PUBLIC WATER SYSTEM MANAGEMENT TRAINING

Emergency Management

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PUBLIC WATER SYSTEM MANAGEMENT TRAINING

Emergency Management

Course Description:

How you prepare your water utility for potential threats, manage your system during an emergency, and recover afterwards can save lives, money, and your credibility as a competent manager. This course focuses on the importance of being prepared for emergencies, communicating during an emergency, and recovery afterwards. After completing this course, participants should be able to better plan and react to emergencies that can affect their water system.

Learning Objectives:

After completing this course, participants should be able to do the following:

1. Differentiate between internal emergencies and external emergencies.
2. List several types of internal and external emergencies.
3. Explain the importance of being prepared for emergencies.
4. Identify steps to mitigate potential emergency threats.
5. List the three focus groups of your communications plan.
6. Explain the importance of a Recovery Plan.
7. List the two necessary steps in completing an after-action review.

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Section

A

EMERGENCY MANAGEMENT

CHAPTER 1.

Introduction to Emergency Management

Since predicting when and where an emergency will occur is impossible, the next best option is to be prepared and try to prevent emergencies in the first place. Some disasters can be prevented, if you properly maintain equipment it's less likely to fail unexpectedly. Ask yourself some prevention related questions like the examples below:

- ❑ Do you have a routine maintenance schedule and have you done regular preventive maintenance on equipment?
- ❑ Are chlorine and other chemicals stored and handled safely so they're less likely to leak, spill, or ignite?
- ❑ Are your pumps and water storage tanks protected so vandals can't contaminate your water?

Routinely asking yourself these kinds of prevention questions is just part of good management. Of course we must understand that some emergencies are completely out of our control and no amount of planning will prevent them. In these situations, the only thing we can do is be prepared to deal with the emergency as safely and efficiently as possible.

This manual will introduce you to the concepts of emergency planning and management for small water systems.

CHAPTER 2.

Potential Water System Emergencies

For a small water system, an *emergency* will be any unplanned event, natural or man-made, that disrupts the systems' ability to deliver safe, potable water to all customers. The emergency may be caused by a natural disaster (such as wind, rain, tornadoes or hurricanes), a power outage, intentional acts or accidents occurring either at the facility or in the surrounding community.

It is helpful to breakdown potential water system emergencies into the following three types of incidents: Intentional, Accidental and Natural Disasters.

> **Intentional Incidents:** these are incidents that are caused by an individual with intent of causing damage or harm to the system and/or the system employees and customers. Examples of intentional acts: vandalism, theft, sabotage, terrorist acts, etc.
>
> **Accidental Incidents:** these are incidents that are caused by some type of event or action that is unintentional. In some cases, accidental incidents may be the result of carelessness. Examples of accidental incidents: vehicle accidents, chemical spills, etc.
>
> **Natural Disasters:** these are incidents that are determined by nature and are typically out of the control of human influence. Examples of natural disasters: hurricanes, floods, tornadoes, etc.

These incidents may be classified as either an ***Internal Emergency*** or an ***External Emergency***.

INTERNAL EMERGENCIES

Internal emergencies are those incidents that occur at the water system facility or as a result of actions at the facility. Examples of internal emergencies include *water outages, chemical spills, workplace injuries, electronic data loss and waterborne disease outbreaks*. Many accidental incidents and most intentional incidents, such as *theft, acts of terrorism, water quality tampering and arson*, will be considered internal emergencies. A natural disaster will only be an internal emergency if it directly results in damage to the system facility.

INTERNAL EMERGENCY

An emergency that occurs at the water system facility or as a result of actions at the facility.

External Emergencies

External Emergency

An emergency that results from events that occur near the water system facility, but not on facility property, or as a result of actions at the facility.

External emergencies are those incidents that result from events that occur near the water system facility, but not on facility property or as a result of actions at the facility. External emergencies effect operations at the facility. Many external emergencies will be caused by natural disasters, but they may also be accidental or intentional. Examples of an external disaster include any natural disasters that strike off-site, but knockout utilities at the water system. *Power outages, gas line leaks, train, plane or car accidents, and radiological leaks* are all examples of emergencies that could occur off-site and become an external emergency for the water system.

CHAPTER 3.

Emergency Preparedness

Anything that disrupts water service can threaten your system's ability to provide safe drinking water to your customers. No one can predict when or where an emergency will strike. While there may be a low probability that certain types of emergencies will occur at your water system, ignoring the possibility could cause your system much more damage than the emergency alone. Planning for infrequent, but major disasters, is something that small system managers often overlook until it's too late. Emergency planning is not only the responsibility of system operators and managers, it is also the responsibility of the Board. Yet, preparing for an emergency may feel like a burden to system managers, operators and board members.

With all of the responsibilities of day-to-day operations, how can we justify spending time worrying about and preparing for something that may never happen?

The answer to this question may require that you step back and take a look at the big picture, what are you trying to accomplish? Simple enough…*safe, high-quality water delivered to our customers in an efficient manner*. Many systems even have mission statements that say something to that effect.

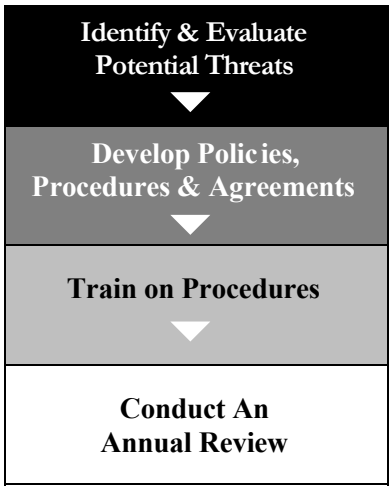
An emergency, large or small, threatens our ability to fulfill this goal. Any of the emergencies described in Section II could hinder your ability to deliver safe water to your customers. Without advanced preparation, there could be many unanswered questions when an emergency situation arrives. Anticipating emergencies and preparing for them in advance can have several benefits including helping system employees stay calm and collected.

Emergency personnel such as fire fighters and police officers train for the unexpected. As citizens we expect these individuals to be prepared to help us in our time of need. Water system customers have similar expectations of their water service. Protecting the public health is your primary responsibility as water system administrators and operators. You owe it to your customers to be prepared to deal with emergencies. Being prepared, and knowing what you'll do when an emergency occurs, will allow you to respond more efficiently and restore safe water to your customers as quickly as possible.

THE BENEFITS OF PREPARING FOR AN EMERGENCY INCLUDE CALM EMPLOYEES WHO:

1. Know how to ***recognize*** an emergency.
2. Know how to ***respond*** to an emergency
3. Know ***when*** to call for help.
4. Know ***who*** to call for help.

THE EMERGENCY PREPAREDNESS PROCESS



Emergency preparedness is a process, which is constantly evolving. During any phase of the preparedness process, a new threat or hazard may be identified calling for a revision to previously established guidelines. In order for your system to be adequately prepared for an unknown emergency, you must make planning for such an event a priority. The Emergency Preparedness Process is based on the following four basic steps. Once your system starts this process, if you follow the four steps as illustrated by the diagram to the left, your ability to respond to an emergency will continue to develop. This process must involve both system employees and board members.

STEP 1: Identify & Evaluate Potential Threats

Before you can plan any type of response to an emergency, you must have some idea how your system may be vulnerable. This is not only the first step in the Emergency Preparedness Process, but also a step that will be frequently revisited as additional threats are identified. As you work through each of the following steps in this process you may identify threats or hazards that you may not have considered before. If you do identify additional threats, evaluate those newly identified threats and work them into your four-step process.

Hazard Identification Form

The Hazard Identification Form is useful when preparing an at-a-glance survey of hazards that could potentially threaten your water system. The Hazard Identification Form looks at all three types of emergency incidents (intentional, accidental and natural disasters) to rank them in order of their level of threat to your system. Use the Hazard Identification Form in the Appendix to help you identify potential hazards and rank them in the order that they should be addressed in your emergency planning process. Priority should be given to those hazards that pose the threats that are most likely to occur at your system.

It may be useful to distribute this form to all members of the board, as well as the system operator, to complete individually. Each person will have different reasons for the order in which they rank the priority hazards. When you come back together as a group to review these forms, new perspectives may be available that help you finalize your collective priority hazards listing.

Security Vulnerability Assessments

In order to assess your systems weaknesses, every community water system should complete a Security Vulnerability Assessment (VA). A VA is a tool designed to help water systems identify potential threats and the corrective actions necessary to reduce the risk facing the system. A VA focuses primarily on the identification of security threats related to intentional acts against a system. The Federal Bioterrorism Preparedness and Response Act requires community water systems serving a population of 3300 or more to complete a VA. Smaller systems, serving a population less than 3300, are not required by Federal law. However, all community water systems, including those that serve less than 3300, are encouraged to have a completed security VA.

Regardless of whether a system is required to conduct a VA, it is more of a question of responsibility. You may or may not believe that your system is vulnerable to some type of intentional attack. Many board members and system managers feel that since they work with small water systems, the possibility of a terrorist attack is so remote there is no reason for them to be concerned about security. This limited vision of security could be placing their system and their customers at risk. Security is not just about terrorism, it is also about protecting the health of your customers and the assets of your system from any act, intentionally harmful or not. For this reason, it is beneficial to use both the Security Vulnerability Assessment and the Hazard Identification Form to assess potential threats to your system.

By accepting the responsibility of your position, whether board member or system employee, you are committed to protecting your customers and looking out for public health. Conducting a Security Vulnerability Assessment is an indispensable tool for ensuring the safety of your system. A recommended standard VA form will have the following components:

- An inventory of critical components at your water system.
- Questions designed to identify vulnerabilities that your water system may have.
- Key information addressing each question and providing guidance on corrective actions necessary to reduce risk to your system.
- Guidance on prioritizing actions necessary to reduce risk.
- Standardized report forms are helpful when receiving the notification of a threat.

The Security Vulnerability Assessment should be completed with the help of the entire board and the system manager and operator.

STEP 2: Develop Policies, Procedures & Agreements

Once you have identified potential threats and weaknesses in your facility, you will need to establish policies and procedures for dealing with those vulnerabilities. While this may be one of the more difficult steps in the emergency preparedness process, these policies and procedures are the most essential tools available to you in an emergency situation. The following three types of documents should be developed in this step: an Emergency Response Plan, Workplace Safety Policies, and Mutual Aid Agreements. Assistance with the development of these policies can usually be obtained from Community Resource Group.

Emergency Response Plan

An Emergency Response Plan or ERP is your written plan of action during an emergency. If your system does not have already have an ERP, then creating one should be high on your list of emergency preparedness priorities. The Federal Bioterrorism Preparedness and Response Act requires community water systems serving a population of 3300 or more to complete an Emergency Response Plan. Smaller systems, serving a population of less than 3300, are not required to do this by Federal law but are strongly encouraged to develop an ERP.

When an emergency strikes normal operations may become chaotic in minutes. Water system personnel will be under extreme pressure to answer vital questions at a moments notice.

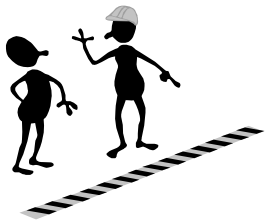
- ❑ Who will be in charge in the event of an emergency?
- ❑ When should law enforcement and/or other outside emergency personnel be notified?
- ❑ Who else should be contacted? ie. board members, primacy agency…
- ❑ How do we determine if an alternative water supply is needed?
- ❑ Who can provide an alternative water supply?
- ❑ When should a Do Not Drink or Boil Water notice be issued?
- ❑ How should the media be addressed during an emergency?

An ERP will outline the procedures that should be followed and the steps that should be taken during this decision-making process. Having all of this information in writing before an actual emergency not only removes some of the liability from the system, it also removes some of the stress from the system employee.

An ERP must be written clearly and logically. It must be written in language that is not only easy for the system employee to understand and use, but also easy for personnel from outside agencies such as fire and law enforcement personnel to use. Check to see if your state health department or emergency management agency has a model that can be modified to meet the needs of your individual utility. A model ERP can serve as a guide that can be modified to meet the needs of your utility, however it is not recommended that you remove or delete sections without consulting an emergency management professional.

Workplace Safety Policies

Often, accidents happen because an individual is careless, develops bad habits, gets in a hurry or uses bad judgment in spite of the fact that they know how to do their job safely and properly. Occasionally, an individual is not properly trained to do all of the things they are expected to do. Accidents that are caused by any of the reasons above can be prevented. Your operator probably received some safety training in order to become certified. But that was classroom training and it may have been a while ago. Encourage your operator to participate in any safety training sessions that are available through operator organizations, chemical companies or state agencies.



Every person involved in your system has some responsibility for workplace safety. Each individual is responsible for recognizing their limitations, staying alert on the job and following procedures established to protect themselves and others. Your operator probably isn't the only one who does potentially dangerous work for the system. For example, make sure that the person who mows the grass knows how to safely operate the mower. Who handles the chlorine while the operator is on vacation? Does that person know how to safely handle chlorine?

The ultimate responsibility for developing written safety policies falls on the system Board of Directors. You may choose to establish a committee to address issues relating to workplace safety or assign the work to your system manager. The manager or committee would be responsible for developing written safety policies, reviewing accident reports, investigating accidents and advising the Board about safety-related issues.

Writing Safety Policies

The best place to start your water system safety policies is with a general statement about why safety is important to each employee, as well as to the community that you serve. This statement will serve the purpose of outlining your expectations that all employees will be committed to doing things the safe way. The following is an example of a Safety Policy Statement:

> *It is the policy of the XYZ Water System to make operation of the system as accident-free as possible and ensure that every employee is provided safe working conditions. Our employees are a valuable part of the XYZ Water System's ability to fulfill its mission to provide safe, dependable and affordable water to our customers. For financial reasons, as well, it is important to protect the system against accidental and unnecessary loss.*
>
> *In order to ensure worker safety and protect against loss to the system, the Board of Directors of the XYZ Water System has developed workplace safety policies. Under these policies, all employees are responsible for reporting and correcting hazardous conditions and unsafe work procedures that might cause injury to fellow workers, the public or damage to property.*
>
> *Every accident represents an unnecessary loss to the employee or the system, no just in dollars, but in human suffering, morale, and lost production. We are committed to protecting our employees and the public from harm, as we work to fulfill our obligation to provide efficient water services to our customers. All employees are expected to assist in achieving our goal of an accident-free system.*
>
> *Date Adopted:* _____

Once you have developed your general workplace safety statement, you will need to begin working on specific policies that establish a guide for employees. You may use the following responsibilities as a guide to developing your workplace safety policies. The responsibilities are divided into a category for management and a category for staff. Policies for both should be included in your final copy.

Management (Board and/or Manager):

- ❑ Develop written safety policies and distribute them to all system employees.
- ❑ Ensure that all employees are fully trained to do the job for which they were hired.
- ❑ Ensure that adequate insurance (fire, liability, vehicles, etc.) is purchased by the system.
- ❑ Enforce all safety policies fairly and take disciplinary action when appropriate.
- ❑ Investigate and determine the cause of each accident and take action to see that it does not recur.
- ❑ Make funds available for the purchase of any necessary safety equipment for employees to use while doing their jobs.
- ❑ Make funds and paid time available for employees to attend safety-training sessions when such courses are available.
- ❑ Set a good example for employees by encouraging safety and watching for unsafe conditions and practices.

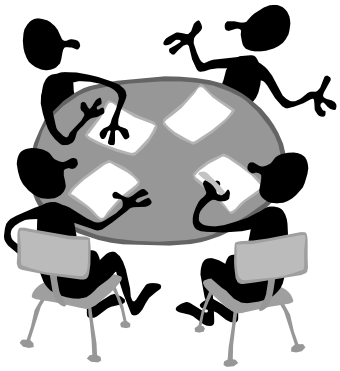
Staff:

- ❑ Make safe work practices and the identification and correction of unsafe practices/conditions a priority.
- ❑ Follow all safety policies and procedures as outlined in the system's written safety policies.
- ❑ Practice good housekeeping in all work areas at all times. A clean work environment makes hazardous conditions easier to identify.
- ❑ Refrain from horseplay.
- ❑ Drive safely according to speed limits. Use common sense while driving in poor weather conditions.
- ❑ Wear seatbelts at all times when driving any vehicle during working hours.
- ❑ Be sober and fit for work. Intoxication or possession of alcohol or illegal drugs on system property or elsewhere during working hours is strictly prohibited.
- ❑ Use the safety equipment which has been provided.
- ❑ Only use tools or operate equipment for which training has been provided.

- ❑ Advise a member of the Board's Safety Committee of any unsafe conditions or practices pertaining to system operation.
- ❑ Report any defective equipment immediately to a member of the Board's Safety Committee.
- ❑ Report any accident, regardless of how small, to the Board's Safety Committee.

After you have written your safety policies, distribute them to every employee of the system. In order to be sure that every employee understands the policies and intends to follow the policies, you may want to consider having each employee sign a simple form stating that they have read and understand the safety policies.

Working with Local Emergency Planning Committees (LEPC's)



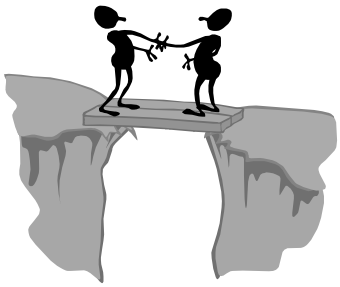
Title III of the federal legislation, Superfund Amendments and Reauthorization Act of 1986 (SARA Title III) requires the development of Local Emergency Planning Committees (LEPC). Also known as the Emergency Planning and Community Right to Know Act (EPCRA), SARA Title III requires that LEPC's are established to work as local resources for anyone involved in emergency planning. Committees usually work at the county level and are typically made up of representatives from the citizenry, industry and local government. Local Emergency Planning Committees can be a valuable resource for small water systems in that they can do the following:

- ❑ Provide assistance with developing your Emergency Response Plan.
- ❑ Provide emergency preparedness training opportunities in the form of mock exercises.
- ❑ Help you develop a mock emergency exercise that focuses specifically on an emergency at your system.
- ❑ Help you plug into local resources and develop mutual aid agreements that will be beneficial during an emergency.
- ❑ Help you stay informed on local/state emergency response and reporting regulations.

To reach the LEPC in your community contact your county emergency manager or the emergency management agency in your state and they can provide you with the appropriate contact.

Mutual Aid Agreements

A key component of emergency preparedness involves knowing what kind of resources will be available to you in an emergency. As discussed in the previous pages, your Emergency Response Plan should include emergency contact information and any mutual aid agreements that you have with other companies, businesses or agencies. A mutual aid agreement takes that preparedness to the next level by ensuring that you will have access to those resources in the form of a written contract.



Small water systems may not be able to afford to keep all the equipment or parts that they may need during an emergency in stock. Even in the event of an emergency, financial restraints may make purchasing this equipment difficult. Planning ahead and identifying sources for this equipment will save you a great deal of time and money if an emergency arises. Consider, what parts are already owned by the system and what might you need in the case of an emergency? The following items are things that might have to be procured through a mutual aid agreement:

- ❑ Alternative water supply
- ❑ Backhoe and backhoe operator
- ❑ Emergency Generator and/or additional generators if you already have one
- ❑ Back-up chlorinator
- ❑ Services of an electrician or other contractor

Once these resources have been identified a mutual aid agreement must be written. When writing a mutual aid agreement, you should include the following:

- ❑ A description of the resources that may be requested under the agreement.
- ❑ A description of payment or other compensation that will be made for use of these resources.
- ❑ A description of payment procedures and the time frame in which payment will be made.
- ❑ A listing of the individuals who should be contacted when mutual aid is being requested.
- ❑ Signatures of the individuals authorized to enter into a mutual aid agreement.

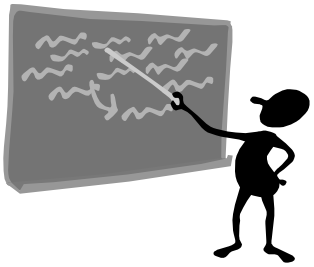
If an emergency situation arises and outside resources are needed, the system operator should contact the Board President and request permission to approach mutual aid partners and enact mutual aid agreements. Then individuals listed as contact persons in the mutual aid agreement must be contacted.

A sample mutual aid agreement between a small water system and a much larger neighboring system that has more resources can be found in the Appendix.

STEP 3: Train on Procedures

Your Emergency Response Plan may be fantastic, but if your employees have never seen it and do not know how to use it, the plan will be no help during an emergency. The same is true with your Workplace Safety Policies. The personnel at your water system will likely come from a variety of backgrounds with different training experiences. Continued training plays a vital role in developing and maintaining the capabilities of your personnel.

Developing a Training Program

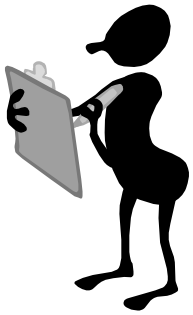


A training program should be tailored specifically to your ERP and Workplace Safety Policies. For this reason, training programs may vary from system to system. The training objective should be based on system employees understanding and knowing how to use the ERP and Workplace Safety Policies. Below are some tips for developing your in-house training program:

- **Develop in-house training standards.** For example, require that system personnel should attend quarterly trainings and refreshers. Include training requirements that are outlined by state and federal regulations. You may choose to outline your training standards in your ERP.
- **Choose training topics that target your highest risk threats.** It is important to make sure that your training appropriately addresses actual risks your system employees may encounter.
- **Conduct practice exercises.** In most cases, simply reading an emergency response plan or workplace safety policies will not be adequate. System employees will need training, as well as practice implementing these plans.

- **Seek outside assistance.** Periodic "mock" or practice exercises at your facility will be extremely beneficial to your system employees. Developing these exercises can be costly and time consuming. Consider contacting your local fire department or emergency management agency to partner for an exercise. Water systems are vital to public health, therefore it is likely they will be interested in doing a joint exercise that will be beneficial to several emergency agencies.
- **Conduct a self-evaluation.** After a training or exercise, sit down together as a group. Discuss what went right and what went wrong. Determine if ERP or workplace safety policies should be modified as a result of what you learned. Consider if any new potential hazards were brought to your attention. If so, follow-up by updating your policies to reflect those hazards.
- **Document all training.** Water system records should reflect all training and individual personnel should also be encouraged to keep personal training records. Remember, if it is not in writing a court may reasonably assume that it did not happen.

STEP 4: Conduct an Annual Review



Writing an emergency plan now is great, but things can change and the information in your plan must be updated regularly in order to adequately reflect changes such as new personnel or changes in mutual aid agreements. Board members, system managers and operators should come together to review the document at least once a year.

CHAPTER 4

During An Emergency

Adequate pre-planning will help ensure that you are ready for an emergency when it strikes. In the last section we discussed the steps necessary to prepare for an emergency. In this section, During an Emergency, we will build on that knowledge and discuss the notification of an emergency, the activation of your emergency plan, record keeping and communication during an emergency.

NOTIFICATION OF AN EMERGENCY

The first moment that someone at your water system becomes aware of an emergency, potential emergency or developing emergency is the point of *emergency notification*. Emergency notification is the critical moment when all of your emergency preparedness must be put to use. The report may come from a water system employee, a customer, or even a passer-by.

Whether the report is delivered in person or by telephone, the water system representative taking the call must collect a certain amount of vital information. Information received from the initial report may prove to be very valuable during the emergency response. For this reason, it is very important that the individual taking the report be very detailed in the information that they record.

An *Emergency Notification Form*, (See Appendix) is a valuable tool for use when recording information from a reporting party.

ACTIVATING THE EMERGENCY RESPONSE PLAN

Once the report of an emergency situation has been received, it is important to evaluate the severity of the damage, both as it was reported and as it actually is. Your ERP should outline procedures for determining when the plan should be activated. Together with your designated Emergency Manager, as identified by your ERP, you should evaluate the report as it was received. The following questions should be asked:

- ❑ Is the incident reported possible?
- ❑ Can the report be confirmed?
- ❑ Did the caller sound credible?

- ❑ How serious is the incident reported?
- ❑ Can it be handled in-house?
- ❑ Will outside assistance be necessary?

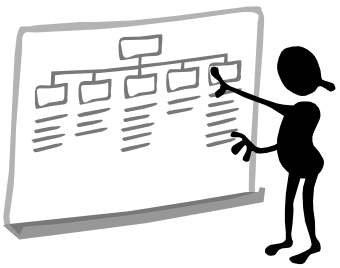
You may only have moments to consider the report. The nature of the report may require quick action and an immediate assessment of the situation? An Initial Damage Assessment form or IDA (See sample in the Appendix.) may be useful in the initial assessment of the report and any damage sustained. The IDA form helps the individual conducting the assessment collect a specific set of information. This helps alleviate the concern of human error in a situation that may be very stressful for the individual.

Once the IDA is completed, another set of questions may be considered before activating the emergency response plan:

- ❑ Has the report been confirmed?
- ❑ Is the damage contained?
- ❑ How serious is the current situation?
- ❑ Is a response justified?

When you have determined that a response is necessary. The first step in launching your emergency response plan is to begin calling on emergency contacts.

MANAGEMENT DURING AN EMERGENCY



You and/or your staff will easily manage most of the incidents that you encounter at your water system. The majority of the incidents that occur at your water system will be situations that, when handled properly, will never become full-scale emergencies. The more prepared you are, the more likely you will be able to manage an incident without outside assistance. At the onset of an emergency situation, it may be necessary for the designated emergency manager (as outlined in your ERP) to determine if additional assistance will be needed. The following considerations are important when deciding whether to bring in outside resources:

- ❑ Does the system have employee(s) that are trained and competent to handle this situation?
- ❑ Does the system have the resources available to handle the situation?

- ❑ Would managing the situation without the aid of outside resources put the employees, customers or the general public at risk?
- ❑ Would managing the situation without the aid of outside resources cause damage to the system that could otherwise be prevented?

It may seem like a difficult decision, but if there is even a small concern that the situation could get out of hand, outside assistance should be called. There are several emergency managers in your area. In most states, each county has a designated emergency management official. Along with the local fire and police departments, these individuals are trained to manage emergency incidents. These individuals coordinate with a designated state agency that is responsible for emergency management statewide. When preparing your Emergency Response Plan and the emergency contact list as part of that document, you should include the contact information for your local emergency managers. Working with these individuals in advance can provide a number of resources for small water systems. They are experienced in many areas of emergency management and may be able to provide additional training, assistance in developing emergency plans and they will be indispensable when planning a "mock" emergency training for your facility.

In the event of an emergency where you require the assistance of local fire, police, emergency medical services and emergency managers you will need to understand the basics of managing an emergency. Most local emergency managers will use the *Incident Command System*, also known as ICS. The Incident Command System is a broadly recognized emergency management system. As operators, board members and employees of small water systems, public health and safety has become one of your primary responsibilities. When an emergency occurs, you need to be ready to handle it as safely and efficiently as possible. If the incident is likely to threaten the safety of your employees, customers or the general public, you will find yourself working with local emergency officials. For this reason, understanding the basic concepts and language of the Incident Command System will be beneficial to you as well as the emergency officials involved.

INCIDENT COMMAND SYSTEM

The Incident Command System originated as a method of management to be used by the fire service specifically for managing large wildland fires. As the ICS method of emergency management became more widely recognized by the fire service, the value of the system to any type of emergency became more apparent. Today, it is not only widely used by the fire service, but also

by police, emergency medical and emergency management personnel. In March 2004 under the Homeland Security Presidential Directive number 5 (HSPD-5) the Department of Homeland Security was directed to develop a National Incident Management System (NIMS). As a result of this directive, ICS has become the central component of the National Incident Management System. Any individual involved in emergency management needs to have at least a basic understanding of the ICS.

ICS has proven to be a valuable emergency management system because it is both flexible and standardized. Some characteristics of the ICS that make it beneficial include:

- It is multi-operational, meaning it can include:
  - Single jurisdiction, single agency events.
  - Single jurisdiction, multi-agency events.
  - Multi-jurisdiction, multi-agency events.
- It is adaptable to any emergency, incident or even large events or celebrations.
- Expands in a logical manner.
- It is widely recognized and used by emergency personnel.
- Easily adapts to new technology.
- It is both cost effective and efficient.

The ICS is based on the following components:

- **Modular Organization** - is the backbone of the ICS structure, an organizational pattern that is structured in a modular manner, therefore more easily expanded or reduced when necessary. Modular Organization is discussed more in-depth below.
- **Manageable Span of Control** - is a key factor in the decision to expand the management structure of an incident. According to ICS protocols, anyone fulfilling a management function during an incident should have the responsibility for no more than 7 individuals. The manageable span of control during an incident is between 3-7 individuals, with 5 being ideal.
- **Integrated Communications & Common Terminology** - ICS establishes common methods of communication and terminology in order to be able to communicate effectively and efficiently during an emergency incident regardless of the number or relationship of the agencies involved.

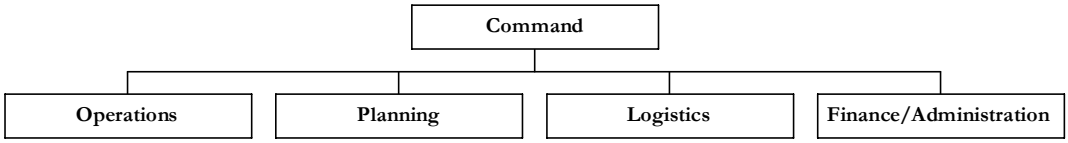
- **Comprehensive Resource Management** - an emergency incident can quickly involve several agencies and their resources. ICS uses standardized methods and forms to track resources and utilize them in a cost efficient and effective manner.
- **Management By Objectives** - throughout the ICS structure, incident managers are expected to work together to establish individual objectives for their section that are consistent with the overall efforts of the structure as a whole.
- **Consolidated Action Plan** - multiple agencies may have differing strategies when responding to an emergency, ICS calls for emergency managers from each agency to work together and establish a single Incident Action Plan to manage an incident.
- **Accountability** - the ICS is a structure that clearly defines the roles and responsibilities of each individual that becomes involved in the response to an incident. Because responders are more aware of what their responsibilities are, each of these emergency responders is also held to a higher standard of accountability.

Modular Organization

The modular organization is truly one of the more beneficial aspects of using the Incident Command System. It creates a management structure that can be tailored specifically to the level of response that is needed for a particular incident. At the basic level, the ICS has five primary sections:

1. Command
2. Operations
3. Planning
4. Logistics
5. Finance/Administration

The Command Section will be the section that heads up the entire incident. The remaining four sections are immediate subsections of the Command Section. The figure below illustrates the structure of the ICS's basic organization.



*Department of Homeland Security, National Incident Management System (Washington, DC: United States, 2004) pg 13.

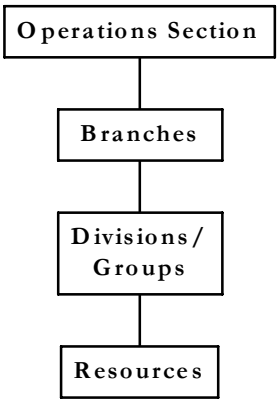
In a very small incident, each section may have only one person covering the responsibilities. An incident may expand for a number of reasons. Usually, at the onset of an incident, very little information is available. As more information about the situation becomes available, emergency managers may realize that the magnitude of the situation is greater than they initially thought. In that situation they may be required to expand their level of response to the situation.

Each of these sections has a specific set of responsibilities. As the scale of the incident grows larger, incident managers may need to expand the ICS to accommodate the additional personnel needed to meet the growing number of responsibilities that each section has.

Command Section. The *Command Section* is responsible for the oversight of the entire emergency response effort. Depending on the size of the response, a single individual, known as the ***Incident Commander***, will take charge of the Command Section. If the incident requires a large-scale response, where many different agencies have varying levels of legal responsibility for the effort, emergency managers may choose to shift to a *Unified Command*. A ***Unified Command*** replaces the position of Incident Commander with a group of representatives from the different jurisdictions involved in the emergency response.

Individuals in the Command Section are known as the Command Staff. If the incident expands and a need for additional personnel is established, the following positions may be added to assist the Command Staff:

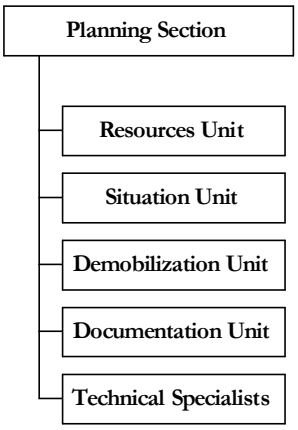
- ❑ Public Information Officer (PIO)
- ❑ Safety Officer (SO)
- ❑ Liaison Officer (LNO)



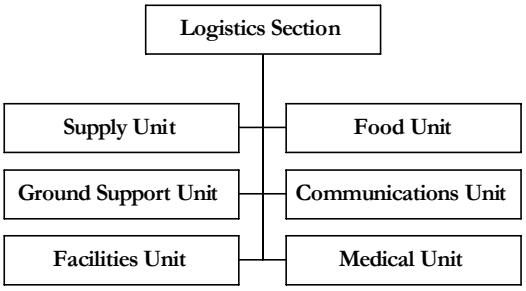
Operations Section. The *Operations Section* is responsible for all activities focused on the reduction of the immediate hazard, saving lives and property, establishing control of the situation and restoring normal operations.[i] The *Operations Section Chief* takes the lead in this section. Expansion of this section is based on the needs of the incident and the resources that are available. The *Operations Section* may be expanded to include *Branches, Division or Groups and Resources* as illustrated in the figure above and to the left.

Resources refer to the combination of personnel and equipment required to enable incident management operations.

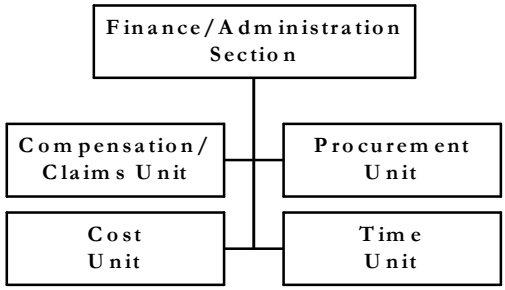
Planning Section. The *Planning Section* is responsible for the organization and flow of information at an incident. Information, details and data are collected, evaluated and documented by the Planning Section, then distributed to other sections to provide updates of the situation at regular intervals. The *Planning Section* is also responsible for developing an ***Incident Action Plan***, which outlines the detailed objectives of the incident and the strategies for accomplishing these objectives. Work on the IAP is done in conjunction with the Incident Commander or the Unified Command. The *Planning Section* may also be expanded to include individual units that focus on responsibilities such as identifying available resources, maintaining and updating information on the status of the situation, keeping records for documentation and planning for demobilizing personnel and equipment once the incident is complete. The expansion of the Planning Section is illustrated below and to the right.



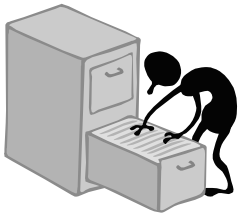
Logistics Section. The *Logistics Section* is responsible for acquiring any resources that are needed for the incident in a timely and cost-efficient manner. They may have to consider everything from food for emergency responders to equipment, fuel and communications technology to sustain the response effort. If the incident is large enough, the *Logistics Section* may expand to included specialized units focusing on food, supplies, ground support, communications, facilities and medical requirements. The expansion of the *Logistics Section* is illustrated below.



Finance/Administration Section. The *Finance/Administration Section* is established under circumstances where tracking expenses generated by the incident have become too involved to be completed by the Planning Section. Typically this section will only be created during a large incident with several emergency response agencies involved. The expansion of the *Finance/Administration Section* is illustrated below.



RECORD KEEPING DURING AN EMERGENCY



When you get word of an emergency your adrenaline gets going, your heart rate goes up and your memory may skip a step or two. Because you are in a situation that you are not comfortable with, details can be easily overlooked in the emergency response process. The excitement of the emergency and the dizzying effects of the aftermath can make it easy to misinterpret or forget what actually happened.

From the moment that you receive notification of a water system emergency, you must begin the record keeping process. Records collected during an emergency incident tell the story of what happened. They must be accurate and detailed in order to provide a complete picture of the situation as it occurred. There are several reasons for keeping records during an emergency incident.

- In a situation where property damage, equipment damage, bodily injury or death occurred as a result of the emergency incident, records kept during the incident provide a representation of the actions that the water system staff and other emergency responders took to prevent this kind of harm from happening.

- ❑ Records provide information that may be needed by insurance agencies and state primacy agencies to provide the system with financial assistance for damage repair and complete other reporting requirements.
- ❑ Records are very valuable in follow-up training exercises and after-action reviews to determine what went well and what needs to be improved.

It is very valuable to have standardized forms available to collect information for purposes of accurate record keeping. Forms that are prepared ahead of time and familiar to system personnel will act as a guide during the moments when activity around them may be somewhat distracting and chaotic. The following is a list of records that should be completed and maintained throughout the incident:

- ❑ Notification Form (See the Appendix for a sample)
- ❑ Initial Damage Assessment Form (IDA) (See the Appendix for a sample)
- ❑ Resource Utilization Summary (See the Appendix for a sample)
- ❑ Assignment Log (See the Appendix for a sample)
- ❑ Action/Event Log (See the Appendix for a sample)
- ❑ Log of Personnel On-Scene (See the Appendix for a sample)
- ❑ Photographs of damage to facility, property or equipment
- ❑ Any other notes, sketches, written correspondence, or data that is generated during the incident

COMMUNICATION DURING AN EMERGENCY

Communication can become a significant responsibility during an emergency. Your ERP should outline the emergency contacts that will be necessary to respond and contain the situation. Once you have addressed the response to the emergency, you must consider who needs to be notified that the emergency has occurred. If you do not already have a method for communicating with your customers regularly, you should consider developing a communications plan. A communications plan should provide information about communicating with agencies, customers and the media, not only during an emergency but any time.

YOUR COMMUNICATIONS PLAN SHOULD FOCUS ON THE FOLLOWING GROUPS:

1. *Agencies*
2. *Customers*
3. *Media*

Notifying Agencies of Emergency Conditions

When you have an emergency and you call for outside help, some agencies will be notified as part of the emergency response. Dispatchers may automatically send police, fire and ambulance services to your system facility. Often, when dispatchers receive notification of an emergency incident that may be a threat to the public, they will contact local emergency managers to respond as well.

Most states will have a state agency responsible for management during emergencies. Each county, or in some cases small groups of counties, will have a designated emergency management coordinator. If this individual or representatives of the their office are not automatically dispatched, you should consider contacting them right away. Regardless of the size or scope of your incident, these individuals have specialized training in emergency management that will be very valuable to you. It is recommended that you contact these individuals in advance and become familiar with them and the resources they have available.

You should also have the contact information for the department of environmental management in the emergency contacts section of your ERP. Anytime you have an emergency you should contact your local county health department and the corresponding state agency. These officials can help you stay in compliance with state and local regulations during your emergency response and recovery efforts.

Warning Customers and Critical Users of Emergency Conditions

Communicating with your customers on a regular basis builds trust. During an emergency, that trust is essential. Your customers must have faith in the water system, as well as the board and employees to handle the situation and protect their health. Some emergencies may require that you follow the guidelines of the Public Notification Rule and you may want to request assistance from your department of health or environmental management representative for assistance in assuring that you remain compliant.

If the water that you supply to your customers and your critical users is threatened during an emergency, you may need to spread the word quickly. You should be prepared with a list of priority contacts, focusing on customers that are critical users such as hospitals, fire stations and nursing homes.

In order to get the word out quickly, you may not be able to rely on conventional methods of communication. The following methods of reaching customers may be helpful during an emergency:

- ❑ Going door to door
- ❑ Posting notices in area stores, shops and community centers
- ❑ Relaying the message via the media

When preparing your communications plan, make an effort to identify individuals that may be difficult to reach during an emergency. For example, if you have individuals who may not be able to afford the cost of cable television or newspaper delivery, messages from the media will not be an effective method of providing them information. Consider all your customers and determine a combination of outreach methods that will adequately reach everyone.

Working with the Media

Media coverage can rapidly spread a message to your customers. The puzzling part for most water system employees is figuring out how to work with the media and keep the message positive. Here are a few tips that will help you build a strong working relationship with the media in your area:

- ❑ **Know them before you need them.** Create a list of media outlets in your area and the reporters who will be assigned to you. Take the time to get to know them; do not wait until you need them to cover a public notice. Work with them on smaller educational projects and invite them to cover your board meetings.
- ❑ **Stay in touch.** No news is not necessarily good news and most reporters know that. If you regularly provide reporters with information, it will prevent them from having to dig up information and draw their own conclusions.

Press Releases

- ❑ **Provide quality information.** Make sure what you are telling the media is accurate. Do not give them old news. Keep them up-to-date and check your facts to make sure you are correct.
- ❑ **Proof read, proof read, proof read.** When you are sending out press releases or media information kits, always remember to proofread. Grammar and spelling are important!

- **Format.** Use 8.5 x 11 paper with a minimum of one inch margins. It is important to be concise. People working in the newsroom may see up to a hundred press releases a day. You want them to get the important information fast! (For a sample Press Release see the Appendix.)
- **Contact information.** Make sure that the contact information you put on a press release is accurate, reporters must be able to follow-up with you to get more information.
- **Style.** Do not try to write the story for them. Avoid the stylistic or flowery language. Just include the information they need to know and you need the customers/viewers to know.

During an emergency, give some special consideration to working with the media at the scene. Their job is to report the story. It is likely that you will need a specific message conveyed to your customers. As soon as possible after an incident has begun, you will need to take to following steps in working with the media:

- **Appoint a Public Information Officer.** It will be beneficial to have one person at the scene of the incident that the media can address their questions to. This prevents the media from interrupting emergency managers that are filling other important roles. It is helpful to encourage individual responders to direct any questions or request for comments to the PIO in order to protect the integrity of the information provided.
- **Establish an Area Where Media Can Wait.** The purpose is not to seclude the media; the purpose is to have them all together in a location where you can reach all of them at once with your message. This also prevents them from wandering around the scene of the incident where safety concerns may be an issue.
- **Update the Media Regularly.** Especially if the emergency incident lasts for several hours. Reporters know that things are changing regularly. If you do not consistently update them, they may decide to sneak around and try to get information from other sources.

Working with the media will take practice, but as long as you keep these rules in mind you will be successful. *Remember, just because the cameras are not rolling or a reporter is not taking notes, it does not mean that you will not be quoted in the story!*

CHAPTER 5

Recovery After An Emergency

Recovery after an emergency can be costly and time consuming if you are not prepared. Essentially, most of the effort that you put into preparing for emergencies will benefit you during the recovery period. The recovery period technically begins as soon as the emergency is contained. When you are notified of an emergency, your immediate effort will focus on containing the problem and preventing further damage. Once the situation is contained, then you will have to begin the recovery period and focus on repairing the damage and restoring service to your customers.

Much of the work that is done in preparing for an emergency is also preparing you for the recovery. For a water system, the recovery can still be considered a state of emergency unless water service has been completely restored.

EMERGENCY RECOVERY PLANS

The purpose of developing an Emergency Recovery Plan is to create a timeline and strategy for returning your water system to optimum levels of operation as soon as possible after an incident. The emergency recovery plan should be developed after you have contacted the necessary agencies and customers with emergency information. The primary purpose for the emergency recovery plan is to answer the question: *How do we get back on track?* The emergency recovery plan should:

- ❑ Identify the major objectives that must be met for recovery
- ❑ Identify strategies necessary to meet those objectives
- ❑ Establish a timeline for accomplishing the recovery objectives

The emergency recovery plan should address issues that will affect the recovery of operations at your utility, some examples include:

- ❑ Alternative water sources
- ❑ Alternative power sources
- ❑ Resources that are needed
- ❑ Mutual Aid Agreements available to provide resources

- ❑ Supply for needed resources if Mutual Aid Agreements are not available
- ❑ Financial Assistance

The emergency recovery plan is tailored to the specific incident that you are recovering from. Emergency managers, board members and system managers/operators should be involved in preparing the recovery plan.

Financial Assistance

Financing the recovery effort is often the major obstacle in the way of restoring the water system to operation after an emergency. Your emergency recovery plan should include information about your plans for securing financing. You need to identify who to contact, and how to get on the list for emergency financing. There are three main sources of emergency financing: natural disaster sources, internal/local financing sources and external sources.

Natural Disaster Sources. If your emergency is the result of damage from a natural disaster, you should immediately contact your local emergency management official or the statewide emergency management agency in your state. These local and state officials can help you determine what type of documents and forms you will need to complete in order to provide them with an assessment of the situation and the assistance that you need.

Internal/Local Financing Sources. There are a few sources of financing available for you to consider locally or from your own reserves.

- ❑ **Banks.** Any water utility can contact a local bank and apply for a loan. Water utilities operated by a water association with a need for an emergency loan from a local bank may qualify for a small business administration loan to be underwritten in situations where a state disaster area has been designated. Representatives from your state emergency management agency or state health department will be able to help determine if you qualify for such a loan.
- ❑ **Reserve Funds.** If you have established a reserve account to replace aging and ailing water system equipment, you may be able to borrow against those funds. In some cases you may be able to withdraw those funds with the permission of the lien holder. You may need to check to see if your reserve funds are restricted by loan covenants.

External Financing. There are several sources of financing available from sources outside your utility. Below is a brief description of some of the loan funds that may be available to you. Depending on how urgent your need is,

some of these loan funds may be too time consuming. *The information provided here is subject to change according to the loan fund operators. It is very important that you confirm the requirements prior to applying for any of these loans.*

Drinking Water State Revolving Loan Fund. The Safe Drinking Water Act authorizes a fund to help public water systems become or stay in compliance with the Act. Each state is required to designate an agency to be responsible for managing the loan fund. An emergency loan program has been created to extend loans to water utilities that have suffered an unforeseen event causing the system to be in immediate need of repair. For more information contact your state health department or environmental regulatory agency.

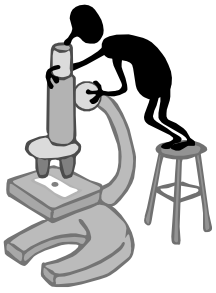
Community Development Block Grant. Community Development Block Grants are offered to incorporated municipalities and county governments for water system improvements. These grants are not true emergency funds and may take up to four months to secure. Certain criteria must be met. The agency responsible for distributing CDBG grants will vary from state to state. For more information, contact your state agency responsible for economic development and/or community affairs.

Community Loan Fund. Community Resource Group, Inc. is a financing source for small rural water and wastewater systems. Loans are made to systems for projects that improve compliance with state and federal regulations; reduce cost of operations or improve efficiency and/or public health. Community Resource Group technical assistance providers will work with systems to complete the loan application. In emergency situations, loan approval can be received in 3 weeks or less from the time that the completed application is received by Community Resource Group. For more information contact Community Resource Group at (479) 443-2700 ext 114.

USDA Rural Development's Rural Utilities Services Loans. RUS provides loans and grants for water, wastewater and solid waste projects to communities and small incorporated towns and cities with populations of 10,000 or less who are unable to obtain financing from other sources at reasonable rates and terms. RUS provides both Guaranteed and Direct loans, as well as some grants. Terms and conditions of the loans and grants vary depending on type. These are not true emergency funds, however, loans can usually be prepared within six months. For more information contact the USDA office in your state.

CHAPTER 6

After - Action Review



The likelihood that your system will experience the same type of incident more than once is minimal. However, the benefits of conducting an after-action review are numerous. An after-action review will help you evaluate the effectiveness of your response to the incident in a positive way that will allow you to prepare for future incidents. The after-action review accomplishes this by completing the following two steps:

1. Compare your plan for emergency response to your actual action/response.
2. Revise any plans or policies that need to be changed as a result of what you learned.

An after-action review, sometimes called an Incident Debriefing by emergency managers, should be held as soon after the incident as possible. Everyone who was involved with the incident should be invited and encouraged to attend. Some emergency managers require the review take place before responders leave. A few guidelines should be followed when conducting an after-action review:

- ❑ Any criticism should be constructive and given for the purpose of improving future incident responses.
- ❑ Individuals should never place blame at anyone involved in the response effort. The incident review is not the appropriate time for such discussion. If a legitimate concern exists, responders should be encouraged to address those with the emergency manager privately so it can be properly addressed.
- ❑ Keep a record of the review. At a minimum, someone should be assigned to take minutes. Some emergency managers prefer to have the review video or audio-recorded.
- ❑ Make sure everyone who wants to add something constructive has a chance.

AFTER ACTION REVIEW =

COMPARE

▼

REVISE

- ❑ Develop rules of conduct and go over the rules before you start the review.
- ❑ For larger incidents, you may want to have an uninvolved outside party act as a moderator for the review.

The questions below can be used as a basic guide to start your after-action review. If you feel a component of your incident is not adequately reviewed, more questions can be added.

Overall Incident

- ❑ Why/How did it happen?
- ❑ Could it have been prevented?
- ❑ Are there policy changes that could prevent incidents like this in the future?

Response

- ❑ What went right?
- ❑ What went wrong?
- ❑ Could the response have been more efficient? How?

Emergency Response Plan

- ❑ Was the plan used?
- ❑ If not, why?
- ❑ Was the plan followed as written?
- ❑ If not, explain.
- ❑ Was the information contained in the plan adequate?
- ❑ Should the plan be revised?

Workplace Safety Policies

- ❑ Was the incident related to workplace safety?
- ❑ Were policies being followed?
- ❑ Was the incident a result of deficiencies in the policy?

Communication Plan

- ❑ Do you have a communication plan?
- ❑ Was the communication plan followed?
- ❑ If not, would a communication plan have been beneficial?
- ❑ What kind of communication worked well during this incident?
- ❑ Would it have worked in any incident?
- ❑ What kind of communication did not work well in this incident?
- ❑ How can communication be improved?
- ❑ If no communication plan existed, should one be developed?

Recovery Plan

- ❑ Was the incident recovery plan successful?
- ❑ Was the incident recovery plan timely?

Incident managers and water system managers should carefully consider thoughts, concerns and comments collected during the after-action review. Remember, all of your water system policies are living documents that should be reviewed and revised often. If you hear feedback during the after-action review that could be addressed in your Emergency Response Plan, Workplace Safety Policies or your Communication Plan, these issues should be addressed as soon as possible. Once you have discussed these questions with the responders and employees present at the incident, the system board should review the findings of the incident review and determine if changes should be made in the policies.

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Section

B

Learning Exercises

Learning Exercise 1 - Responding to a Threat

Purpose: This exercise is designed to introduce the importance of being prepared to react to any threat and to gauge your response on how you would react if a similar incident would threaten your utility.

Instructions: This is an individual exercise. Using the scenario below, answer the questions on the next page. <Note> At the conclusion of this exercise, the training facilitator will conduct a group review of each question.

Case Study: Anonymous Report of Intentional Sabotage

Your Role: You are a municipal public works superintendent who also works part time as a certified water operator for a small rural water system. Because your job with the municipality requires your full time devotion, you normally execute your operator duties with the rural system in the morning before you go to work for the municipality and in the evenings when you get off work. (This is allowable by your municipal board and the contract that you executed with the rural water system). Normally, you stop by the rural system's wells each morning to perform your inspection and record readings from the flow meters and run-time meters

System Information: The rural system has a part time secretary who works out of her house answering telephone calls, collecting payments, and executing other necessary administrative duties. The system also has a semi-retired plumber who reads the meters and performs maintenance on the system calling on you as necessary for guidance regarding major leaks, flushing and other emergencies. The system is supplied by groundwater from two wells and requires no treatment other than gaseous chlorination at both wells.

Other Background Information: Because of concerns regarding the financial capacity of this system, you advised the Board a couple of months ago that they needed to start enforcing a cut-off policy and that they should also increase their water rates. The Board took your advice and adopted a strict cut-off policy and also raised the water rates. Many customers have been complaining about the rate increase. Two days ago, meters were cut-off to delinquent customers including several who had not paid water bills in several months. This was the first time that the new cut-off policy was enforced and caught many of the delinquent customers by surprise.

Scenario: You just received a frantic call from the secretary who received a threatening call from someone she could not identify. The caller told her that he had just dumped poisonous chemicals into the system's water tank and that 'people were going to start dropping like flies.' You are in the middle of supervising a smoke test of your municipal system's sewer lines and can't break away from this right now as you have had to answer numerous calls and concerns from your own customers regarding smoke pouring out their roof vents.

How will you respond to this report?

1. Would you:
   a. think that this is a hoax that is being perpetrated by one of the customers who was recently cut-off?

   b. think that this is a real threat that demands immediate attention?

2. Which of the following actions would you take and in what order would you do these things? (Number the order that you would complete these tasks that you would do):

   ____ Contact the Sheriff's Office (which has law enforcement jurisdiction for the rural water system service area) and request an investigation.

   ____ Contact the statewide Department of Environmental Health.

   ____ Direct the system's part-time maintenance worker to shut off the water wells and to turn off the valve to the storage tank.

   ____ Personally inspect that the water is shut off from the water wells and the storage tank.

   ____ Direct the water system secretary to issue a "Do Not Drink" notice (coordinating publicity efforts with state health department, local emergency management officials, and the news media).

   ____ Collect water samples from the storage tank and the distribution system and order a full bank of biological, IOC, VOC, and SOC analytical tests.

   ____ Contact the statewide Emergency Management Agency.

   ____ Other: _____

   _____

3. If this incident proved to be just a hoax, would you act any differently the next time a threat was made against this system or the municipal system you serve?
   a. Yes

   b. No

LEARNING EXERCISE 2 - IDENTIFYING POTENTIAL THREATS

Purpose: This exercise is designed to give you experience in completing the first step in preparing for an emergency - by identifying potential threats to your water utility. This small group exercise should reinforce the principles learned in Chapter 3 and using the Hazard Identification Form on the next page.

Instructions: This exercise is typically best executed in a small group environment (ideally with other group members being from the same water utility) but if necessary this exercise may be conducted individually. Rely upon your own experience and knowledge of your water utility and the locale which you serve but realize there will be varying answers due to the fact that participants may represent more than one water utility. Complete the following instructions to execute this exercise:

1. Starting with each possible threat that is listed under Natural Disasters and then under Accidents, and Intentional Acts, check off the probability of occurrence of this threat at your water utility. Use your historical knowledge of your locale and develop the threshold number of occurrences to rate the probability of future occurrences. For example, if during your lifetime an earthquake has never effected your water utility but you recall that a major earthquake effected most areas of the state in the early 19th century, you would probably check the occurrence probability as "Low." On the other hand, you may have had a tornado to cause damage to your area some time in your lifetime. This would be a good example of a "Moderate" probability. Lightning is very common throughout the state and thus should be probably checked as a "High" probability. <NOTE> Check only 1 probability column for each potential threat.

2. After you have checked the probability for each column, focus on the potential damage that may be caused by each threat. Again, the development of benchmarks for this process is user-defined by you. You may want to consider the threat to people as "Light" damage if minor injuries could occur and "Moderate" if the injuries could be critical and require hospitalization. "High" should probably be reserved for those threats that present the threat of fatalities to people. When considering your infrastructure, you may consider a water outage lasting less than 24 hours as "Light", one lasting more than 24 hours as "Moderate", and one lasting more than a few days as being "Severe."

3. Check whether the threat is Internal (caused by the water utility, its personnel, or causing damage to the water utility or personnel)or External (not caused by your utility but occurring near your area that may have a indirect impact on your utility). <Note> Some threats may considered both internal and external. For example, the H2O Quality tampering may be caused by a disgruntled employee (Internal) or a terrorist (External).

4. Rank each of the threats. You may want to assign a numeric rating for each Probability and Potential Damage category. For example, you may want to assign 1 to Low Probability and to Light Damage. 2 could be assigned to Moderate and 3 could be assigned to High Probability and Severe Damage.

HAZARD IDENTIFICATION FORM

HAZARD	Probability			Potential Damage			Category		RANK
	High	Moderate	Low	Severe	Moderate	Light	Internal	External	
NATURAL DISASTERS									
Flood									
Hurricane									
High Winds									
Lightening									
Forest Fires									
Extreme Heat									
Snow or Ice									
Tornado									
Other									
ACCIDENTS									
Equipment Failure									
Chemical Spill									
Vehicle Accident									
Train Derailment									
Power Outage									
Fire									
Gas Leak									
Other									
INTENTIONAL ACTS									
H_2O Quality Tampering									
Arson									
Theft									
Vandalism									
Riots									
Strikes									
Terrorist Acts									
Other									

LEARNING EXERCISE 3 - MANAGING AN EMERGENCY

Purpose: The purpose of this exercise is to give you the opportunity to apply what you have learned about the Incident Command System of managing an emergency.

Instructions: This exercise should be completed while working in small groups of 4 or 5, preferably with other members of your own utility. Read the scenario below and work together as a group to answer the questions about the situation. Take notes on your groups discussion and have one member prepared to act as a spokes person for your group and report the final decisions of your group. <Note> At the conclusion of this exercise, the training facilitator will conduct a review of each question.

Scenario: Rain Event Causes Significant System Damage

System Information:

Piney Creek Water Authority serves 5000 rural customers. They have eight employees including a system manager, a certified operator, a system secretary and five field technicians. When significant field work must be done, the system operator often joins a field crew to help speed the work process. The system has never had a significant emergency and has no existing mutual aid agreements. They have an Emergency Response Plan, but it has not been revised in years and the employees have not been trained to use it. The system manager has recently attended an emergency preparedness seminar and learned about the Incident Command System.

Scenario:

4 P.M A rain storm has been hovering in your region for almost 24 hours. In that time, nearly 13 inches of rain has fallen. The system manager has just been notified that a creek crossing has washed out, tearing out over 1/8 of a mile of distribution pipe and is currently on the phone trying to locate a backhoe which will be available to rent immediately.

5 P.M. Field Crew # 1 has stayed behind to work on the washed out creek crossing. The system manager has sent Field Crew #2 home to rest so they can relieve Crew #1 first thing in the morning.

By 7 P.M. Three more creek crossings have washed out. Field Crew #2 has been called back to work. Almost 3700 customers are currently without water. Both Crews will be working through the night.

7 A.M. Crew #1 is just finishing up the casings for the first and smallest creek crossing to wash out.

9 A.M. Piping and tie-ins have been completed for the first creek crossing. Numerous customer complaints have been received.

10 A.M. The system manager returns to the office to make a statement to the media.

10:30 A.M. The system manager and a state health department official are preparing to issue Boil Water Notices.

11-overnight Both Crews continue to work on the washed out distribution lines overnight with a trackhoe, backhoe and wench truck that the system manager rented this morning.

9 A.M. After working overnight, two of the remaining crossings have been completed. Crew #1 has been sent home. Crew #2 is working on the last section of casing and preparing to run pipe and connect the tie-ins.

9:45 A.M. As the system manager is on the phone desperately trying to negotiate with the rentalsupply company for a cost reduction on the equipment they have rented, the system secretary rushes into the office in a panic. The manager has turned his radio down and did not hear Crew #2 call for him. The trench that they have been working in has collapsed, one man is not accounted for.

Question #1: What is the responsibility of the system manager at this point? In the space below, make a list of the actions the system manager should be taking.

9:55 A.M. It is still raining. The system manager has arrived on scene to find the local Volunteer Fire Chief and 12 volunteer fire fighters waiting for him. The Chief advises the system manager that their volunteer fire department is not equipped to conduct a confined space rescue. He has already contacted the nearest Municipal Fire Department with a tactical rescue team. They are enroute, but their station is 20 minutes away. The tactical rescue team captain has advised the Chief that it is possible that the system employee could still be alive and trapped in a pocket of air. In order the save time the Captain has asked the Volunteer Fire Chief for the following:

- ❑ The tactical team will need a list of equipment including 1" plywood, 4x4's, 4x6's, nails, hammers, shovels, and pumps for removing water from the trench. This equipment will be absolutely necessary for shoring, but they do not keep it on hand, as they are a smaller municipality.
- ❑ To prevent further collapse, a 300 ft radius from the trench should be blocked off from foot traffic until the rescuers arrive.
- ❑ Traffic on nearby roadways (within 500 - 1000 ft) should be blocked off and/or redirected to prevent vibrations and further collapse.
- ❑ Someone will need to verify that all utilities have been turned off in the area surrounding the trench.
- ❑ Someone who was nearby the trench when it collapsed will need to be available to tell the tactical rescue team what happened and the proximity of the employee at the time of the collapse.
- ❑ The collapsed trench will have to be dug out by hand to prevent any additional harm to the missing individual. The team may need additional manpower to assist with this function.

Question #2: Rather than one individual being in charge, the volunteer fire chief and the system manager have agreed to work together in the Incident Command, this is called_____.

Question #3: Time is limited and work must begin to prepare for the tactical rescue team, the system manager and the volunteer fire chief need to get to work immediately. What should they do next? In the space below, make a list of things they should be doing to manage the emergency. Your list should consider such things as assigning tasks, procuring resources and managing personnel.

LEARNING EXERCISE 4 - MEDIA AND AN EMERGENCY

Purpose: The purpose of this exercise is to build on what you have learned about managing an emergency to include working with the media.

Instructions: This exercise should be completed while working in small groups of 4 or 5, preferably with other members of your own utility. This exercise will build on the previous exercise using the same scenario. For this section you will need to read the scenario information below and work together was a group to answer the questions. After you have answered the questions, you should work together using the information in the scenario found in Learning Exercise 3 and Learning Exercise 4 to develop a press release to be issued to the media at the scene. One member of your group should be prepared to stand before the class and read the press release as if your classmates are members of the media. At the end of the exercise, the training facilitator will conduct a review of this exercise.

Scenario: Rain Event Causes Significant System Damage

11:15 A.M. A long-time system employee has been pronounced dead at the scene of the collapsed trench. There are dozens of people on the scene including emergency responders, board members, the state health department representative, sheriff's deputies and the coroner. Reporters have heard the emergency crew's radio traffic on their scanners and are beginning to arrive at the scene. They are walking around asking questions about what happened. The system manager and the volunteer fire chief are worried that the local news will report the incident inaccurately. A county deputy has already been sent to notify family, but they want to wait one more hour before they release the victim's name.

1. Working together as a Unified Command, the fire chief and the system manager need to manage the media to prevent information from being distributed before they are ready. What are the first two things they should do to manage the media?

1. _____
2. _____

2. Which position does the Public Information Officer report to according to the Incident Command System? _____ In this scenario, who fills that position?_____

3. The media will expect to be updated regularly while they are waiting at the scene of an incident. The best way to inform them of the situation and insure that they have all the necessary facts is to write a press release to be distributed to media personnel on the scene. Refer back to the section on working with the media in Chapter 4 for information on how to write a press release. On a blank piece of paper, develop a press release for this scenario. (Hint: You may refer to the sample press release in the Appendix.)

LEARNING EXERCISE 5 - CONDUCTING AN AFTER-ACTION REVIEW

Purpose: The purpose of this exercise is to illustrate how an After-Action Review can be useful for identifying weaknesses in emergency response and corrective actions to make a utility better prepared for an emergency.

Instructions: This exercise should be completed while working in small groups of 4 or 5, preferably with other members of your own utility. Review the scenario that is discussed in Learning Exercise 3 and Learning Exercise 4. Using what you know from the scenario and your group responses to the previous Learning Exercises, complete the discussion questions below. One member of your group will be asked to report your findings to the class.

1. Do you feel that this utility was adequately prepared for the initial emergency, in which four creek crossings washed out? Provide a couple of examples to support your opinion.

2. What, if anything, do you feel went wrong during the response to the washed out creek crossings?

3. Do you believe that the crossing washouts could have been prevented? How?

4. Do you believe that the fatality accident could have been prevented? How?

5. Make a list of actions that this utility should take in order to be better prepared for the next emergency.

Section

C

APPENDIX

HAZARD IDENTIFICATION FORM

HAZARD	Probability			Potential Damage			Category		RANK
	High	Moderate	Low	Severe	Moderate	Light	Internal	External	
NATURAL DISASTERS									
Flood									
Hurricane									
High Winds									
Lightening									
Forest Fires									
Extreme Heat									
Snow or Ice									
Tornado									
Other									
ACCIDENTS									
Equipment Failure									
Chemical Spill									
Vehicle Accident									
Train Derailment									
Power Outage									
Fire									
Gas Leak									
Other									
INTENTIONAL ACTS									
H_2O Quality Tampering									
Arson									
Theft									
Vandalism									
Riots									
Strikes									
Terrorist Acts									
Other									

2 - Sample Mutual Aid Agreement

Mutual Aid Agreement for the
Town of Soggy Bottom and Sunshine Water Corporation

Be it Jointly Resolved, duly motioned seconded and unanimously approved that the Town of Soggy Bottom Board of Directors and the Sunshine Water Corporation Board of Directors entered into the following agreement for the purpose of providing mutual aid resources during the event of an emergency or crisis.

The Town of Soggy Bottom agrees to provide its available resources including but not limited to its employees, backhoe, and other equipment to Sunshine Water Corporation during an emergency or crisis situation should the Town of Soggy Bottom be requested to do so. In the event that the Town of Soggy Bottom provides such services to Sunshine Water Corporation, the Town of Soggy Bottom agrees to submit an invoice for services conditional to the service rates listed below within 15 days after assisting Sunshine Water Corporation. Sunshine Water Corporation agrees to remit full payment of invoice within 30 days of the date of the invoice.

Sunshine Water Corporation agrees to provide its available resources including but not limited to its employees, backhoe, and other equipment to the Town of Soggy Bottom during an emergency or crisis situation should Sunshine Water Corporation be requested to do so. In the event that Sunshine Water Corporation provides such services to the Town of Soggy Bottom, Sunshine Water Corporation agrees to submit an invoice for services conditional to the service rates listed below within 15 days after assisting the Town of Soggy Bottom. The Town of Soggy Bottom agrees to remit full payment of invoice within 30 days of the date of the invoice.

The Town of Soggy Bottom and Sunshine Water Corporation agree to charge the following fee structure when responding to a Mutual Aid Request:

Mileage:	$0.35 / mile (All Mileage)
1 Employee:	$10.00 / hour (Total Time including Travel Time)
2 Employees:	$20.00 / hour (Total Time including Travel Time)
Backhoe and 1 Employee:	$65.00 / hour (Total Time including Travel Time)
Certified Operator Services:	$35.00 / hour (Total Time including Travel Time)

One or more of the following persons should be contacted when making a Mutual Aid Request:

Name	**Telephone**	**Alternate Phone**
The Town of Soggy Bottom Office	_____	_____
Matt Damon, President	_____	_____
John Doe, Public Works Director	_____	_____
Sunshine Water Corporation Office	_____	_____
Molly Ringwald, President	_____	_____
Regis Philbin, Certified Operator	_____	_____

EMERGENCY NOTIFICATION FORM

Date:	Report Time:	Report Taken By:

Location of Emergency Situation:

❑ Internal *(onsite or involving system components)* ❑ External *(offsite, but directly affecting system)*	**Directions:**
Address: **City/State/Zip:**	

Nature of Emergency Reported:

Natural Disaster	Accident	Intentional Act
❑ Flood	❑ Workplace Injury	❑ Water Quality Tampering
❑ Hurricane	❑ Equipment Failure	❑ Arson
❑ High Winds	❑ Chemical Spill	❑ Theft
❑ Drought	❑ Vehicle Accident	❑ Vandalism
❑ Lightening	❑ Train Derailment	❑ Riots
❑ Forest Fire	❑ Power Outage	❑ Strikes
❑ Snow or Ice	❑ Gas Leak	❑ Terrorist Acts
❑ Tornado	❑ Fire	❑ Other:
❑ Other:	❑ Other:	

Reporting Party

Name:		Address:
Home Phone:	Cell Phone:	
Best time to contact:		City/State/Zip:

Reporting Party Comments:	Call-taker Comments:

INITIAL DAMAGE ASSESSMENT FORM (IDA)

Date:	Time Occurred/Reported:	Location of Incident:
Time IDA Completed:	IDA Completed by:	

TYPE OF INCIDENT:

Natural Disaster	Accident	Intentional Act
❑ Flood ❑ Hurricane ❑ High Winds ❑ Drought ❑ Lightening ❑ Forest Fire ❑ Snow or Ice ❑ Tornado ❑ Other:	❑ Workplace Injury ❑ Equipment Failure ❑ Chemical Spill ❑ Vehicle Accident ❑ Train Derailment ❑ Power Outage ❑ Gas Leak ❑ Fire ❑ Other:	❑ Water Quality Tampering ❑ Arson ❑ Theft ❑ Vandalism ❑ Riots ❑ Strikes ❑ Terrorist Acts ❑ Other:

DESCRIPTION OF DAMAGE:

Personnel:

Facilities:

Treatment Plant:

Distribution/Transmission System:

StorageTanks/Reservoirs:

Wells:

Others:

5 - Resource Utilization Form

Resource Utilization Summary			
Incident Name:		**Date:**	**Completed By:**
Resource &/or Mutual Aid	**ETA**	**On Scene ✓**	**Location/Assignment**

ASSIGNMENT LOG

Name	Agency	Assignment	Time Assigned	Time Completed

ACTION/EVENT LOG
DATE:_____

Time	Description of Action/Event

8 - Log of Personnel On-Scene

Log of Personnel On-Scene		Date: _____thru_____	
Name	**Agency**	**Check-In Time**	**Check-out Time**

9 - Sample Press Release

For Immediate Release:
May 25, 2005

Date you want the information released to the public.

CONTACT:
Johnny Doe, Manager
The Town of Soggy Bottom
1000 Soggy Bottom Road
Soggy City, AL 12345
Office: (251) 555-1234
Cell: (251) 555-2345
Email: jdoe@soggybottomwa.com

Adequate contact information is very important.

Financing Secured for Local Water System Improvements

The title should be interest catching, but not flashy or sound like a cliche.

Two local water associations closed loans today that will finance future water system improvements. Loans were secured from Community Resource Group, Inc. (CRG), a private non-profit corporation, based in Fayetteville, Arkansas, that provides technical and financial assistance to small communities and rural water systems in the mid-south.

The Town of Soggy Bottom and neighboring Sunshine Water Corporation are working together to extend and improve water service to their customers. The two systems will be interconnecting their water systems in order to increase their service area.

The total project cost to interconnect the systems will be $154,000. Community Resource Group's Community Loan Fund has approved a loan in the amount of $80,000 for the Town of Soggy Bottom and a loan in the amount of $74,000 to the Sunshine Water Corporation to enable completion of the project.

###

Marks that indicate this to be the end of the press release.

Keep the content concise with important details. Do not add flowery language.