

Disaster Preparedness & Response

*Prepared or Not... **That is the Vital Question?***



*Presented by the
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Overview



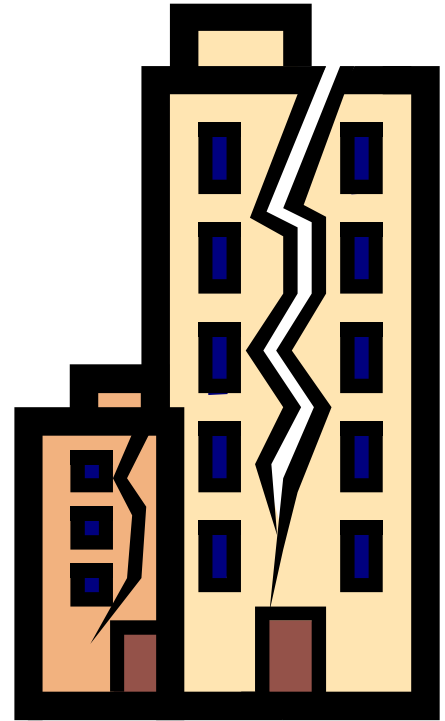
Objective: Participants will be introduced to the basic objectives of the workshop and to test their pre-knowledge of disaster planning & response.

Introductory Quiz ~

Critical Questions To Ask Before Disaster Strikes

1.	Do you know what to do when an emergency or disaster strikes?	Yes___ No___
2.	Does your organization have a Disaster/Emergency Plan?	Yes___ No___
3.	Has your organization lost records or information as the result of fire and smoke, storm damage, earthquake, flood, explosion, vandalism, sabotage, utilities or computer failure?	Yes___ No___
4.	Does your organization identify its vital records? Are vital records (paper and electronic) backed up or duplicated in another agency building/location, stored off-site in a facility designed to protect the records or housed in a vault?	Yes___ No___
5.	Does your organization have a Recovery Plan to provide organized backup and recovery activities required to continue operations after the danger of a disaster has passed?	Yes___ No___
6.	Does your organization have necessary communication strategies? If normal communication networks are down, what alternative methods are available?	Yes___ No___
7.	What security measures will be jeopardized? What protection will various systems require?	Yes___ No___
8.	Are there backup procedures for computer records that all staff follows? Are backups stored away from the work area?	Yes___ No___
9.	What if your building is not habitable? Do you know what will happen if you cannot or are not allowed inside the office for days or weeks or FOREVER?	Yes___ No___
10.	Do you know will be empowered to initiate emergency procedures and set up a recovery team?	Yes___ No___
11.	Are there specific procedures for handling emergencies; are there periodic drills and emergency training for all staff?	Yes___ No___
12.	Is there documentation for all software on file and are operating procedures for all critical functions written and stored off-site?	Yes___ No___
13.	Does your organization have disaster kits? In obvious locations- for all staff to be able to function in the building for 72 hours?	Yes___ No___
14.	Can you function if critical records and information, business functions or staff were unavailable - a day, a week, or a month?	Yes___ No___

What Are Disasters & Emergencies?



Objective: Participants will be able to identify potential threats and hazards.

POTENTIAL TYPES OF EXPOSURE

Natural Threats & Hazards

Fire
Flood
Hurricane
Earthquake
Lightning Strike
Tornado, Wind Storm
Snow and Ice Storms
Wind
Epidemic
Tidal Wave
Typhoon
Mould & Mildew
Insects & Rodents

Technical & Mechanical Hazards

Power Outage/Failure
Gas Leak
Software Failure
Sewage Failure/Backup
Building Structural Failure
Computer Malfunction
Toxic Spill
Radiation Contamination
Biological Contamination
Loss of Physical Access To Resources
Electrical Shortage/Faulty Wiring
Train Derailment
Airplane Crash

Human Activities & Threats

Computer Error
Vandalism
Theft
Bomb Threat
Civil Disorder
Strikes
Kidnapping
Terrorism
Sabotage
War
Vehicle Crash
Loss of Key Personnel
Lost or Misfiled Documents/Records
Toxic Waste

What Are Vital Records?



Objective: Participants will be able to identify vital records and plan for protection of not only vital records but permanent and archival records.

GENERAL CATEGORIES OF VITAL RECORDS

1. What does the organization own?	Property and Equipment Inventories
2. What moneys are owed?	Accounts Receivable, contracts, leases
3. What moneys are owed?	Accounts Payable, Loans, other fiscal obligations
4. What benefits are due employees?	Payroll, insurance & retirement
5. How can the organization rebuild?	Engineering Drawings, Building Plans
6. How are products made?	Product Processes, Formulae Design
7. How does the organization operate?	Orders of succession, delegations of authority, staffing assignments
8. Is critical data on the computer?	System documentation and backups, software documentation Manuals
9. Where are cash and securities located?	Bank records
10. How does the organization manage?	Directors Meetings/Reports/official statements
11. What steps do employees follow to complete their job task?	Policy & Procedure Manuals, directives
12. How and where are vital and important records/information located?	Vital Records Plan & Inventory Lists
13. How does the organization know where and what records it has?	File Plans & Retention Schedules
14. How does organization operate during an emergency or disaster?	Disaster & Emergency Plans

Quiz

What are Vital & Essential Records?

1. How can we define what constitutes a vital & essential record?

2. What is the common percentage of an organization's records that are vital?
 - a. 10%
 - b. 3%- 7%
 - c. 1%
 - d. 80%

3. True or False: Vital records exist only on paper.

4. Which of the following is not a method of identifying vital records?
 - a. Consultation with emergency response officials.
 - b. Reviewing current file plans for offices with crucial functions.
 - c. Selecting all records series that appear in retention schedules.
 - d. Reviewing documentation created in contingency planning sessions.
 - e. Reviewing statutory and regulatory responsibilities as they relate to current functions.

5. Examples of "emergency operating" vital records include:
 - a. Payroll records.
 - b. Land titles.
 - c. Retirement plans.
 - d. Leases.
 - e. Building plans.

6. Vital records are always permanent (archival) records.
 - a. True.
 - b. False.

8. What are three methods to protect vital records?

9. What are vital records?
 - a. Any record needed to reconstruct the company's activities
 - b. Any record which cannot be reconstructed or which would be costly to reconstruct
 - c. Any record which documents the legal position of the company including ownership, contracts, and other corporate documentation
 - d. All of the above

What Are Risk Assessment & Contingency Processes?



Objective: Participants will be able to understand the importance of mission-oriented business impact analysis (BIA), to conduct risk assessment and to identify critical planning steps prior to developing a disaster plan.

Contingency Process Planning Steps?

We can describe the planning process as a type of "investment" or "prime-time insurance". It takes planning to be prepared to prevent the worst from happening and practice in to recover and survive. The basic planning steps are outlined next.

Step 1: Obtain Top Management Support and Commitment

The first step is to secure senior management support and commitment. They must be responsible for coordinating the development, implementation and maintenance of the disaster preparedness and recovery plan. For the plan to be effective and ongoing, adequate time and resources must be committed to the process. Appropriate resources will include financial allocations, specific staff time involvement and general staff education. Who will develop and implement the Plan? Will we need or want to use outside consultant help and software programs? How much time and capital should we devote to the program development, implementation and maintenance? These and other resource and scope questions can only be answered at the senior management level.

Step 2: Establish a Planning Committee

The second step involves people. The planning effort will need leaders. A disaster planning committee should include representatives from all functional areas of the organization. Key committee members should include operations/ administration management, computer processing and records management professional staff. The committee will define the scope of the plan and develop a policy statement.

Step 3: Perform the Risk Assessment

The third step requires evaluating your organization's "risks". In order to appropriately allocate funds for developing programs to prepare, protect and recover from a disaster, there needs to be an adequate and thorough risk assessment. The risk assessment is an analysis that includes:

- The identification of and likelihood of various types of disasters (natural, human and technical) happening
- The consequences and impact of each disaster scenario on the entire company
- The estimated costs of lost/damaged information/records and lost time and customer good-will
- The costs to replace/restore records, equipment, facilities, hire or replace staff versus the costs to develop and maintain the disaster plan.
- The risk of the "worst case" situation striking the organization

Step 4: Establish Processing and Operation Priorities

The critical operating and processing needs of each department should be carefully evaluated. Part of the preparation must be concerned with "business as usual" - only with less staff - perhaps untrained, located in another building or city, with fewer supplies, etc. Other operational concerns involve:

- What equipment is needed to complete jobs - computers, copiers, calculators, microfilm reader/printers?
- What communications devices are required - phone, long-distance lines, fax machine (What if the main phone system is effected by the disaster?)
- What detailed steps and procedures must be followed? Where are these steps written down - in a manual, kept in the middle of the disaster site or, more often than not - in someone's head?
- What people will be needed to complete daily business? Will they all be available to work - under what conditions?
- What vital records (those records that should they be destroyed, lost or stolen would place the organization in jeopardy of survival)?

The above questions must be answered and prioritized as part of the disaster preparedness process. While many organizations have some sort of disaster/ contingency plan for their computer generated records, few have adequate provisions for the same type of identification and protection of their hardcopy or paper records (especially inactive records); and even fewer address the maintenance of regular business functions during the "unplanned event".

Step 5: Perform Data Collection

This very important step involves completing the following tasks:

- Determining and locating external resources and making contracts/agreements with them
- Determining backup/duplication systems
- Preparing staffing information
- Gathering various inventories (records, equipment/supplies, forms, etc.)
- Locating policies and procedure manuals, etc.
- Preparing master lists (staff, telephone, and vendor, insurance)
- Reviewing all security systems
- Evaluating the facilities for potential problems
- Locating "cold" and "hot" sites

Step 6: Prepare the Written Plan

An outline of the plan's contents should be prepared to guide the development of the detailed procedures. Top management should review and approve the proposed plan. Any changes to the scope and goals of the plan would be finalized prior to writing the formal plan. A standard format should be developed to facilitate the writing of the detailed procedures. If the organization decides to use a software package for this plan, the software should be easy to understand, use and update/revise. In addition to being able to update/revise the plan, there should be procedures that allow for a regular review of the plan by key personnel or an outside consultant.

Just as all areas of the company should be involved in the planning process, internal teams need to be created to implement the disaster procedures. Responsibilities should be assigned to appropriate teams for each functional area of the organizations. Some of the teams' functions include:

- Administrative activities,
- Facilities services
- Logistics
- User support
- Computer and hardcopy backup systems
- Restoration
- Department operations

Step 7: Test the Plan

It is essential that the plan be tested and evaluated on a regular basis (at least annually). The tests assure that the plan's steps and assumptions are accurate and inclusive. Most importantly can the staff follow them? Other objectives include:

- Identifying areas in the plan that need modification
- Reviewing the reliability and compatibility of backup systems, facilities and procedures
- Assuring that backup and duplication procedures are adequate and appropriate
- Providing training for team members
- Demonstrating the ability of the organization to recover
- Providing motivation for maintaining and updating the plan

After testing procedures have been developed, an initial test of the plan should be performed. This test should be done in sections, by each operating unit and after normal business hours to minimize disruptions to the overall operation of the company.

QUIZ: Risk Analysis

1. _____ vital information and records
2. _____ business sites and facilities
3. _____ and make available vital materials, supplies & equipment.
4. _____ that all employees are safe.
5. _____ the risk of disasters caused by human error, deliberate destruction, and building/equipment failures.
6. _____ to recover from a major natural catastrophe.
7. _____ that the organization can continue to operate after a disaster.
8. _____ lost or damaged records/information after a disaster.

Disaster/Emergency/Contingency Exercise

Name _____

Department _____

Date _____

CHECK APPROPRIATE BOXES OR FILL IN REQUESTED INFORMATION (if more space is needed, continue on the back or on another sheet of paper):

1. How long can your department function without existing equipment, supplies, trained staff, critical records and information, and operating procedures?

a few hours 24 hours 48 hours a week

2. What items from the above list must you have to complete essential tasks?

equipment (list) Staff (which) Records (list)

3. What are the high priority tasks, including manual and electronic functions and processes?

How often are these tasks performed?

daily weekly monthly other

4. How would you replace critical resources in a disaster situation?
 - equipment _____
 - forms _____
 - supplies _____
 - records _____
 - staff _____
 - other _____
5. Do any of the above require long lead times to obtain?
6. What reference and procedures manuals are used in your department?
How would you replace them?
7. Do you have written work procedures for all critical job functions?
8. Do you have job descriptions for all your staff? Are your staff cross-trained on critical tasks? Could outside people perform critical functions with your procedures?
9. What are your vital records and information (essential to the operation of the department functions)?
10. Are your vital records protected? Are microcomputer records backed up? Are hard copy records duplicated? If so, are they stored off-site or at another facility?

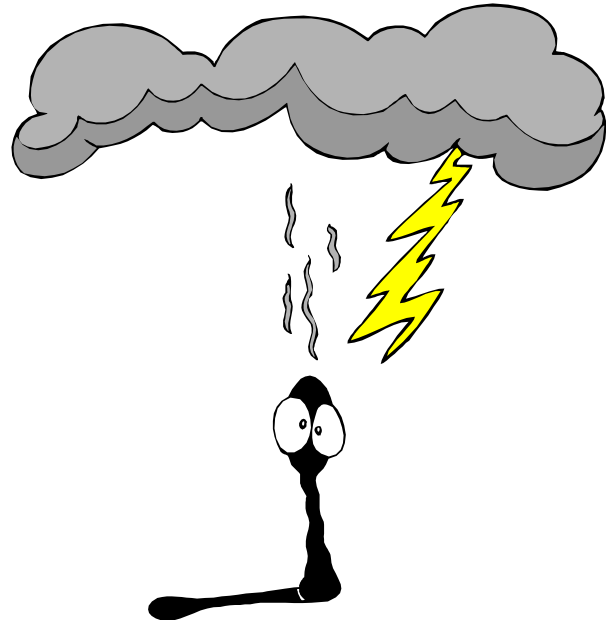
11. How often are these records backed-up or duplicated? Check off all that apply and explain.

- hourly daily weekly monthly other

12. How would other departments in the organization be affected by an interruption in your department?

13. What outside services/vendors/consultants do you rely on for normal operations?

What are Recovery & Salvage Processes?



Objective : Participants will be understand the basic Processes of recovery and salvage operations and be able to assist where appropriate.

Recovery & Salvage Recommendations

1. Pack Out - Wet Records

- Utilize safety precautions, such as: rubber gloves/boots.
- Check for toxic air, chemicals.
- If there is a question whether material is wet enough to dry, consider it wet.
- Rinse away contamination gently with clear water before handling and packaging for drying.
- **Microfilm/Microfiche**
 - Place immediately in plastic containers filled with clean cold water.
 - Secure original cartons with rubber bands without removing the rolls of film from them.
 - To preserve film for up to two weeks, add one percent solution of formalin to water.
- **Floppy Diskette**
 - Keep them wet. Store upright without crowding in cool water ready for data recovery.
- **Books and Documents**
 - Place in one cubic foot records center box. (Since wet paper in heavy, large boxes are impractical to move).
 - Place spine side down in the box.
 - Avoid stacking material on top of one another - water damaged materials will sag to become permanently deformed.
 - Wash off contaminants.
 - If needed, use wax paper, paper towels or newsprint between documents or books.

2. Restoration - Wet Records

- **Microfilm/Microfiche**
 - Place 75-degree tap water in a film processor. Remove screeds to keep from scraping off sensitive emulsions.
 - One roll at a time, drain storage water from the microfilm. Don't let film dry out.
 - With constant supply of fresh water, run film through complete cycle.

- **Floppy diskette**
 - Cut the jacket with non-magnetic scissors and carefully remove diskette. Gently agitate the exposed discs in multiple baths of cool distilled water to remove all visible dirt. Dry with lint-free towels.
 - Place damaged disc in new jacket and insert in disc drive. Copy to new floppy disc and discard the damaged disc.
 - Clean the drive heads frequently to minimize head damage.
- **Books and Documents**
 - For large volumes of material, freeze drying chambers can be used. Material is loaded and the pressure within the chamber is reduced.
 - Application of heat allows the water to vaporize within the drying chamber and exhausted through the pumps and /or captured by the cold traps.
 - After drying, dirt can be brushed away. Soot can be removed chemically.
 - If the volume is not too great and there is ample space, material can be spread out on floors and fans can be used. Pages of books or files should be turned often to completely dry each. Paper towels or newsprint can be used to assist in drying process.
 - Before returning to file locations, all records should be checked for dryness and any signs of mold.

Recovery Priority by Type of Records Media

Salvage Techniques

Media	Recovery Priority	Initial		Follow-up		Comments
		Action	Purpose	Action	Purpose	
<u>Magnetic Media</u> Mag tapes Disc packs Floppy diskettes and disks Flexible disks Audio and video tape cassettes CD-Rom Computer Output Laser Disk	Immediately	Contact vendor	To obtain professional advice	May include freeze or vacuum drying, special cleaning techniques or professional assistance in retrieving data.	To remove all moisture and other contaminants from the media; to access data in case of damaged media.	Such advice should be sought well in advance of a disaster. Contingency plans for data and word processing groups may be advisable. Heat and water damage to media may result in subsequent damage to hardware or to ir-retrievability of data. Proper back-up and salvage procedures are essential. It is worth noting that such records are among the easiest to duplicate and store off-site.
<u>Photographic Materials</u> Color films and photographs	Immediately	Once wet, keep wet	To avoid further damage and image loss			Color dyes are inherently unstable and should be handled immediately to prevent loss of color and other damage.

Recovery Priority By Type Of Records Media (Cont'd) page 2

Media	Recovery Priority	Salvage Techniques				Comments
		Initial		Follow-up		
		Action	Purpose	Action	Purpose	
Color films and photographs (cont.)	Within 48 hrs.	Obtain professional advice and/or assistance with cleaning, drying and restoring.		Freeze if professional help must be delayed longer than 48 hrs.	To stabilize color dyes.	
Silver or emulsion films and photographs	Immediately Within 48 hrs.	Immerse totally in water. Formaldehyde to a 1% solution, may be added to cool, clean water. One teaspoon of salt may be added to hard water.	To avoid further damage. To avoid softening or filling of gelatin or emulsion layer. If materials are allowed to dry out, they tend to stick to adjacent surfaces, with image loss and other damage.	Seek professional advice and help with cleaning and drying. Freeze only if necessary.	To restore film to original state. Freezing may lead to image damage, but less damage is likely to be caused by freezing than by delayed treatment.	

Recovery Priority By Type Of Records Media (Cont'd) page 3

Media	Recovery Priority	Salvage Techniques				Comments
		Initial		Follow-up		
		Action	Purpose	Action	Purpose	
Diazo or vesicular (duplicate) films	Last	If time and staff are available, rinse off and lay out flat to dry, otherwise, leave until last.	To prevent water sooting and curting of films and fiche.	Wash with liquid detergent and rinse and lay out on absorbent paper to dry.	To remove water spots and other contaminants and to restore film.	Diazo and vesicular films are nearly impervious to water damage and should clean up easily. Diazo films sometimes fade with age. Fading or other damage discovered after the disaster can be related to poor quality control rather than to the disaster.
Paper Bond, rag, duplicating other	Within 48 hrs. (depending on temperature and humidity levels at disaster site and on extent of damage). In fires, paper is least vulnerable media.	Air dry in well-ventilated area: if volume of wet records is large, consider freeze or vacuum drying.	To prevent further deterioration of paper materials and eruption of mold or fungus.	May include freeze or vacuum drying. If mold erupts, treat with fungicides. May place paper towels or newsprint paper between wet pages.	To remove moisture from materials and to reduce humidity levels in damaged materials: to eradicate mold.	In high-humidity levels, deterioration of wet paper records can begin within 2-3 hours.
Coated or clay papers	Immediately	Freeze	To hold damaged materials until freeze or vacuum drying can be arranged.	Freeze or vacuum drying.	To remove all moisture from paper, without damaging or removing coated surface.	Freeze or vacuum drying is the only successful recovery technique for this medium.

What Is An Emergency/Disaster Plan?



Objective: Participants will be able to understand the Basic components of a disaster plan and to develop a disaster plan for their agencies.

Sample Outline of a Disaster/Contingency Plan

1. Introduction
 - A. Policy Statement
 - B. Purpose
 - C. Overview
 1. Definitions
 2. Scope
 3. Objectives
 4. Structure of plan
 - D. Planning Process Description (use of flow-chart)
 - E. Organization documents
 1. Organization description
 2. Security/backup systems
 3. Floor-plans of electrical, water, exits
 4. Insurance documents
 5. Resource lists/contracts
 - a. Equipment vendors
 - b. Water related recovery
 - c. Supply/forms/blank checks
 - d. Storage companies
 6. Organization inventory
 7. Vital records listing
 8. Locations of operating procedures
 9. Distribution of the plan
 10. Maintenance of the Plan
 - F. Testing/Training
 1. Program description
 2. Types of tests
 3. Testing frequency/schedules
2. Risk Assessment
 - A. Description
 - B. Detailed risk assessments
 - C. Results

3. Event Descriptions/procedures
 - A. Level One/Category one
 - B. Level Two
 - C. Level Three
 - D. Level Four
 - E. Level Five
4. Team responsibilities/organization
 - A. General
 - B. Management
 - C. Logistics
 - D. Users
 - E. Records and Information Systems (computers)
5. Restoration procedures
 - A. General
 - B. Specific procedures for handling each type of probable disaster
 - C. Equipment and supply lists with phone numbers
 - D. Auditing procedures

Section VIII

Glossary of Terms



Glossary of Terms

ABSORBENT PAPER. A disaster recovery supply such as blotting paper or un-printed newsprint used to speed the drying process for water-damaged records. If acidic papers such as newsprint are used, they must be removed immediately upon drying.

BACKUP. The saving of critical computer-generated data and other files to other physical areas, media, or computers. Backups should be conducted on a regular basis to ensure critical data can be accessed and restored in the event a disaster destroys the mainframe computer or network server.

BLOCKING. The irreparable sticking of glossy/coated paper upon uncontrolled drying.

BUSINESS IMPACT ANALYSIS. A process or methodology which determines critical functions of an organization's business. BIA's also determine declines in service levels, the areas of a company most likely to be impacted.

CALLING OR PHONE TREE. A list of names, addresses, phone numbers, and alternate contact numbers in a hierarchical chain or tree structure. At the time of a disaster, the chain or tree is used to notify plan participants of the event and their next steps.

COLD SITE. An empty, environmentally conditioned computer room available for use at the time of the disaster. The subscriber is responsible for bringing in the computers and other hardware and communications equipment. Cold sites can be stationary or mobile.

COMMAND CENTER. A designated location where command and control can be situated to manage a company's emergency management and recovery effort.

CONTINGENCY PLANNING. Instituting policies and procedures to mitigate the effects of potential emergencies or disasters on an agency's operations and records. Contingency planning is part of the continuity of operations planning required under Federal Preparedness Circulars and other guidance issued by the Federal Emergency Management Agency (FEMA) and Executive Order 12656.

CYCLE. The periodic removal of obsolete copies of vital records and their replacement with copies of current vital records. This may occur daily, weekly, quarterly, annually or at other designated intervals.

DEGAUSSING. The process of removing the magnetism from a magnetically recorded tape or disk, thus erasing its contents.

DESICCANT DRYING. Technique for *in situ* drying of a building and its contents by repeated cycles of pumping out moist air and introducing dry air. In limited damp, not wet, situations this technique may be quite effective.

DISASTER. An unexpected occurrence inflicting widespread destruction and distress and having long-term adverse effects on agency operations. Each agency defines what a long-term adverse effect is in relation to its most critical program activities.

DISASTER BOX. An initial supply of disaster recovery materials.

DISASTER MITIGATION. Preparedness planning and activities that are directed toward elimination or reducing the probability of occurrence of a disaster producing event or reducing

the effects of those events that are unavoidable. (Mitigation often is considered to be primarily the responsibility of governments; for example, when flood control levees and dams are built).

DISASTER PLAN. Written policies and procedures intended to prevent or minimize damage to archival materials or organizational records resulting from disasters, and to respond and effectively recover from the disaster. It identifies an organization's vulnerabilities to disaster; points out how some of them can be mitigated and others prepared for; details ways and means of responding to disaster when they do occur; and provides a guide to the organization's ultimate recovery. Plans are a blueprint to be followed for protection of the organization's assets and integrity in face of danger.

DISASTER PREPAREDNESS. Those activities that prepare a framework for an organized immediate response to disaster situations that cannot be mitigated. The major objective of preparedness plans is to save lives, to minimize disaster damage and effects, and to facilitate recovery. Thorough training and exercises enhance preparedness capabilities and provide a review process for identifying changes and necessary updates in plans.

DISASTER TEAM. A working team of individuals who are trained to efficiently 1) respond appropriately during disaster to ensure human safety and the well-being of collections, 2) conduct a successful recovery operation, and 3) re-establish service.

DISASTER RECOVERY. Those activities initiated and organized can return to normal or to an improved level. During recovery, activities that would enhance mitigation and preparedness may be discovered and taken into account in improved planning and reconstruction.

DISASTER RESPONSE. Those activities that provide for temporary care and relief for victims of disasters and ensure that avoidable casualties and property damage do not occur. (Beyond a certain degree of seriousness, depending upon the type of disaster and the nature of the threatened organization, successful response to a disaster depends upon the application of resources other than or in addition to those of the affected organization, i.e., outside assistance or support).

DISPERSAL. The transfer of duplicate records to locations other than those where the originals are housed.

DUPLICATION: A process of copying original documents on paper, microfilm, magnetic, or other media.

ELECTRONIC VAULTING. A methodology for preserving critical electronic information offsite, but available at the recovery center. Examples include mirroring (writing the same information to two physically separate server disk drives), journaling (continuously transmitting critical data to a remote computer through electronic file transfer), and tape vaulting.

EMERGENCY. A situation or an occurrence of a serious nature, developing suddenly and unexpectedly, and demanding immediate action. This is generally of short duration, for example, an interruption of normal agency operations for a week or less. It may involve electrical failure or minor flooding caused by broken pipes.

EMERGENCY DESTRUCTION. Destroying records under abnormal circumstances, as provided by law or regulations.

EMERGENCY OPERATING RECORDS. That type of vital records essential to the continued functioning or reconstitution of an organization during and after an emergency. Included are emergency plans and directive(s), orders of succession, delegations of authority, staffing assignments, selected program records needed to continue the most critical agency operations, as well as related policy or procedural records that assist agency staff in conducting operations under emergency conditions and for resuming normal operations after an emergency.

FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA). The Federal agency responsible for providing leadership and support to reduce the loss of life and property and protect the nation's institutions from all types of hazards through a risk-based, all hazards emergency management program of mitigation, preparedness, response, and recovery.

FREEZING. A stabilization technique for water damaged materials. Provides time for establishing work areas and allows postponement of treatment. Wet paper will increase in size as much as 8% upon freezing; some physical distortion should, therefore, be expected.

FUJITA-PEARSON SCALE (F-SCALE). A measure of the relative tornado strength developed by Dr. Ted Fujita from the University of Chicago and Allen Pearson, head of the Forecast Center in Kansas City. An F tornado spins at up to 72 miles an hour and causes light damage; an F5 spins at up to 318 mph and causes incredible damage.

FUMIGATION. The process of exposing documents, usually in a vacuum or other airtight chamber, to gas or vapor to destroy insects or mold. Fumigation is also referred to as disinfection or disinfestation.

HACKER. Person or persons who illegally gain access to someone else's computer system.

HALON. An inert gas capable of terminating a localized fire without affecting sensitive records or computer equipment. The ozone-depleting gas is being phased out, but existing supplies can still be used.

HOT SITE. A commercial recovery facility that provides subscriptions for stand-by computer processing or related services. In the event of a disaster, the subscriber uses the hot site's computers (for a fee) to resume processing of critical computer applications. Modern hot sites can also provide office space, computer technology, mail processing, voice recovery services, and other specialized recovery services.

IMPORTANT RECORDS. Records necessary to the continued life of an organization. While these records can be reproduced, this can be done only at considerable cost in time and money.

INTERLEAVING. The placement of absorbent material between leaves to hasten drying. Interleaving sheets should be clean and dry, un-printed, and, ideally, acid-free. In books the total number of interleaving sheets should constitute no more than one-third the thickness of the volume in order to limit physical distortion. When air-drying is the only option, despite the risk of severe distortion, coated (glossy) papers should be interleaved between each sheet to prevent blocking (sticking).

LEGAL AND FINANCIAL RIGHTS RECORDS. That type of vital records essential to protect the legal and financial rights of the Government and of the individuals directly affected by its activities. Examples include accounts receivable records, social security records, payroll records, retirement records, and insurance records. These records were formerly defined as "rights-and-interests" records.

LOSS: Irrecoverable business resources that are damaged, destroyed or removed as a result of a disaster.

MILLENIUM BUG. The so-called Year 2000 (Y2K) crisis. Many businesses and government computers are not set up to handle the "year 2000" date change. These computers will interpret the year "2,000" to be "1900", which could result in business interruptions or more serious emergencies and disasters.

MYLAR FILM. Trade name of the Du Pont Co. for a high-strength polyester film that is chemically and dimensionally stable. Used in disaster recovery operations to support and separate wet papers.

NATIONAL SECURITY EMERGENCY. Any occurrence, including natural disaster, military attack, technological emergency, or other emergency, that seriously degrades or threatens the national security of the United States, as defined in Executive Order 12656.

NONESSENTIAL RECORD. A record which has no predictable value to the organization after its initial use.

OFF-SITE STORAGE. A facility other than an agency's normal place of business where vital records are stored for protection. This is to ensure that the vital records are not subject to damage or destruction from an emergency or disaster affecting an agency's normal place of business.

RECORD: Recorded information, regardless of medium or characteristics, made or received by an organization that is useful in the operation of the organization.

RECORD PRIORITIES. Disaster recovery priorities based on 1) value of the information and/or intrinsic value of the record itself, 2) vulnerability of the media and substrates, and 3) frequency of use.

RECORD VALUES. The determination of usefulness of records for operating, administrative, legal, fiscal, and historical purposes.

RISK: Any potential for loss within an organization is classified as a risk. This includes natural risks (i.e., tornadoes, earthquakes), and man-made risks (i.e., war, chemical leaks, sabotage).

RISK ANALYSIS. This type of analysis identifies and examines the risk to an organization, reviews the organization's critical functions necessary for its continued operation, and evaluates the effectiveness of controls that can help reduce the risk exposure.

USEFUL RECORDS. Records useful to the continuous operation of an organization; these records are replaceable although their loss could cause temporary inconvenience.

VACUUM DRYING (also called vacuum thermal drying) The treatment of water-soaked materials by placing them in a chamber, creating a vacuum, and introducing warm, dry air. If materials have previously been frozen, most of the water in the ice becomes liquid before changing to the gaseous state, thus making feathering of inks and other water-related problems such as staining and blocking likely.

VACUUM FREEZE DRYING. The treatment of water soaked materials by freezing to prevent further damage, and subsequent drying under high vacuum with controlled applications of heat. The water, in the form of ice, undergoes sublimation directly from a solid to a gas. Vacuum freeze-drying is also effective in killing insects and mold.

VITAL RECORDS. Essential agency records that are needed to meet operational responsibilities under national security emergencies or other emergency or disaster conditions (emergency operating records) or to protect the legal and financial rights of the Government and those affected by Government activities (legal and financial rights records).

VITAL RECORDS MANAGEMENT. The application of records management principles and techniques to ensure the preservation of vital records in cases of emergency or after a disaster.

VITAL RECORDS PROGRAM. The policies, plans, and procedures developed and implemented and the resources needed to identify, use, and protect the essential records needed to meet operational responsibilities under national security emergencies or other emergency or disaster conditions or to protect the Government's rights or those of its citizens. This is a program element of an agency's emergency management function.

Section IX

Appendix



~Appendix B~

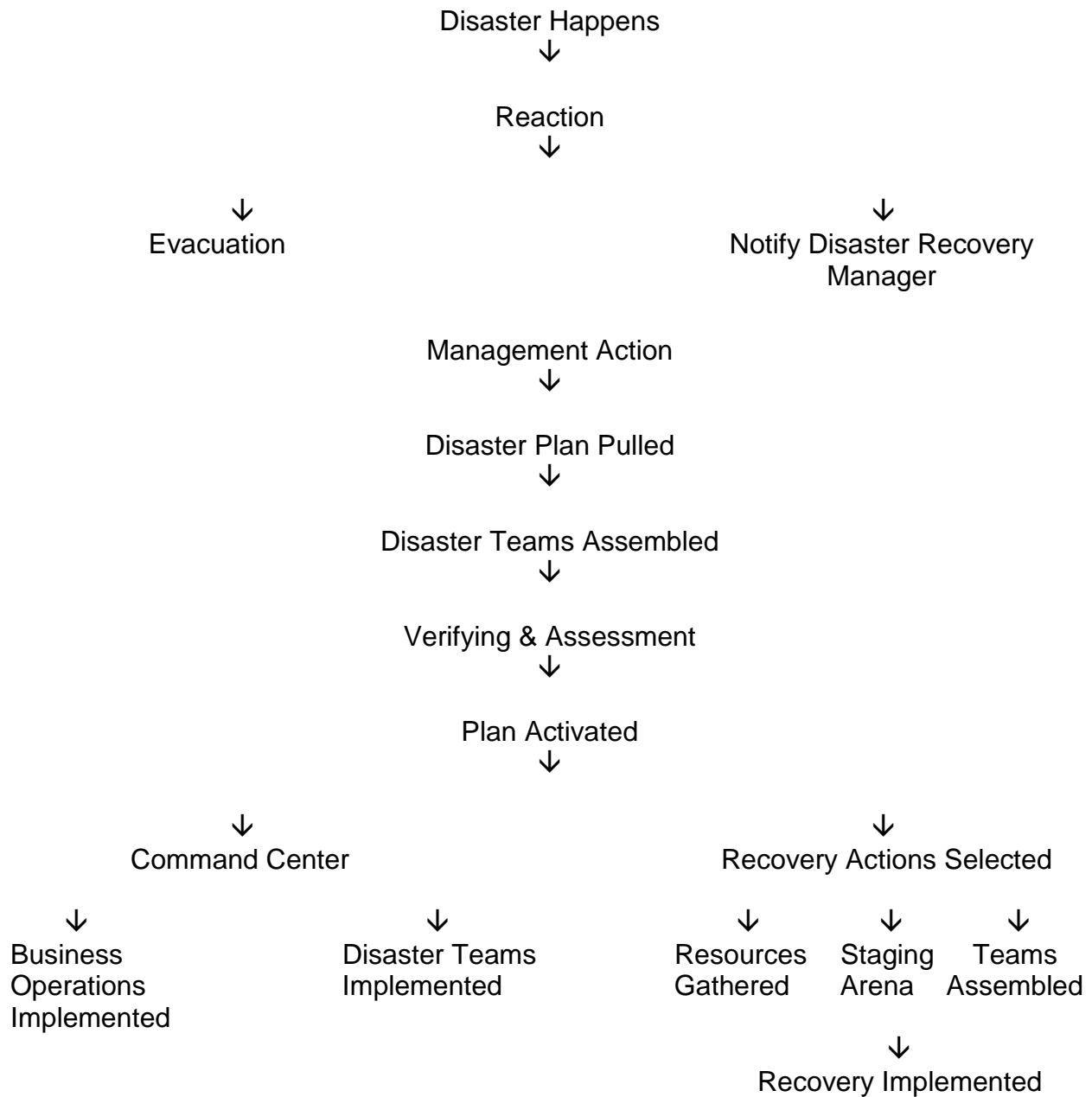
RECORDS CLASSIFICATION

<u>Class</u>	<u>Definition</u>	<u>Example</u>	<u>Recommended Protection</u>
Class 1 - Vital	Records essential to the continued life of the business. These records are irreplaceable because they give evidence of legal status, ownership, and financial status. Vital records are generally housed in active records storage.	Accounts receivable Inventory Contracts Creative materials Research records	Fire resistant vaults Dispersal Fire resistant safes/cabinets
Class 2 - Important	Records necessary to the continued life of the business. While these records can be replaced or reproduced, this can be done only at considerable cost in time and money. Important records may be housed in either active or inactive storage.	Accounts payable Directives Payroll records	Safes Vaults
Class 3 - Useful	Records useful to the uninterrupted operation of the business. These records are replaceable although their loss could cause temporary inconvenience.	Bank statements Correspondence	File cabinets
Class 4 - Nonessential	Records having no present value and should be destroyed.	Requests answered Advertisements Announcements	Use, then destroy

Source: Gordon P. McKinnon, editor. Fire Protection Handbook, 15th ed. (Boston: National Fire Protection Association, 1981).

~Appendix C~

Disaster Work Flow



~Appendix F~
Emergency Equipment and Supplies
Inventory Checklist

Institution: _____ Date: _____

Personal Safety/Protection

Supply	Source	Amount	Locations	Initial
First-Aid Kit				
Dust cloths				
Plastic aprons				
Disposable gloves				
Cotton gloves				
Rubber boots				
Hard hats				

Documentation

Supply	Source	Amount	Locations	Initial
Camera with film				
Waterproof pens/markers				
Pencils				
Paper pads/logs				
Clipboards				
Self-adhesive labels				
Color coded adhesive dots				

Environmental Monitoring/Relative Humidity Control

Supply	Source	Amount	Locations	Initial
Hygrothermograph				
Psychrometer				
Fans				
Dehumidifiers				
Humidifiers				

Emergency Equipment and Supplies

Inventory Checklist

Institution: _____ Date: _____

General Equipment/Supplies

Supply	Source	Amount	Locations	Initial
Waterproof extension cords				
Portable generator				
Flashlights w/ batteries				
Hand radio sets				
Wet/dry vacuum cleaners				
Hair dryers				
Tool kit				
Water hoses w/ connectors				
Adjustable spray nozzle				
Ladders				
Brooms/dustpans				
Sponges				
Mops				
Buckets				
Disinfectant				
Shovels				

Transportation Equipment/Supplies

Supply	Source	Amount	Locations	Initial
Tray racks				
Corrugated polypropylene				
Boxes/Plastic crates				
Dollies/Streamliners				
Hand trucks				
Cord				

Emergency Equipment and Supplies
Inventory Checklist

Institution: _____ Date: _____

Salvage/Drying Supplies

Supply	Source	Amount	Locations	Initial
Polyethylene sheeting				
Unprinted newsprint				
Paper towels				
Blotting paper				
Freezer/waxed paper				
Plastic garbage bags				
Polyethylene ziplock bags				
Polyester film				
Non-woven polyester cloth				
Aluminum foil				
Soft cloths/brushes				
Plastic wash tubs				
Garbage cans				
Plexiglas (rounded edges)				
Clean weights				
Screen drying racks				
Fishing/clothes lines				
Rope/twine/string				
Clothespins				
Heavy duty (duct) tape				
Utility knives/Zippy cutters				
Scissors				

~Appendix G~

DISASTERS MOST LIKELY TO AFFECT AN ORGANIZATION
 (Source: *Contingency Planning Research Inc.*)

DISASTER EVENT:	% OF OCCURRENCE:
POWER OUTAGE	27.7%
STORM DAMAGE	11.7%
FLOOD	9.6%
COMPUTER HARDWARE ERROR	7.7%
BOMBING	7.2%
HURRICANE	6.3%
FIRE	5.6%
COMPUTER SOFTWARE ERROR	5.4%
POWER SURGE/SPIKE	5.1%
EARTHQUAKE	4.9%
NETWORK OUTAGE	2.1%
HUMAN ERROR	2.0%
OTHER	1.5%
HVAC/UTILITY FAILURE	1.4%
BURST PIPE	1.0%
EMPLOYEE SABOTAGE	.8%
TOTAL:	100.0%

~Appendix H~

Supplies Needed In an Emergency

1. **FOOD** - Nonperishable, canned or dehydrated, requiring minimum heat and water. Remember food for infants and pets.
2. **WATER** - A minimum of one (1) gallon per person per day for drinking. Additional water required for cooking and hygiene.
3. **FIRST AID KIT** - Customized, based on family needs. Include first aid manual.
4. **FLASHLIGHT AND SPARE BATTERIES** - Don't forget spare bulbs.
5. **RADIO AND SPARE BATTERIES** - Portable type.
6. **FIRE EXTINGUISHER** - ABC multipurpose type.
7. **PRESCRIPTION MEDICINES** - Keep extra supply on hand. Note expiration dates.
8. **CAN OPENER** - Manual type.
9. **MATCHES** - Waterproof type or dipped in wax.
10. **KNIFE** - Sheath or pocket type.
11. **TOOLS** - Pliers, screwdriver, crescent wrench, shovel, wire, broom, etc.
12. **PLASTIC BAGS WITH TIES** - Assorted sizes for waste disposal, storage of personal items.
13. **ROPE** - Polyethylene type preferred.
14. **CANDLES** - Open flames are not to be use if gas leaks or electrical-problems exist.
15. **STERNO OR OTHER BRAND OF HEATING FUEL** - Note: if used indoors, charcoal briquettes must be in operable fireplace.
16. **BLANKET** - Of woolen material; one per person. ("Space" blankets can also be used).
17. **GLOVES** - Work type of durable material.

Section X

Bibliography & Resources



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ARMA International Publications. 4200 Sommerset, Suite 215, Prairie Village, Kansas 66208, 913-341-3808, U.S. WATS 800-422-2762, Canadian WATS 800-433-2762, FAX 913-341-3742, www.arma.org.

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www.contingencyplanning.com

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Disaster Recovery Contingency Planning and Program Evaluation. QED Information Sciences, Inc., QED Plaza, P.O. Box 181, Wellesly, MA. 02181., 1989.

"Disaster Recovery Video", Volume II, Disaster Recovery Journal, P. O. Box 510110, St. Louis, Mo. 63151, ph. 314-894-0276, Fax 314-894-7474.

The Disaster Recovery Journal. Disaster Recovery Institute, 2712 Meramer Dr., St. Louis, MO, 63129.

Emergency Management Guide for Business & Industry, FEMA, Prepared by Thomas Wahle and Gregg Beatty.

Eulenberg, Julia Niebuhr. Handbook for the Recovery of Water Damaged Business Records. ARMA International Publication Sales, 4200 Sommerset, Suite 215, Prairie Village, Kansas 66208, ISBN 0-933887-17-5, 1986, 800-422-2762.

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Guide to Preservation of Essential Records, Emergency Preparedness Canada, 1987.

The Inside Track to Disaster Recovery. ARMA International video, 4200 Sommerset, Suite 215, Prairie Village, Kansas 66208, VHS cassette, 1986, 800-422-2762.

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Myers, Kenneth N. Total Contingency Planning for Disasters, Wiley, ISBN: 0-471-15739-6, 1993

Murray, Toby. Preservation Officer, University of Tulsa, 600 S. College Avenue, Tulsa, OK 74104, 918-631-3800. Specialist in recovery advice.

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Association of Contingency Planners, www.acp-international.com

Conservation OnLine, <http://www.palimpsest.stanford.edu>

Disaster Recovery Journal, <http://www.drj.com>

FEMA, www.fema.gov

NARA, National Archives and Records Administration, <http://www.nara.gov>

National Media Lab, <http://www.nml.org>

National Fire Protection Association, <http://www.nfpa.org>

NorthEast Document Conservation Center, <http://www.nedcc.org>

Society of American Archivists, <http://www.archivists.org>

Smithsonian Institution Archives, www.si.edu/archives/report/disaster/sevena.htm

Disaster site, www.disasters.org/emgold/index.htm

Electronic Records sites, www4.gartner.com/5/about/news/disaster_recovery.html
Csrc.nist.gov/publications/drafts/itcontingency-planning-guideline.pdf

Resources: Consultants & Vendors

BSM Catastrophe, Water damage recovery & restoration service
303 Arthur St. Fort Worth, TX 76107. 1-800-433-2940.

Cole Emerson & Assoc., Consultants
8477 Hialeah Way, Fair Oaks, CA 95628 1-916-729-6055

Comdisco Business continuity Services, Hot site recovery and general DR consulting.
Corporate: (800) 272-9792 - FAX (847) 518-5438, 6111 North River Road, Rosemont, Ill.
60018

Disaster Reprocessors, Water damage recovery & restoration services
West Coast Office. 41 Sutter Street, Ste. 1120, San Francisco, CA 94104. 1-800-437-9464.

Disaster Restoration, Inc. Water damage recovery & restoration service
1-800-475-FIRE Address 7015 Julian St. #7, Westminster, CO 80030 FAX 303-657-9510

Geological Survey, US Govt. Disaster information
Office of the Director, 107 National Center, Reston, VA 20192 www.usgs.gov

IBM Business Recovery Services, Hot site recovery and general DR consulting
1-800-599-9950 Long Meadow Rd, Sterling Forest, NY 10979-0700

Iron Mountain, Vital records and computer media storage
745 Atlantic Avenue, Boston, MA 02111, 1-800-883-8000, www.ironmountain.com

Latitude Communications, Offsite communications continuity
(408) 988-7295 Fax (408) 988-6520 Micah Richton
elara@latitude.com 2121 Tasman Drive, Santa Clara, CA 95054 www.latitude.com (Steve

MLC & Associates, Inc., General disaster planning
(949) 222-1202 Fax; 949-651-8220 MLC2RESQ@ix.
PO Box 16445 Irvine, CA 92623

Munters Moisture Control, Water damage recovery & restoration.
79 Monroe Street, Amesbury, MA 01913 1-800-I-CAN-DRY

Ms. Toby Murray, Consultant,
University of Tulsa Libraries, McFarlin Library
600 S. College Ave., Tulsa, OK 74104 918-522-8116

NOAA, Disaster information
Forecast Systems Laboratory, R/E/FS1, 325 Broadway, Boulder, CO 80303-3328
idad.noaa.gov

RMCAAT, Water damage recovery & restoration service
5762 Lamar St., Arvada, CO 80002 (303) 425-9700 FAX 425-9499

Rosthstein & Associates, Inc
1-203-740-7444. Online and CD listing of disaster and contingency planning books, tapes, etc.

Solex Environmental Systems, Water damage recovery & restoration service
1003 Wirt Rd. #107, Houston, TX 77055 1-713-963-8600

Sungard Recovery Services, Hot site recovery and general DR consulting
1-800-247-7832, 1285 Drummers Lane, Bldg 2, Suite 300, Wayne, PA 19087-9945