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The Utility's Checklist for Emergency Planning

PHASE I – Pre-Planning Activities

	<i>Date Completed</i>	<i>Posted By</i>
Step 1 -- Prepare and deliver a governing body/staff briefing.	_____	_____
Step 2 -- Obtain a commitment from the governing body.	_____	_____
Step 3 -- Form a coordinating committee.	_____	_____
Step 4 -- Assign planning responsibilities.	_____	_____
Step 5 -- Establish planning documentation procedures.	_____	_____

PHASE I --- Pre-Planning Activities

The purpose of this phase is to clearly identify the principal areas of concern to a Utility and to define the framework in which the planning effort will take place. Most importantly, this includes determining the resources available to a Utility.

Specific steps that could be undertaken in this phase include:

Step 1 – Prepare a Governing Body/Staff Briefing

A briefing should be prepared to acquaint the Governing Body/Staff with risks and vulnerabilities to their Utility. Also a part of this step is to make some estimate of what personnel resources will be required to assist in the planning effort and for what lengths of time.

Step 2 – Obtain Management Commitment

Obtain from the Governing Body a commitment to allocate the appropriate resources and personnel to the planning effort. A mission statement should be obtained to provide direction for the effort.

Step 3 – Form a Coordinating Committee

This committee will be a working group and will develop a detailed work program and schedule. A list of assumptions should be prepared by this committee with the goal to establish a set of minimum standards for the plan.

Step 4 – Assign the Planning Responsibilities

This task will help to identify individuals that will have a specific responsibility during the planning effort. One person should be designated as Emergency Director for the Utility and should assume the lead in plan preparation and execution.

Step 5 – Document Procedures

Document the administrative procedures to account for and manage the planning process, including plan development and plan implementation.

PHASE II - Plan Development and Implementation

Step I – Hazard Identification

- Rank identified hazards (Figure III-2-62.1)
- Provide appropriate information to staff members

Step 2 – Disaster Scenarios for Plan Development

Assessing Vulnerability

- Identify major system components (Figure III-2-64.1)
- Estimate the effects of probable hazards on each Component (Figure III-2-64.2)
- Establish performance goals (Figure III-2-64.3)
- Identify Critical components (Figure III-2-65.1)

Mitigation / Prevention

- Identify possible areas for mitigation (Figure III-2-67.1)

Recovery

- Restoring normal operations / damage assessment
- Short-term recovery
- Set priorities on damage to be repaired and determine work needed
- Long-term recovery (Figure III-2-70.1)
- Request for financial reimbursement

Step 3 – Develop A Logical Plan

- Plan activation
- Agreements
- Emergency communications

Date Completed	Posted By

- Specific plans
- Media (Figure III-2-76.1 & III-2-76.2)

PHASE II – Utility Plan Development and Implementation, continued

	Date Completed	Posted By
Step 4 - Plan Completion and Implementation		
• Document preparation (Figure III-2-77.1)		
• Distribution (Figure III-2-77.11)		
• Update (Figure III-2-77.12)		
• Final Review		
○ Basic Plan Outline (Figure III-2-77.1)		
○ General Information (Figure III-2-77.2)		
○ Preliminary Damage Assessment (Figure III-2-77.3)		
○ Communication Log (Figure III-2-77.4)		
○ Utility Personnel (Figure III-2-77.5)		
○ Emergency Phone Numbers (Figure III-2-77.6.1&.2)		
○ Work-Order Log (Figure III-2-77.7)		
○ Emergency Support List (Figure III-2-77.8)		
○ Recovery Period Checklist (Figure III-2-77.9)		
○ Record Keeping Procedures (Figure III-2-77.10)		
○ Media Contacts (Figure III-2-77.11)		
○ Plan Distribution List (Figure III-2-77.12)		
○ Record of Changes (Figure III-2-77.13)		

PHASE II – Utility Plan Development and Implementation

The steps in this phase are related to the development and implementation of a Utility's emergency plan. These steps should be completed in sequential order, as each will provide essential information for completing the tasks that follow.

Step 1 – Hazard Identification

It is mandatory to a good planning effort to have the best possible assessment of the potential hazards facing the Utility. The hazard information that a Utility should incorporate into its planning includes the following:

- **Type of hazard**
- **General estimate of probability and magnitude for each type of hazard**
- **What affect each hazard will have on service provided**
- **Ranking of each potential hazard**

Step 2 – Disaster Scenarios for Plan Development

The development of scenarios plays an important role in emergency preparedness planning. Based upon the hazard identification, the scenario provides a common picture to the planning staff of what the environment and problems will be at the time of the disaster. Assessing the vulnerability of each functional area for each type hazard and documenting the mitigation/prevention process will tell you where to concentrate your planning efforts. Necessary steps that will need to be taken to return things to normal should be considered and planned for a part of recovery.

Step 3 – Develop A Logical Plan

After discussions with regulating agencies in your state or local governments are concluded and a full understanding of their requirements is accomplished, an emergency plan document should be prepared. It should be developed from information gathered during hazard identification, vulnerability assessment and mitigation/prevention accomplishments. This document should then become a living document that can be used before, during and after a disaster. Areas for planning should include, but are not limited to:

- **Activation of Plan**
- **Agreements**
- **Communication**
- **Specific Plans**
- **Recovery**
- **Distribution**

Step 4 – Plan Completion and Implementation

At the completion of the steps outlined above, the Coordinating Committee should have a number of specific plan recommendations, assignments, procedures and checklists. It will now be necessary to document the results of the planning effort in the form of an Emergency Response Plan. The completed plan should propose a time frame for program implementation. Programs should be prioritized on an annual basis so that costs can be budgeted accordingly. The goal of the plan should be to reach an acceptable level of preparedness by a specific time period while at any given time, be prepared to adequately respond to a major disaster by having up-to-date procedures in place.

PHASE II – Utility Plan Development and Implementation

Step 1 – Hazard Identification for Utilities

Before preparedness planning, mitigation, and vulnerability assessments can begin, a study must be conducted to identify potential hazards and the degree of severity that may affect the geographic service area of the Utility. There are two basic categories of disaster hazards, Natural and Man-Made.

Natural Disaster Hazards

- Earthquakes
- Forest or Brush Fires
- Other Severe Weather
- Volcanic Eruptions
- Floods
- Hurricane
- Tornadoes
- Waterborne Diseases

Man-Made Disaster Hazards

- Construction Accidents
- Hazardous Material Release
- Nuclear Power Plant Accidents
- Riots
- Vandalism
- Structure Fires
- Nuclear Bomb Explosion
- Transportation Accidents
- Strikes
- Terrorism

Using a form similar to the Hazard Identification/Ranking Form (Figure III-2-62.1), identify and rank all potential hazards that you may be called upon to deal with in your geographic service area. Information on potential hazards, their probability and possible effect on your particular geographic service area can be retrieved from several sources.

Your State Rural Water Association is the best place to start. Others could be the National Rural Water Association (NRWA), Federal Emergency Management Association (FEMA), State Emergency Management and Civil Defense Agencies, National Weather Service (NWS), Environmental Protection Agency (EPA), U.S. Geological Survey, U.S. Army Corps of Engineers, Department of Natural Resources (DNR) and most any federal or state agency that might be called upon to respond to a disaster or emergency in your area. Remember to spend your time planning for those disasters and emergencies that will most likely affect your service area.

Although it may be a guess, an effort must also be made to predict the probability of a disaster or emergency for your service area. Examples might be: (1) A small town in the Midwest might not be as vulnerable to terrorism as a small town close to a large city hosting an international event, (2) some western states may need to work on earthquakes first, where some eastern states might need to concentrate on severe weather first. Wherever you are located, disasters and/or emergencies are going to occur. A few minutes of thought and investigation can get you started on the right events.

Hazard Identification / Ranking Form

Type of Hazard	Probability			Magnitude			Ranking
	High	Moderate	Low	Severe	Moderate	Light	
Construction Accidents							
Earthquakes							
Densification							
Fault Rupture							
Ground Shaking							
Landslide							
Liquefaction							
Tsunami and Seiche							
Floods							
Forest or Brush Fires							
Hazardous Material Release							
Hurricane							
Flooding							
Storm Surge							
Wind							
Nuclear Bomb Explosions							
Nuclear Power Plant Accidents							
Other Severe Weather							
Extreme Heat							
Lightning							
Snow or Ice							
Wind							
Other							
Riots							
Strikes							
Structure Fires							
Tornados							
Transportation Accidents							
Air							
Rail							
Road							
Water							
Vandalism, Terrorism							
Volcanic Eruptions							
Waterborne Diseases							

Figure III-2-62.1

Step 2- Disaster Scenarios for Plan Development

Assessing Vulnerability for a Utility

At the completion of the hazard analysis, the effect a hazard will place on the different components and on water quality and quantity should be determined. Each water system is different, but can be described and analyzed in terms of its components and expected level of service. Strengths and weaknesses of each water system must be understood in relation to a specific hazard before an attempt to draft an emergency plan is started.

A four-step approach to Assessing Vulnerability can be developed.

Action 1 – Identify and describe the separate components of the water supply for a system service area.

Action 2 – Estimate the potential effects of probable hazard on each component of the system.

Action 3 – Establish performance goals and acceptable levels of service for the system service area.

Action 4 – Should the system fail to meet the performance goals due to the conditions produced by the hazard, identify the key or critical components of the system that are primarily responsible for the failure.

I. What are the Major Components of the Utilities

Key elements of the system service area should be listed and described as components under the following general headings: source water, transmission system, storage, treatment facilities, distribution system, administration, electric power, transportation and communications. The headings represent the major categories of system components. Of course, each system is unique. When identifying major components, each Utility should include components that may not have been mentioned or place the ones mentioned in a more appropriate category.

After completing a Major Component Checklist by placing a check next to those components found in your system (Figure III-2-64.1), you can use it as a guide to insure no critical component is overlooked. You can then move comfortably to Action 2.

2. Estimate the Effect of Probable Hazards on Components of the Utility

Hazards can degrade the quality and/or quantity of potable water supplies. Each hazard has a particular impact on different components of the Utility. Damage to one part of the system may or may not affect other parts of the Utility. For example, a tornado would not likely rupture pipes underground, but could destroy all the power sources necessary for continuous operation of the water system. A dam break and loss of reservoir water might not destroy pumping stations or disrupt the communications system, but without a source of water, the system could not continue to operate. The association should not be affected at all, but would need to implement a plan for a supporting alternative water source for that system.

To complete Action 2 of the vulnerability assessment process, the effects of hazards are evaluated for each component of the system. This can be accomplished using a form for each type of disaster or hazard or a matrix of the hazard summary and effects. An example is shown in Figure III-2-64.2

3. Establish Performance Goals and Acceptable Levels of Service for the Utility

A system is considered a lifeline because water is essential to the safety and health of the population it serves. Each system service area should develop specific goals and acceptable levels of service under hazards and recovery conditions. The following are specific goals to consider.

GOALS

Life Safety

A system's primary goal should be to preserve the health and safety of its personnel and the public. Meeting this goal should be considered a continuous function of the system before, during and after the effects of a hazard are experienced. Examples of life-threatening or injury-causing conditions could be:

- Failure of distribution system
- Failure of dams
- Distribution of contaminated water
- Release of hazardous materials, especially chlorine
- Collapse of structures such as water towers

Fire Suppression

Most fire suppression activities depend on the potable water distribution system. During disasters, there may be many fires to fight. Fire suppression capabilities should be made available immediately after a disaster, or as soon as possible.

Public Health Needs

Water is essential to life and health. However, some needs are more immediate than others. The following list is of public health needs and the allowable time without potable water being available. Times are guidelines only and depend on the magnitude of the disaster.

- Hospitals – Continuous need
- Emergency Shelters – Immediate need
- Kidney Dialysis – 24 hours
- Drinking Water – 72 hours
- Personal Hygiene, Waste Disposal – 72 hours

Commercial Business Uses

Many businesses depend on water for their operation; for example, restaurants, car washes and many manufacturing companies. However, nearly all businesses could not function for long without potable water for drinking, waste disposal and cooling water for air conditioning and other process systems. Also, many commercial structures are protected with fire sprinkling systems that should not be left without a water supply.

Establishing priorities for service is an important part of completing this step of vulnerability analysis. Most medical facilities need continuous service; contact them to determine approximate daily needs or estimate their needs from utility records. Other priorities should be police and fire departments, and the emergency operations center. For medical facilities and other priority customers, it is a good idea to have a record of a contact person or persons, their phone numbers, reasons for needing priority service, approximate daily needs and an alternative on-site source if one is available.

Water Requirements

Water requirements under disaster conditions can be assumed or estimated only in terms of the nature and magnitude of the disaster, user needs and capabilities of the system. An attempt to approximate water demand for each type of hazard should be made using whatever local expertise is available. Research conducted by state and federal agencies may provide useful information by drawing on the expertise from like disasters.

A list of goals should be prepared. A sample goals outline is provided in Figure III-2-64.3.

Major Components Checklist*

Type Hazard _____

Date _____

Prepared by _____

Administration and Operations

- Personnel
- Facilities and Equipment
(buildings and computers)
- Records
(accounting, customer lists, & system maps)
- Emergency Plan

Communications

- Telephone
- Radio
- Telemetry
- Mass Media Outlets
(such as newspaper, radio & television)
- Other _____

Distribution

- Pipelines, valves and other
appurtenances in place
- Pump or pressure-reducing stations
- Materials
(extra pipe, valves, hydrants, and so forth)

Electric Power

- Substations
- Transmission Lines
- Transformers
- Standby Generators

Source Water

- Watersheds & Surface Water
Sources
- Reservoirs and Dams
- Ground Water Sources
- Wells and Galleries

Storage

- Tanks
- Valves
- Piping

Transmission

- Intake Structures
- Aqueducts
- Pump Stations
- Pipelines, Valves, and Other
appurtenances

Treatment

- Facility Structures
(buildings, basins, and tanks)
- Controls
(manual and computer)
- Equipment
(feeder, pumps, and piping)
- Chemicals

Transportation

- Vehicles
(including construction equipment)
- Maintenance facilities
- Supplies, Parts, and Fuel
- Roadway Infrastructure

*Place a check next to the component that will be affected by a given hazard.

Hazard Effects Matrix Functional Areas Likely affected, loss, or shortage due to hazard	Construction accidents	Earthquakes	Floods	Forest or Brush Fires	Hazardous Material Release	Hurricane	Nuclear Bomb Explosions	Nuclear Power Plant Accidents	Other Severe Weather	Riots	Strikes	Structure Fires	Tornadoes	Transportation Accidents	Vandalism, Terrorism	Volcanic Eruptions	Waterborne Diseases
	Administrative/Operations Facilities/Equipment Personnel Records	•	• •	•	•		• •			• •	• •	• •	•	•	•	• •	•
Communications Telemetry Telephone Two-Way Radio	•	•	•	•		•			•	•	•	•	•	•	• •	•	•
Distribution Materials Pipeline, Valves Pump or PRV Stations	• •	• •	•	•	•	• •			• •	• •	• •	•	•	•	• •	•	•
Electric Power Standby Generators Substations Transformers Transmission Lines	• • •	• • •	•	•		• • •			• • •	• • •	• • •	• • •	• • •	• • •	• • •	•	
Source Water Ground Water Sources Reservoirs and Dams Watershed/Surface Wells and Galleries		•	•	•	•	• •			•	•	•	•	•		• • •	•	• •
Storage Piping Tanks Valves		• •		•	•	•			• •	•	•	•	•	•	•	•	•
Transmission Aqueducts Intake Structures Pipelines, Valves Pump Stations	• • •	• •	•	•		•			• •	• •	• •	•	•	• •	• •	•	
Transportation Maintenance Facilities Roadway Infrastructure Supplies Vehicles	• •	• •	•	•		• •			• •	• •	• •	•	•	• •	• •	•	
Treatment Chemical Controls Equipment Facility Structures	• • •	• •	•	•		• •			• •	• •	• •	• •	• •	• •	• •	•	

Source: AWWA Manual M-19
Figure III-2-64.2

Goals

<i>Priority</i>	<i>Statement of Goal</i>
Life Safety	
Fire Suppression	
Public Health	
Commercial and Business	
Service Priorities	
Water Requirements	

Figure III-2-64.3

4. Critical Components to the Utility

When the first three steps are complete, the Utility has identified the most probable disaster/hazard effects on major components and has established service priorities and performance goals. The priority demand can also be thought of as the minimum needed for health and safety. Identifying the critical components of the system, or its "sub-components" in the distribution system is the final step in the vulnerability analysis.

Critical components are those vulnerable to failure, or partial failure, because of a disaster/hazard. Failure of a critical component will reduce or bring to a stop the ability of the Utility to meet minimum health and safety performance goals. The best way to approach this step is to select a scenario of a particular disaster. Focus on the components that are interrelated with other components so as to make the entire system inoperative. These are the most vulnerable components. List them on a form like the example shown in Figure III-2-65.1.

Repeated application of this process of assuming various scenarios constructing anticipated demand curves, determining measures required to meet minimum health and safety demands, and subsequently identifying critical components eventually will isolate the most critical components in the entire water supply system. These components are ones of particular interest in pre-disaster protective measures.

CRITICAL COMPONENT LIST				
Hazard	Component Affected	Affect on Process	Site Location	Corrective Action Necessary

Figure III-2-65.1

Mitigation/Prevention

The vulnerable areas identified in the previous section can be made less vulnerable through mitigation actions. The actions are intended to eliminate or reduce the damaging effects of disasters. Mitigation actions cover a wide spectrum of activity, from incorporating disaster/effect mitigation at the design state of system components or by simple preventative maintenance procedures.

Before implementing any mitigation actions, consider the following: how critical is the component to the Utility; what is the age of the component; what are present and projected expansion, replacement, or construction programs; and what is the cost of the mitigation action?

There are many possible areas where mitigation/prevention actions can prove to be worthwhile. As in every phase of planning, not all areas of consideration will apply to every Utility. Some areas and their sub components might be as follows:

Personnel

Without Utility personnel, nothing can happen to correct the effects of a disaster. Personnel shortages can best be reduced through education, cross training, replacement and the assurance of a safe workplace. Each Utility's level of competence will vary but serious consideration should be given to all these areas.

Source Water

Measures relating to source water and transmission might range from providing alternative sources, to protecting wellheads to retrofitting dams and aqueducts. Surface water will be vulnerable to large-scale watershed damage from many different hazards. Close screening for illegal dumping, flammable material buildup, hazardous spills and erosion should be conducted. Proper coordination with regulating agencies might provide some unique ideas to reduce or eliminate these hazards.

Ground Water and Wells

Consideration should be given to ground water protection by identifying alternative water sources, providing shutoff valves, maintaining adequate setbacks from sewage pipes and disposal systems, and installing wellhead protection and well seals. A spill response plan and hazardous waste disposal plan are recommended to mitigate ground water contamination. Earthquakes can produce a change in hydrogeology; deep aquifers are less of a problem.

Many disaster hazards will cause power outages to well pumps, therefore, alternative sources should be considered. Other areas might be how casings are installed, well pump material, connecting pipes and well screens.

Treatment

Fundamental to the design of reliable water, treatment should be the philosophy that no single component failure will shut down the entire facility.

Due to the complexity of a treatment plant, many areas can affect its operation. From simple things such as location, hazardous material spills, construction philosophy, construction materials used, vandalism and others, to more complex issues such as power supply, telemetry, equipment design, chemical storage, piping, process basins, storage tanks and others can all contribute to taking the plant off-line or its total failure. Be sure isolation valves are installed and their locations well marked so the plant can be isolated from the distribution system. Alternative sources can possibly be used if available.

Distribution

Because of the numerous and widely distributed components of a distribution system, mitigation/prevention will be difficult. Isolation valves and metering devices throughout the system will prove valuable during a disaster. Keeping adequate supplies in inventory will help expedite getting an out-of-control system back in check so repairs can be systematically worked off.

Cost Effective

Mitigation/prevention should begin with identification of critical components that are vulnerable to probable hazards. The cost of the actions must be justified by comparing them to estimated losses. Expensive projects may take several years to obtain funding and complete. Low-cost actions for critical components can be accomplished in the meantime. An example of a possible checklist is shown on Figure III-2-67.1.

Mitigation/Prevention Possibilities for Utilities

Personnel Shortages

- Safety Education
- Cross Training
- Proper Equipment
- Use of Other Agencies

Agency Contacts & Agreements

- Rural Water Association
- State Emergency Management
- Local Government
- Neighboring Utilities
- Equipment Suppliers
- Material Suppliers
- American Red Cross
- Law Enforcement
- Lifeline Utilities
- Alternate Communication Sources
- Emergency Water Production
- Water Haulers
- Salvation Army

Educational Areas for Utility Personnel

- Family Safety Plans
- Treatment Facilities
- Source Water
- Watersheds Hazards
- Chemical Storage
- Piping
- Equipment
- Process Basin
- Storage Tanks
- Ground Water and Well Hazards
- Electrical Power & Instrumentation
- Hazardous Materials Spills
- Reservoirs Hazards
- Dams
- Intake Structures
- Interconnection Possibilities
- Valves and Appurtenances
- Economics of Mitigation

Recovery

Restoring Normal Operations

Returning to normal operations is vital to rapid restoration of clean, safe water and sanitary facilities to the community and is essential to the assessment and recovery process of your service area.

1. Assess Damage and Classify Emergency

In the aftermath of any disaster such as a flood, hurricane, earthquake or other emergency, the following actions should be taken as soon as possible (Figure III-2-77.2).

1. Conduct an on-site inspection of all treatment facilities;
2. Check and examine the condition and operation of all process equipment;
3. Check for structural and other damage to facilities and chemical storage tanks;
4. Conduct an inspection of the plant for leaks in the piping system;
5. Prepare a preliminary damage report; and
6. Report conditions to appropriate officials.

Loss of and/or Restoration of Power

Most primary plant processes can continue to operate during brief periods of power outage. However, for extended periods of power loss, it may be necessary to take additional steps to return the service. Temporary power by generators may be possible until full service and power is returned. Contact your designated Emergency Management official to request emergency power. When power is restored, take the following actions:

1. Restart process equipment, one at a time, that was shut off or off-line during the power loss;
2. Before returning dirty filters to service, filters must be backwashed;
3. Plant flow should be increased as appropriate;
4. Inspect all process equipment and performance of equipment and treatment processes;
5. Processed and treated water must be verified;
6. Survey all damage and make sure all water is being properly treated. Any areas where contamination of the water system may have occurred should be reported immediately to the local state office so bacteriological and/or chemical samples can be taken and analyzed.

2. Use Classification Guidelines

Refer to the Classification Guidelines to determine the impact of the emergency. This guideline will enable you to determine the level of the impact and extent of the emergency or disaster. (Figure III-2-72)

- Level 1 – Normal Trouble
- Level 2 – Alert (Minor Emergency)
- Level 3 – Major Emergency
- Level 4 – Disaster

Short-Term Recovery

After the impact of a disaster has peaked and the damage has been assessed and classified, the short-term recovery process should begin. This should be an effort to stabilize the Utility.

Action 1 – Set priorities on damage needing repair and what is needed to stabilize the system.

Action 2 – Determine the extent of work required and determine if local assets can complete all the tasks to stabilize the system.

Action 3 – Dispatch crews and equipment to needed work sites.

Action 4 – Make sure that crews make a record of work effort, written logs and pictures. This will all be helpful in recovery of funds.

Long-Term Recovery

It should now be clear what would need to be done to return a Utility to normal operation. The decisions that need to be made now are:

1. What mutual aid agreement can be used to assist in recovery? (Figure III-2-70.1)
2. Will there be need to implement standby contracts or other emergency agreements for equipment and operations? (Figure III-2-70.1)
3. Has there been a release of emergency information through the media and other means of distribution that might prove effective? (Figure III-276.1 & 76.2-76.8)
4. Has the Recovery Period Checklist been reviewed? (Figure III-2-77.9)

Request for Financial Reimbursement

Identify and document all costs related to each specific emergency. All or a portion of costs due to a disaster may be recovered through federal or state disaster-relief funding. To clearly identify costs related to a disaster, insure costs related to any specific operation are charged to the work order number for the project. To restore the entire system service area, many work orders may be used during a natural disaster. However, all emergency work orders should be specifically coded to identify them as being related to the emergency.

Use proper record keeping procedures to keep track of the work. These records will be invaluable for assessing damage and evaluating the response. The records also indicate follow-up activity needed (Figure III-2-77.10). Video and pictures are excellent ways to document actions.

Predicated upon the concept that emergency operations will begin at the level of government most appropriate to provide effective response, state assistance shall be provided upon request when emergency or disaster needs exceed the capability of county and municipal governments. Federal assistance is supplemental to that of state and local governments and is available upon approval of a request by the Governor of the appropriate federal agency or the President.

Federal disaster assistance programs available with or without a Presidential Declaration have been identified in FEMA Manual 8600.2, *"Digest of Federal Assistance Programs"*. Each federal program identified lists the primary implementing federal agency. Requests to such agencies will be made through the director or state emergency management agency/state disaster coordinator. Federal assistance subsequent to a presidentially declared emergency or major disaster may be made available under either emergency or major disaster provisions of Robert T. Stafford Disaster Relief and Emergency Assistance Act, PL 93-288, as amended by PI 100-707, dated November 1988.

Under an emergency declaration of the President, the Regional Director of the Federal Emergency Management Agency may provide emergency debris clearance limited to the clearance of debris to save lives and protect property, public health and safety. This includes debris clearance from roads and facilities as necessary for the performance of emergency tasks and for restoration of essential public service. To the extent that public law provides, any federal assistance made available to relieve the effects of an emergency or disaster in the state is channeled through and coordinated by the Governor or the designated representative.

Support Areas to Consider

Suppliers

- Pipe, Valve and Fitting Vendor
- Pipe Bedding and Concrete
- Lumber Yard
- Chemicals and Chemical Feed Pumps
- Shoring
- Pumps and Electrical
- Hardware Store
- Fuel
- Tires
- Signing
- Heavy Equipment
- Rental
- All Contract Vendors

Contractors

- Excavation
- General Contractor
- Pump
- Water Hauler
- Communications
- Computer
- Telemetry
- Traffic Control

City Hall

- City Manager/Administrator
- Elected Officials
- Fire Department/District
- Police Department/Sheriff
- Wastewater/Storm Water Utility
- Street/Road/Highway Department
- Engineer
- Insurance/Safety Officer
- Dispatcher

Other

- One-Call System
- Emergency Services
- Local/State Health Departments
- Newspaper (News Desk and Traffic Reports)
- Radio (News Desk and Traffic Reports)
- Television (News Desk and Traffic Reports)

Agencies

- Wastewater/Storm Water Utility
- Neighboring Utilities
- Emergency Services
- Safe Drinking Water Program
- Testing Laboratories
- Red Cross
- Salvation Army
- Ham Radio Club
- Electrical/Telephone Utility
- Fire Department

Special Contractor/Equipment List

- Concrete Saw
- Auxiliary Power
- Pumps
- Garage
- Office Computer & Communications
- Portable Lights
- Alternate Transportation
- Boat
- Snowmobile
- Snowcat
- Helicopter
- Freight Company
- Portable Restrooms
- Catering/Restaurant
- Showers
- Warm/Cool Resting Place
- Chain Saws
- Sump Pumps
- Chlorine Test Kits

Lifeline Support

- Wholesale Supplier
- Electric Utility
- Telephone Utility
- Tower Utility
- Emergency Response Center
- Chemical Supplier
- Fire Department/District
- Hazardous Material Response

Step 3 – Develop a Logical Plan

Activation

There are many types of emergencies with varying degrees of impact. If a Utility is well prepared, it can lessen the effects of disaster hazards by responding quickly. Many disasters come with some warning like hurricanes and other severe weather, while other hazards come with no warning.

The Utility's emergency response director should represent the Utility during times of emergency, no matter what the level. This will serve to reduce confusion and misinformation during times of stress. This individual should follow National Weather Service warnings and alerts for severe weather.

A list of agency phone numbers and the name of a contact person should be made and kept current, including organizations like the U.S. Geological Survey for warnings about volcanic activity and earthquakes; U.S. Army Corps of Engineers concerning flooding; and Health Departments concerning water-borne diseases. In addition, other state and local agencies such as emergency management offices, civil defense and local law enforcement can all help provide up-to-date information prior to and during a major emergency or disaster (Figure III-2-77.6)

A clear list of guidelines to determine the impact of an emergency or disaster hazard should be established. Each level or different classification should trigger some form of action. Examples can be found in Figure III-2-72.

CLASSIFICATION GUIDELINES TO DETERMINE IMPACT OF AN EMERGENCY

Level 1 – NORMAL TROUBLE

Trouble, which can be handled routinely. This would include normal operator activity.

Level 2 – ALERT (Minor Emergency)

Trouble that can be handled system with oversight and guidance from the state primacy agency and/or Rural Water Association. This could be the early sign that a system or part of a system could be lost.

Level 3 – MAJOR EMERGENCY

Problems that are somewhat beyond the capability of system personnel and association capabilities may require a declaration of emergency to authorize shortcut procedures.

This level would require the mobilization of all Utility personnel who might seek additional help by activation of mutual aid agreements or contracts.

This level of emergency leaves no doubt that outside help is required because of a serious threat to health or facilities of a member system.

Level 4 – PROBLEMS CLEARLY AND IMMEDIATELY BEYOND THE CAPABILITY OF THE UTILITY.

Recovery time will exceed one week, cost will be great, large amounts of mutual aid will be required and a request for declaration of emergency will be required.

This level would normally affect many different services that may be lifelines to the water and wastewater systems. These natural or man-made disasters will cause disruption over a large area of service and cause a severe health risk.

Agreements

A Utility should take an active role in preparing agreements for supplies, contracted service, backup lifeline service, interconnections, etc.

Copies of these agreements should be made a part of the plan. Figure III-2-70.1 may provide some possible areas for agreement. A sample agreement can be reviewed on the following page.

Sample Community Water and Wastewater Utility Mutual Aid Agreement

Purpose

Emergency situations could arise in a community's water and/or wastewater system that would require assistance from an adjoining community to restore normal operation. The purpose of this Mutual Aid Agreement is to formalize and define the extent of this assistance between the two communities identified herein.

If an emergency situation arises in one of the participating communities, the authorized officials in each community identified below, agree to support each other during the emergency, to the extent possible, upon request as initiated by authorized personnel from the affected community. Each community will provide the name(s) and emergency telephone numbers(s) of personnel authorized to initiate a request for aid.

Agreement to Render Aid

WHEREAS the governmental units of _____ and _____ in the State of _____, have rendered mutual aid to one another in the past, and anticipate a continuing demand for such mutual aid and cooperation in the use of their personnel and equipment in the future, for the safety, health, and welfare of the people of their governmental units during a time of emergency, hereby agree to become part of the _____ RURAL WATER ASSOCIATION EMERGENCY RESPONSE SYSTEM, in conjunction with the Department of Emergency Management of the State of _____.

THEREFORE, the parties hereby agree that their water/wastewater department and/or department of public works, will render mutual aid to each other under the following conditions:

1. In the event of a serious man-made or natural emergency, the parties of this agreement shall cooperate in any effort to provide service, subject to the terms and conditions prescribed in this agreement, and to the extent possible.
2. The city manager/mayor, or the water/wastewater superintendent, or the director of public works, or other such individual serving as a governing or managing party of the participating governmental unit, shall have the authority, in the event of a serious emergency, to determine whether manpower and/or equipment shall be sent beyond the jurisdictional limits of its governmental unit.
3. It is the intention of this agreement to vest in each party the sole right to determine when its needs will permit it to respond to a request by another governmental unit, and it is further agreed by the parties hereto, that if the water/wastewater department refrains from sending any manpower and/or equipment beyond its jurisdiction, that such unit thus failing to respond, shall not be liable for any damages to the requesting party or any third party.
4. The superintendent of the water/wastewater utility, director of public works, or such person acting in that capacity, SHALL BE IN TOTAL COMMAND of the responding party. All personnel and/or equipment of the respondents shall be under the immediate command of the person(s) attached to the responding community. All commands or orders for the use of such personnel and/or equipment shall be made by the superintendent of the water/wastewater utility, or such person acting in that capacity, of the requesting community, through the person(s) in charge of the responding community's personnel and/or equipment, whenever it is practical. However, the person(s) acting in authority for the responding community shall, at all times, have the authority to recall the responding water/wastewater personnel and/or equipment from an emergency assistance mission upon direct notice to the person(s) in authority for the requesting community or governmental unit.
5. It is understood that personnel and equipment of the responding governmental unit shall be utilized in the capacity for which they are intended, and further, SHALL NOT be held in "stand by" capacity for a period exceeding _____ hours. If the requesting party does not need the said personnel and/or equipment in the emergency area, it will be returned to the responding community.

6. Each governmental unit entering into this agreement shall continue to provide the same salaries, compensation for death or disability, and retirement and furlough payments, to their respective employees or volunteers who are assigned to render aid or other assistance to the requesting governmental unit, as that employee or volunteer would receive if on duty within the jurisdictional limits of the governmental unit by which he or she is employed.
7. Cost of repairs and employees or volunteers of the responding governmental unit operate maintenance of equipment used or expended while rendering assistance under this agreement will be borne by the governmental unit owning the equipment, if said equipment is operated by employees or volunteers of the responding governmental unit for a period not exceeding 24 hours. If said equipment is operated by personnel from the requesting community, or is requested for a period longer than 24 hours, then the requesting governmental unit or community will assume the expense of any repairs and/or maintenance required by the said equipment. It is further agreed, that if said equipment is required by the requesting community or governmental unit for a period exceeding 24 hours, that the requesting community or governmental unit will be responsible for returning the requested equipment, in good condition, to the responding governmental unit.
8. It shall be the responsibility of the requesting community or governmental unit to notify the appropriate state or other agencies of governmental authority, in accordance with all applicable laws and/or policies, the nature and extent of the emergency.
9. To prevent haphazard and/or unauthorized response to a request by a community or governmental unit's water/wastewater department to emergencies outside of the jurisdiction of the responding party, NO PERSONNEL OR EQUIPMENT WILL BE DISPATCHED, except by the direct request of authorized person(s), identified in this agreement, from the responding governmental unit or community, an authorized representative from the State Department of Emergency Management, or an authorized representative of the _____ Rural Water Association.
10. Cost of meals, lodging and/or fuel, expended or consumed by personnel or equipment of the responding government unit, shall be borne by the requesting party to this agreement, unless otherwise expressly stated in a separate, attached mutual aid agreement between the parties to this agreement.
11. There will be no costs incurred by the requesting community for any meals, lodging, fuels or other needs for any staff person(s) or members of the Board of Directors of any participating Rural Water Association, or the State Department of Emergency Management.
12. No participating Rural Water Association to this agreement shall be held liable for any injury or damages incurred by or caused by personnel working, or equipment operated, under the authority of either governmental unit to this agreement.
13. Any party to this agreement may, upon thirty days written notice to all parties to this agreement, withdraw from further participation.

Execution of Agreement

IN WITNESS WHEREOF, the parties do sign and execute this Mutual Aid.

Appropriate Assignees

Emergency Communications

When a serious emergency occurs, one can probably assume conventional forms of communications, such as a telephone, will not be available. Alternative methods of communications should be investigated and arrangements made for use. Cellular phones, civilian radio clubs, local and state radio nets may provide alternative systems of communications. Other potential sources might be:

- **Sheriff Departments**
- **Highway Patrol**
- **National Guard**
- **Civil Defense**
- **Ambulance Services**
- **Fire Departments**
- **Police Departments**

Many businesses utilize radio communications. Some common ones are: plumbing contractors, telephone companies, power companies, bulk fuel distributors, concrete companies and heating and air conditioning companies.

A good communication system needs to be set up in advance—after the fact is too late. Communication logs need to be started at the first call for assistance or at the first sign of trouble (Figure III-2-77.4).

Communication Charts listing all Utility personnel and key contacts should be prepared, placing a priority for notification so decision makers can be involved early (Figure III-2-77.5). The phone list of local, state and federal agencies (Figure III-2-77.6) should also be included as part of the communication section.

As discussed in previous sections, agreements with the Utility's state association and other systems should have been reached for the use of manpower, equipment, supplies, interconnection and other support assets. Other agencies also need to have been contacted and agreements recorded. A support communications list should be prepared and include Figure III-2-77.8.

Specific Plans

Emergency plans can be effectively developed for specific disasters determined to be the most likely to occur in a given geographic area. The items included in a specific disaster plan are based on the hazard identification, vulnerability analysis and mitigation. Component specific plans to cover the loss of a critical component, hazard material spills and other consideration may trigger the need for a plan. Many state emergency management agencies write a basic plan and then supplement it with specific plans for each type of disaster. This can provide for early success in areas where there is a high probability for occurrence.

Media

During any disaster the media will be around and they will report what they see and hear. It is very important that correct information get to all different types of media. If the media is informed properly and proper preparations have been made, the media can be of great assistance in getting needed information to the public. Figure III-2-76.1, *Dealing with the Media: Some Tips*, will help you prepare for your contact with the media.

Dealing with the Media: Some Tips

PLAN AHEAD

Media relations start before a disaster occurs. Take steps to familiarize yourself with your local media representative on an ongoing basis. The best way to do this is for your water or wastewater systems to be active in various public relations programs. Regular press releases and articles on routine operations not only keep the public informed on your system, but serve to open a dialogue between you and the various local news organizations. Before a disaster strikes, you should know them and they should know you. (Figure III-2-77.11).

WHEN DISASTER STRIKES

If a disaster occurs, the press will be on the scene relatively quickly. Make preparations before meeting the media. Check your facts and organize the information you plan to release prior to your interview. See samples at Figure III-2-76.2.

AVAILABILITY

Don't hide from the media. The public has a right to know the situation. Take a pro-active approach and establish your association as the spokesperson for your member systems, help keep the pressure off the system where possible. Schedule a meeting with the media at the first reasonable time and at a location you choose. Familiar surroundings can ease the situation for you. After your initial report, schedule regular updates. Adapt these to your schedule, not the reporter's.

ACCURACY

This is extremely important. Be sure of your facts and give only the facts. Don't be drawn into expounding on your present story or speculating on situations where you have no confirmed information. Avoid ad-libbing. Be brief and to the point. If injuries are involved, numbers are okay, but avoid specifically naming the injured parties.

RESPONSIBILITY

If the crisis situation is your responsibility, say so. If not, the same rule applies.

MONITOR

If practical, monitor the finished news report whether electronic or in print. Make sure the facts are presented as reported and immediately take steps to correct the record if inaccuracies are noted. Misinformation can be more damaging than no information.

Sample Letter to Local News Media

Dear _____:

Governor Zell Miller has proclaimed the week of February 21-25, 1994, as "Severe Weather Awareness Week" in Georgia. This will be a week devoted to an important public education program to make all Georgians fully aware of the very real threats to life and property caused by severe weather.

During the past 16 years, lightning has taken more lives in Georgia than any other single weather event. A total of 29 people have died as a result of lightning strikes since 1978. Other weather phenomena, including flash floods and thunderstorm winds or "downbursts", have also caused numerous deaths in the state.

Tornadoes continue to pose a serious threat to lives and property in Georgia each year. On February 21 and 22, 1993, two people were killed and 44 others were injured when eight tornadoes hit the state. On October 30, 1993, a mother and her two sons were killed when a tornado destroyed their mobile home in Lee County. (Add local details here, if applicable). These deaths bring to 21, the total number of tornado fatalities recorded in Georgia since 1977. Therefore, tornado preparedness and safety measures will also be an essential part of Severe Weather Awareness Week activities.

"Family Protection Day" is planned for Monday, February 21, 1994, to focus attention on what individuals and families can do to prepare for and survive disasters. A statewide tornado drill has been scheduled for Wednesday, February 23, and will be held at various schools, businesses, and industries. Conducted by emergency management personnel and the National Weather Service, the drill will test emergency response capabilities, as well as each citizen's ability to react properly to tornado warnings.

In the past, the successes of our state's Severe Weather Awareness Week activities were due in large measure to the combined efforts of emergency services personnel and the support and publicity provided by the local news media. With your help and the help of other leaders in our community, we believe this weather safety program will continue to benefit the residents of _____ County.

In closing, I would like to emphasize that we at the _____ County Emergency Management Agency (EMA) would be pleased to work with any member of your staff, citizens in our community, or groups requesting additional information on severe weather events or storms, or any activity of Severe Weather Awareness Week 1994.

By conducting programs of this type each year, we hope to better prepare Countians to cope with, and to survive, a variety of severe weather events that regularly pose the most serious threats to lives and property within our community.

Sincerely,

Director

BASIC PLAN OUTLINE

I. INTRODUCTION

General (*Mission Statement of Plan*)
Specific (*What the Plan Accomplishes*)

II. PURPOSE (*The Reason for the Plan*)

III. SITUATIONS AND ASSUMPTIONS

Situation (*What is Driving the Plan*)
Assumption (*What is Expected to Happen*)

IV. CONCEPT OF OPERATIONS

General (*How will the Plan Work*)
Specific (*The overall concept of what will happen during an emergency.*)

V. ORGANIZATION AND ASSIGNMENT RESPONSIBILITIES

General (*Who are the players*)
Organization (*How organized*)
Responsibilities (*Who will be doing what and when*)

**This will be the main body of your plan and should be your primary source during early implementation.*

VI. ADMINISTRATION AND LOGISTICS

General (*What to expect to support operation*)
Funding (*Who will pay for what*)
Support (*Travel, lodging, meals*)

Other sections can be added as necessary like Authority and References, Definitions and Terms, Organization Charts, Tabs, Annexes, etc.

GENERAL INFORMATION

A. Act to Protect Life

B. Notify Employees of Implementation of Emergency Operating Plan:

- Act to ensures safety of employees and families.
- Maintain, to a practical extent, records and logs of actions taken and ask all supervisors to do the same.
- Attempt to coordinate efforts with other regulatory agencies.

C. Preserve Water in Storage:

- Consider what can be saved, what can be sacrificed.
- If damage is apparent, lower water in dams to prevent structural failure.
- If applicable, assess damage to sewer system which could contaminate water supplies.
- Secure wellhouses against unauthorized entry and possible contamination.

D. Isolate Areas That Will Take Longest to Restore Service and Arrange for Emergency Water Distribution in Those Areas:

- Establish collection points and ration water.
- Locate source of water containers (plastic bottles, jerrycans, etc.)
- Spot containers at locations to serve immediate needs.
- Locate trucks with water-carrying capabilities.
- Start reserve pumping facilities.
- If needed, provide information to public on emergency disinfection of drinking water.

E. Set Priorities on Repair Work:

- Plan to restore service by area.
- Prepare and keep current a plan to restore service
- Get input from appropriate agencies on essential uses.
- Take into account condition of existing facilities.
- Take into account the public's need for protection—determine if other water sources are available.
- When work exceeds capabilities, notify agency.

PRELIMINARY DAMAGE ASSESSMENT

Things to Do

General Overview

- Determine need to repair, replace, or abandon facilities
- Estimate cost to repair damage
- Evacuate buildings in danger of collapse
- Confirm that field crew does the following:
 - Closes and tags
 - Damage Facilities; and
 - Equipment

Reservoirs:

- Check for:
 - Seepage
 - Cracks
 - Embankment slump
 - Leaks
 - Landslides
 - Broken inlet/outlet pipes & underdrains

Notify DNR if problems are found.

- Lower water levels to reduce possibility of structural damage

Wells:

- Check for physical damage to facilities
 - Test for contamination
 - Name, address, phone # for private lab:
-
-

- Check for pump or motor failure
- Check power source

Treatment Plants:

- Check if power available and condition of mechanical and electrical equipment
- Check for quality of outflow
- Check for chemical spills or releases
- Check for need of emergency purification
- Check for structural damage

Tanks:

- Check for evidence of failure of subbase
- Check for:
 - Leaks
 - Cracks
 - Broken inlet/outlet pipes, underdrains
- Check for buckling

Distribution System:

- Check for:
 - Leaks
 - Breaks
 - Pressure loss in lines
 - Cross-connections between and sewage
 - Overflows in streets
- Check for mechanical couplings

Figure III-2-77.3

Utility Personnel

Name	Title	Home Phone #	Office Phone #	Authority to Purchase Yes / No

State Association

Contact Person	Office Phone #	Home Phone #

Local Utilities

Type	Contact Person	Office Phone #	Home Phone #
Telephone			
Sewer			
Electricity			
Gas			
Local Fire Dept.			
Police Dept.			
Local Civil Defense			
County Sheriff			
System Engineer			

Figure III-2-77.5

EMERGENCY PHONE NUMBERS

State and Federal

Phone Numbers

State Emergency Management Agency

24-hour number

State Department Natural Resources

DNR – Environmental Emergency Response (24-hour)

DNR – Information

DNR – Public Information

DNR – Public Drinking Water

DNR – Laboratory Services

DNR – Field Services

DNR – Regional Offices

Location

1.

2.		
----	--	--

3.		
----	--	--

4.		
----	--	--

5.		
----	--	--

6.		
----	--	--

State Department of Conservation

Main Office

Fish and Wildlife Research

Local Conservation Agent

State Department of Health

Operator

After Hours Emergency

Eastern District

NW District

NE District

Central District

SE District

SW District

Division of Radiological Health

State Laboratory

Other Laboratory

Public Service Commission

Figure III-2-77.6.1

EMERGENCY PHONE NUMBERS

Law Enforcement

Location

Phone Numbers

State Highway Patrol Headquarters

1. Troop A		
2. Troop B		
3. Troop C		
4. Troop D		
5. Troop E		
6. Troop F		
7. Troop G		
FBI		
U.S. Marshal Service		

Environmental Protection Agency Region

24-Hour Emergency Number		
Drinking Water		
Safe Drinking Water Hotline		

**State National Guard
U.S. Corps of Engineers**

1. _____	District (24-hour number)	
2. _____	District	
3. _____	District	
4. _____	District	

Other Agencies

Chemical Spill Hotline	
National Weather Service	
U.S. Coast Guard	
National Poison Control Center Hotline	
Office of Pesticides and Toxic Substances	
Call Before Your Dig	
National Rural Water Association	

Figure III-2-77.6.2

WORK-ORDER LOG				
Work-Order Number	Crew	Assignment	Estimated Time of Repair	Assignment Made By

Figure III-2-77.7

* Denotes Member System EMERGENCY SUPPORT LIST					
Organization	Address	Contact Name	Telephone	Type of Service to be Provided	Date of Agreement

Figure III-2-77.8

RECOVERY PERIOD CHECKLIST

- Perform in-depth damage assessment of system to determine long-term effects of damaged areas.
- Notify DNR of system status and situation.
- Prepare written documentation of emergency work performed for possible compensation by emergency agencies.
- After completion of emergency repairs, rest the crews and return, if possible, to more normal work schedules.
- Notify appropriate insurance carriers. Provide written and photo documentation of damage.
- Assist in the survey of emergency repairs and scheduling of permanent repairs.
- Assist in the inventory of repair supplies and replacement stock.
- Recommend when able, servicing of emergency equipment.
(oil changes, lubrication, etc.)
- Make sure the public is kept informed throughout the extent of the emergency.

Local Radio Stations				
Call Letters	Frequency	Contact Person	Home #	Office
Local Television Stations				
Call Letters	Frequency	Contact Person	Home #	Office
Local Newspapers				
Call Letters	Frequency	Contact Person	Home #	Office

Figure III-2-77.11

PLAN DISTRIBUTION LIST			
Plan Number	Distributed By	Received By	Date

Figure III-2-77.12

RECORD OF CHANGES

Change Number	Subject	Date	Entered By

Figure III-2-77.13

PHASE III – PLAN EVALUATION

Each Utility will have different procedures for plan evaluation depending on the available resources. The testing of the emergency response capability is important particularly in those geographic areas where the risks of major disasters are greatest.

Step 1—Training

Training should focus on increasing the knowledge of the Utility's personnel about disaster hazards and the effect they will have on the system. An opportunity to practice disaster response should also be incorporated in the training.

Training can be in-house or through outside sources. Consideration should be given to the idea to train the trainer. Train those that will be in a position to train others and will make decisions during an actual response.

Step 2 -- Conduct Operational Drills

Many areas conduct Emergency Response drills. These drills are often at local levels, sponsored by city or county governments, fire and police departments, and other affected agencies.

State and federal drills are conducted also, many times addressing a specific hazard. Get involved; find out by asking when and where drills are scheduled. Go and observe other state and community drills, note what goes right or wrong. There is a lot happening in Emergency Response. Find out what's happening in your area or a larger system near you and get involved. You will find most people in emergency assistance have a genuine desire to help. Don't be afraid to conduct your own drills by acting out one of your scenarios used to determine vulnerability.

Step 3 – Occurrence Evaluation

At the conclusion of the event, the Utility should assemble and prepare an after-event evaluation report. The report should address issues, background, recommendations, and conclusions. This report assesses actions, responses, and evaluates the Utility's response. This report can serve as a model for future emergency response and appropriate actions. A sample form for this project is Figure III-3-79.1

Utility Evaluation Report Form

Introduction

- Disaster Declaration
- Purpose of Report
- Hazard Mitigation Planning
- History

Description of Disaster

- Geography
- Chronology
- Damages and Impact
- Statistics

Recommendations

- Issue
- Background
- Recommendation
- Lead
- Support
- Funding
- Schedule

Appendices

- Maps
- List of Participants

Miscellaneous Information

The Miscellaneous Information section of the Emergency Management Manual is a compilation of extremely useful material that can be utilized by the State Association in development of its own plan. It also provides appropriate information to utilities for inclusion in the Utility's Response Plan.

What to Do with Flood Debris

All debris must be managed to avoid future environmental problems. The following specifies the recommended options for particular categories of waste.

In General

All solid wastes which cannot be recycled or reused must be ultimately disposed of in municipal solid waste landfills, construction/demolition landfills or inert landfills. For the location of the disposal site nearest you, contact your local state regulatory agency. The only exception to landfill disposal will be open burning of trees, limbs, stumps, other vegetative debris caused by the flood and clean lumber/plywood.

The EPD encourages the recycling of waste if practical. Trees, limbs, and stumps can be chipped for mulch if equipment is available.

White goods (appliances), batteries, tires and metals should be separate for recycling.

All household garbage, such as food and other putrescible waste, must be disposed of in municipal solid waste landfills. Household items such as furniture, carpet, drapes, clothing, bedding, mattresses, etc. may be disposed of in construction/demolition landfills.

All construction/demolition type wastes (lumber, siding, shingles, sheetrock, etc.) may be disposed of in inert waste landfills.

Inert wastes (mud, dirt, concrete, bricks, cured asphalt, tree stumps, limbs, leaves) may be disposed of in inert waste landfills.

Local governments may establish temporary locations for transfer stations, convenience centers or stockpiling areas which have been established to handle the large volumes of wastes which cannot be directly transported to recycling or disposal sites. These established sites need to be convenient as possible, provide for the separation of wastes for appropriate handling and should be closely supervised to prohibit mixing of waste materials.

Burning Flood Waste:

Only trees, limbs, stumps, other vegetative debris, and clean lumber/plywood can be burned without specific approval. Call your regulatory agency prior to burning any other materials.

Do not burn asbestos containing waste, tires, shingles, painted lumber, insulation, plastics, plastic sheeting, carpeting, draperies, linens, kitchenware, furniture, mattresses or household chemicals. These materials cause serious pollution and health effects if burned.

If debris is to be burned, take the following steps:

Call your local government to determine if a central burning location has been established. If so, use that location. If not, then coordinate the burn with the local fire department and the Forestry Commission.

Conduct the burning when the wind is blowing away from roadways, railroad tracks, airfields, and populated areas.

- Provide supervision on the burn site.
- Avoid exposure to the smoke.
- Please burn between 9 a.m. and 6 p.m. to achieve the best natural dispersion of smoke.

For Asbestos-Containing Waste:

Asbestos-containing waste, such as boiler/pipe insulation, fireproofing, floor tiles, asbestos roofing, transite boards:

Where possible, and especially for large projects, asbestos waste removal and disposal should be performed by licensed asbestos abatement contractors. When this is not possible, follow the following guidelines:

1. Keep all suspected asbestos-containing materials wet.
2. Collect and place wet asbestos in bags or covered, pre-lined (two or more layers of plastic) metal bodied trucks, commercial dumpsters, or containers.
3. Place asbestos warning labels on all bags and containers.
4. Transport waste in enclosed or covered vehicles to landfills.
5. For information on removal, disposal, or the location of approved landfills, contact your local regulatory agency.

SOLID WASTE HANDLING OF FLOOD DEBRIS

If you have questions call your local regulatory agency

WASTE CATEGORY

DISPOSAL OPTIONS

<ul style="list-style-type: none"> Household Chemical Waste Drums Tanks Barrels 	<p>If you find sealed drums, tanks, or barrels of unknown contents, call your local regulatory agency. To dispose of propane tanks, contact the nearest propane distributor. Serial numbers on tanks allow for identification of owners.</p>
<ul style="list-style-type: none"> Household Hazardous Waste Home care products; i.e. cleaners, paints, etc. 	<p>Homeowners and workers should use caution when cleaning up household products in leaking or damaged containers. Wear rubber gloves and avoid breathing any fumes or dust. Avoid working around these products in confined or poorly ventilated areas. Disposal must be in permitted municipal solid waste landfills or wastes should be saved for household hazardous waste collection.</p>
<ul style="list-style-type: none"> Household Garbage/Food Institutions (hospitals, schools) Food processing companies households 	<p>All garbage and food wastes must be disposed of in municipal solid waste landfills.</p>
<ul style="list-style-type: none"> Household furniture, bedding, mattresses, carpet, drapes, clothing, general household items. 	<p>This bulky type waste may be disposed of directly in permitted municipal solid waste landfills including construction/demolition landfills. Such wastes may be temporarily stockpiled and disposed of at a later date.</p>
<ul style="list-style-type: none"> Appliances/Major Equipment Lawn mowers Washers/Dryers Bikes Refrigerators Heaters, Air Conditioners, Dishwashers, Hot Water Heaters 	<p>EPD will allow cities and counties to set up scrap metal collection centers for recycling and/or disposal in municipal solid waste landfills. Keep refrigerators, freezers, and air conditioners separate so that contractors can access these units for freon, mercury switches and capacitor removal.</p>
<ul style="list-style-type: none"> Car batteries and other lead/acid battery types 	<p>These items can only be recycled. They should be separated and stored preferably on a concrete/asphalt pad until a recycler can handle them.</p>
<ul style="list-style-type: none"> Demolition Waste Painted lumber, roofing shingles, asbestos materials (transite siding, shingles, insulation), plastics and other synthetic materials. 	<p>These materials should be properly disposed in a municipal or construction and demolition landfill.</p>
<ul style="list-style-type: none"> Dead Animals 	<p>Small accumulations of dead animals should be buried on site as soon as possible to reduce public health hazards or odor problems. Large accumulations of dead animals will require special considerations. Call your local regulatory agency for more information on disposal of dead animals.</p>
<ul style="list-style-type: none"> Tires 	<p>Tires, which wash up along with other flooding debris, are to be stockpiled by the local jurisdictions in designated collection centers. EPD may later contract to remove the collected tires for proper disposal or offer grants for clean up. Tires must not be burned or buried on site.</p>
<ul style="list-style-type: none"> Wood/Vegetation Waste Trees Brush Limbs Clean lumber/plywood 	<p>Cities and counties are encouraged to establish designated collection centers. Disposal options are landfills or burning. If a central burning location is not established, individual burning is allowed.</p>
<ul style="list-style-type: none"> Inert Waste Mud Concrete Broken asphalt Brick Sand bags 	<p>Disposal of these materials may be in designated inert waste landfills.</p>

Household Chemicals and Hazardous Waste

Damaged or Unusable Household Chemicals

- Homeowners returning to their homes after floodwaters recede may find products used to care for home and property that are damaged and unusable.
- Products labeled with words such as POISON, DANGER, WARNING or CAUTION contains hazardous chemicals. These wastes, commonly referred to as “household hazardous wastes”, should be separated from other wastes before disposal.
- Use extreme caution when cleaning up household products in leaking or damaged containers. Wear rubber gloves and avoid breathing any fumes or dust. Do not work around these damaged products in confined or poorly ventilated areas.
- The U.S. Environmental Protection Agency is in the process of setting up local household hazardous waste collection sites to receive flood-damaged wastes. Use of these collection programs will ensure that wastes are disposed of in a safe and environmentally sound manner.
- Check with your local officials and use a household hazardous waste collection program if one is available in your area. If a collection program is not available, some of this waste may be disposed in a municipal solid waste landfill with the landfill operator’s permission. For your own safety, do not burn these materials as they may produce toxic smoke.

Drums -----Tanks -----Barrels

- Most barrels that wash up in the flood are open – burn barrels, trash barrels, or dock barrels.
- There may be danger in sealed barrels, drums, or tanks with unknown contents. These should be handled by trained persons. If you find sealed drums, barrels, or tanks of unknown contents, call your local regulatory agency.
- If a propane tank is in flood debris, a company distributing gas may be able to identify the tank and return it to its proper location. Propane tanks have serial numbers that help to identify owners and locations.
- If propane tanks are found there is reason to believe they may be unsafe, contact the local emergency management coordinator or the state emergency management agency.

Restoring Drinking Water

If you are on a Community Water System

CONTACT THE OWNER/OPERATOR OF YOUR PUBLIC WATER SUPPLY SYSTEM DIRECTLY FOR INFORMATION ABOUT PROBLEMS (such as broken water mains, low water pressures, loss of water source or treatment facilities, or any other sources of contamination), AS WELL AS ABOUT ANY HEALTH ADVISORIES. As long as adequate water pressure has been maintained through the flood, and the disinfections treatment system has been intact, you may only need to flush your water pipes.

Disinfection of Unsafe Drinking Water

The following procedures will destroy the usual bacteria and other microorganisms that may be present in water obtained from a contaminated public water supply system or from alternate emergency sources. IF YOUR WATER SYSTEM IS UNDER A "BOIL WATER NOTICE", YOU SHOULD CONTINUE TO BOIL YOUR WATER UNTIL YOU ARE NOTIFIED BY YOUR WATER UTILITY THAT THE WATER SYSTEM HAS BEEN RESTORED TO FULL OPERATION AND THAT THE MICROBIOLOGICAL QUALITY OF THE WATER IS SAFE FOR HUMAN CONSUMPTION.

HEAT DISINFECTION (boiling)

Boil the water for at least one minute after reaching a rolling boil.

CHEMICAL DISINFECTION

If boiling your water is not possible, consider chemically disinfecting your water. Follow the steps outlined below:

1. Strain water through a clean, tightly woven cloth into a clean container to remove any sediment or floating matter.
2. Purify the water with one of the following chemicals (choice of chemical is based on availability).
 - a. Hypochlorite solutions (PUREX, CLOROX or other household bleach).

Read the label to find the percent of available chlorine in the solution and determine the number of drops needed to disinfect each quart of water from the table below.

Available Chlorine	Drops of Bleach To add to each quart of clear water	Drops of Bleach To add to each quart of cloudy water
1%	10	20
4 to 6%	2	4
7 to 10%	1	2
If not known	10	20
Mix thoroughly by stirring or shaking water in container. Let stand for 30 minutes. A slight chlorine odor should be detectable in the water.		
If not, repeat the dosage and let stand an additional 15 minutes before using.		

- b. Iodine: Use USP tincture of iodine; iodine from the medicine cabinet should be suitable. Add two to three drops to each quart of clear water (or eight to ten drops to each quart of cloudy water). Mix and let water stand for 30 minutes before using.

WATER STORAGE

Water purified by boiling should be stored in clean, non-corrosive, tightly covered containers. Containers suitable for water storage include empty vinegar bottles, soft drink jugs and plastic milk containers that have been thoroughly washed and rinsed with purified water. Freezing does not disinfect water; ice cubes must be made from water that is properly disinfected.

FLUSHING HOME WATER LINES

- A. The best and easiest way to begin flushing your water lines is to use a garden hose and wash off your patio or driveway for half an hour.
- B. Water pipes in homes that have been submerged in water may be extremely dirty. Clean the exterior of pipes and faucets with regular household cleaner. Briefly run hot and cold water at all faucets to remove dirt that may have settled just inside the faucets. Next, squirt a 50 percent water, 50 percent household bleach solution into the faucets. Then flush ALL water pipes as described in Step C below.
- C. Sequentially flush out all water pipes inside the house. Begin at the faucet nearest the point where the water line enters the house. This is usually the sink nearest the water meter. Turn on both hot and cold faucets at full blast for three to five minutes. **IF AFTER THIS AMOUNT OF TIME YOUR WATER DOES NOT BECOME CLEAR, DO NOT USE IT FOR CONSUMPTION.** (You may wish to catch water in buckets if you are concerned about overloading your septic tank.)

IF YOU HAVE A PRIVATE WELL

Wells that are totally filled with mud or have suffered extensive damage will need major repairs. You will need to contact a State licensed water well contractor. A list of licensed water well contractors can be obtained from your state contractor licensing board.

A licensed water well contractor can clean out wells that are only partially damaged or partially filled with mud. A pump installer can also do the job, but only after electric power has been restored to your area. The water well contractor or pump installer can also determine if other repairs are necessary.

Wells that are undamaged should be disinfected following the procedures listed below. If muddy water is present, contact your licensed water well contractor or a pump installer for use and start-up procedures to protect your pump.

PRIVATE WELL EMERGENCY DISINFECTION PROCEDURES

1. Pump well until water is clear. Use this water to clean outdoor facilities. Do not allow it into the house plumbing.
2. When water is clear, wash down the inside of the well casing and pump again until the water is clear.
3. Drop 2 cups of chlorine tablets or pour 2 gallons of liquid bleach into the top of the well. Let well sit for 2 hours. For more specific information, call your health department.
4. Pump chlorinated water through all household water lines until there is a noticeable chlorine odor at taps. If chlorine odor is not detected, add additional chlorine until you smell it.
5. Wash down interior and exterior of well with chlorinated water using a hose.
6. Let chlorinated water stand in the well and in pipes for 24 hours.
7. Run water until chlorine smell is no longer detectable.
8. Have water tested for bacteria. Any water for temporary use should be boiled for 1 minute until you receive a satisfactory bacteria test.

CAUTION: *Use caution when working on your well to avoid electrical shock from wiring and pump.*

LABORATORIES FOR TESTING PRIVATE WELLS

A network of water quality laboratories should be established to perform bacteriological tests for private well owners in flooded areas. Arrangements for the collection of samples should be made through county sanitarians.

Private well owners in the flooded areas should first contact their county health department. The county health department will collect a sample and send it to a cooperating laboratory. The laboratories will notify the county health department on the results.

WATER POLLUTION

CONTAMINATED SURFACE WATER

- Contact with floodwaters should be kept to a minimum. Flooded rivers and streams are contaminated with sewage, animal wastes, and other harmful contaminants.
- Stay out of floodwaters, do not swim, wade, tube, or have other recreational contact.
- Avoid recreational boating on rivers and streams in flood stage. Rapidly flowing floodwaters can contain unpredictable currents and eddies and can conceal submerged or moving objects that can damage a boat.
- If contact with floodwaters is unavoidable, shower or bathe with antibacterial soap afterward.
- If you are injured while working floodwaters, contact your doctor to see if you need a tetanus shot.
- After floodwaters recede, wash flooded buildings with clean water and biodegradable detergent. Thoroughly check and clean all natural gas, electric, drinking water, and sewage disposal systems prior to returning to service. Outdoor areas should be washed with clean water.
- Floodwaters trapped behind levees or pooled in low areas may be released or pumped back to the adjacent river or stream without special permission or permits. Use care to avoid damage or harm to neighbors.
- If you suspect floodwaters may be contaminated with petroleum products or other chemicals, contact your local emergency management agency.

Septic Tank Failures

Many septic tank systems at individual properties have been flooded. Most of these systems will remain inoperable until the floodwaters recede and the ground dries out somewhat. Some of these systems may be so damaged that repairs will be required before they will work.

One big problem with a septic tank that doesn't work is the release of untreated sewage onto the top of the ground or into stagnant pools left behind by the flood. The pooled sewage from these tanks can be a significant health hazard. The other big problem is the backup of sewage into the building; caused by a blockage that results from the damaged tank system or piping, or the fact that the system is full of water which cannot drain into saturated ground.

Underground Storage Tanks (UST)

A. A UST Contact Center should be established for handling calls concerning UST problems in the flood impacted areas.

B. Because of the potential for releases of gasoline or diesel fuel from damages sustained from flooding, the following steps should be taken to return impacted UST Systems to operation. These steps will help to avoid future liabilities.

1. Visual Observation: Check for obvious indications of released gasoline or diesel or damage to the UST System.

2. Document all findings and maintain records of visual observations and any gasoline or diesel loss indicated through inventory records. For example, if the UST previously contained 6,000 gallons of gasoline and subsequent visual observations indicate the UST is now filled with water, detailed information should be maintained. This information will be critical for submitting request for assistance.

3. Utilize an approved precision tightness test employing overfill or vacuum test methods for evaluating the integrity of the tanks and piping prior to returning them to service. This is recommended because of future liabilities that may occur in the event that problems are not corrected at this point.

Your state may have a program to provide assistance in scheduling and conducting approved UST System tests.

Financial assistance for the required system testing in flood-impacted areas may be available through your state regulatory agency.

Assistance for Facilities with EPD Permits

Local officials are encouraged to rely upon the knowledge and expertise of their own staff. Operations specialists and engineering staff should be available for on-site consultation and advice. Contact the state regional offices if services in your area cannot respond to your needs regarding drying and overhauling motors; repairing electrical components; and repair of treatment plants, water distribution and sewage collection systems.

WASTEWATER TREATMENT PLANTS

State regulatory agency review and approval should not be required of proposed emergency measures to return sewage collection or treatment facilities to service or to replace identical parts or components to sewage collection or treatment facilities.

State regulatory agency review and approval should be required for facilities that are repaired or rebuilt to a design different from the previous facility for new facilities.

State regulatory agency review and approval should not be required for restoring power supply, including raising electrical service and equipment to a higher elevation. The repair of washed-out stream crossings, repairing or replacing existing water mains, and repairing or replacing water distribution systems will be considered maintenance. Repair of flooded water supply wells and water treatment plants using identical parts and components should not require review and approval.

Other improvements such as raising portions of the water treatment plants, water supply wells or backwash discharge lines will require review and approval by your state regulatory agency.

TRAPPED OR PONDED FLOOD WATERS

Flood waters trapped behind levees or ponded in low-lying areas may be pumped or released back to the adjacent river or stream without obtaining a discharge permit from EPD. If there is reason to believe that the trapped flood waters is contaminated with agricultural fertilizers or pesticides, petroleum, products or other chemical contaminants, contact your state regulatory agency.

Contact your state regulatory agency for approvals of new landfills or expansions. Inert landfills and transfer stations do not need site specific approval. An inert landfill can accept mud, concrete, broken asphalt, brick, and sandbags.

Information for Operators of Public Water Systems

BOIL WATER NOTICE

In order to protect the public from a potential health hazard caused by the flooding of public water utilities, all citizens that have experienced water outages or low water pressures are advised to "boil" all water prior to use for drinking, cooking, or preparing baby food. The water should be boiled for at least one minute after reaching a rolling boil. Citizens should continue to boil their water until they are notified by their water utility that the water system has been restored to full operation, and that the microbiological quality of the water in the distribution system is safe for human consumption.

This public advisory should be issued to all customers connected to those public water systems that experienced water outages or low water pressures. The boil water notice can be issued by using radio and TV, by newspaper and/or by hand delivery, and should remain in effect until acceptable corrective measures are taken and the microbiological quality of the water has been monitored to ensure it is safe to drink.

PUBLIC WATER SUPPLY WELLS

1. Wells that are destroyed, totally filled with mud, or suffered extensive damage should be plugged because they may cause further damage to the ground water supply. If you want to have the same well re-drilled, you must contact a licensed well driller. For further technical advice or for a list of licensed well drillers, contact your state regulatory agency.
2. Wells that are partially damaged or partially filled with mud can be cleaned out, repaired and disinfected by a licensed well contractor. For any technical assistance or for a list of licensed water well contractors, contact your state regulatory agency.
3. Wells that are undamaged should be disinfected following the procedure below. If muddy water is present, contact a licensed water well contractor for use and start-up procedures. Should you have any questions or need a list of licensed water well contractors, contact your state regulatory agency.
4. Make sure the water disinfection system (chlorination equipment) is functional and is operating when the well is running.
5. Repair or replace damaged water lines in the distribution system. Flush all the distribution lines until the water is clear. Disinfect the distribution lines with a strong chlorine solution, as needed, so that after a 24 hour holding period in the main there will be a free chlorine residual of not less than 10 parts per million. After 24 hours, discharge the chlorinated water from the pipes to waste, and replace it with fresh water until the free available chlorine residual is not greater than 2 parts per million in the mains.
6. Make sure the water storage tank is structurally safe and functional. Drain it to waste and disinfect it, as deemed necessary.
7. Collect representative water samples from the distribution system and the storage tank for microbiological analysis. Acceptable results must be obtained. If not, water lines and/or the water storage tank must be re-disinfected and re-tested until acceptable results are obtained.
8. Make sure traceable amounts of free available chlorine residuals are present throughout the distribution system. Verify this with field tests.
9. Expedite the rehabilitation of flooded or damaged equipment. However, do not overlook the need to fully attend to the rehabilitation (such as re-packing bearings) to avoid repeated equipment failure.

WATER SUPPLY WELL DISINFECTION

- A. USE CAUTION WHEN WORKING ON THE WELL TO AVOID ELECTRICAL SHOCK FROM THE PUMP.
- B. Pump well until water is clear.
- C. If well is undamaged, introduce and mix disinfectant, such as chlorine, through the entire water column. In most cases, disinfectants that are poured from the top of the well will not reach the entire water column.

For best results, the pump should be pulled, contaminated water should be removed from the well, proper quantities of disinfectant should be thoroughly mixed and surged within the well; and the mixture pumped to waste. Proper contact time must be allowed between the contamination and the disinfectants.

If contaminated water has flowed into the well and entered the aquifer, a single application of disinfectants may not be enough. In these cases, water may be pumped from the well to waste for one to three days to evacuate the well and in adjacent aquifer sediments before introducing disinfectants.
- D. Introduce a prepared chlorine solution into the well in sufficient quantity to produce a minimum of chlorine residual of fifty (50) parts per million in six (6) hours after such an application.
- E. Disinfect the well pump and pumping equipment with a strong chlorine solution prior to being placed into service.
- F. Let the chlorinated water stand in the well and the pipes for 24 hours.
- G. Pump the well to waste until no trace of chlorine (chlorine smell) is detectable.
- H. Collect water samples at the wellhead and have them tested for coliform bacteria by a division approved laboratory. If water fails bacteria test, re-disinfect the well. EPD will assist in testing.
- I. Before placing the well into service as a drinking water source, acceptable microbiological water quality results must be obtained.

OPERATORS OF PUBLIC WATER SYSTEMS

QUICK REFERENCE (to prepare Chlorine Solution)

A. Use the following number of ounces of chlorine compounds of a given available chlorine content (generally marked on the outside of the can or package) required to provide a concentration of 50 parts per million in 1000 gallons of water:

100% liquid chlorine	6.7 oz.
15% chlorine compound	44.7 oz.
25% chlorine compound	26.7 oz.
30% chlorine compound	22.3 oz.
70% chlorine compound	9.6 oz.

B. Use the following amounts of chlorine compounds required to dose 100 foot water-filled well at 50 mg/l

Well Casing Diameter	Volume per 100 feet of Water Depth 100%	Amount of Chemical Compound		
		Calcium Hypochlorite 65%	Sodium Hypochlorite	Liquid Chlorine
4	65.28	0.7 oz.	3.5 fl. oz.	0.03 lb.
6	146.9	1.5 oz.	7.8 fl. oz.	0.06 lb.
8	261.1	2.7 oz.	13.9 fl oz.	0.11 lb.
10	408.0	4.2 oz.	1.4 pt.	0.17 lb.

PROCEDURES FOR REMOVING BOIL WATER ADVISORY

The following items are to be accomplished before the boil water advisory is removed:

A. Ground water supply sources (wells), if suffered extensive damage or flooded, must be cleaned cut, repaired and disinfected. The well(s) must be pumped until the water is clear. See recommended procedures for well disinfection in the following pages. Following disinfection, water samples must be collected at the wellhead and tested for microbiological quality by an approved laboratory. If water fails bacteria test, well(s) must be re-disinfected. Acceptable results must be obtained before the well(s) can be placed into service.

B. Make sure the water disinfection system (chlorination system) is operating when the well is running, and detectable chlorine residual (0.2 mg/L, or greater) is being maintained throughout the distribution system.

C. Distribution system integrity restored by repairing and/or isolating all main breaks. Pipes should be flushed out until water is clear. Adequate water should be pumped into distribution system to pressurize all areas and build adequate reserve in storage tanks. Chlorine residual measurements and coliform bacteria samples must be collected from enough sites to adequately represent all areas of the distribution system (we recommend using at least 50% of system's existing coliform sample site locations). These coliform tests must be negative for total coliform bacteria, and chlorine residuals must be detected in the distribution system.

D. After satisfactory laboratory results, the boil water notice can be rescinded.

STAFFING GUIDELINES FOR EMERGENCY OPERATING CENTER

<u>STAFF</u>	<u>NUMBER</u>
COMMAND GROUP	
Governor.....	1
Lieutenant Governor.....	1
Emergency Management Director, EMA.....	1
Assistant Director, EMA.....	1
Congressional Liaison, EMA.....	1
 EMERGENCY MANAGEMENT AGENCY STAFF	
EOC Chief.....	1
Operations Officer.....	1
Intelligence Officer.....	1
Message Control Officer.....	1
Statistics Officer.....	1
Action Officers.....	3
Resource Officer.....	1
Public Information Officer.....	1
Telephone Operators.....	2
 STATE DEPARTMENTS/AGENCIES	
Department of Administrative Services.....	1
Department of Agriculture.....	1
Bureau of Investigation.....	1
Department of Corrections.....	1
Department of Defense.....	1
Forestry Commission.....	1
Department of Human Resources.....	4
Department of Natural Resources (EPA, Law, Dam, Floodplain).....	4
Department of Public Safety.....	1
Public Service Commission.....	1
Department of Transportation.....	1
 VOLUNTEER ORGANIZATIONS	
Red Cross.....	1
Salvation Army.....	1
Other Charitable Organization.....	1
Civil Air Patrol.....	1
State Rural Water Association.....	1
Total.....	39