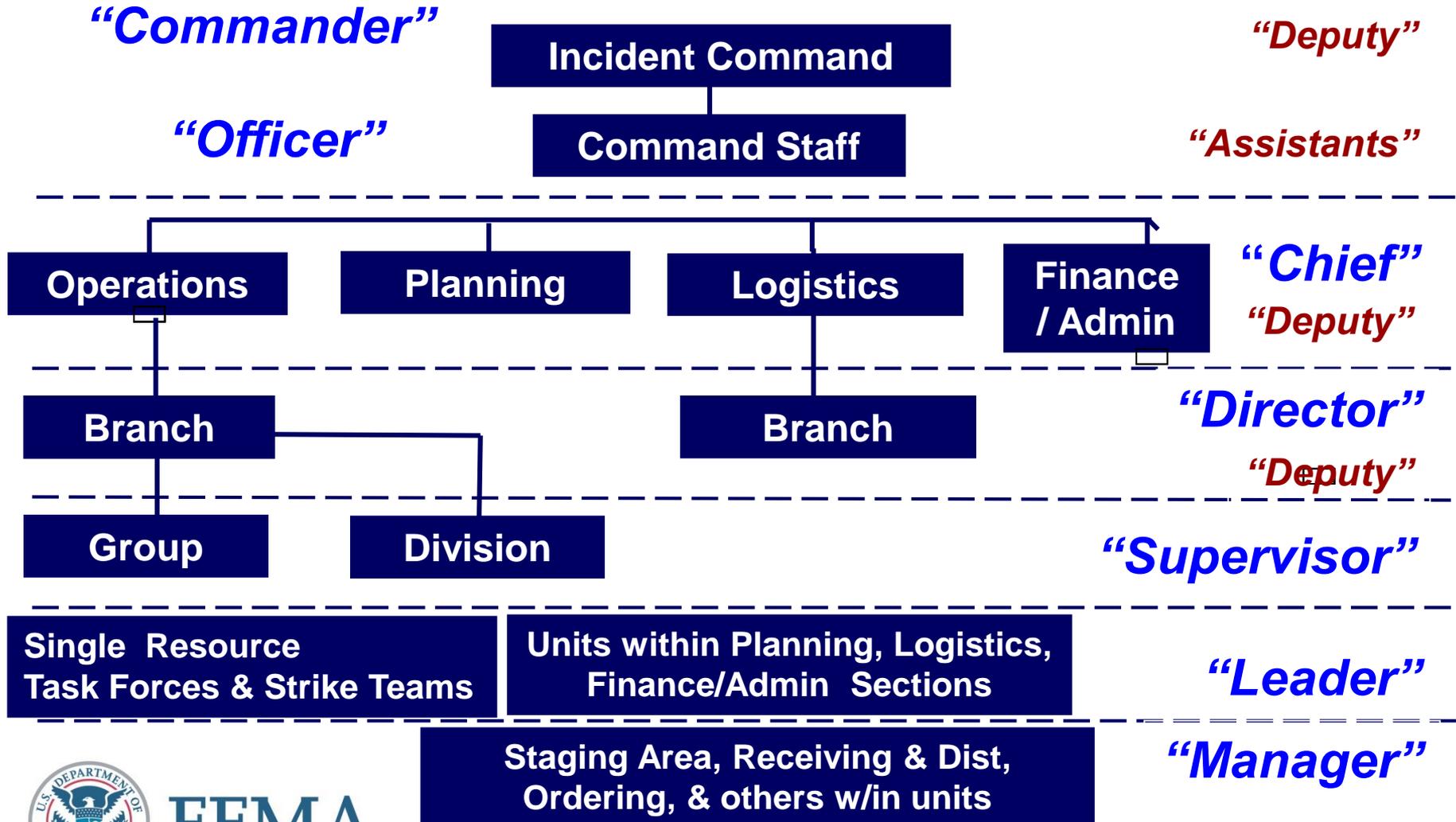
## Logistics:

Provides resources and all other services needed support the incident.



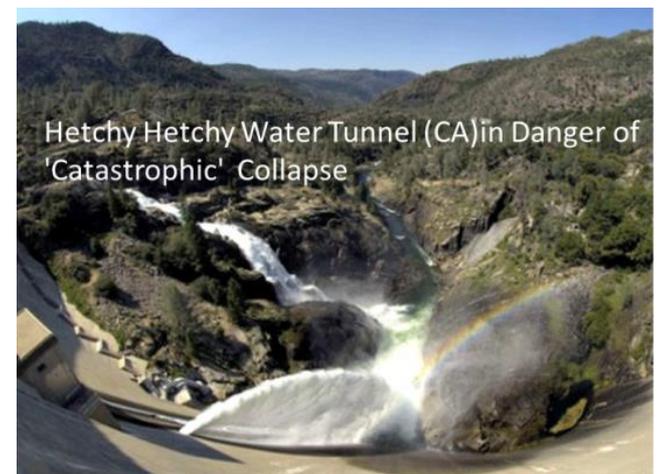
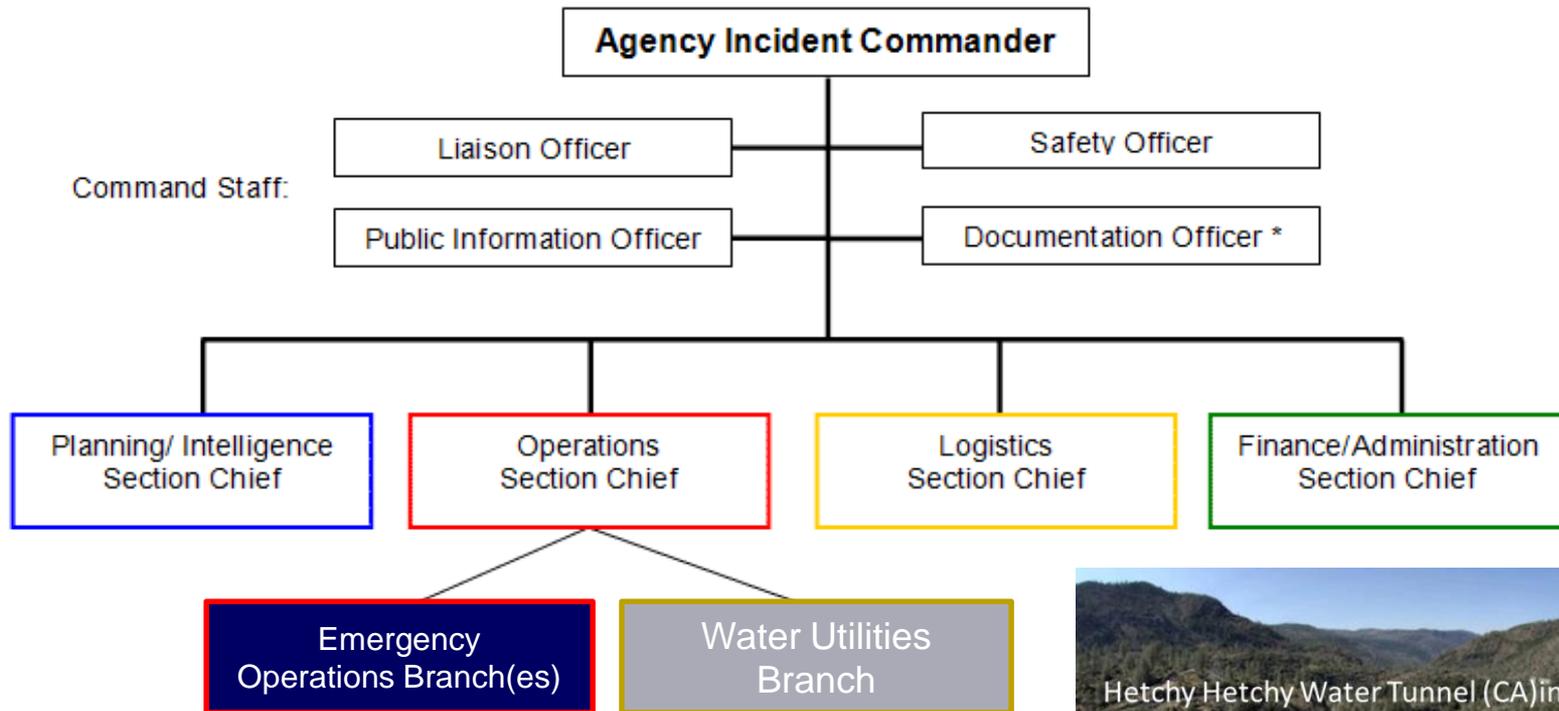
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# Organizational Terminology: Titles



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# Incident Command Organization



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# Span of Control

- One supervisor for every 1 – 7 subordinates
- Optimal is one supervisor for every 3 – 5 subordinates



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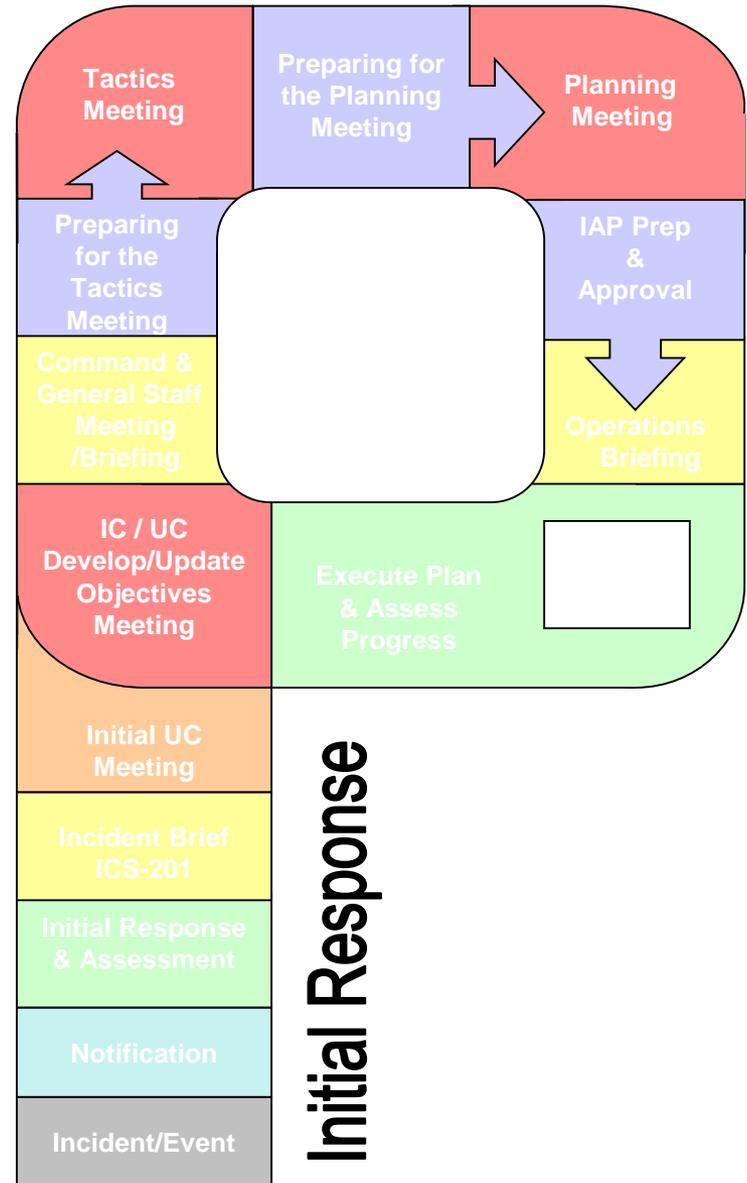
# Operational Period

- Complete a set of actions from Incident Action Plan
- Determined by IC/UC
- Typical period:
  - 12 hr: 0600 – 1800
  - 24 hr: 0600 – 0600

Note: Ops Period & Shift length *MAY* be different.



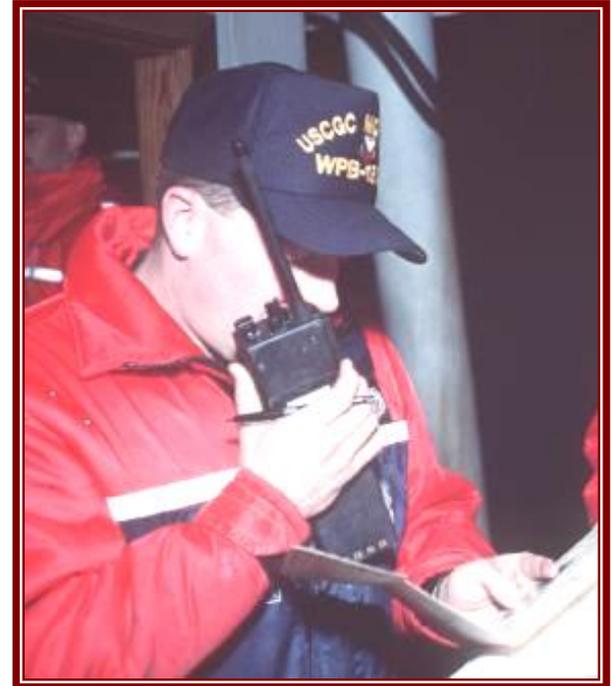
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# Communications

- Captured on ICS-205:
  - Internal/External
  - Forms
  - Radio
  - Landline & Cell
  - Computer
  - Internet



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# Communications

- Formal
  - Sharing of information that requires an action by a member of the Incident Management Team (IMT), documented on:
    - ICS-213
    - ICS-214
    - ICS-233
- Informal
  - Sharing of non-critical information that is needed to keep other IMT members informed
  - May or may not require documentation



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# Resource Management

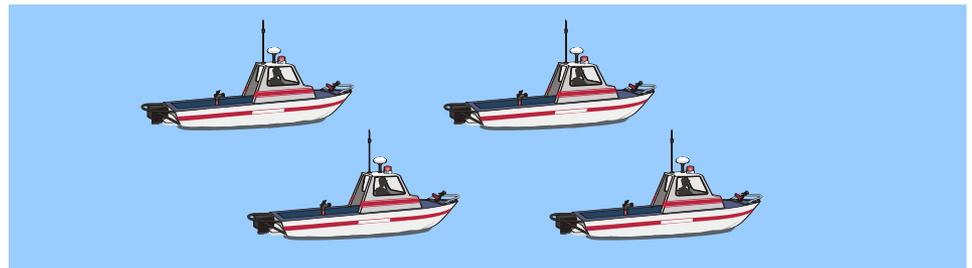
- Single resource



- Task force



- Strike team



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# Resource Management Units

- Branches (I, II, III, Piping repair, SAR, etc.) if necessary
  - Divisions (Geographic, e.g. A,B,C,D, etc.)
    - Single Resource(s)
    - Task Force
    - Strike Team
  - Groups (Functional, e.g. Skimming, Intake Repairs)
    - Single Resource(s)
    - Task Force
    - Strike Team



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# ICS Unified Command Overview



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# Unified Command

As a team effort, Unified Command allows all agencies with jurisdictional authority or functional responsibility for an incident to jointly provide management direction to the incident with a coordination of efforts.

In Unified Command, no agency's legal authorities will be compromised or neglected.

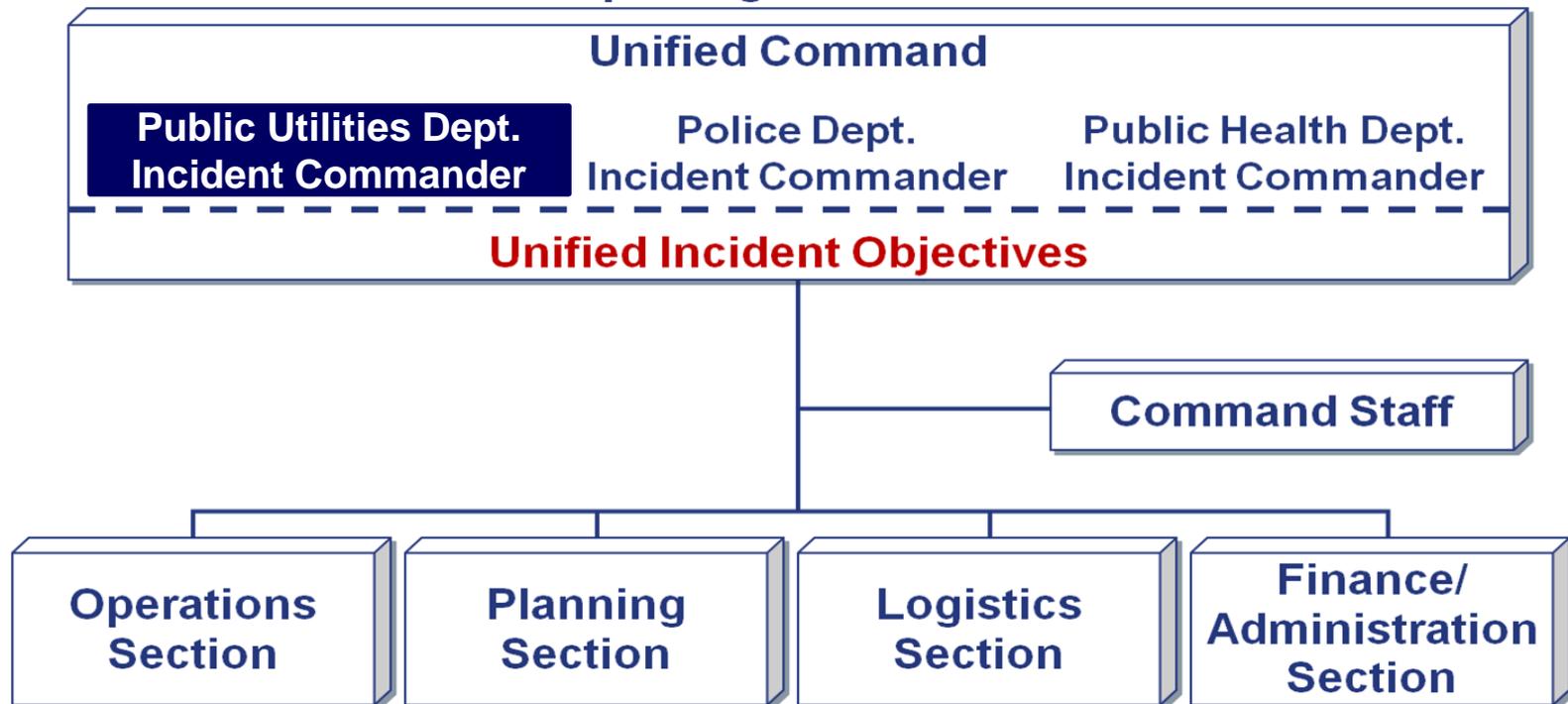


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# Unified Command Organization

- Link between the organizations with jurisdictional involvement
  - Includes local involvement

## Sample Organization Chart



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# Unified Command Benefits

- Single integrated incident organization
- Collocated (shared) facilities
- One Incident Command Post
- Shared Operations, Planning, Logistics and Finance activities
- Coordinated process for requesting resources
- Single planning process and Incident Action Plan
- Improved internal and external information flow



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# Organizational Flexibility

- Incident complexity
- Resource commitment required
- Length of incident
- Multiple incidents/jurisdictions
- Size of affected area
- Logistical considerations
- Political/media considerations



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# ICS Example

**Example :** A water main break has disrupted all major utilities. The break has caused local flooding of a major road and several local businesses.

What are the potential Response agencies and resources that could be needed?

## **Potential Response Agencies:**

- Law Enforcement
- Fire Firefighters
- Public Works/Highway Dept.
- Utility Companies
- Emergency Management EOC

## **Potential Resources:**

- Police officers, communications equipment
- Fire Apparatus, communications equipment
- Repair equipment, flares, blockades, trucks, repair Personnel, etc.
- Repair personnel, trucks, repair and natural gas detection equipment
- Communications equipment



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# Area Command Overview



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# Area Command

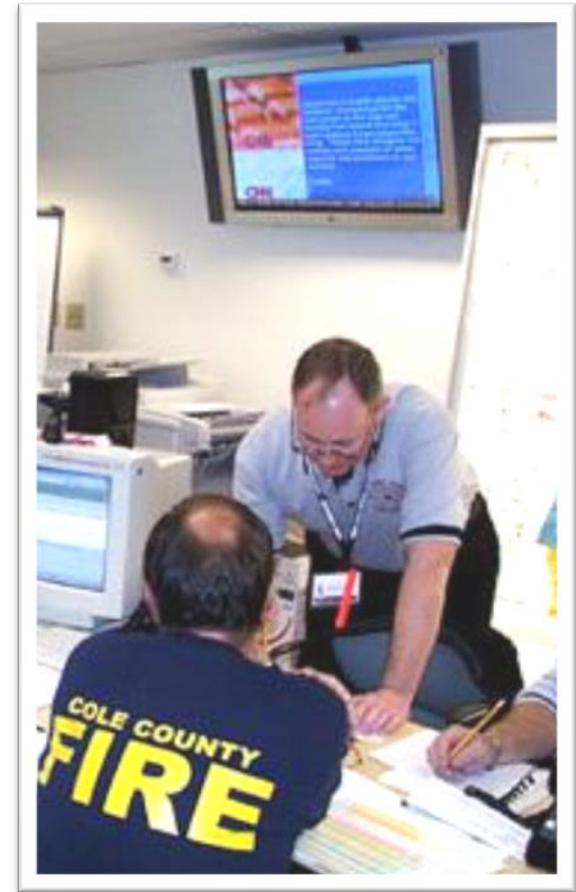
- Area Command is used to oversee the management of:
  - Multiple incidents that are each being handled by an Incident Command System organization; or
  - A very large incident that has multiple Incident Management Teams assigned to it.



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# Area Command: Primary Functions

- Provide agency or jurisdictional authority for assigned incidents.
- Ensure a clear understanding of agency expectations, intentions, and constraints.
- Establish critical resource use priorities between various incidents.
- Ensure that Incident Management Team personnel assignments and organizations are appropriate.
- Maintain contact with officials in charge, and other agencies and groups.
- Coordinate the demobilization or reassignment of resources between assigned incidents.



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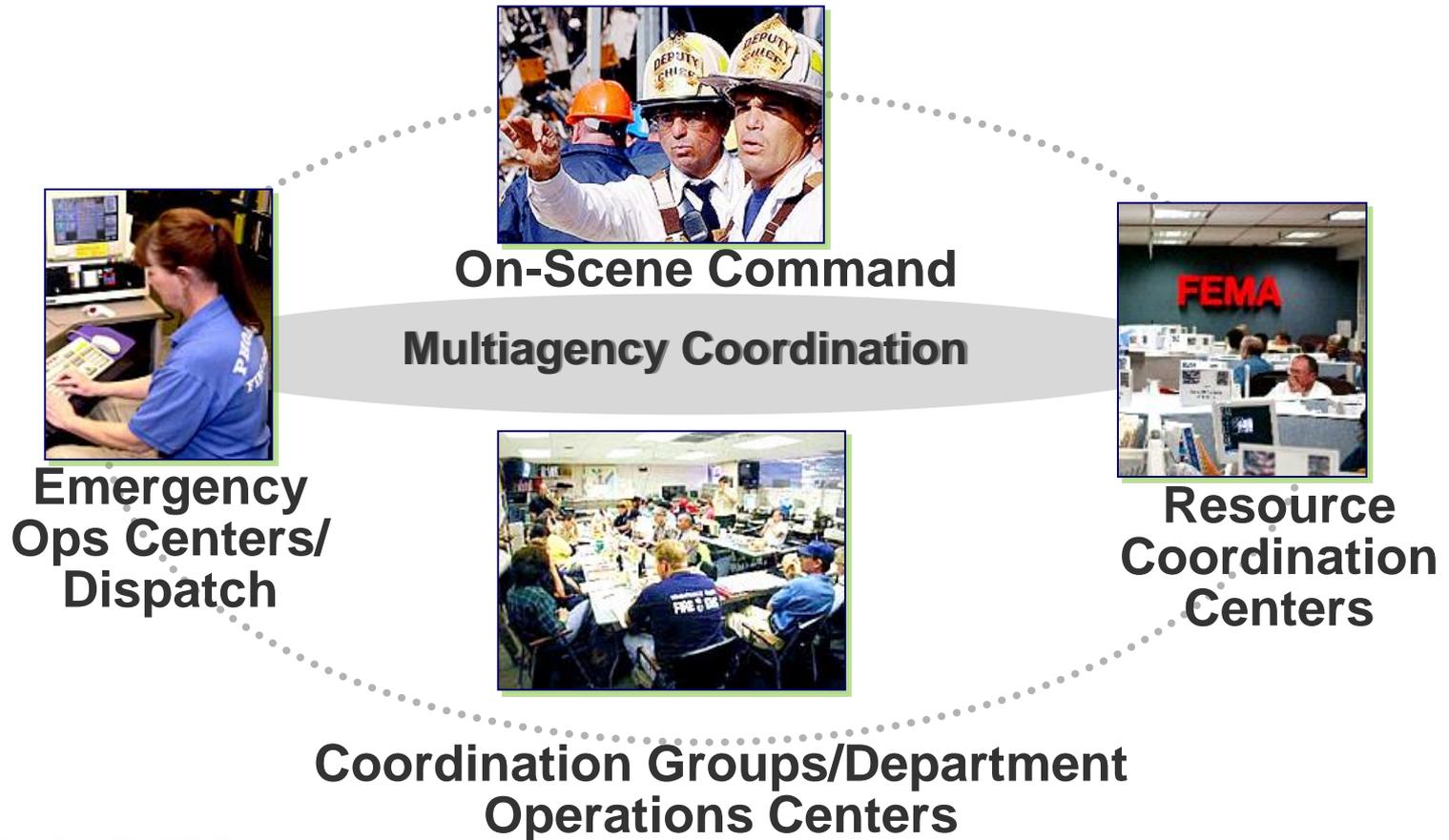
# Multiagency Coordination System



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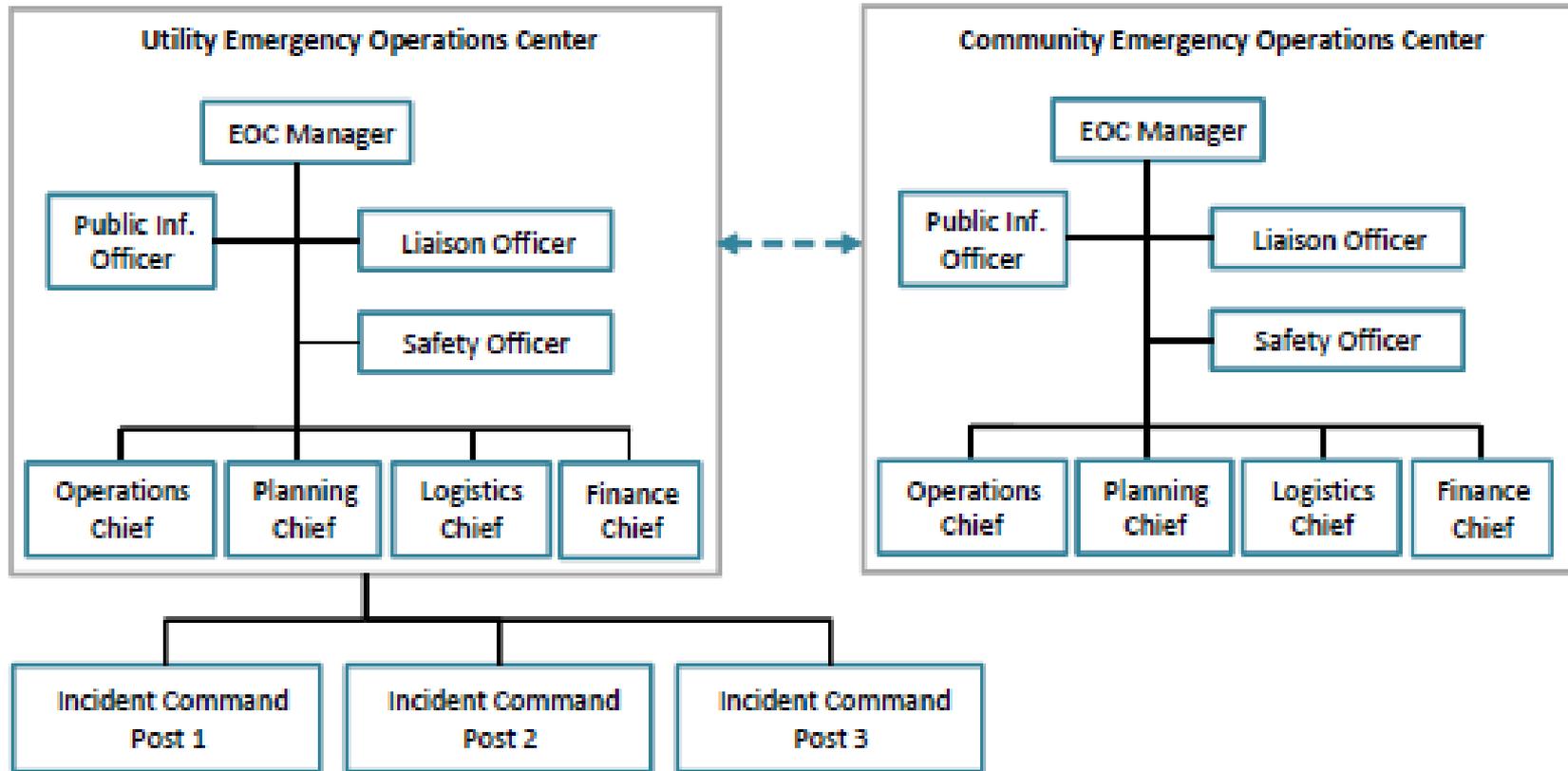
# Multiagency Coordination

*A System Not a Facility*



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# Utility Multiagency Coordination



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# NIMS Resource Typing



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# NIMS Resource Typing Defined

- Supports a universal language for the management of resources prior to, during and after major incidents
- Supports consistency in the identification and inventorying of resources for capability estimation, planning, and for mobilization in support of mutual aid efforts.
- Ensures that response partners have a consistent understanding of what a given resource is and what it can do
- Represents the minimum criteria for the associated component and capability.



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# Benefits of NIMS Resource Typing

- Enhances emergency readiness and response at all levels of government, NGOs and the private sector;
- Categorizes, by capability, the resources requested, deployed and used during an incident;
- Helps responders request and deploy resources through the use of common terminology;
- All NIMS resource typing definitions and job titles/position qualifications that have been released are available via: Resource Typing Library Tool at:

<http://www.fema.gov/resource-management-mutual-aid>



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Resource Typing Definitions for Public and Private Services and  
Resources Public Works

DESCRIPTION		<b>WATER PUMPS, WATER DISTRIBUTION</b>				
RESOURCE CATEGORY	Public Works	RESOURCE KIND	Equipment			
	OVERALL FUNCTION	COMPOSITION AND ORDERING SPECIFICATIONS				
RESOURCE TYPES			TYPE 1	TYPE 2	TYPE 3	TYPE 4
COMPONENT	METRIC/ MEASURE	CAPABILITY				
Equipment	Description		Dry-prime pump Self contained diesel power with fuel supply Weight: 10,500 (approx) Skid mounted (example: )	Dry-prime pump Self contained diesel power with fuel supply Weight: 10,500 (approx) Skid mounted (example: Godwin HL8M)	Dry-prime pump Self contained diesel power with fuel supply Weight: 5,000 (approx) Skid/trailer mounted (example: Godwin CD225M)	Dry-prime pump Self contained diesel power with fuel supply Weight: 6,500 (approx) Skid mounted (example: Godwin CD160M)
<b>NOTES: Not Specified</b>						
Equipment	Suction Side		12"	10"	8"	6"
<b>NOTES: Not Specified</b>						
Equipment	Pump Capacity (GPM)		6000	4000	2400	1850
<b>NOTES: Not Specified</b>						
Equipment	Head (ft)		104	160	120	150
<b>NOTES: Not Specified</b>						
Equipment	Suction depth (ft)		10	10	10	10
<b>NOTES: Not Specified</b>						
Personnel	Trained Operator		2	2	2	2
<b>NOTES: Not Specified</b>						



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WATER PUMPS, WATER DISTRIBUTION

## COMMENTS

1. Personnel – Two (2) trained operating engineers can set up and operate this pump. A CDL driver is needed to haul pump due to weight. Refueling service will be needed.
2. Suction depth – Pump curves shown by manufacturers' often show-wet suction. If lift above 8-10 feet is a factor, pump capacity and head may be less.

## NOTES

Nationally typed resources represent the minimum criteria for the associated component and capability.



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WATER PUMPS, WATER DISTRIBUTION

### DAMAGE ASSESSMENT AND REPAIR TEAM - WATER PUMP FACILITIES

<b>DESCRIPTION</b>	This team assesses and repairs all types of water pump facilities.		
<b>RESOURCE CATEGORY</b>	Public Works	<b>RESOURCE KIND</b>	Team with personnel and equipment components.
<b>OVERALL FUNCTION</b>	<p>This team is responsible for the assessment and repair of all types of landbased water pump facilities, regardless of size, including intake facilities, raw water conveyance facilities, treatment plants, and pump stations.</p> <p>Excluded are structural or similar scale facilities such as raw, finished, and booster pump stations.</p>	<b>COMPOSITION AND ORDERING SPECIFICATIONS</b>	<p>Requestor should specify types of pump facilities in need of assessment and repair, as well as any materials that should be provided by the responder. Major repair materials provided by requestor or others _____</p> <p><u>Types of pump facilities in need of assessment and repair:</u></p> <p>Materials that should be provided by responders: Specific control systems used:</p> <p>Electronic _____ Pneumatic _____ Hydraulic _____</p> <p>Facility capacity, Millions of Gallons Per Day (MGD): _____ Maximum pump voltages: 4160 _____ 480 _____</p> <p>Ordering Specifications: Security requirements should be determined by the requesting agency based upon actual field conditions and intelligence, and provided to the responding team.</p>

RESOURCE TYPES			TYPE 1	NO TYPE 2	NO TYPE 3	NO TYPE 4
COMPONENT	METRIC/ MEASURE	CAPABILITY				
Personnel	Hours of operation per shift		12 hours	Not Applicable	Not Applicable	
NOTES: None						
Personnel	Duration of self-sustained operation		72 hours	Not Applicable	Not Applicable	
NOTES: The requestor will provide support to the team, such as security, fuel, recharging for phones, batteries, power for computers, etc.						
Personnel	Positions per team		Total = 4 1 Team Leader 1 Mechanic 1 Electrician 1 Repair technician	Not Applicable	Not Applicable	
NOTES: All team members will have completed the Occupational Safety and Health Administration - Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) required coursework.						
Equipment	Duration of sustained operation					
NOTES: None						

RESOURCE TYPES			TYPE 1	NO TYPE 2	NO TYPE 3	NO TYPE 4
COMPONENT	METRIC/ MEASURE	CAPABILITY				
Equipment(Vehicle and Specialized Equipment)	Number and kind of, per team		2 Heavy-duty pick-up trucks, 1 with equipment boom Other tools and equipment as needed based on ordering specifications <b>NOTES: None</b>	Not Applicable	Not Applicable	Not Applicable
Equipment (Communications)	Quantity and kind per team based on mission assignments		Cell phones Portable radios Satellite phone <b>NOTES: None</b>	Not Applicable	Not Applicable	Not Applicable
Supplies(Logistics)	Quantity and kind based on mission assignments		Water and other potable fluids Food Shelter Sanitation <b>NOTES: None</b>	Not Applicable	Not Applicable	Not Applicable



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DAMAGE ASSESSMENT AND REPAIR TEAM - WATER PUMP FACILITIES

## COMMENTS

1. Basic safety equipment for team members should include hard hats, reflective vests, and other appropriate equipment based on ordering specifications and conditions.

## REFERENCES

1. This document is U.S. Government work and is not copyright protected in the United States. This publication was created with individual input and expertise provided by several state and local government entities. While the Federal Emergency Management Agency does not endorse any non-U.S. Government organizations or publications, several documents were referenced in the creation of this document, including, for example, the “American Water Works Association (AWWA), c 2008. Water & Wastewater Mutual Aid and Assistance Resource Typing Manual. Denver, Colorado.”

## NOTES

Nationally typed resources represent the minimum criteria for the associated component and capability.



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DAMAGE ASSESSMENT AND REPAIR TEAM - WATER PUMP FACILITIES

# Incident Resource Inventory System 5.0

- IRIS is a free distributed software tool for resource inventorying that assists communities in inventorying and typing resources in accordance with NIMS concepts and principles
- IRIS version 5.0 includes the following new features:
  - Allows users to download new or updated resource typing definitions from RTLT through a link on the IRIS homepage
  - Offers a more user-friendly interface and enhanced user functions
  - Allows users to manage and view resource information across related organizations within their planning community
  - Generates notifications to indicate whether a user's version of IRIS is current or requires an update
- IRIS is accessible at <http://www.fema.gov/resource-management>



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# Unit Summary

- In this Unit, we covered/introduced:
  - Development of NIMS
  - Overview of the National Preparedness System
  - Concepts and principles of ICS
  - General review of Area Command
  - Initial introduction into Multiagency Coordination System (MACS)
  - NIMS Resource Typing



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# Thank you, any questions



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