



American Water Works  
Association

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# **Establishing Resiliency in the Water Sector**

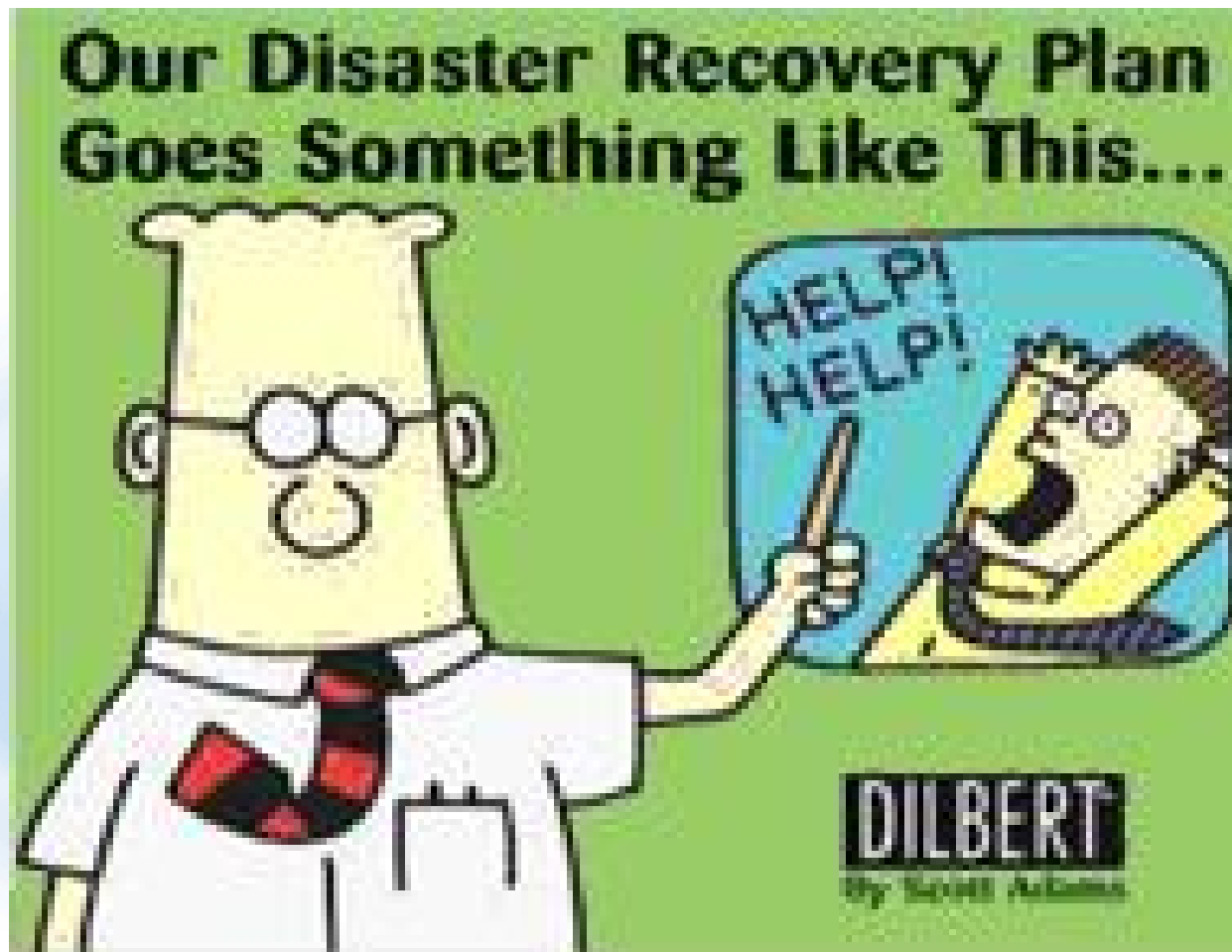
## **The WARN Initiative**

A large, faint, light blue background image of a water splash with concentric ripples, centered behind the text.

# Objectives

- What is Resiliency
- National Homeland Security Strategy
- A Little Alphabet Soup
- What is and Why consider WARN
- Supporting Actions

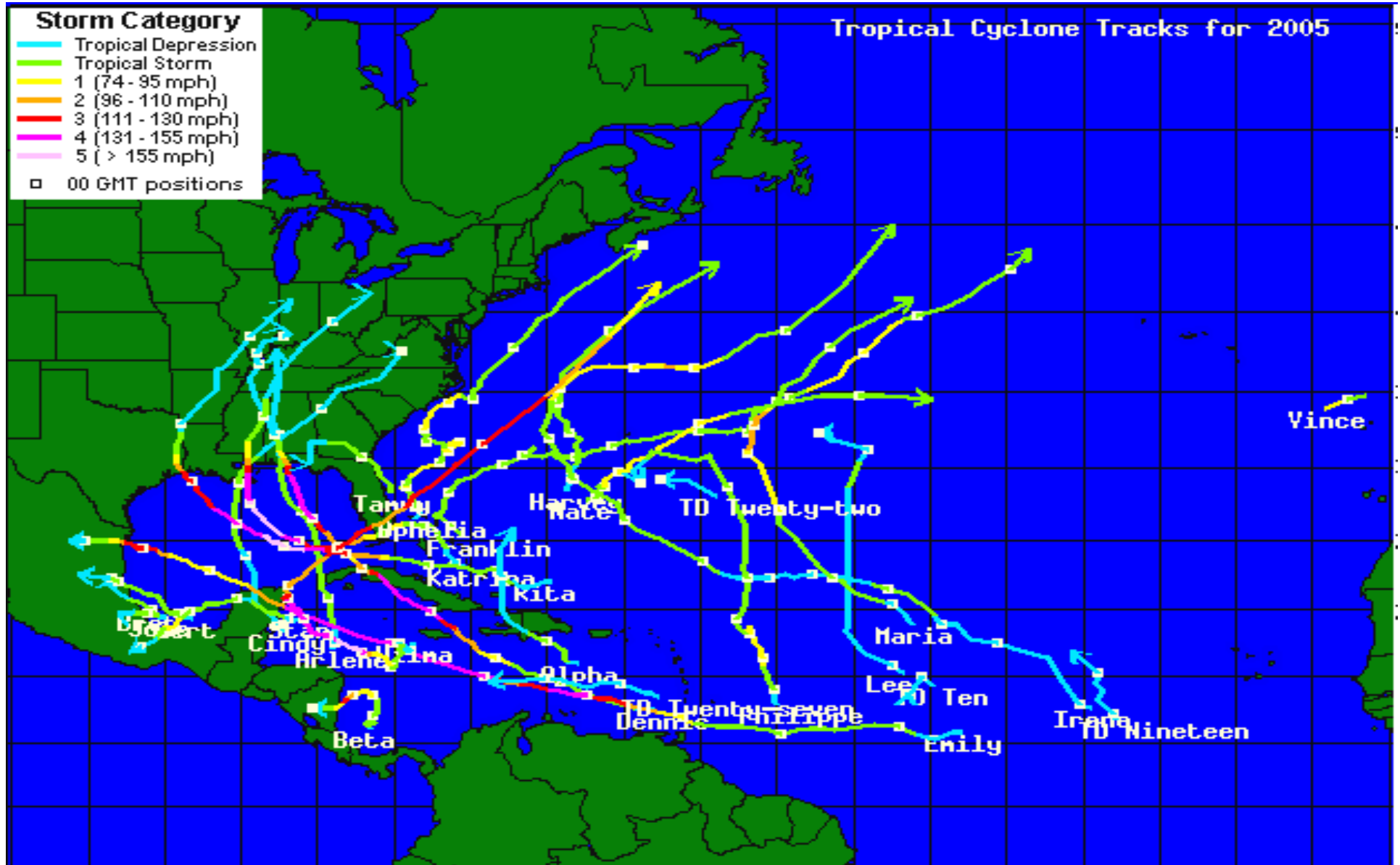
# Why do we need WARN?



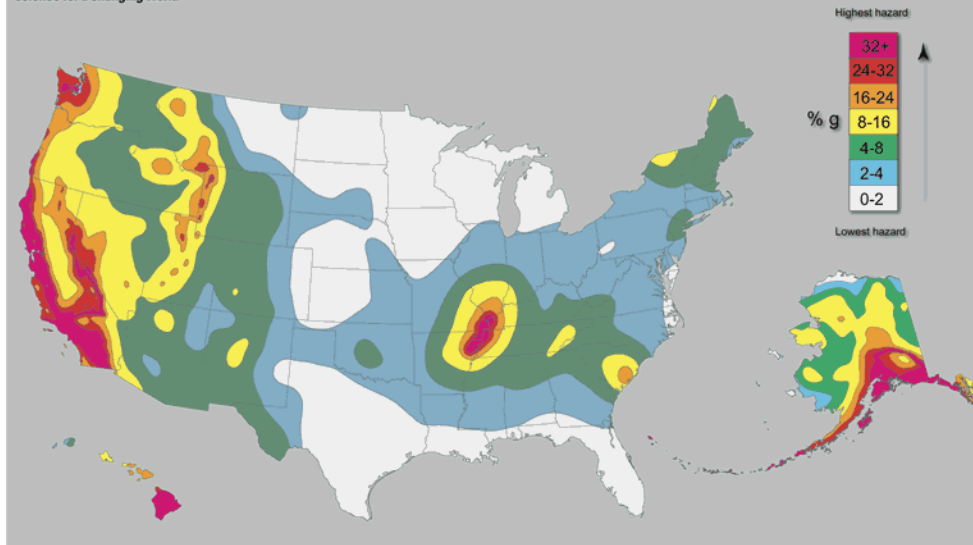
# Because “stuff” happens Utilities will need HELP!



# Preparing for

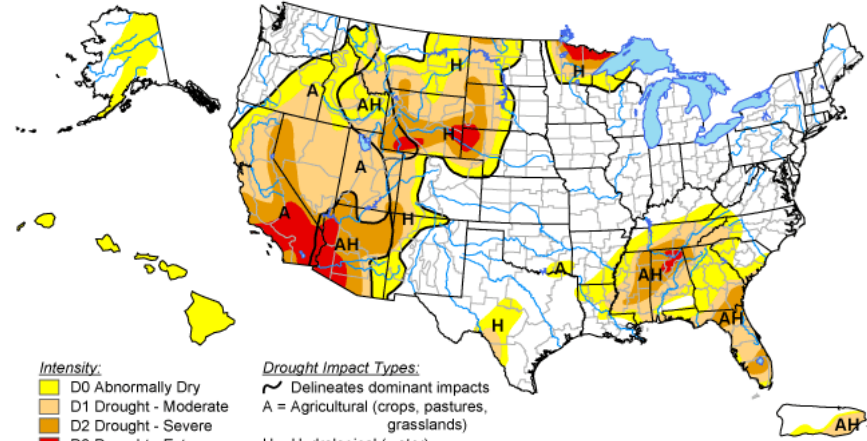


# Responding to



## U.S. Drought Monitor

April 17, 2007  
Valid 8 a.m. EDT



**Intensity:**

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

**Drought Impact Types:**

- Delineates dominant impacts
- A = Agricultural (crops, pastures, grasslands)
- H = Hydrological (water)

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

<http://drought.unl.edu/dm>



Released Thursday, April 19, 2007  
Author: David Miskus, JAWF/CPC/NOAA

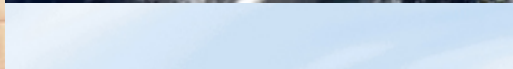
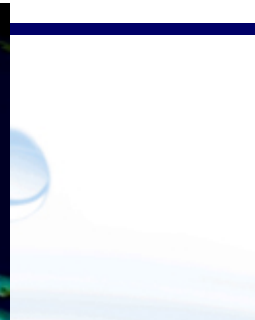
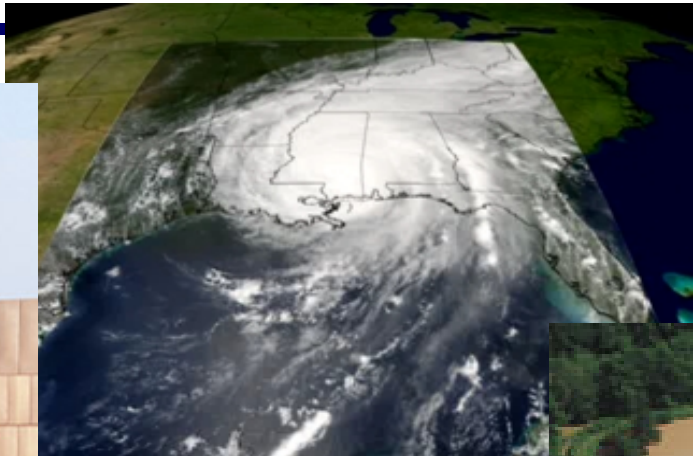
# and Recovering from



# All-Hazards



© 2004 Oklahoma City National Memorial



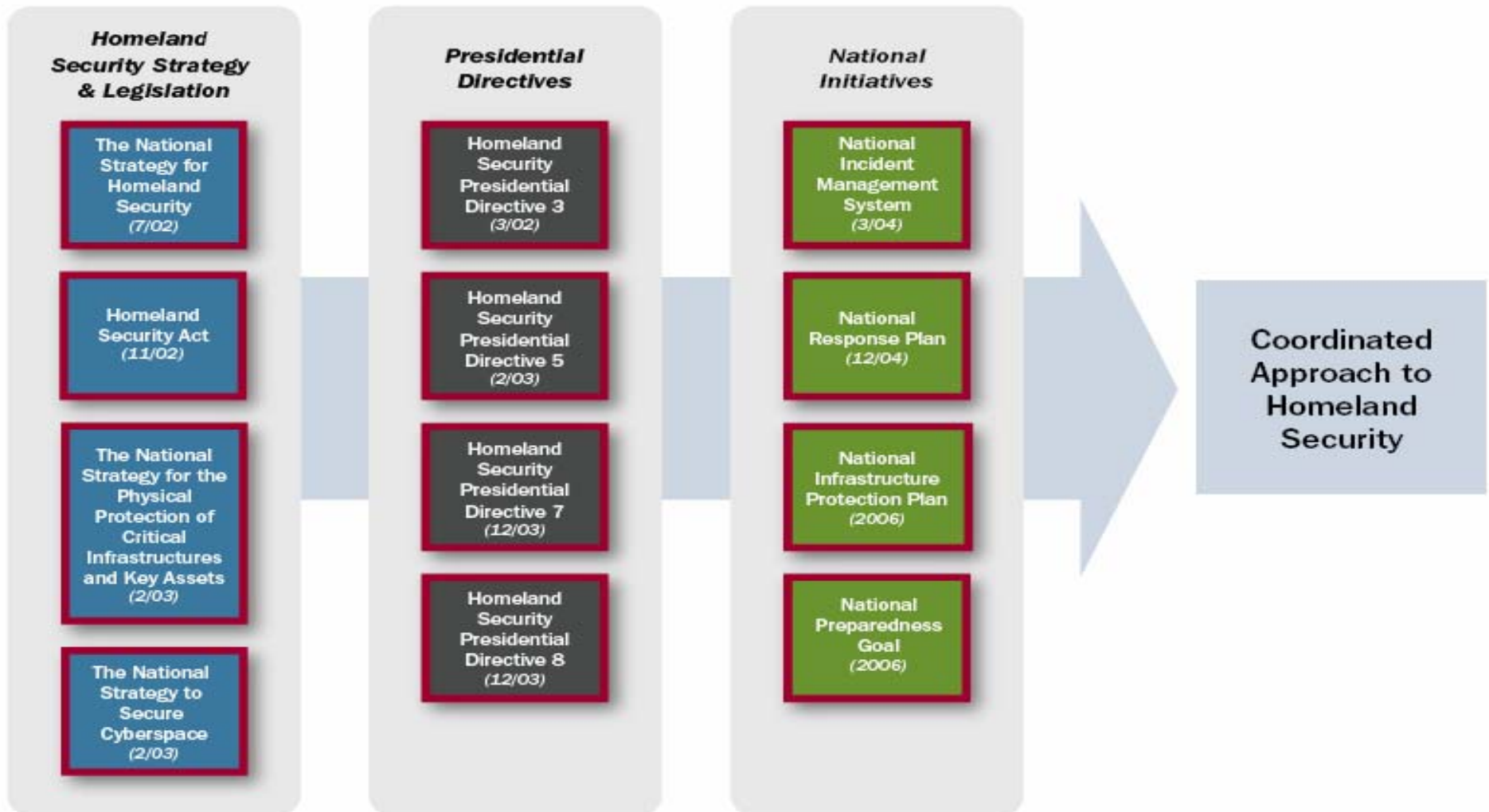
# What is Resiliency?

*Resilience -- the ability to accommodate change gracefully and without catastrophic failure, is critical in times of disaster.  
(Foster 1997)*

*Local resiliency with regard to disasters means that a locale is able to withstand an extreme natural event without suffering devastating losses, damage, diminished productivity, or quality of life and without a large amount of assistance from outside the community.  
(Mileti 1999)*

*Resiliency is the capability of an asset, system, or network to maintain its function during or recover from a terrorist attack or other incident  
(NIPP 2006).*

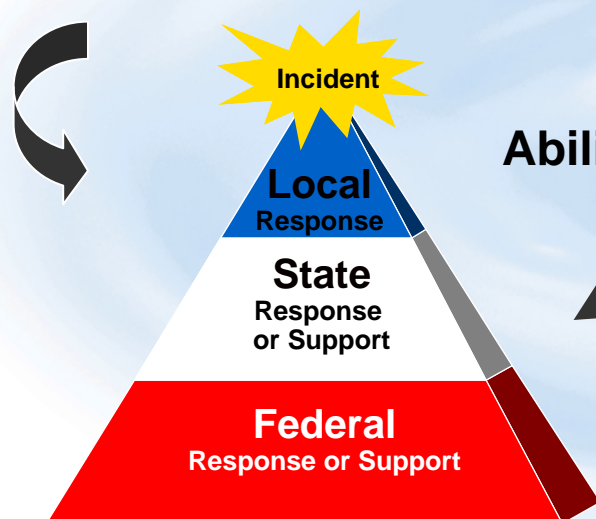
# Linkage to the Federal Strategy



# Relationship of NIMS & NRF

## NIMS

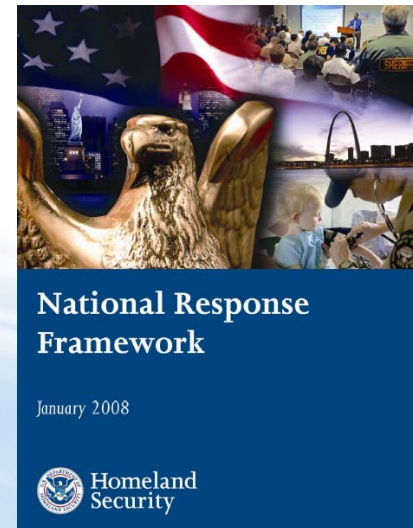
- Aligns command, control, organization structure, terminology, communication protocols, & resources/resource-typing
- Used for all events



Resources

Knowledge

Abilities



## NRF

- Integrates & applies Federal resources, knowledge, & abilities before, during, & after an incident
- Activated only for incidents of national significance

# National Incident Management System (NIMS)

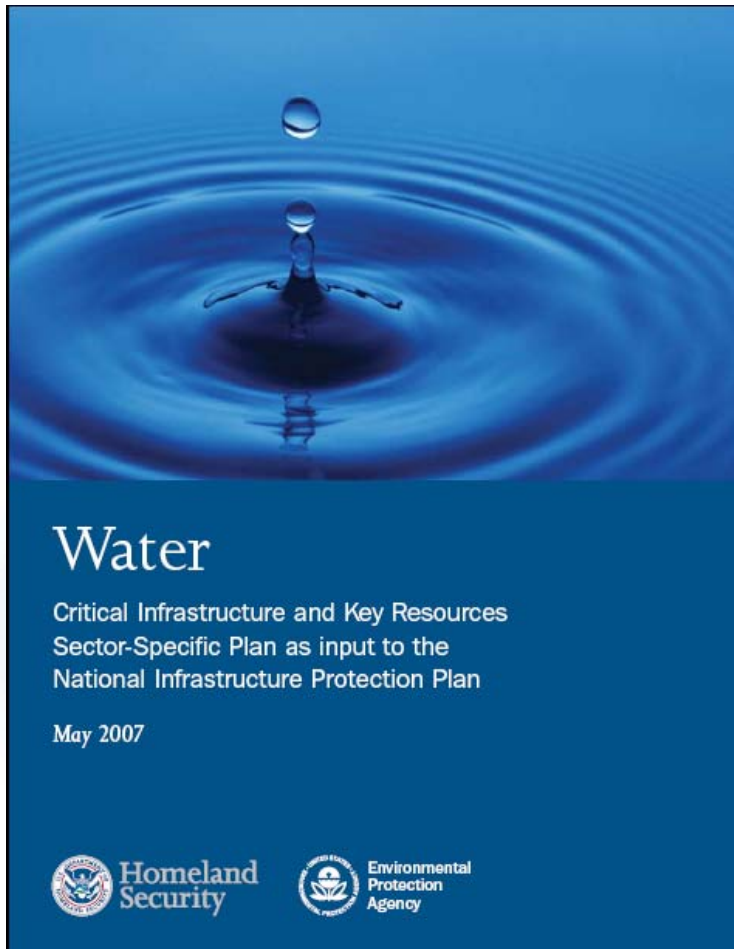
- Full compliance with NIMS is an eligibility condition for all federal preparedness assistance grants for state, territorial, tribal, & local entities in FY 2008.
  - These criteria include formalizing mutual aid agreements with surrounding communities and states for the purposes of sharing equipment, personnel, and facilities during emergencies.
- NIMS training available @ [www.fema.gov/nims](http://www.fema.gov/nims)
  - This training is available free of charge online

# National Infrastructure Protection Plan (NIPP)

- NIPP released July 7, 2006
- Risk management framework uses an all-hazards approach
- Resiliency is a key overarching goal
- 17 CI/KR Sectors – Water & Wastewater
- Sector-Specific Plan



# The Water Sector Vision



- ***A secure and resilient drinking water and wastewater infrastructure that provides clean and safe water as an integral part of daily life. This Vision assures the economic vitality of and public confidence in the nation's drinking water and wastewater through a layered defense of effective preparedness and security practices in the sector.***

# SSP Goals

- 1. Sustain protection of public health and the environment.**
- 2. Recognize and reduce risks in the water sector.**
- 3. Maintain a resilient infrastructure.**
- 4. Increase communication, outreach, and public confidence.**

# Linkage to HSPD-5 & 8

## Goal 3: Maintain a resilient infrastructure.

**Objective 1:** Emphasize continuity of drinking water and wastewater services as it pertains to water sector utility emergency preparedness, response, and recovery planning.

**Objective 2:** Explore and expand the implementation of mutual aid agreements/compacts in the water sector. The water sector has significantly enhanced its resilience through mutual aid agreements among utilities and states; increasing the number and scope of these agreements will further enhance resiliency in the sector.

**Objective 3:** Identify and implement key response and recovery strategies. Response and recovery from an incident in the sector will be crucial to maintaining public health and public confidence.

**Objective 4:** Increase the understanding of how the water sector is interdependent with other critical infrastructure sectors. Sectors such as public health and emergency services are largely dependent on the water sector for their continuity of operations, while the water sector is dependent upon sectors such as chemical and electricity for the continuity of its operations.

# Supporting Goal 3: Objective 2

- **The water sector is actively seeking to leverage the success and lessons learned from existing intrastate mutual aid & assistance networks to support the formation of state-level Water/Wastewater Agency Response Networks (WARNs)**
- **AWWA in partnership with USEPA and others, facilitated the establishment of WARNs nationally via regional workshops**

# Utilities Helping Utilities (Feb 2006)

## — Joint Policy Statement

- 8 major water organizations
- Encourages the creation of intrastate mutual aid & assistance networks
- Provides for greater water sector resiliency against natural or manmade incident



## Utilities Helping Utilities

### Joint Policy Statement on Mutual Aid & Assistance Networks

The water sector is committed to a "Utilities Helping Utilities" concept and is taking steps to encourage utilities and local/state governments to establish intrastate mutual aid and assistance networks. The purpose of these networks is to provide a method whereby water/wastewater utilities that have sustained damages from natural or manmade events could obtain emergency assistance in the form of personnel, equipment, materials, and other associated services as necessary, from other water/wastewater utilities. The objective is to provide rapid, short-term deployment of emergency services to restore the critical operations of the affected water/wastewater utility.

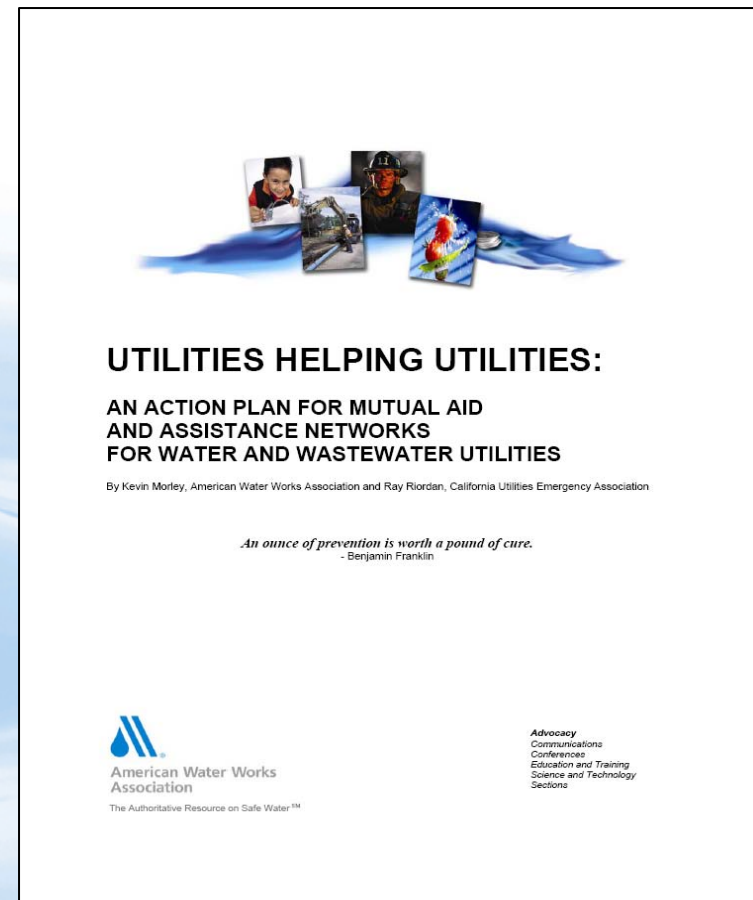
A pre-established agreement among a network of utilities can complement and enhance local capabilities to prepare for and respond to a broad range of threats, both natural and man-made. The establishment of such intrastate mutual aid and assistance networks is a core principle of the National Preparedness Goal developed by the Department of Homeland Security.

Formalizing the existing capability to provide mutual aid and assistance provides the water/wastewater sector with a degree of resiliency against natural or manmade disaster to ensure continuity of service to our sector's customers.

It is essential that all partners in the water and wastewater community work together to support this concept. We encourage our members to discuss this concept with peers and take the steps necessary to establish an intrastate mutual aid and assistance network.

# The WARN Action Plan

- **Utilities Helping Utilities**
  - **Outlines 10 key steps in the formation of a WARN**
  - **Includes sample agreement that satisfies NIMS and comparative assessment of existing WARN programs**
  - **Recognized by DHS as model for the water sector**



# What's Involved - 10 Steps to Success

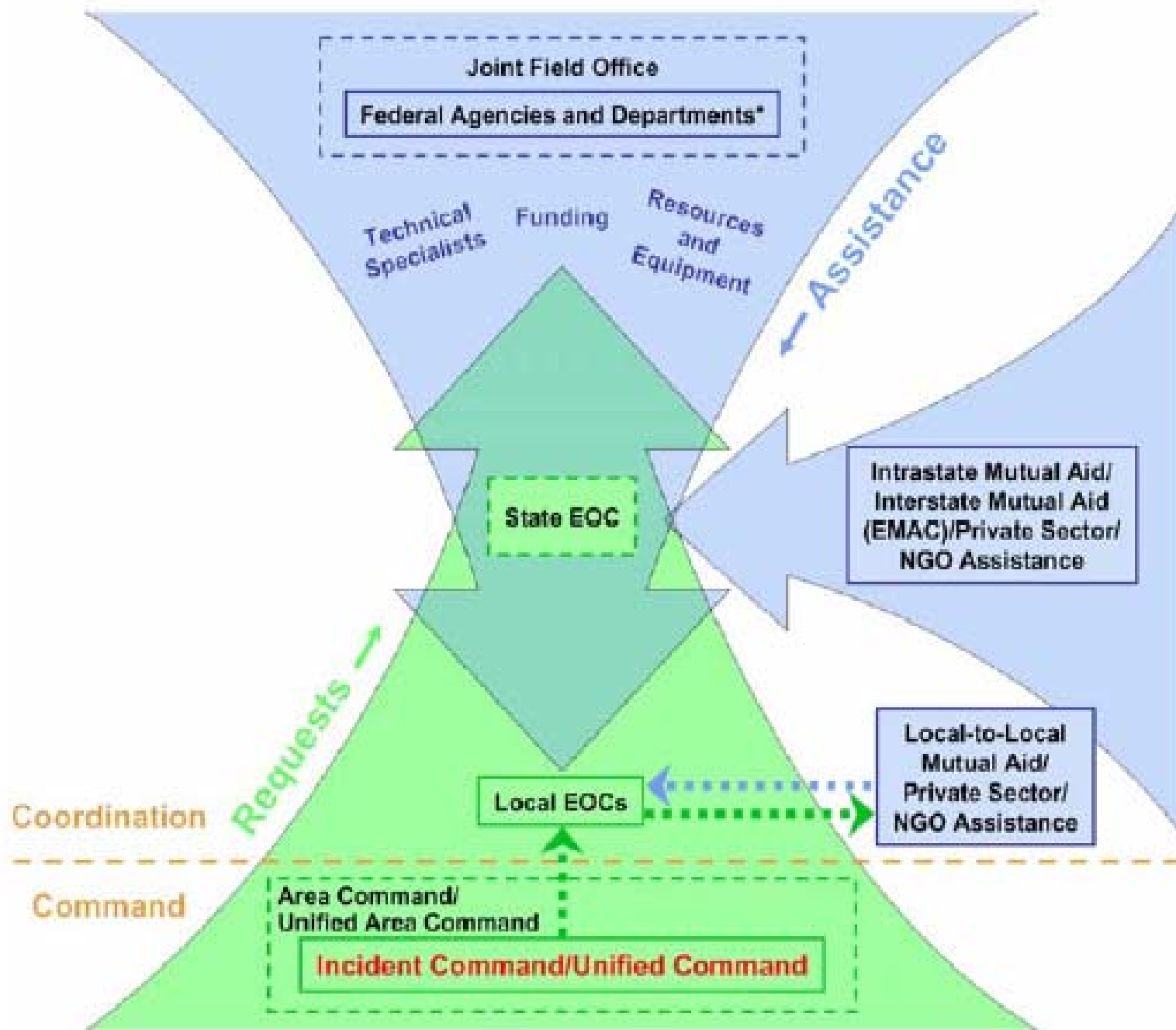
1. Identify interest in starting a program
2. Form an initial leadership team
3. Prepare a kick-off session
- 4. Establish a steering committee**
5. Identify a mission for the program and steering committee goals
6. Review use of state regions
7. Identify mutual aid and assistance activation criteria
- 8. Draft an agreement**
9. Create facilitation tools
10. Maintain the program

# Who's Involved?

- Utility owner/operators
- Professional association representation
  - (AWWA, NRWA, WEF, sanitation association, etc.)
- State water and wastewater primacy agency
  - (State health, environmental protection, etc.)
- State emergency management and/or homeland security agency
  - (State EMAC coordinator)
- US EPA region representation

# Benefits of Having an Agreement

- Increases planning & coordination
- Provides an emergency contact list
- Enhances access to specialized resources
- Expedites arrival of aid
  - FEMA is muscular and provides support, but is not agile
- Reduces administrative conflict
  - Signed agreement in place
  - Workman's comp, indemnification, etc. identified
- Increases community and customer hope
  - The right resources with the right skills are available

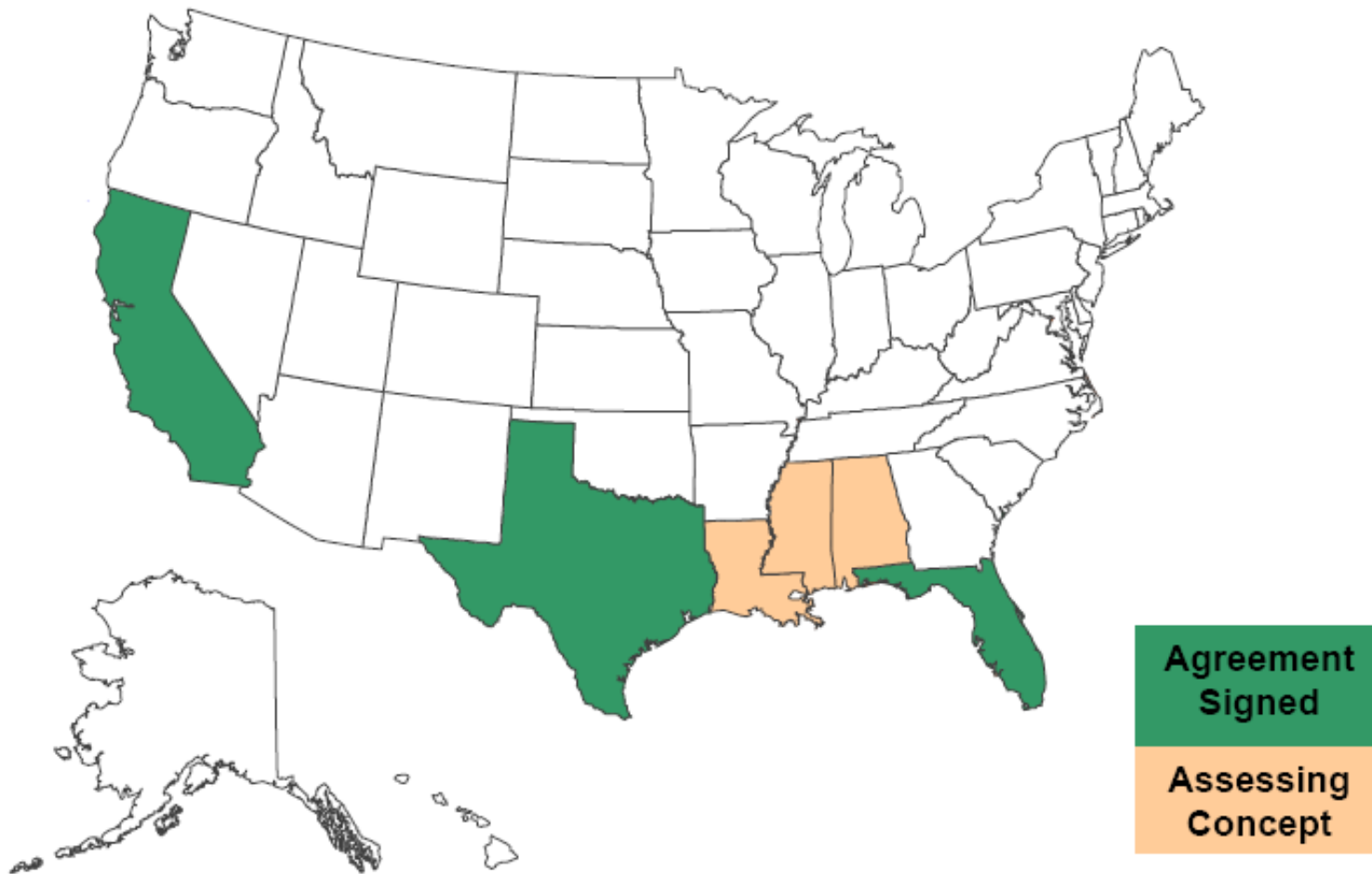


**Figure 3—Flow of Requests and Assistance During Large-Scale Incidents**

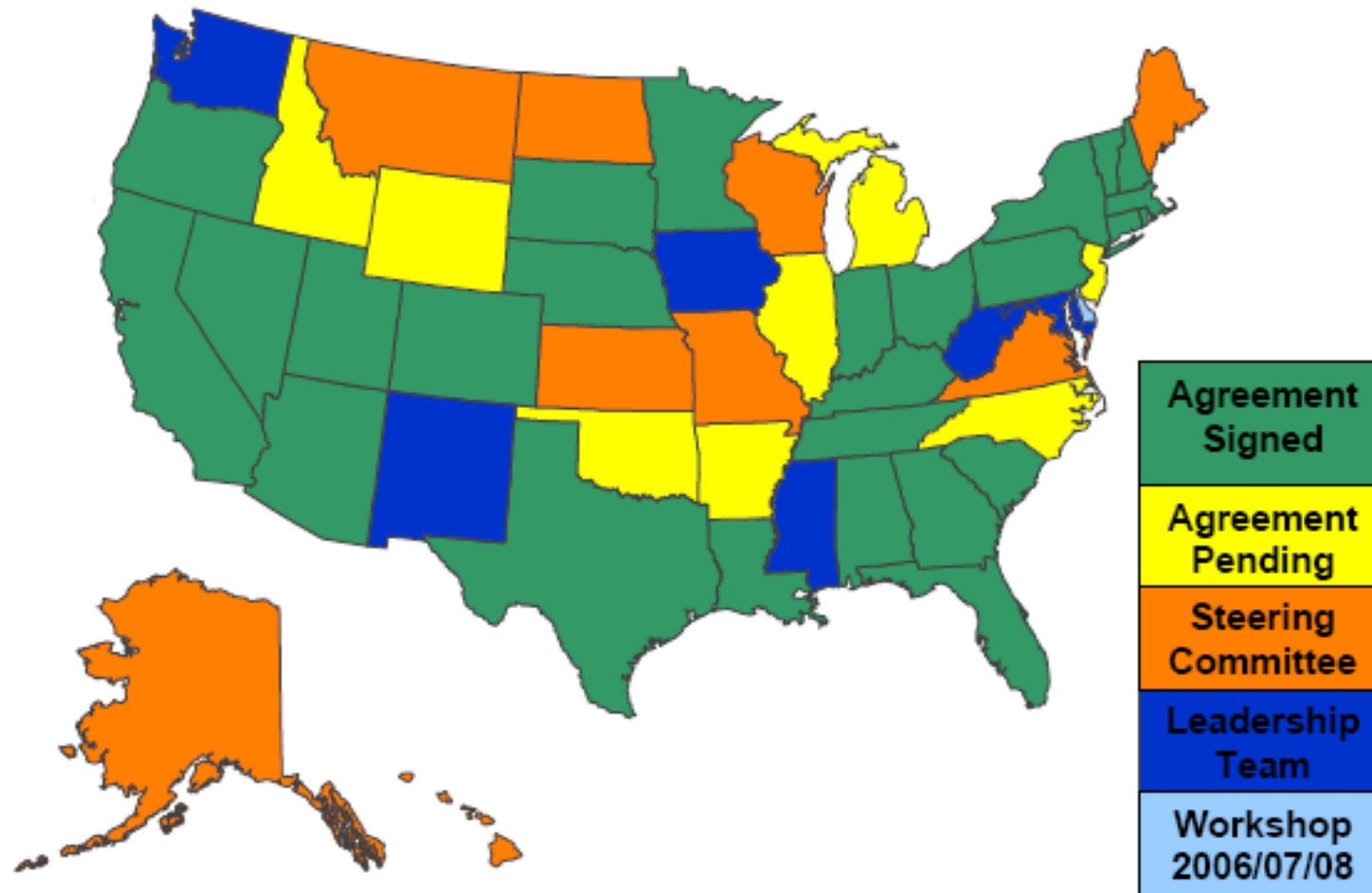
# So Now What?

- Learn from success/challenges of existing programs
- Conduct state & regional workshops
  - Share key steps for organization, support, and management of a mutual aid network
- Increase number of intrastate aid networks
  - Initially targeted states on the Gulf and Atlantic seaboard
- Develop a national aid network
  - Incorporation of WARNs into a national preparedness system
  - Facilitate development of resource typing for the Water Sector (both drinking water and wastewater)
  - AWWA is working with Emergency Management Assistance Compact (EMAC) Advisory Council to facilitate interstate aid and assistance

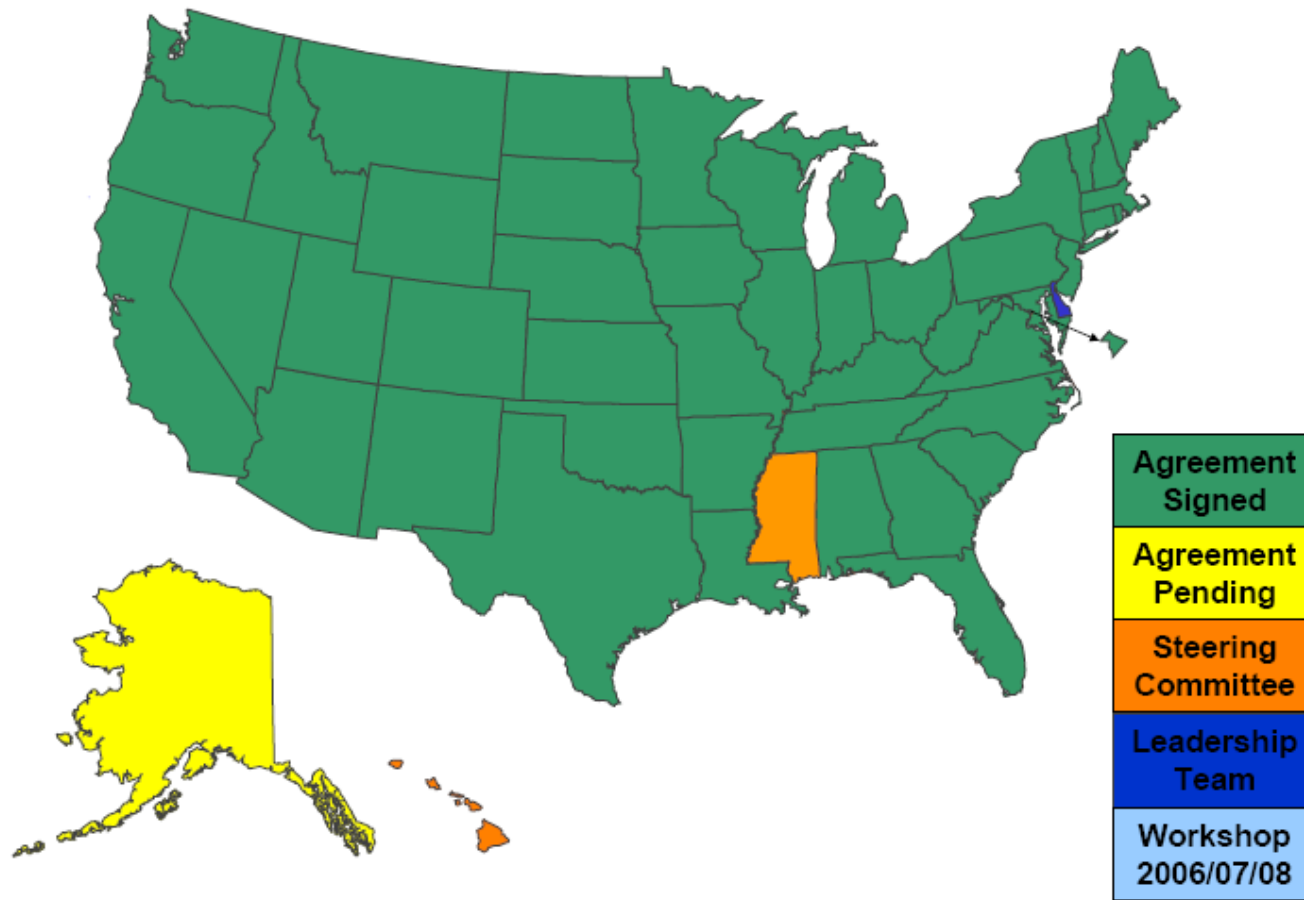
# WARN – The Beginning (April 2006)



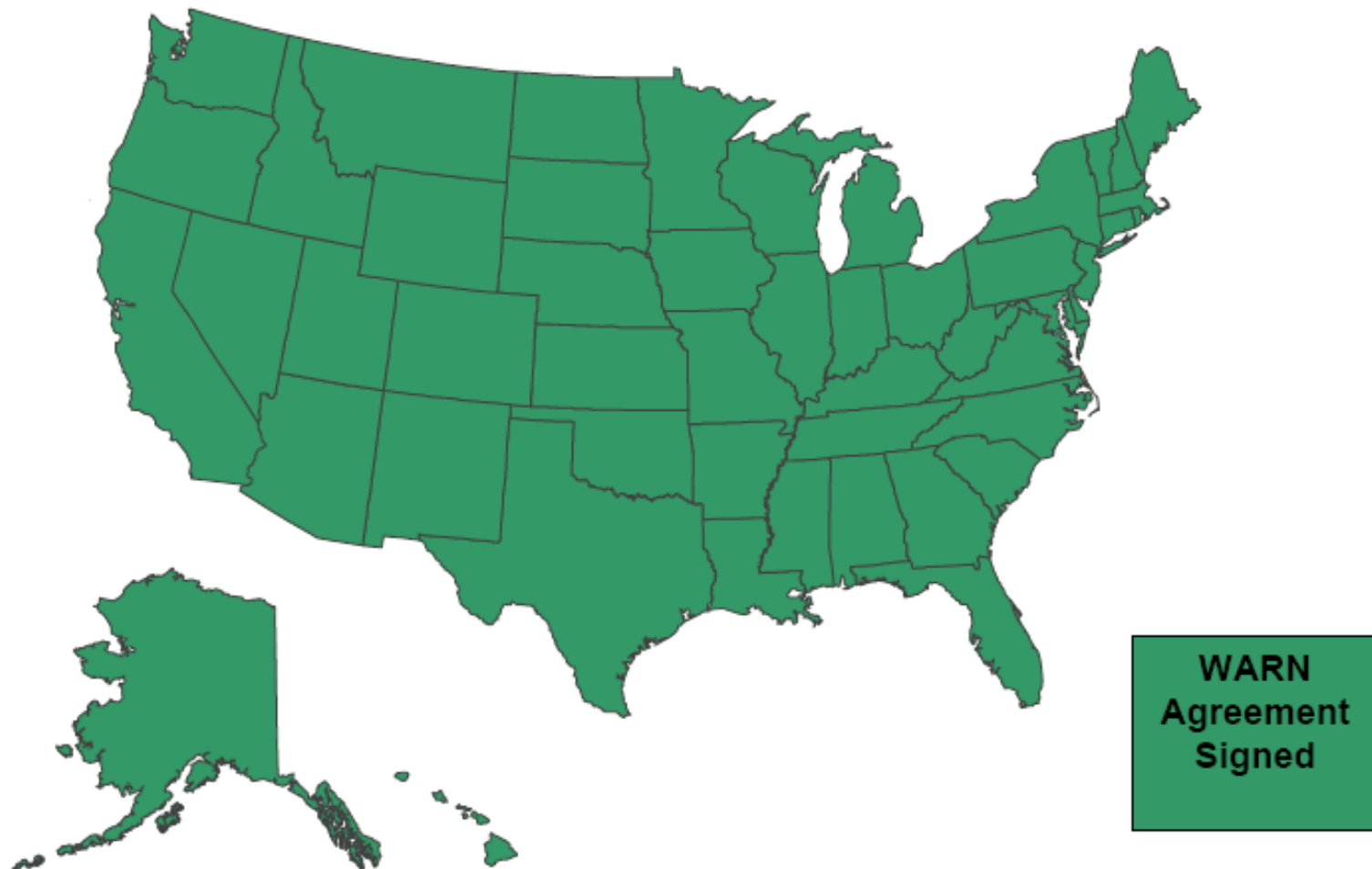
# WARN – 26 & Counting (June 2008)



# WARN – 47 & Counting (January 2011)



# “The WARN Ultimatum”

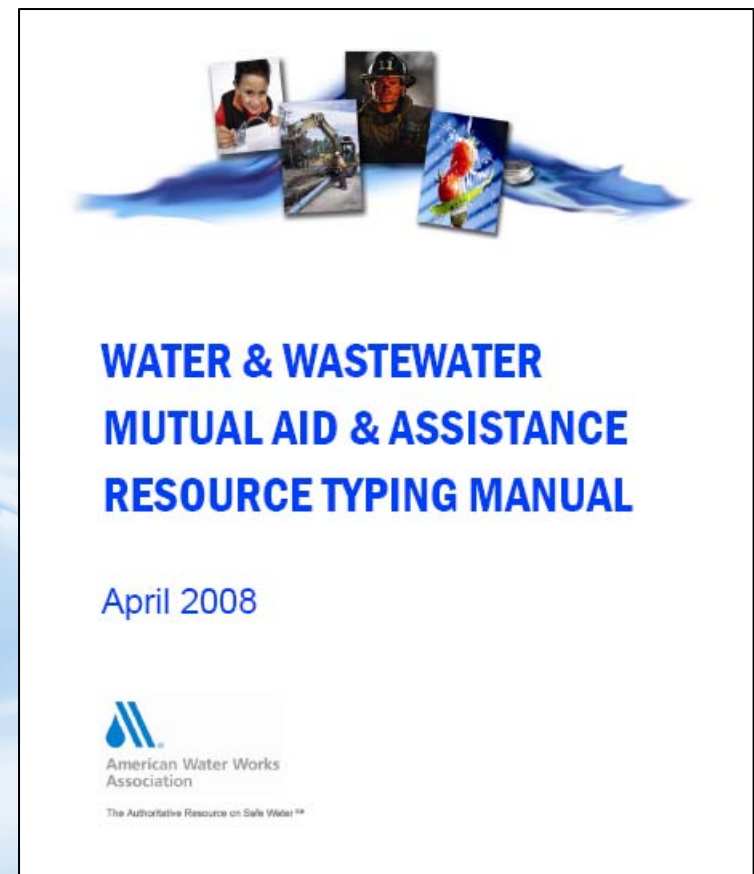


# Projects to Support WARN

- **WITAF #506 – Benefits of Mutual Aid and Assistance**
  - **Survey recently completed to gather data to help build the business case for WARN type activity**
  
- **WITAF #508 - Water Sector Resource Typing Manual**
  - **Build common language to expedite resource requests and responses...not about building inventory database of utility resources**
  
- **WITAF #510 – Interstate Mutual Aid and Assistance**
  - **Assess potential for WARN-to-WARN assistance**
  - **Working with EMAC to review options**

# Resource Typing Manual

- Purpose is to provide common set of terms for requesting and providing certain resources that only water sector utilities are likely capable of providing
- Follows FEMA guidance for typing resources which is focused on teams that could be deployed in response to an incident



**RESOURCE: WASTEWATER LIFT AND PUMP STATIONS DAMAGE ASSESSMENT, REPAIR AND START-UP TEAM  
AWWA April 2008**

Category: Public Works and Engineering (ESF 3) Subcategory: Water and Wastewater Kind: X Team

Component	Metric	Type I	Type II	Type III	Type IV
Capability	Degree and type of repair and start-up capability	Screw, submersible, wetwell / drywell and vertical-turbine solids-handling pumps greater than 400 HP	Screw, submersible, wetwell / drywell, vertical-turbine solids-handling pumps and suction-lift pumps 26 – 400 HP	Submersible, suction-lift, grinder, LPP, vacuum and STEP pumps, 25 HP or smaller	Components of Type I – III Teams
Ideal Team Size	Total persons	4	4	2	1-2
Team Composition	Team member capabilities for assessments and repairs indicated	1 Qualified mechanic 1 Qualified electrician 2 Repair technicians (mechanic or electrician serves as team leader)	1 Qualified mechanic 1 Qualified electrician 2 Repair technicians (mechanic or electrician serves as team leader)	1 Qualified mechanic 1 Qualified electrician 2 Repair technicians (mechanic or electrician serves as team leader)	Any portion of other types that can be provided
Vehicles and Heavy Equipment	Number and type of vehicles and heavy equipment	1 or 2 Heavy-duty 4X4 pick-up trucks or equivalent, one with equipment boom 1 30-ton+ crane preferred	1 or 2 Heavy-duty 4X4 pick-up trucks or equivalent, one with equipment boom	1 or 2 Heavy-duty 4X4 pick-up trucks or equivalent, one with equipment boom	Any portion of other types that can be provided
Other Equipment	Other specific equipment	Necessary tools and equipment	Necessary tools and equipment	Necessary tools and equipment	Any portion of other types that can be provided
Materials	As needed for repairs indicated	Necessary materials as indicated	Necessary materials as indicated	Necessary materials as indicated	NA

Comments and Definitions: This team is responsible for the assessment and repair of all types of wastewater lift station and pump facilities, regardless of size, including conveyance facilities, treatment plants and pump stations, excluding structural and similar scale repairs. Requestor should specify types of pump facilities in need of assessment and repair in which expertise is needed, as well as any materials that should be provided by the responder. Major materials provided by requestor or others.

Specific types of pump facilities in need of assessment and repair: \_\_\_\_\_

Specific materials that should be provided by responders: \_\_\_\_\_

Specific control systems used: Electronic \_\_\_\_\_ Pneumatic \_\_\_\_\_ Hydraulic \_\_\_\_\_ Facility capacity (MGD): \_\_\_\_\_

Maximum pump voltages: 4160 \_\_\_\_\_ 480 \_\_\_\_\_

# Projects to Support WARN (cont)

- **Sample Mutual Aid/Assistance Operational Plan:** EPA developed to help each WARN create its procedures on how to activate and implement the signed agreement or test a draft agreement. The plan facilitates the integration of Member utilities before, during and after an event, including actions to take prior to a formal emergency declaration. A secondary purpose is to know, understand, practice and use the AWWA Resource Typing Manual.
- **WARN TableTop Exercise:** EPA developed to help each WARN exercise communications during activation.

# Bottom Line – Establishing Resiliency

- All emergencies are local and require a local response capability.
- Participation in a WARN agreement will enhance your utility's preparedness and overall resiliency against **any** disaster.
- In its most basic form, WARN is a low or no-cost action that helps ensure the continuity of operations of the water infrastructure vital to the well being of every community.



# References

- **Utilities Helping Utilities: An Action Plan for Mutual Aid and Assistance for Water and Wastewater Utilities**  
[www.NationalWARN.org](http://www.NationalWARN.org)
- **Morley, K.M., 2007. A Vision and Direction for Water Sector Security and Preparedness Initiatives. *Jour. AWWA*, 99:2:38.**
- **Roberson J. A. & Morley, K.M., 2006. Water Security: Shifting to an All-Hazards Resiliency Approach. *Jour. AWWA*, 98:5:46.**
- **Roberson J. A. & Morley, K.M., 2005. We Need to Get Strategic on Water Security. *Jour. AWWA*, 97:10:42.**

# Questions

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