

# Incident Command System (ICS) Training for the Water Sector

## Incident Command System



Adapted from FEMA IS-100.PWb

# What Is an Incident?

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An **incident** is . . .

. . . an occurrence or event, natural or manmade, that requires a response to protect life or property.



# What Is ICS?

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## The Incident Command System:

- **Is a standardized, on-scene, all-hazard incident management concept.**
- **Allows its users to adopt an integrated organizational structure to match the complexities and demands of single or multiple incidents without being hindered by jurisdictional boundaries.**

# ICS Purposes

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Using management best practices, ICS helps to ensure:

- The safety of responders and others.
- The achievement of tactical objectives.
- The efficient use of resources.



# How can ICS benefit me, a utility?

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- 1. It is a proven system for managing incidents of any kind or size.**
- 2. It is used for emergency response by all local, state, and federal agencies.**
- 3. Allows personnel from a variety of agencies to meld rapidly into a common management structure.**
- 4. It is flexible enough to manage incidents that only involve utility personnel to incidents that require response by several agencies or jurisdictions.**
- 5. Is cost effective by avoiding duplication of efforts.**
- 6. Using ICS is required for NIMS compliance.**

# Homeland Security Presidential Directives (HSPDs)

**HSPD-5**

**Management of Domestic Incidents**

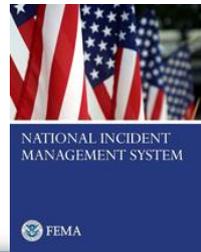
**HSPD-8**

**National Preparedness**

**PPD-8**

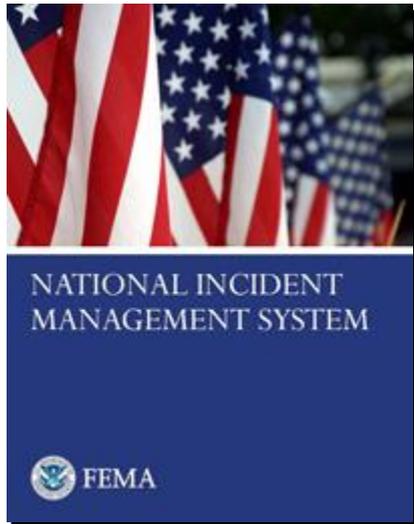
**Whole Community Preparedness**

**Mandates**



**National Incident Management System (NIMS)**

# NIMS Components & ICS



**Preparedness**

**Communications and  
Information Management**

**Resource Management**

**Command and Management**

**Ongoing Management and  
Maintenance**

**Incident  
Command  
System**

**Multiagency  
Coordination  
Systems**

**Public  
Information**

# ICS Features: Overview

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

# Standardization: Common Terminology

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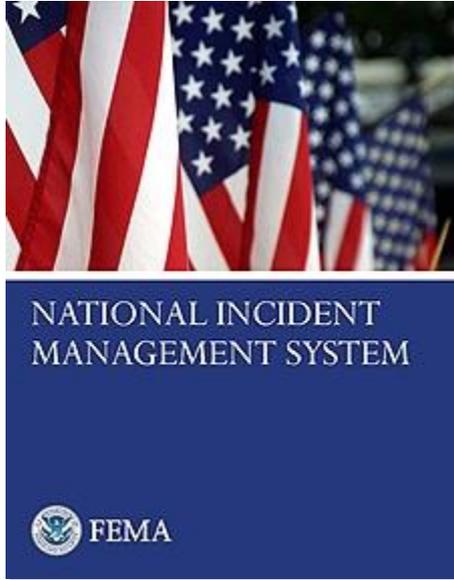
Using common terminology helps to define:

- Organizational functions.
- Incident facilities.
- Resource descriptions.
- Position titles.



# Command: Definition

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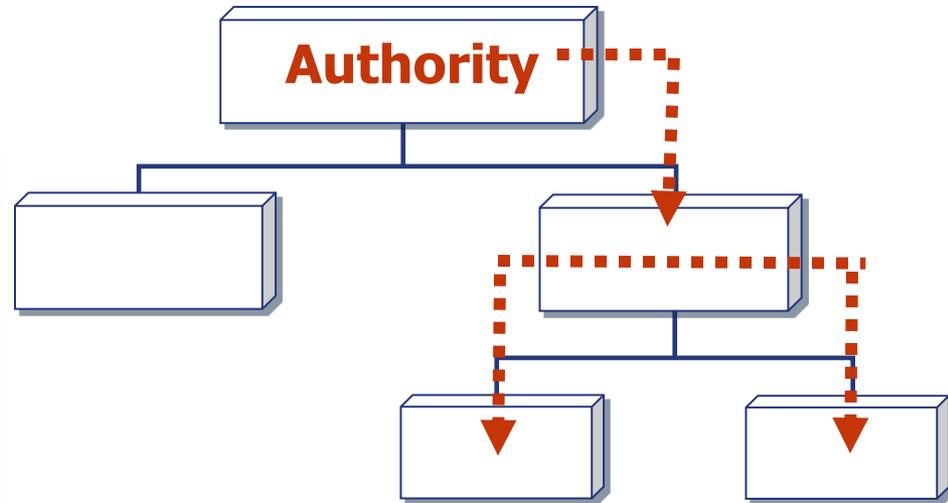


**Command**: The act of directing, ordering, or controlling by virtue of **explicit** statutory, regulatory, or delegated authority.

**At an incident scene, the Incident Commander has the authority to assume command!**

# Chain of Command

Chain of command is an orderly line of authority within the ranks of the incident management organization.



# Transfer of Command (1 of 2)

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- Moves the responsibility for incident command from one Incident Commander to another.
- Must include a transfer of command briefing (which may be oral, written, or both).



# Unity of Command

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Under unity of command, personnel:

- Report to only one supervisor.
- Receive work assignments only from their supervisors.



Don't confuse unity of command  
with Unified Command!

# Unified Command

## Unified Command:

- Enables all responsible agencies to manage an incident together by establishing a common set of incident objectives and strategies.
- Allows Incident Commanders to make joint decisions by establishing a single command structure.
- Maintains unity of command. Each employee only reports to one supervisor.



# **Example: Unified Command**

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**A truck carrying hazardous material in 55-gallon barrels is involved in an accident on the bridge that marks the county line. The barrels ejected from the truck land in both counties and in the raw water source for the water treatment plant.**

**Why might a Unified Command be used to manage this incident?**

# Management by Objectives

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- ICS is managed by objectives.
- Objectives are communicated throughout the entire ICS organization through the incident planning process.



# Overall Priorities

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Incident objectives are established based on the following priorities:

**#1: Life Safety**

**#2: Incident Stabilization**

**#3: Property & Environmental Preservation**



# Reliance on an Incident Action Plan

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Every incident must have an Incident Action Plan (IAP) that:

- Specifies the incident objectives.
- States the activities to be completed.
- Covers a specified timeframe, called an operational period.
- May be oral or written—except for hazardous materials incidents, which require a written IAP.

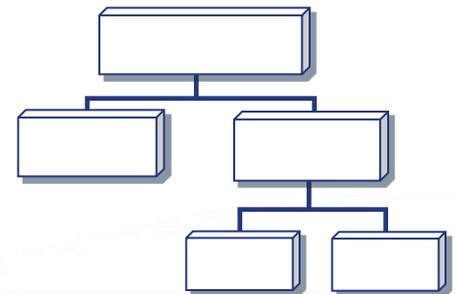


# ICS Organization

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## In the ICS organization:

- There is no correlation with the administrative structure of any other agency or jurisdiction. This organization's uniqueness helps to avoid confusion over different position titles and organizational structures.
- Someone who serves as a chief every day may not hold that title when deployed under an ICS structure.

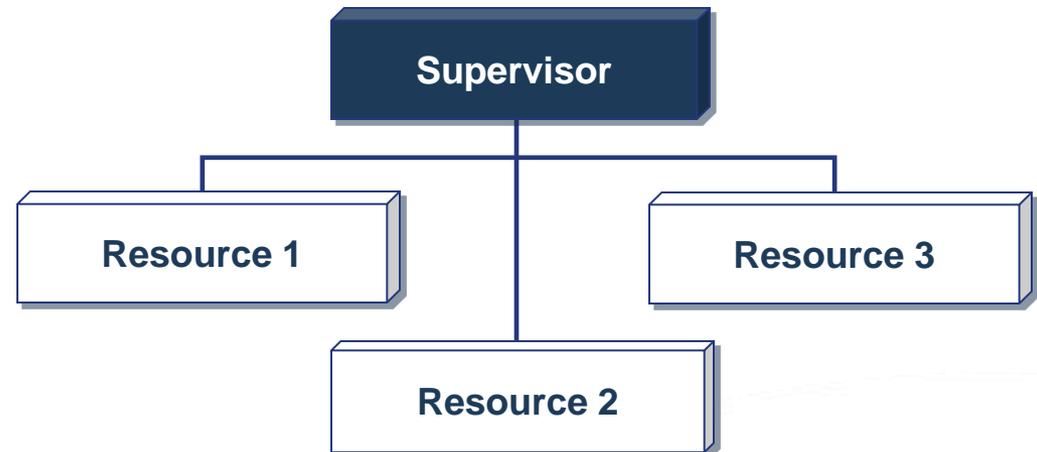


# Manageable Span of Control

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## Span of control:

- Pertains to the number of individuals or resources that one supervisor can manage effectively during an incident.
- Is key to effective and efficient incident management.



# Getting the Right Resources

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Getting the right resources is so critical that . . .

. . . the National Incident Management System (NIMS) requires that various kinds of resources be “typed” whenever possible.

See: [www.fema.gov/emergency/nims](http://www.fema.gov/emergency/nims)



## NATIONAL INCIDENT MANAGEMENT SYSTEM

December 2008



Homeland  
Security

# Resource Kinds and Types

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To ensure that responders get the right personnel and equipment, ICS resources are categorized by:

- **Kinds of Resources:** Describe what the resource is (for example: generator, Planning Section Chief, helicopter, pump, backhoe, rapid field testing kit).
- **Types of Resources:** Describe the size, capability, and staffing qualifications of a specific kind of resource.

# Which Is Kinds? Which Is Types?



**A**



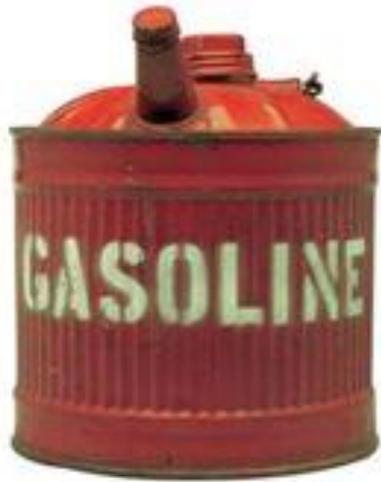
**B**



# Why “Type” Resources?

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Resource Request: “We need fuel.”



What You Needed



What You Got

# Water Sector Resource Typing

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**Funded by AWWA WITAF**

**Led by Project Advisory  
Committee with utility,  
association, and industry  
representation**



**WATER & WASTEWATER  
MUTUAL AID & ASSISTANCE  
RESOURCE TYPING MANUAL**

April 2008



# Specific Water Sector Resource Examples

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## Water Processes

- Water Production Facilities Operations Personnel

## Water Distribution

- Water Mains Leak Location Team

## Wastewater Processes

- Wastewater Sampling and Field Analysis Team

## Wastewater Collection

- Sewer Mains Damage Assessment and Repair Team

## General and Supporting Resources

- Water/Wastewater Public Information Officer

See  
Student  
Manual  
for an  
example.

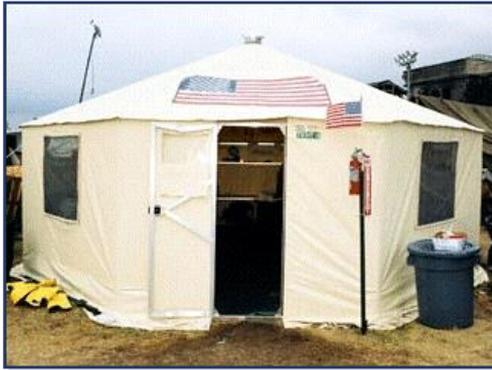
# Water Sector Resource Typing Example

RESOURCE: WATER DISTRIBUTION SYSTEM DAMAGE ASSESSMENT AND REPAIR TEAM					
AWWA April 2008					
Category: Public Works and Engineering (ESF 3) Subcategory: Water and Wastewater Kind: <u>X</u> Team					
Component	Metric	Type I	Type II	Type III	Type IV
Capability	Diameter (in.) of mains repaired	24"+	10"-22"	2"- 8", including services and small meters	Portion of Type I – III Teams
Ideal Team Size	Total persons	6 - 8	5 - 7	4 - 5	1 - 3
Team Composition	Team member capabilities for assessments and repairs indicated	1 Team leader 1 Backhoe-loader operator 1 - 2 Tandem dump truck drivers 1 Lead repair technician 1 - 2 Utility workers 1 Welder if steel mains indicated	1 Team leader 1 Backhoe operator 1 - 2 Dump truck drivers 1 Lead repair technician 1 - 2 Utility workers 1 Welder if steel mains	1 Team leader 1 Backhoe operator 1 Dump truck driver 1 - 2 Utility workers 1 Welder (if steel)	Any portion of Type III that can be provided
Vehicles and Heavy Equipment	Number and type of vehicles and heavy equipment	1 Medium track excavator 1 Backhoe-loader 1 - 2 Tandem Dump trucks 1 Team / equipment tk. w/ boom	1 Medium track excavator 1 Backhoe-loader 1 - 2 Tandem Dump trucks 1 Team / equip. tk. w/ boom	1 Backhoe-loader 1 - 2 Tandem Dump trucks 1 Team / equip. tk.	Any portion of Type III that can be provided
Other Equipment	Other specific equipment	Air compressor, mud pump, welder (if steel) and necessary pneumatic, small power tools and hand tools for repairs indicated	Air compressor, mud pump, welder (if steel) and necessary pneumatic, small power tools and hand tools for repairs indicated	Air cmprsr., mud pump, welder (if steel) and needed pneumatic, small power tools and hand tools for repairs	Any portion of Type III that can be provided
Materials	As needed for repairs indicated	Repair couplings, sleeves and associated materials and expendable supplies for 60 assorted main repairs	Repair couplings, sleeves and associated materials and expendable supplies for 60 assorted main repairs	Repair couplings, sleeves and asctd. mtrls. & expendable supplies for 60 assorted main repairs	NA

# Incident Locations & Facilities

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Established by the Incident Commander based on the requirements and complexity of the incident.



**Incident  
Command  
Post**



**Base**



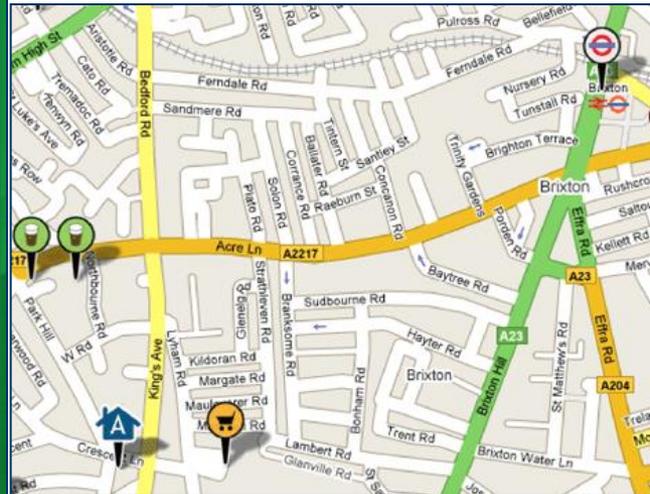
**Staging  
Area**



**Camp**

# Information & Intelligence Management

Information and intelligence are critical to incident response.



# Accountability (1 of 2)

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The following principles must be adhered to:

- **Check-In.** All responders must report in to receive an assignment in accordance with the procedures established by the Incident Commander.
- **Incident Action Plan.** Response operations must be coordinated as outlined in the IAP.
- **Unity of Command.** Each individual will be assigned to only one supervisor.



# Accountability (2 of 2)

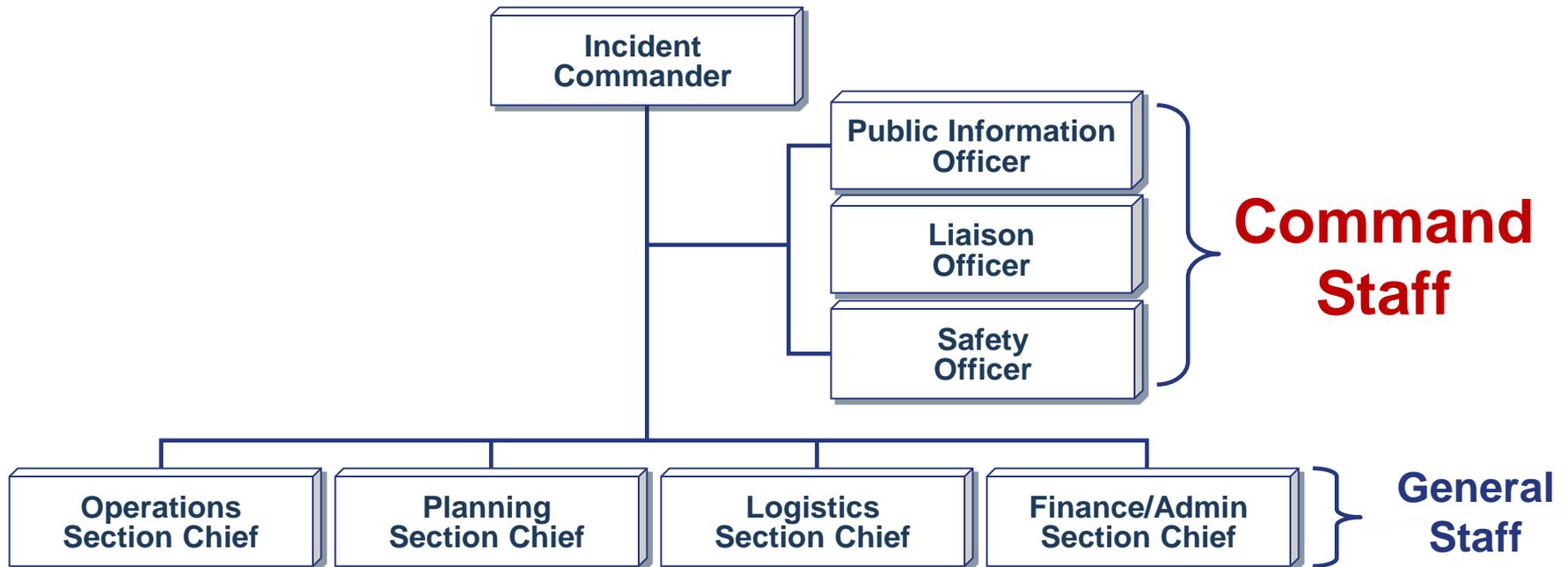
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- **Span of Control.** Supervisors must be able to adequately supervise and control their subordinates, as well as communicate with and manage all resources under their supervision.
- **Resource Tracking.** Supervisors must record and report resource status changes as they occur.



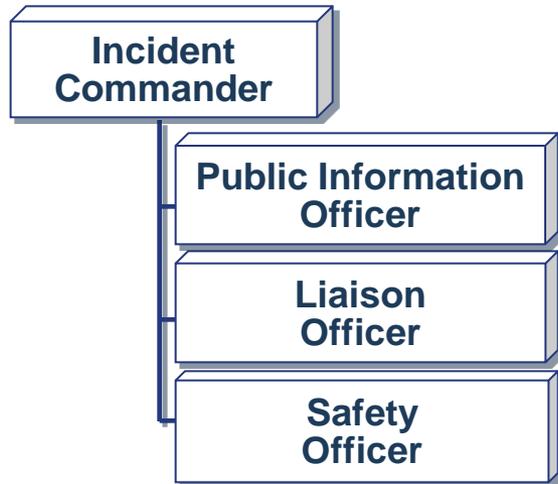
# Incident Commander

The Incident Commander performs all major ICS command and staff responsibilities unless the ICS functions are delegated and assigned.



# Command Staff

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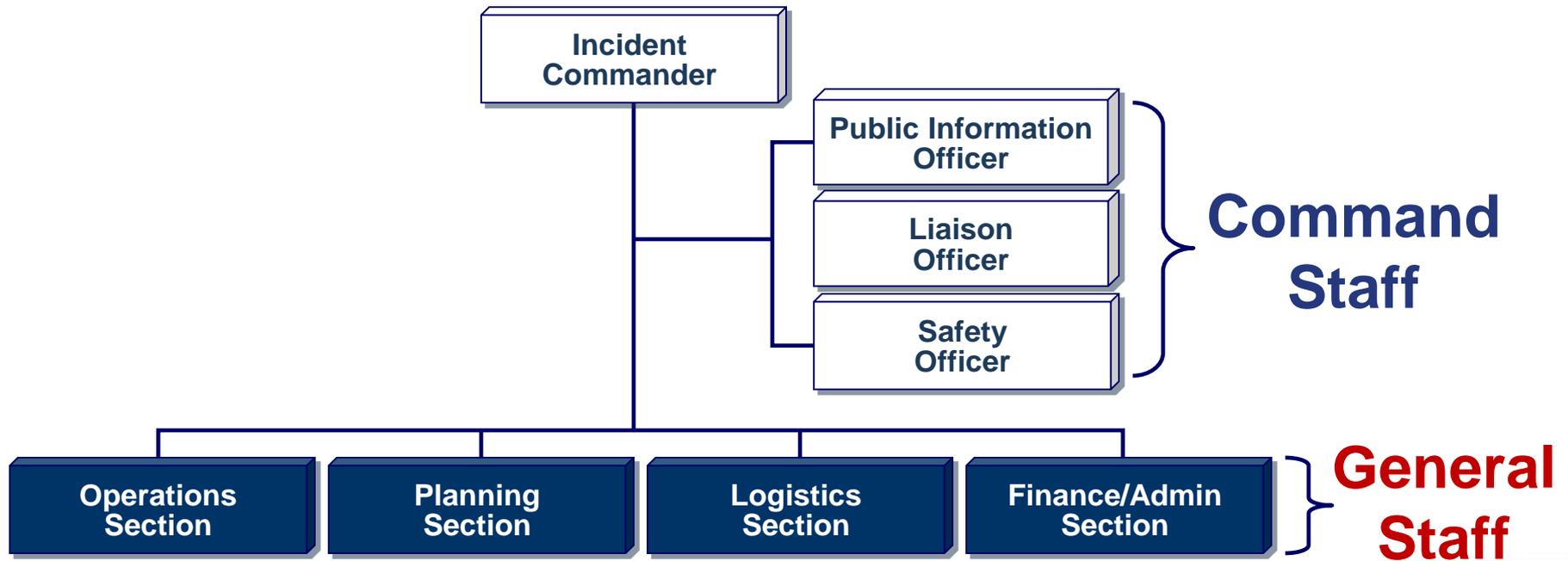


**It may be necessary for the Incident Commander to designate a Command Staff who:**

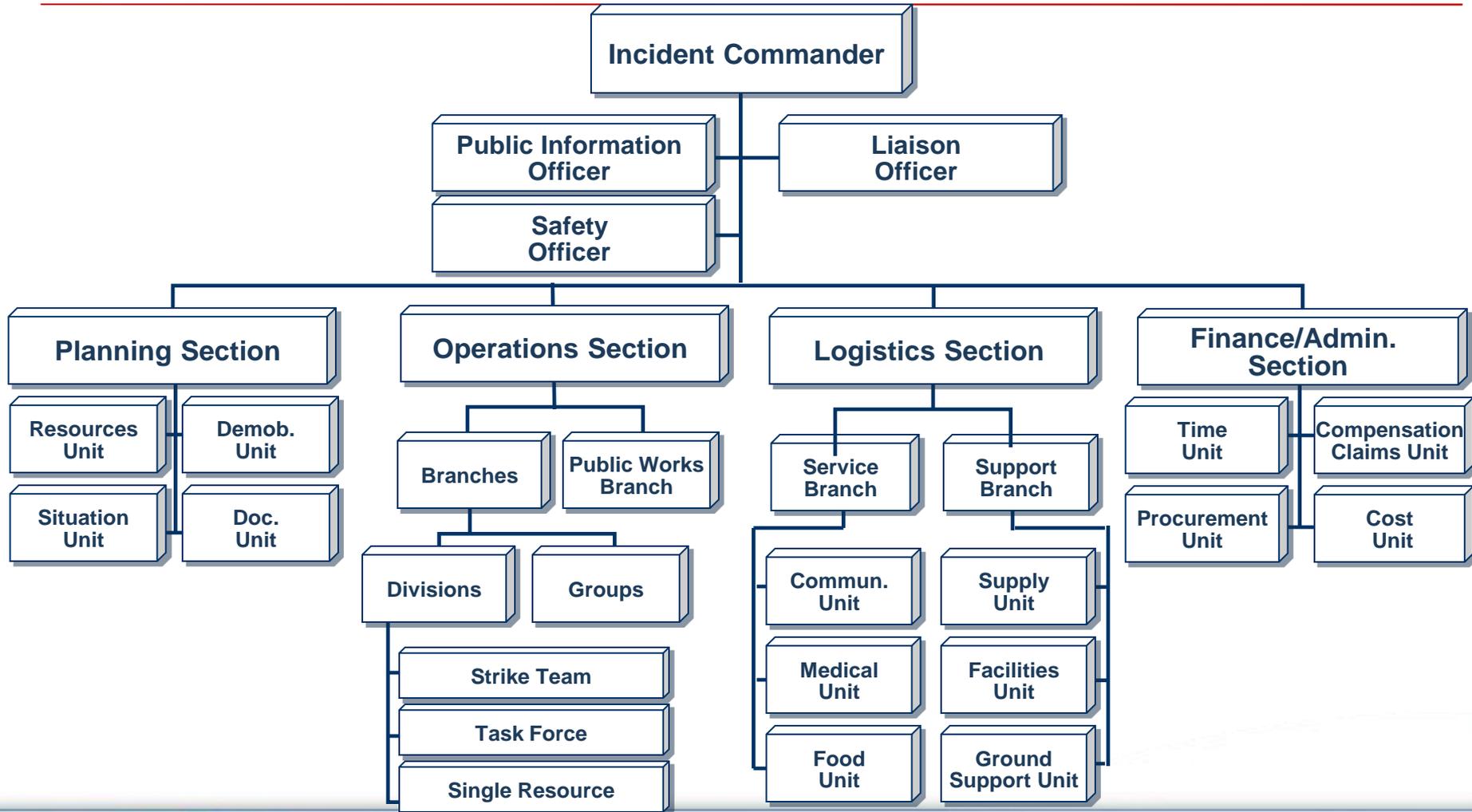
- **Provide information, liaison, and safety services for the entire organization.**
- **Report directly to the Incident Commander.**

# General Staff

This unit focuses on the role of the General Staff in the ICS organizational structure.



# Expanded ICS Organization

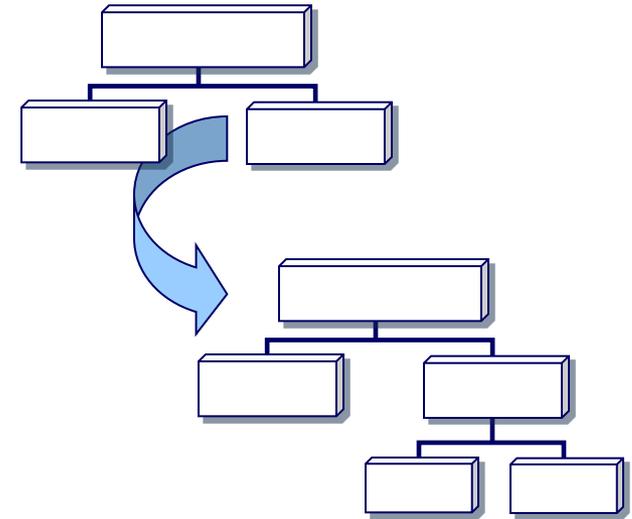


# Modular Organization (1 of 2)

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## Modular organization:

- Develops in a top-down, modular fashion.
- Is based on the size and complexity of the incident.
- Is based on the hazard environment created by the incident.

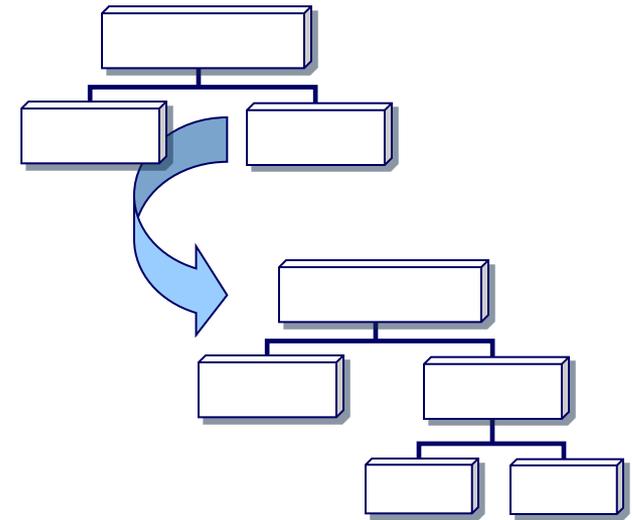


# Modular Organization (2 of 2)

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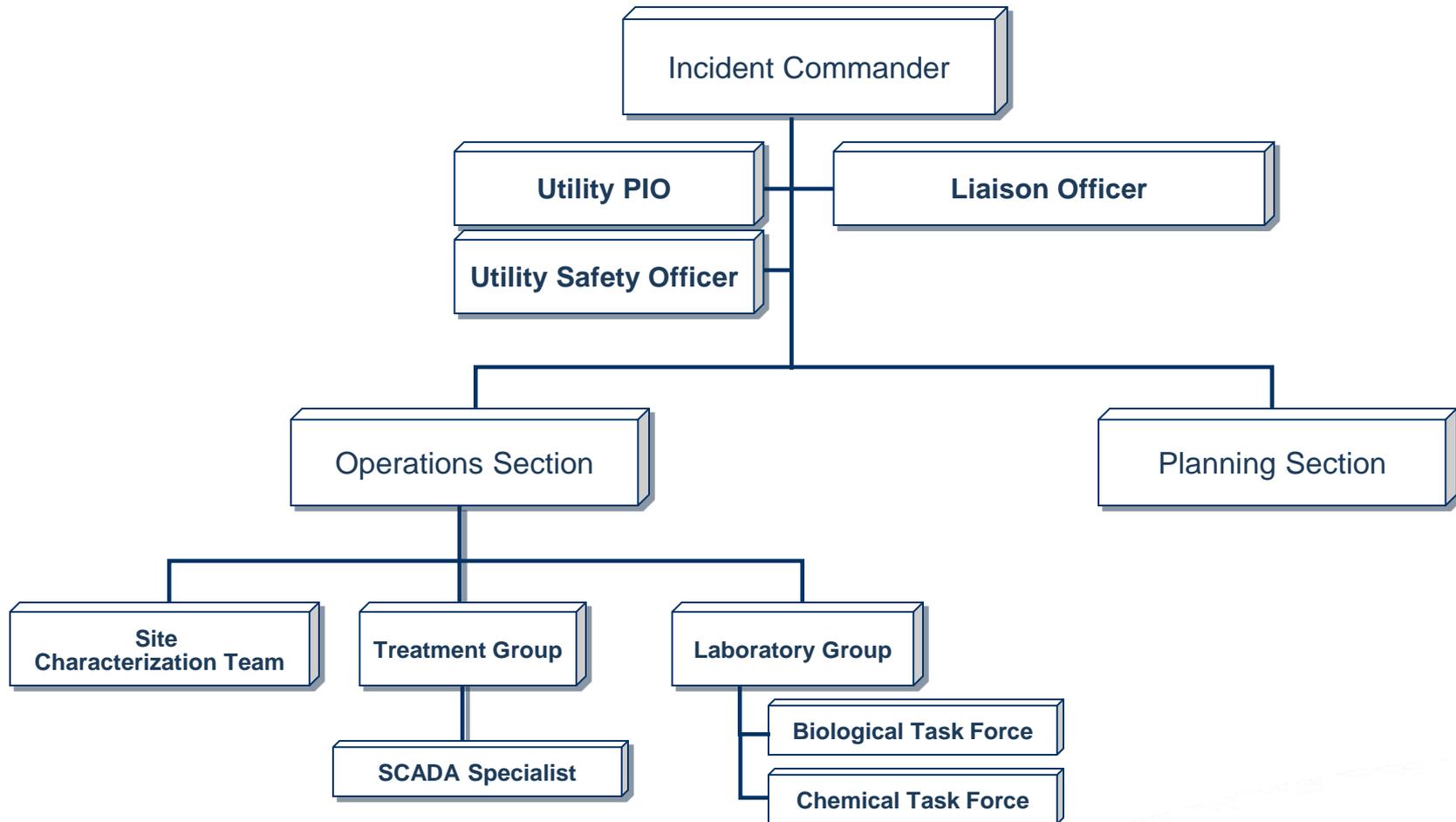
**With modular organization:**

- **Incident objectives determine the organizational size.**
- **Only functions/positions that are necessary will be filled.**
- **Each element must have a person in charge.**

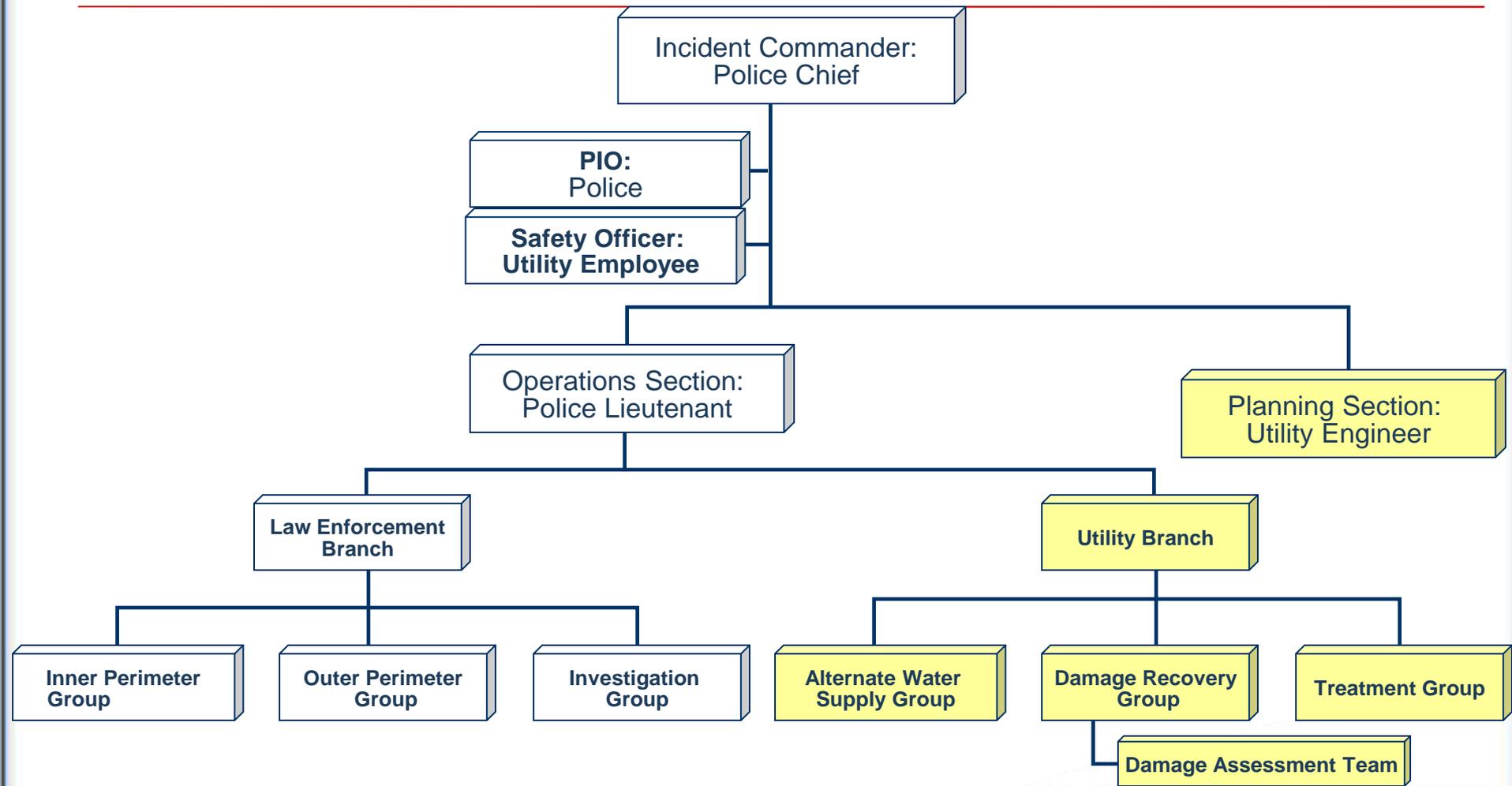


# Example ICS Organization – Water Contamination Incident

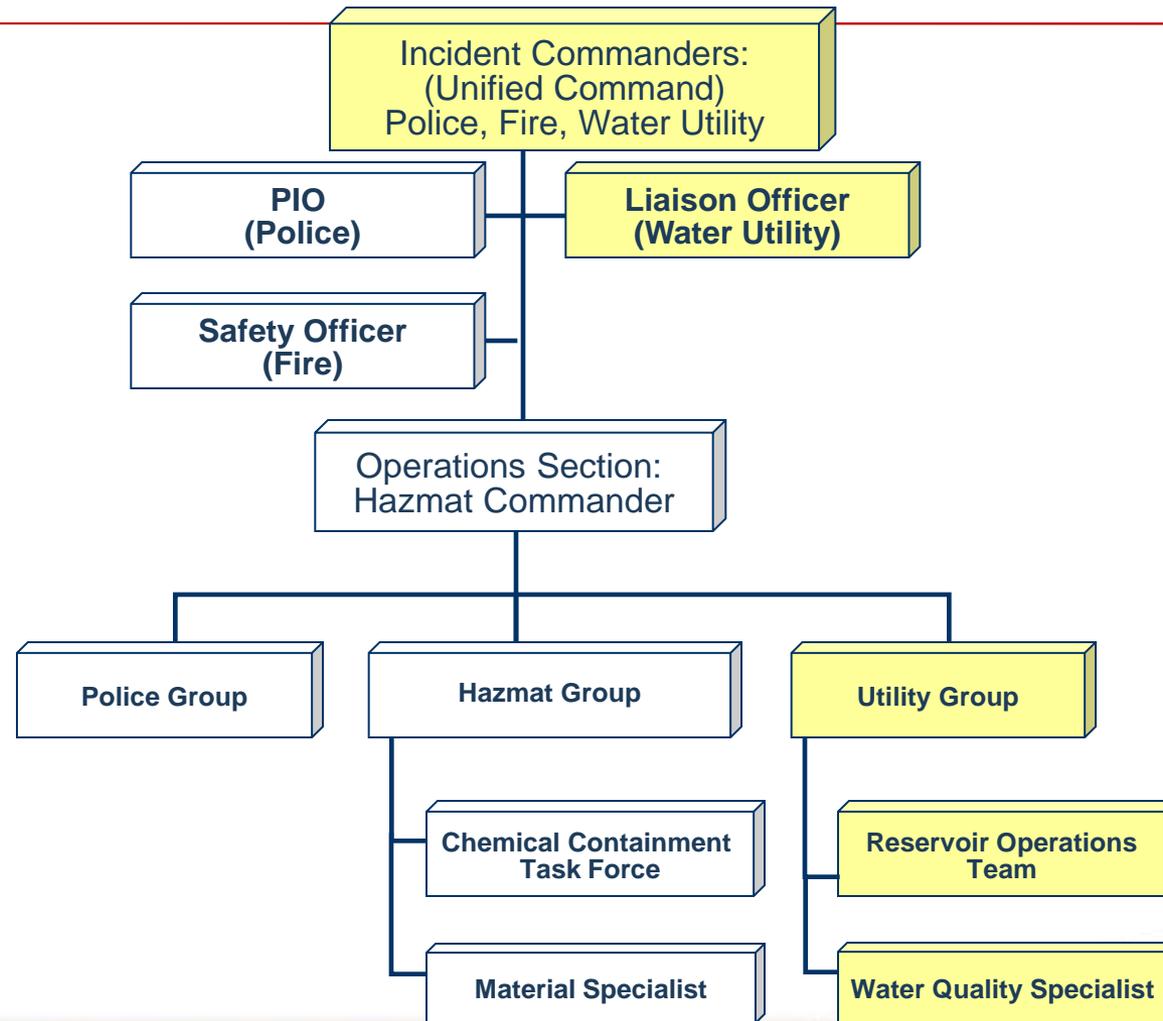
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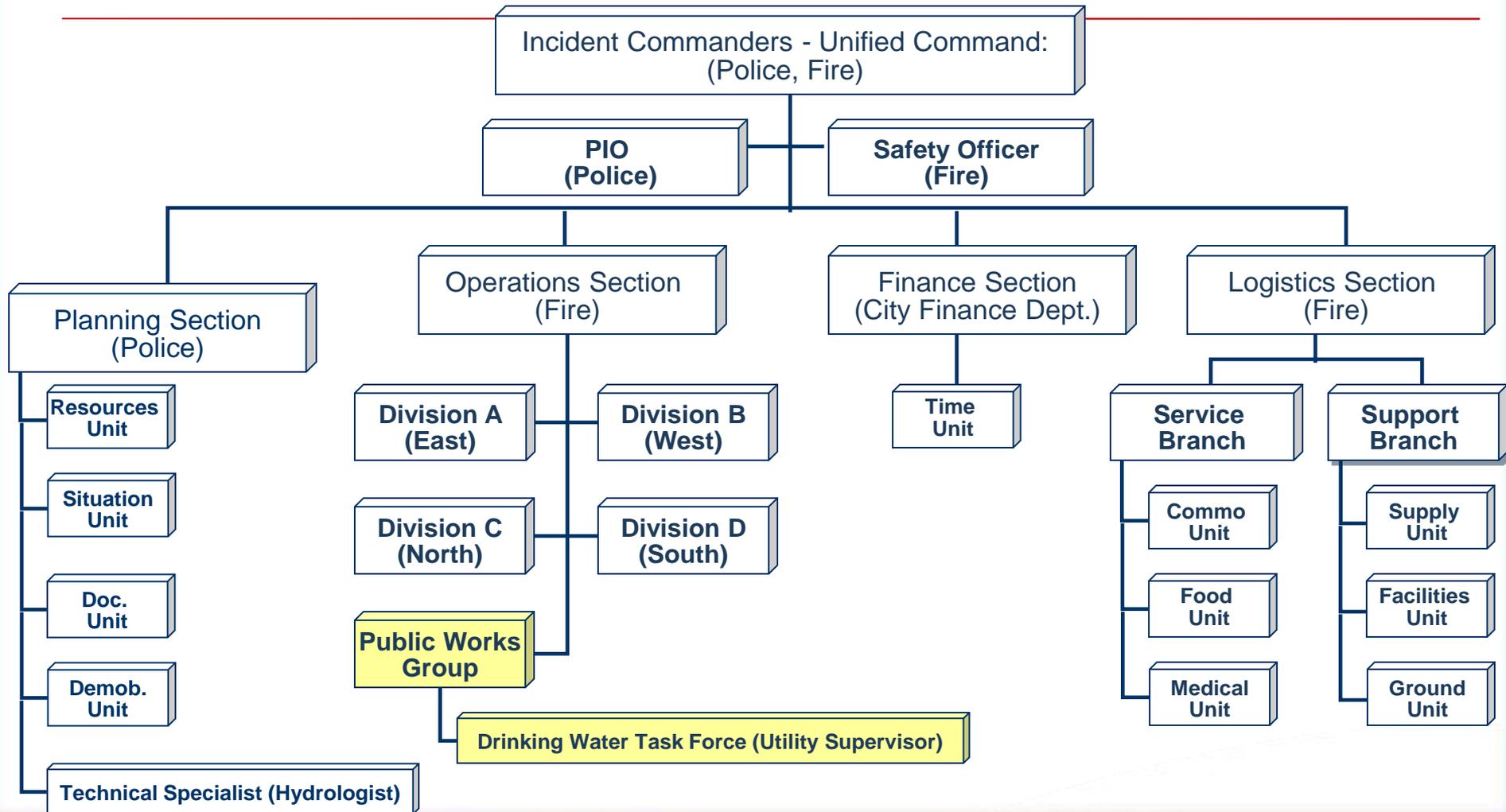
# Example ICS Organization – Intentional Utility Structural Damage



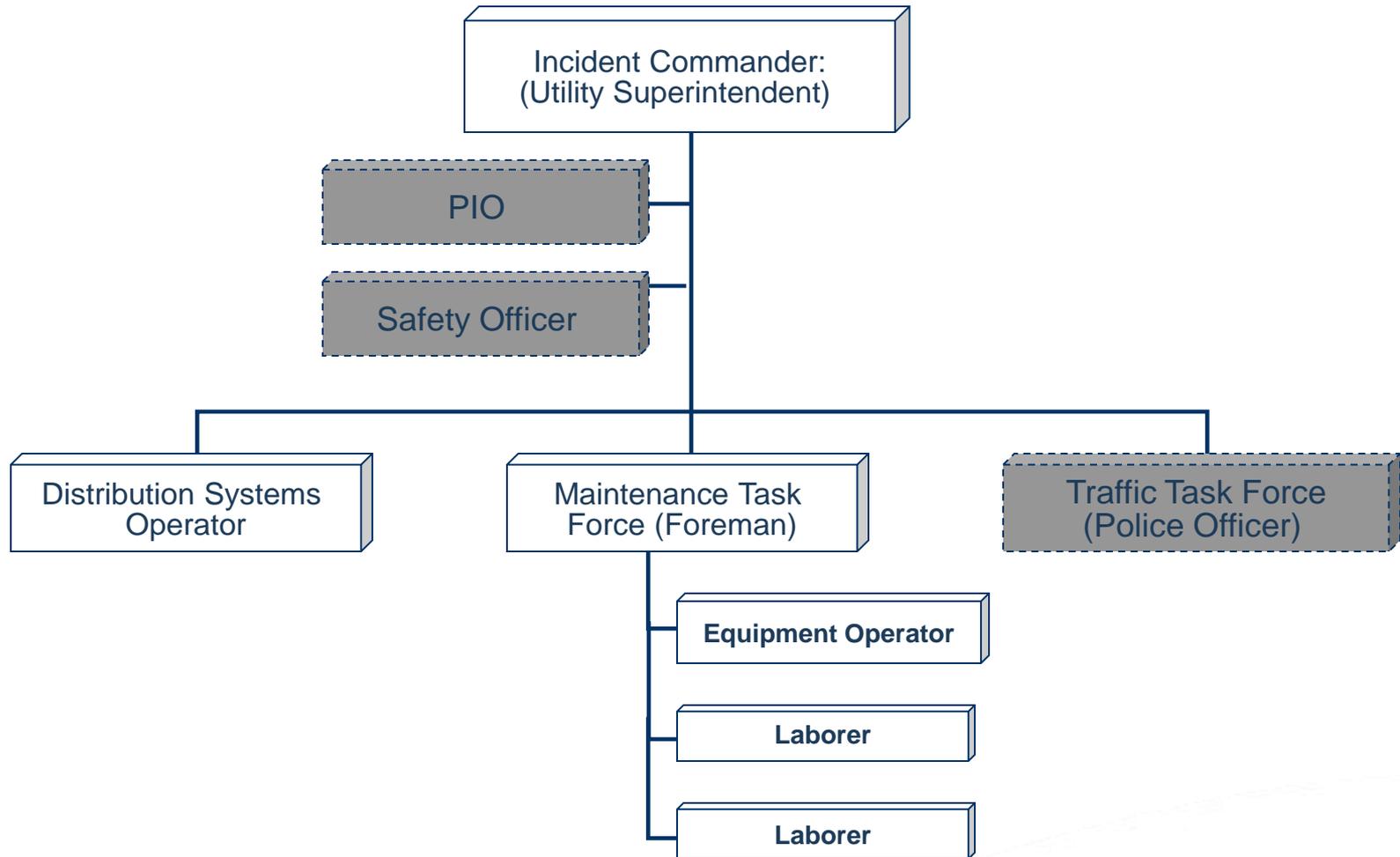
# Example ICS Organization – Reservoir Hazmat Incident



# Example ICS Organization – Flooding Incident



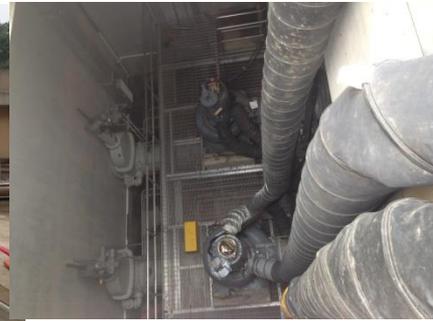
# Example ICS Organization – 16” Water Main Break

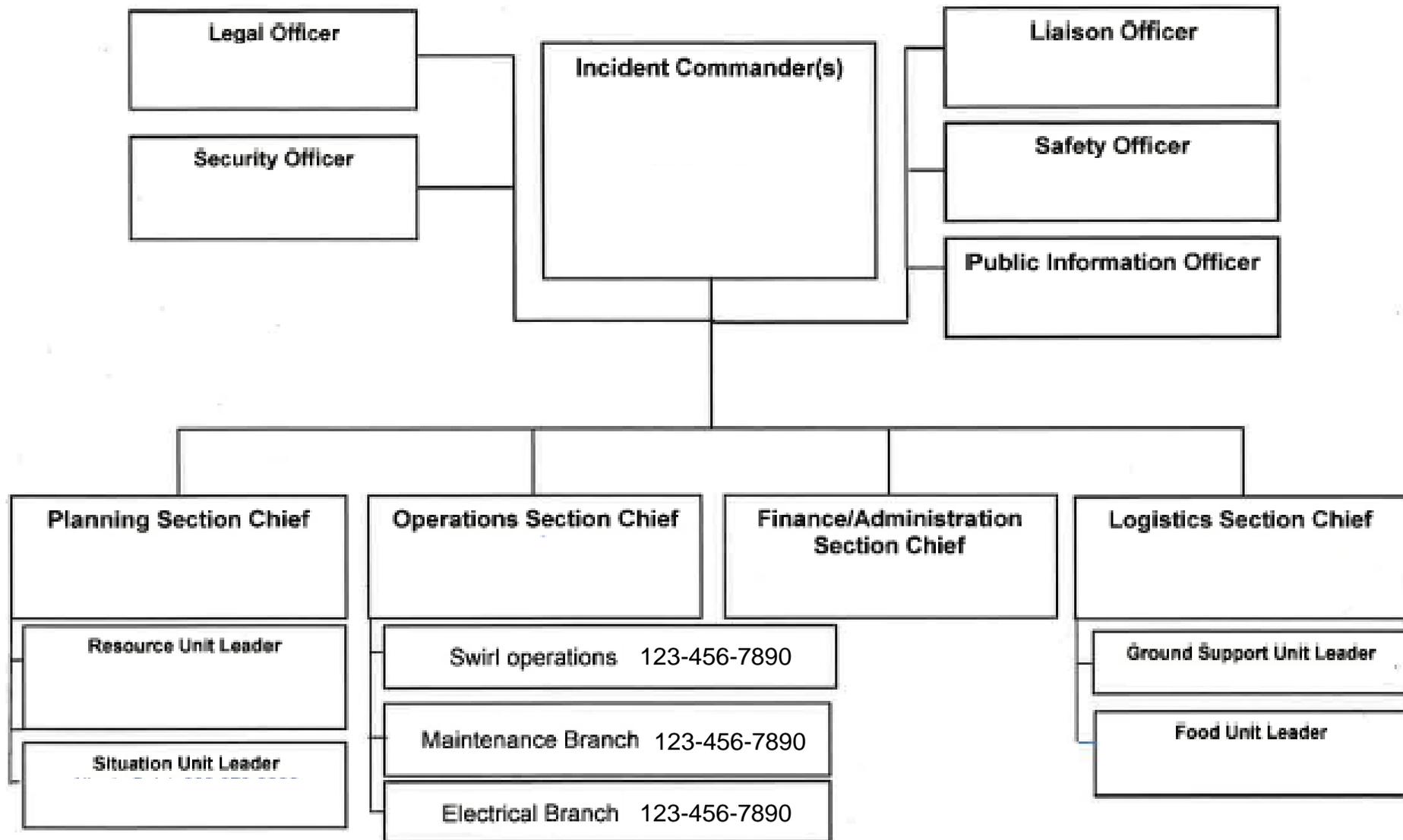


# Incident Description

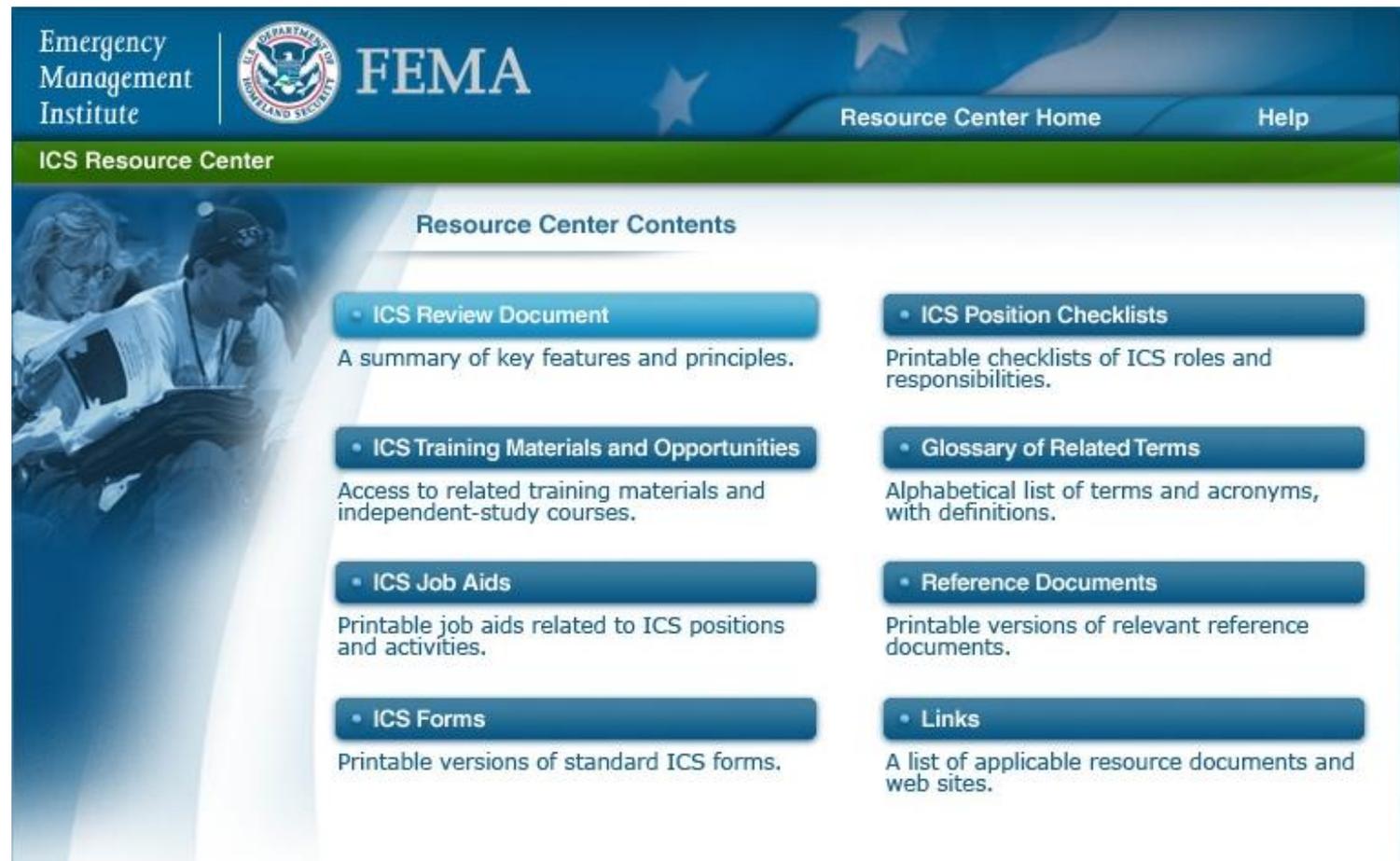
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**Description:** Uncontrolled flow through a check valve at the pumping station began in the afternoon of Tuesday, September 27, 2016. Sewage and stormwater inundated the dry areas of the pump station. Initial efforts to mitigate the incident by pumping water out of the facility were unsuccessful.





# For Additional ICS Resources:



Emergency Management Institute |  FEMA

Resource Center Home Help

ICS Resource Center

### Resource Center Contents

- **ICS Review Document**  
A summary of key features and principles.
- **ICS Training Materials and Opportunities**  
Access to related training materials and independent-study courses.
- **ICS Job Aids**  
Printable job aids related to ICS positions and activities.
- **ICS Forms**  
Printable versions of standard ICS forms.
- **ICS Position Checklists**  
Printable checklists of ICS roles and responsibilities.
- **Glossary of Related Terms**  
Alphabetical list of terms and acronyms, with definitions.
- **Reference Documents**  
Printable versions of relevant reference documents.
- **Links**  
A list of applicable resource documents and web sites.

<http://training.fema.gov/EMIWeb/IS/ICSResource/index.htm>