Tampa Bay Disaster Resiliency Study

Part IV – Resiliency Strategies

1921 Hurricane – Hyde Park Flooding

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Introduction

The importance of preparedness planning and mitigation is critical to the ultimate recovery of a region after a disaster. The main goal of hazard mitigation planning is to create a safer community while minimizing the loss from potential hazards. FEMA has estimated that for every $1 you spend in mitigating, it saves $4 in the future (Rose 2007).

The results of this study showcased the importance of retaining employment and continuing to grow the economy into the future. Unless assistance is provided, the economy never rebounds to the pre-event forecast. In order to ensure these employees are able to get back to work after an event, business continuity planning is critical.

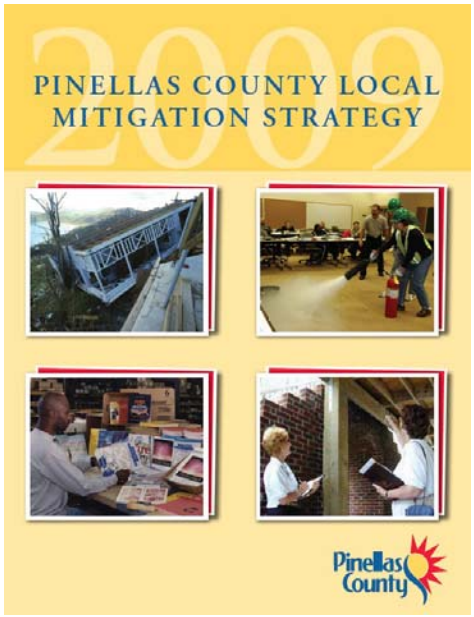
Creating strategies and plans to facilitate the return of employees to work as quickly as possible should be a major goal of preparedness and recovery. Planning for every possible scenario would be nearly impossible; instead, the focus on returning employees to work should be primary economic objectives. Additional objectives revolve around targeting which businesses will need the most help and identifying how to help the business plan.

Strategies include:

- **Hazard and Resiliency Planning (LMS, COOPs, PDRP, etc.)**
- **Structure Hardening (Hurricane Shutters, Hurricane Roof clips, Tornado Safe rooms, Building Elevation, Flood proofing buildings, etc.)**
- **Business Continuity Plans (Education and Outreach, Succession Plans, Insurance Education, Business Continuity Planning, Offsite backups, etc.)**
- **Infrastructure Improvements and Redundancy. (Stormwater/Drainage Improvements, Evacuation Route and Notification Improvements, Building Hardening, etc.)**
- **Funding Identification (SBA, FEMA, EDA, etc.)**

Local Mitigation Strategies

Every county in Florida has a Local Mitigation Strategy (LMS) in place. The LMS analyzes potential hazards to the county, noting the probability and possible damage impacts. The LMS identifies a prioritized mitigation projects list that the community has identified as a cost-effective approach to reduce its vulnerability. These projects are often reflected in the Local Government Comprehensive Plan Capital Improvement Plan. Some are identified for future funding as funds become available. If hazard mitigation funds do become available in a post-disaster event, these projects would be ready to implement. These lists must be maintained and remain up to date and appropriate.



When a disaster occurs, mitigation funds will funnel into the community. These funds are used to pay for public projects on the project list or to enhance infrastructure repairs to not only complete repairs but mitigate future losses. These lists are critical to ensure community resiliency goals are furthered in the post-disaster environment.

The format of an LMS includes: Assessing the risks, Identifying strategies to reduce risk, Actions, and recovery and rebuilding operations. Assessing the risk identifies every risk that has been identified and provides details regarding the fallout of such a scenario.

Strategies to reduce risk are ways to mitigate or become more resilient. These strategies include policies, procedures and regulations to ensure that the recovery leaves the community more resilient, more sustainable and economically sound.

Post Disaster Redevelopment Plans

A Post-Disaster Redevelopment Plan (PDRP) is a requirement for all Florida coastal counties and municipalities and is encouraged for inland communities. The Plan identifies policies, operational strategies, and roles and responsibilities for implementation that will guide decisions that affect long-term recovery and redevelopment of the community after a disaster. It emphasizes seizing opportunities for hazard mitigation and community improvement consistent with the goals of the local comprehensive plan and with full participation of the citizens.

Recovery topics addressed include sustainable land use, housing repair and reconstruction, business resumption and economic redevelopment, infrastructure restoration and mitigation, long-term health and social services support, environmental restoration, financial considerations, and short-term recovery actions that affect long term redevelopment as well as other long-term recovery issues identified by the community.

A - Hillsborough County Post Disaster Redevelopment Plan

Benefits of a Post-Disaster Redevelopment Plan

There are three principal benefits to having a well-developed Plan:

1) Faster and More Efficient Recovery

Without a comprehensive, long-term recovery plan, ad hoc efforts in the aftermath of a significant disaster will delay the return of community stability. Creating a process to make smart post-disaster decisions and prepare for long-term recovery requirements enables a community to do more than react, prompting post-disaster action rather than time-consuming debate. By identifying appropriate planning mechanisms, financial assistance, and agency roles and responsibilities beforehand, a community begins the road to recovery more quickly. Being able to show efficient and effective use of taxpayer dollars after a disaster is incredibly important for the public's perception of the recovery.

2) Opportunity to Build Back Better

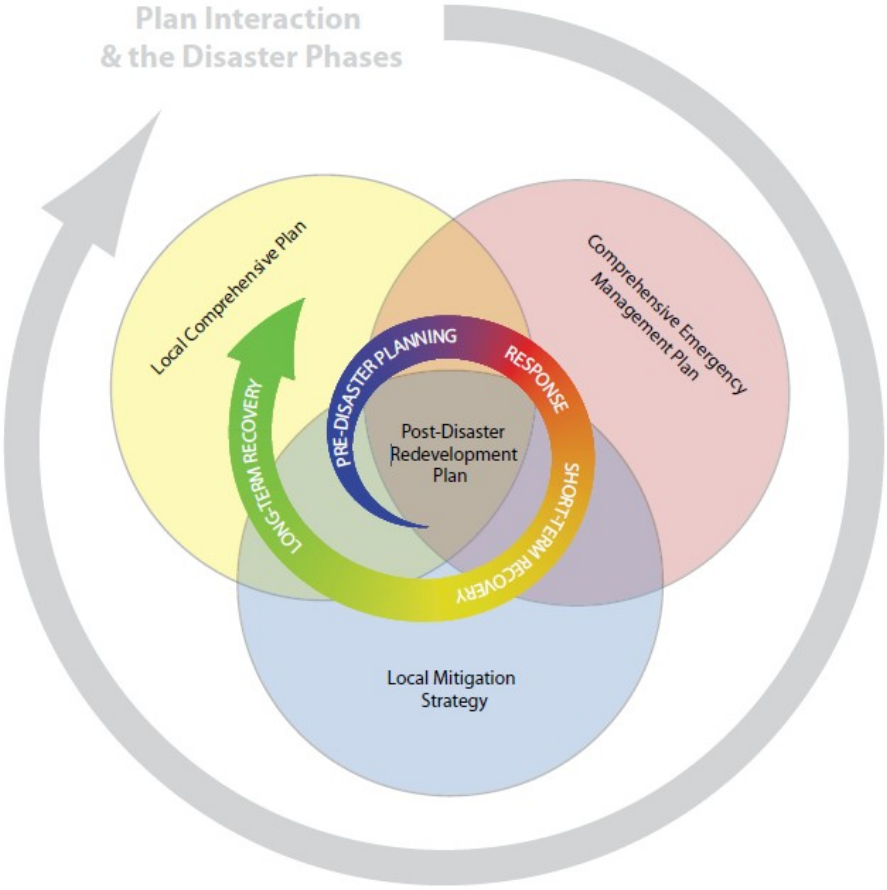
A disaster, while tragic, can also create opportunities to fix past mistakes or leap forward with plans for community improvements. In the immediate aftermath of a disaster, local officials are under significant pressure to restore the community to its pre-disaster condition. Without a guiding vision, short-term decisions may inadvertently restrict long-term, sustainable redevelopment and overlook opportunities to surpass the status quo. A Post-Disaster Redevelopment Plan strengthens the recovery process, and communities benefit from assessing their risk levels and crafting a long-term redevelopment plan under "blue skies." local officials and the public can thoughtfully analyze and debate issues, linking redevelopment goals with other important community plans. Careful thought and planning achieves a more sustainable and resilient outcome than decisions made under emergency circumstances, compromised budgets, and political pressures.

3) Local Control over Recovery

Developing a PDRP provides local government officials, residents, and businesses the opportunity to determine long-term redevelopment goals and develop policies and procedures that will guide redevelopment before well-intended outside agencies and non-government organizations rush to aid the community. While outside resources are needed and welcomed in a major or catastrophic disaster, a locally developed Plan will best channel those resources to effectively meet the community's specific needs and goals. A Post-Disaster Redevelopment Plan will show outside agencies and donors that the community is prepared to play an active role in the recovery process and promote its capabilities to wisely use donated and loaned resources. There will always be rules and, occasionally, strings attached to external sources of funding, but a community that has researched the allowable uses of Federal and State assistance can better work within their boundaries in an effort to fund projects that further local redevelopment goals.

Disaster Phases and the PDRP

Disaster management is typically viewed as a cycle with overlapping phases: 1) pre-disaster mitigation and emergency management preparedness; 2) emergency response; 3) short-term recovery; and 4) long-term recovery and redevelopment. The disaster management cycle and major plan interaction is depicted in the graphic below.



B - Post Disaster Redevelopmetn Planning Guide - www.floridadisaster.com

The Plan has an implementation role in pre- and post-disaster phases, but the intent of all Plan implementation activities is to improve the community's ability for long-term recovery and redevelopment.

Pre-Disaster Phase – Initial Plan development occurs during the pre-disaster phase (except if a community is struck by a disaster before a Plan has been drafted). Once the Plan is adopted, preparatory activities detailed in the Plan should be implemented on an on-going basis during normal operations, which are sometimes referred to as "blue

skies." The Plan should also be exercised prior to a disaster event so that all stakeholders with a post-disaster implementation role are familiar with their responsibilities.

Emergency Response Phase – The Post-Disaster Redevelopment Plan does not address this phase. Emergency response activities are addressed in the CEMP and include immediate actions to save lives, protect property, and meet basic human needs. This is the shortest phase of the cycle, lasting only a few days in minor disaster conditions.

Short-Term Recovery Phase – The role of the Plan during the short-term recovery phase is to begin organizing for long-term redevelopment activities and guide short-term recovery decisions that may have long-term implications (e.g., placement of temporary housing or debris sites). Short-term recovery operations are addressed in the CEMP, but the Post-Disaster Redevelopment Plan can provide direction for transitioning to long-term redevelopment during this phase. The short-term recovery phase begins as the emergency response phase is winding down and will continue until critical services are restored. The duration of the short-term recovery phase depends on the severity of the disaster and the level of community preparedness; it could range from several weeks to one year to complete this phase.

Long-Term Recovery and Redevelopment Phase – The Plan is used most during this phase. long-term recovery and redevelopment include efforts to reconstruct and enhance the built environment as well as recover the economy, environment, and social systems. This phase begins as short-term recovery activities are accomplished and can last from a couple years for a minor disaster to five or more years for a major or catastrophic disaster.

Interaction with Other Plans

The objective of the Post-Disaster Redevelopment Plan is to guide the redevelopment decision-making process following a disaster in a manner consistent with local comprehensive plans (especially the Future Land Use and Coastal Management Elements, where applicable), the local Mitigation Strategy, the Comprehensive Emergency Management Plan, and other relevant plans or codes such as the long-Range Transportation Plan, land development regulations, and economic development and redevelopment plans. Each of these plans, and potentially others, has pre-existing policies or procedures that affect post-disaster redevelopment. For instance, the comprehensive plan has many policies that determine where and to what extent redevelopment can occur.

Ultimately, the PDRP acts as a guide for utilizing the policies and procedures found in other documents when making post-disaster redevelopment decisions. The planning process provides an opportunity to examine how local plans and codes will impact redevelopment and to recommend changes that could result in a faster and more sustainable recovery.

Implementation of the Post-Disaster Redevelopment Plan will overlap with implementation of other plans that also address some of the same topics, such as housing or infrastructure. The focus on long-term post-disaster redevelopment, however, is unique to the Plan and its implementation strategy should include specific actions for integrating long-term redevelopment considerations into other local plans, as applicable.

Approaches to Plan Development

State requirements for the Post-Disaster Redevelopment Plan are general, providing communities some flexibility in how they approach planning for and implementing their Plan.

1. Stand-Alone PDRP Integrated with Other Local Plans
The best practice for developing a PDRP is for a county and its municipalities to collaboratively create a new countywide document through a planning process dedicated to the subject of post-disaster redevelopment. A stand-alone Plan provides a single reference for guiding action and decision-making during the difficult disaster recovery period and detailing actions that can be taken before a disaster strikes to speed the recovery process.

By itself, a stand-alone Plan is not adequate for successful post-disaster redevelopment. The Plan provides the strategy and action plan, but other local plans must support the Post-Disaster Redevelopment Plan strategy through policy, regulations, procedures, and projects. The approaches below for integrating the Plan into other local plans can be used in combination with the stand-alone approach.

2. Adopt a Post-Disaster Redevelopment Ordinance
Every jurisdiction should adopt a post-disaster redevelopment ordinance. This can be the result of developing a comprehensive, stand-alone Plan or it can be a first step in preparing for long-term redevelopment after a disaster. At a minimum, a post-disaster redevelopment ordinance should address temporary regulations (such as building moratoria and repair permitting) and the establishment of a redevelopment task force or advisory body. A redevelopment ordinance was the foundation of Hillsborough County's Plan.

3. Integrate Post-Disaster Redevelopment Issues into the Comprehensive Plan
It is critical that any community working on post-disaster redevelopment issues integrate data, analysis, and policies into their comprehensive plan to guide long-term redevelopment after disaster. A community can choose to address integration into the comprehensive plan through three major processes: 1) as a component of developing a stand-alone PDRP; 2) during the comprehensive plan Evaluation and Appraisal Report (EAR) process; or 3) as part of any comprehensive plan amendment cycle.

Redevelopment topics, such as land use and infrastructure, are essential to address in the comprehensive plan. Not all issues, particularly the operational aspects of the Post-Disaster Redevelopment Plan, will be a good fit for integration into the comprehensive plan. Simply addressing post-disaster redevelopment through the comprehensive plan is a good place for a community to start, but the Plan should be combined with other approaches described in this section for best results.

4. Integrate Post-Disaster Redevelopment Issues into the LMS

Hazard mitigation increases the disaster resilience of a community, thereby decreasing post-disaster redevelopment issues. Integrating post disaster redevelopment goals, analysis, and projects into the local Mitigation Strategy is a natural fit. Each of the six pilot counties has taken advantage of the overlap between the LMS and PDRP to maximize efficient resource use by pairing pre-disaster implementation and plan maintenance processes of the PDRP with similar LMS. The scope of the Post-Disaster Redevelopment Plan, however, is more comprehensive than that of the LMS, and some communities may encounter limitations in implementing post-disaster actions using the LMS structure alone without modification.

5. Expand the Recovery Annex of the CEMP to Address Post-Disaster Redevelopment Issues

Transitioning between short-term recovery operations (led by the County Emergency Operations Center) and long-term redevelopment, which is not emergency-based and is often concentrated around community planning issues, can be difficult. An advantage of integrating long term, post-disaster redevelopment issues into the Comprehensive Emergency Management Plan is that it can better facilitate this transition. A county can expand its CEMP Recovery Annex to address long term redevelopment issues in addition to short-term recovery procedures. The disadvantage to addressing post-disaster redevelopment issues solely through this method is that the CEMP is primarily an operational plan and the ability to address redevelopment policy and public input may be limited.

COOP

Continuity of Operations (COOP) plans are developed by (primarily) public and not for profit agencies to facilitate their preparedness and ability to operate after a disaster. COOP plans are required for critical local government agencies; however, many local governments have found that government operations are reliant on each other and that they will need "all hands on deck" and have expanded the required COOPs to include all departments.

Non-profits also have requirements regarding their COOP plans. Business primarily focuses on Business Continuity Planning (BCP). These are very similar; although the primary focus of the BCP is to minimize downtime and ensure business critical functions can be maintained. BUSINESS CONTINUITY PLANNING PROCESS

Business owners invest their blood, sweat, and tears into their businesses often without thought of the possibility of a disaster occurring. Every year emergencies take their toll on business and industry, in lives and dollars. But something can be done. Business and industry can limit injuries and damages and return more quickly to normal operations.

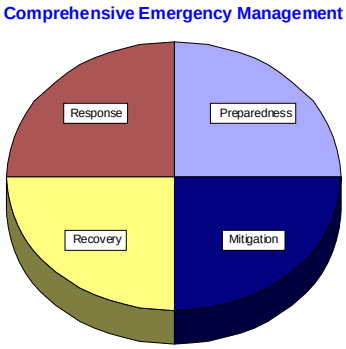
The Florida Business Disaster Kit (www.fldisasterkit.org) was designed to provide the basic knowledge necessary to help protect businesses from the adverse effects of disasters, large or small. In-depth knowledge of emergency management or business continuity management is not required. The commitment and authority from the highest level of management to make emergency management part of your corporate culture is all that is needed.

Business Continuity Planning (BCP) is the act of anticipating incidents which will affect *mission critical functions* of the company and ensuring that the business and its employees respond to any emergency in a safe, planned and rehearsed manner. BCP is not just about disaster recovery, crisis management, insurance or Information Technology (IT). It is a business issue. It presents you with an opportunity to review the way your organization performs its processes, to improve procedures and practices and increase resilience to interruption and loss.

Florida Business Disaster Toolkit

Figure C

Comprehensive Emergency Management consists of four phases:



- **Preparedness** requires understanding the effects of disasters or emergencies, the actions that must be taken to respond to and recover from these events, as well as what can be done to mitigate future losses. Preparedness is taking the steps to ensure your business and employees are ready for the "unexpected" and know what needs to be done in an emergency situation.

- **Mitigation** involves taking the steps to prevent an emergency or disaster or, at least reduce your business' vulnerability.

- **Response** is handling the threat or the occurrence of an emergency or disaster.

- **Recovery** is restoring all aspects of business operations damaged or interrupted by an event.

Top Level Commitment

Management must be committed at the highest level for the plan to be successful. The plan must be part of the strategic business plan and the company must budget appropriately and separately for the program. A top-level policy statement should be issued that affirms the value of planning, acknowledges and accepts the associated costs, documents management responsibilities and includes the goals and expectations of the plan, as well as any organizational assumptions or parameters.

Building the Planning and Management Team

The first step in your Continuity Planning Process is to build a Planning and Management Team. This team is responsible for creating, implementing, updating and maintaining the plan.

To demonstrate management's commitment and promote cooperation, a statement authorizing the planning team to take steps necessary to develop the plan should be issued. A team leader should be selected and a clear line of authority between the group members and group leader should be established. Team members

should also be prepared to view this task as a continual process, rather than a one-time event.

The size of your team depends on the size of your business. The team should be representative of the entire organization. Planning cannot be accomplished in a vacuum. You will need the feedback from every department, as well as their support in the development and implementation of the plan. If appropriate, the team should be comprised of key management employees from each business unit. Once the team is formed, it is important to set up a work schedule and deadlines. Some items to consider are:

- Timeline for key deliverables,
- Budget,
- Assignment of specific tasks, and
- Formation of an Emergency Management/Crisis Management Team.

The team should conduct an analysis of the operational aspects of the business and determine what is critical for continuance. When identifying your critical products, services and operations you should distinguish the following:

- What are the key business objectives of the organization? What is this business about?
- What are the products and services of the business?
- Who is involved (both internally and externally) in the achievement of the business objectives?
- What facilities and equipment are needed to produce our products and services?
- What administrative operations, equipment and personnel are vital to the continued functioning of the business?
- What products and services are provided by suppliers, especially sole source vendors?
- What are the necessary lifeline services such as electrical power, water, sewer, gas, telecommunications and transportation?

Remember to identify those key internal (i.e. personnel, IT, etc.) and external groups and resources (i.e. customers, suppliers, etc.) upon which the business objectives rely. Consider external influences that may impact on the critical processes and functions. Input from these groups or individuals can greatly enhance the planning process.

The purpose of this exercise is to determine the *mission essential functions* for your business, those activities necessary for your business to operate. It is worthwhile to begin the selection process with the mission statement, organizational charts, list of daily responsibilities and activities, and staff rosters. The following are steps necessary for the selection of "Mission Essential Functions":

1. List all organizational functions;
2. Determine criteria for selecting critical activities;
3. Identify Mission Critical Activities;
4. Determine minimum acceptable level you need to operate to provide mission critical activities to stay in business;
5. Prioritize those Activities and Functions;
6. Identify minimum personnel needed to complete those functions based on skills and knowledge;
7. Assess alternate facility capacity and resource needs based on functions and personnel; and
8. Determine requisite resources and equipment needed.

The following form was developed to assist you define your companies "mission essential functions", the critical time period for the operation, minimum staff requirements, special equipment or supplies necessary, space needs and the contact person for each operation.

Table 1 Mission Essential Functions

1 Mission Essential Function	2 Time Period	3 Min. Staff	4 Special Equipment/ Supplies	5 Space Needs	6 Business Unit Manager

Hazard Identification and Risk Assessment

The next step is to identify hazards and assess the risk. This step entails gathering information about current capabilities and possible hazards and emergencies, and conducting an analysis to determine your capacity to handle them.

To identify the potential hazards/emergencies faced, list all the hazards/emergencies that could affect your business. (Your local Emergency Management Agency can assist you). Typically these fall into one of three categories; natural hazards, technological hazards, and other types of hazards. Be imaginative. Consider all emergencies that could occur in your community, areas adjacent to your facility and those that could occur in your facility. If you determine some hazards do not present a threat to your business, you can eliminate them in the process. Other factors to consider are below:

- Historical – What types of events have occurred in the past?
- Human Error – What emergencies can be caused by employee error? Are employees trained to work safely? Do they know what to do in an emergency?
- Physical – What types of emergencies could result from the design or construction of the facility? Are there adequate and appropriate facilities for storing combustibles? Are evacuation routes and exits clearly identified and free of obstructions?

Once you have identified all the possible hazards, you need to rate the probability of the events considering the frequency and severity. When rating the hazards, use a simple system such as low, medium or high, or a scoring system of 1 to 5.

For the next part of the analysis you need to evaluate and rate the potential human impact, property impact and business impact of each of the identified hazards, taking into account any capabilities, resources, plans, policies or procedures you already have in place. When evaluating the **human impact** you are considering the possibility of injury or death to your employees, customers, clients or suppliers. The **property impact** involves the potential loss or damage to the physical structure and equipment, taking into consideration the costs to replace, repair or lease/rent facilities and equipment. Finally, when reviewing the **business impact** you need to evaluate the impact of the event to your critical operations and functions (i.e., employees unable to report to work, customers unable to reach the facility, interruption of critical supplies or product distribution, imposition of fines, penalties or legal costs, etc.). The Hazards and Vulnerability Analysis Form is provided to assist you in your risk assessment.

Table 2
HAZARDS & VULNERABILITY ANALYSIS

HAZARD	Probability	Human Impact	Property Impact	Business Impact	TOTAL
	Low probability 1 - High probability 5	Low Impact 1 – High Impact 5			
Tropical Storm					
Category 1-2 Hurricane					
Category 3-5 Hurricane					
Flooding					
Thunderstorm, Lightning, Hail					
Tornado					
Wildfire					
Sinkhole					
Drought					
Extreme Heat					
Emergency Water Shortage					
Winter Storms & Extreme Cold					
Agricultural Disease & Pests					
Hazardous Materials					
Building Fire					
Power Service Disruption					
Environmental Health					
Pandemic Flu					
Terrorism					
Bomb Threat					
Explosions & Detonation					
Building System Failure /Collapse					
Bio Terrorism					
Cyber-Attack					
Radiological Emergencies					
Violence in the Workplace					
Sabotage, Fraud and Theft					
Loss of key staff					
Civil Unrest					
Workforce Disruption					

HAZARD	Probability	Human Impact	Property Impact	Business Impact	TOTAL
	Low probability 1 - High probability 5	Low Impact 1 – High Impact 5			
Adjacent Hazards					
Other					

Now that you have identified the hazards your business could face and ranked your vulnerability, you know for which hazards you need to plan and you can prioritize your planning efforts based upon your vulnerability.

Mitigation Strategy

Once you have completed your analysis and identified those areas where your business is most at risk, decisions have to be made. What can be done to protect the business operation? Eliminate as many of the hazards as possible or mitigate the effects of hazards that cannot be eliminated.

This is your Mitigation Strategy. There are many possibilities, so it is likely that any strategy adopted will have a number of approaches. Some items may be completed through memos, policy changes or training. Other items may involve expenditures that must be budgeted for over time. Whichever is chosen, there are certain considerations to bear in mind. Benefits to businesses from mitigation are not limited to a reduction in facility damages. The truly cost-effective benefits include:

- Increased life safety for employees and customers,
- Reduced down-time in productions,
- Protected information systems,
- Reduced damages to facilities and nonstructural components,
- Reduced damages to vital equipment, and
- Enhanced insurance coverage or reduced insurance deductibles.

The benefits and elements in a Mitigation Strategy including the following:

1. Human Resources Policy and Procedures: Awareness and Reporting Policies;
2. Employee Training;
3. Employee/ Family Preparedness Programs;
4. Security Issues
5. Protection of your Facilities/ Physical Property from Water, Wind or Fire Damage;
6. Protection of Data – Backups, Software and Policies; and
7. Business Insurance

Recovery Strategy

This section focuses on re-entry and your advance recovery team, the restoration of mission essential functions, the implementation of the crisis communications plan, safety measures and immediate repairs.

Continuity of Operations

Both the public and the private sector are confronting what has been termed the "new paradigm of preparedness" for employees and organizations in the wake of the September 11th tragedy. Traditionally, we have spent time and resources preparing to get employees out of a building or area that may be in danger. This is the first step -- a critical one -- in preparing a Business Continuity Plan. There is now a critical second step; how to continue a level of productivity to meet customer/client needs after a disaster.

Imagine that the alarms are sounding and your employees are exiting the building due to some emergency (bomb scare, hazardous material incident, anthrax scare, security breach, etc.). As you gather at your designated area safely outside the building, you are informed that the building is inaccessible for 48 hours, or 72 hours or indefinitely. Following a hurricane you may not be able to get back into the area for several weeks. Are your employees prepared to accomplish work when the workplace is not available?

Typically, the "plan" is to send employees home. However, depending on the length of time and your business demands, this business disruption could be devastating. According to "*Smart Business Magazine*", two out of every five companies hit by a large disaster go out of business within five years. This statistic can be managed if employees and business teams are prepared with a "Plan B" to resume a level of productivity.

While the purpose of the Business Continuity Plan is to provide an overview, emergency procedures and checklists necessary to respond to an emergency, the Continuity of Operations (COOP Plan) defines how to respond to an emergency that directly affects your ability to continue normal operations. The consequence of a major emergency such as a hurricane, terrorist attack, or nuclear attack, could severely disrupt your ability to function. In addition, a small-localized emergency such as a fire, explosion, or contamination could make a building unusable for an extended period of time.

The COOP plan describes how you will resume business operations after a crisis or loss of resource. The capability of an organization to continue essential operations and reconstitute those operations prior to, during, and after an emergency that limits occupancy of the building or disrupts normal services, drives the successful recovery of the business as well as the local economy and entire community. This should be a key part of your Recovery Strategy.

Developing a Business Continuity Plan

A comprehensive Business Continuity Plan will include the following:

1. The **Strategic Plan** which will define the vision, mission, goals and objectives of the program.

2. **Emergency Operations/ Response -** identify the procedures which spell out how you will respond to emergencies. Whenever possible develop them as a series of checklists that can be quickly located. The plan should also list the roles and responsibilities of internal and external agencies, organizations, departments and individuals. This shall also include an organization chart which will establish the line of authority for agency, organization, departments, and individuals.

3. The **Mitigation Strategy** which shall establish interim and long-term actions to eliminate hazards or to reduce the impact of those hazards that cannot be eliminated.

4. A **Recovery Strategy** which shall identify the short-term and long-term priorities, processes, vital resources, acceptable time frames and procedures for restoration of services, facilities, programs, and infrastructure. The Recovery Strategy should address the possibility of loosing access to one or more workplaces/facilities. This **Continuity of Operations Plan** identifies the critical and time-sensitive applications, processes and functions to be recovered and continued, as well as the personnel, resources and procedures necessary to do so.

Each component will have common elements. These elements are the foundation for the procedures that will be followed to protect personnel and equipment and resume operations. These core elements of emergency management are:

- Direction & Control – Someone must be in charge in an emergency. The system for managing resources, analyzing information and making decisions in an emergency is called direction and control.

- Life Safety – Procedures for protecting the health and safety of everyone during an emergency (i.e., evacuation planning, routes and exits, assembly areas, sheltering, etc.)

- Property Protection – Procedures for protecting facilities, equipment and vital records (i.e., fighting fires, containing material spills, shutting equipment down, moving equipment to a safe location, etc.)

- Communications – Specific methods and equipment will be needed to report emergencies, warn personnel and customers of the danger, keep

employees and families informed about what's happening, coordinate response actions and keep in contact with customers and suppliers, keeping in mind that the normal communications systems could be unavailable.

- Community Outreach – You may involve outside organizations in your emergency management plan. This section should include a plan for public information and media relations.

- Recovery & Restoration – This section should include your critical operations and the plans for resuming operations, continuity of management and protection of the chain of command, insurance coverage, contracts and claim requirements, and employee support.

- Administration & Logistics - This section provides direction for the creation and maintenance of complete and accurate records to ensure a more efficient emergency response and recovery, keeping in mind that certain records may be required by your insurance carrier(s) or prove valuable in the case of legal action after an incident.

Writing the Plan

1. Identify Existing Plans and Procedures - Chances are, there are existing plans and procedures which address disaster planning already in existence. It is possible all that is necessary is to pull these documents together into a comprehensive plan. At a minimum, there are probably procedures already incorporated into the business practice which address many of the hazards your company may face. The challenge is bringing this information together, identifying what may be missing or incomplete and writing a clear, concise and viable plan.
2. Support Documents – The committee will need access to any documents that could be needed in an emergency such as:
   - **Emergency call lists** for employees, clients, vendors and suppliers, contractors, insurance agent/companies, emergency response agencies
   - **Floor plans, Building and site maps** that indicate utility shut-offs, water lines, gas lines, electrical cut-offs, electrical sub stations, hazardous materials (including cleaning supplies) storage, sewer lines, fire extinguishers, exits and designated escape routes, assembly areas, and restricted or high security areas.
   - **Local government plans for community disasters** (Evacuation Zones, procedures for re-entry, etc.)
   - **Insurance i**nformation and inventories
   - **Vital Records** (paper and electronic formats, software, data bases) and the procedures for backup and protection
3. Team Members to discuss and complete the (1) Strategic Plan (purpose, goals, objectives and policies), (2) Hazard and Vulnerability Assessment and (2) Mission Essential Functions Table (each department).
4. Use the BCP Template to generate a draft plan
5. Assign each member of the planning team a section to review. Establish specific goals and milestones as well as an appropriate format. Ideally a schedule should be set for:
   - First draft,
   - Review,
   - Second draft,
   - Table-top Exercise,
   - Review of plan in relation to the exercise,
   - Final draft,
   - Printing,
   - Distribution and
   - Training and Testing schedules.

Once the plan is ready for distribution employees will need to be informed about the plan and the scheduled training.

Implementing the Plan

Implementing a plan is more than simply exercising the plan during an emergency. It means acting on recommendations made during the planning process, integrating the plan into company operations, training employees, exercising and evaluating the plan.

Emergency planning must become part of the business culture. Look for opportunities beyond employee orientation to build awareness. Educate and train personnel, test procedures, and make emergency management a part of what employees do on a daily basis. Use opportunities already available, such as Florida Hazardous Weather Awareness Week, National Hurricane Awareness Week or National Fire Prevention Week to conduct training sessions or exercises.

All employees will require some form of education and training. General training for all employees should address:

- Individual roles and responsibilities
- Information about threats, hazards and protective actions
- Notification, warning and communications procedures
- Personal/family emergency plans
- Emergency response procedures
- Evacuation, shelter and accountability procedures
- Location and use of common equipment
- Emergency shutdown procedures

Keep in mind that training needs to be a continual effort. For the plan to be efficient and effective, employees need to be knowledgeable about the policies and procedures outlined in the plan as well as their roles and responsibilities.

Plan Testing, Evaluation and Maintenance

No matter how well conceived a plan is, it is almost impossible to consider all of the events and possibilities that can be encountered in a real emergency or disaster. Deciding to create a plan is an important step toward ensuring the survival of your business after a disaster. But simply writing the plan is not enough. Turning thoughts into action is not

an exact science. In order to be considered reliable, your plan must be tested. A proven plan increases your confidence in its workability and avoids having a false sense of security in a plan that may look good on paper but is deficient in reality. Testing also assists in training the participants and familiarizing them with their roles. It lowers the stress during the emergency and reduces the possibility of panic since people will have a basic familiarity with their roles.

In order to test your plan, you will need to think of scenarios in which you would have to put the plan, or components of the plan, into action. Basically, the threat scenario should be based on those items identified in your risk assessment. Some suggested scenarios include fire, loss of services (including water, wastewater and power), tornado, tropical weather, hazardous materials release and computer virus. You may also want to consider testing re-entry and recovery procedures after the emergency.

Test Levels
Testing the plan can be as simple or complicated as you wish. While you may not want to conduct a full-scale exercise, orientation sessions and tabletop exercises can be very effective. The key is to always evaluate your plan after each training session or implementation and make the necessary changes from lessons learned.

There are seven types of exercises defined within the U.S. Department of Homeland Security (DHS) Exercise Guidance each of which is either discussions-based or operations-based.

Discussions-based Exercises familiarize participants with current plans, policies, agreements and procedures, or may be used to develop new plans, policies, agreements, and procedures. Types of Discussion-based Exercises include:

- *Seminar.* A seminar is an informal discussion, designed to orient participants to new or updated plans, policies, or procedures (e.g., a seminar to review a new Evacuation Standard Operating Procedure).

- *Workshop.* A workshop resembles a seminar, but is employed to build specific products, such as a draft plan or policy.

- *Tabletop Exercise (TTX).* A tabletop exercise involves key personnel discussing simulated scenarios in an informal setting. TTXs can be used to assess plans, policies, and procedures. It is an exercise that simulates an emergency situation in an informal, stress-free environment. The participants, usually people on a decision-making level, gather around a table to discuss general problems and procedures in the context of an emergency scenario. The focus is on training and familiarization with roles, procedures, or responsibilities. While this type of exercise lacks realism and provides only a superficial exercise of plans, procedures, and staff capabilities, it requires only a modest commitment in terms of time, cost and resources. It is a good way to acquaint key personnel with emergency responsibilities, procedures, and one another.

- *Games.* A game is a simulation of operations that often involves two or more teams, usually in a competitive environment, using rules, data, and procedure designed to depict an actual or assumed real-life situation.

Operations-based Exercises validate plans, policies, agreements and procedures, clarify roles and responsibilities, and identify resource gaps in an operational environment. Types of Operations-based Exercises include:

- *Drill.* A drill is a coordinated, supervised activity usually employed to test a single, specific operation or function within a single entity (e.g., a fire drill).

- *Functional Exercise (FE).* A functional exercise examines and/or validates the coordination, command, and control between various multi-agency/division/company coordination centers, if appropriate. The functional exercise simulates an emergency in the most realistic manner possible, short of moving real people and equipment to an actual site. As the name suggests, its goal is to test or evaluate the capability of one or more **functions** in the context of an emergency event. Players practice their response to an emergency by responding in a realistic way to carefully planned and sequenced messages given to them by simulators. All decisions and actions by players occur in real time and generate real responses and consequences from other players. The guiding principle is to imitate reality. The atmosphere is stressful and tense due to real-time action and the realism of the problems. While this type of an exercise can test the same functions and responses as in a full-scale exercise without high costs or safety risks, it is lengthy and complex, requires careful scripting, careful planning, and attention to detail.

- *Full-Scale Exercises (FSE).* A full-scale exercise is as close to the real thing as possible; it replicates the disaster to the smallest detail. It is a lengthy exercise which takes place on location, using, as far as possible, the equipment and personnel that would be called upon in a real event. It differs from a functional exercise or "drill" in that a drill focuses on a single operation. Scenarios often include surprise events to test responses of the participants and to achieve realism as much as possible. (For example, people posing as casualties may be made up with wounds to test the reactions of the participants to events they may actually encounter in a disaster.) Full simulations normally are used by the military, police, fire/rescue and emergency management organizations and businesses with high exposure.

Ideally, everyone in your business and third parties (vendors, suppliers, customers, governmental agencies, etc.) who could possibly be involved in the event of a disaster should participate in the test. Obviously, this is not always practical or even possible, especially the third parties. Even if interested parties are unable to participate, they

should be informed of their expected role in your plan and the team should simulate activities assigned to third parties unable to participate. Try to work with the third party in advance to find out how they intend to respond in a disaster. It is important to thoroughly document this portion of the exercise in case the third party's planned response is determined to be inadequate during the exercise. This documentation will be important when you present your results to them and ask for changes. If such an occasion arises, it will likely illustrate the need for the third party's active participation in subsequent exercises.

The building-block approach focuses on exposing participants to a cycle of training and exercises that escalates in complexity, with each exercise designed to build upon the last, in terms of scale and subject matter. For example, a building-block series of exercises may include a *seminar*, which leads to a *tabletop exercise (TTX)*, which leads to a *full-scale exercise (FSE)*.

The plan should be tested at least annually. More frequent exercises may be required for high-risk operations. Seasonal exercises should be considered. These should be conducted far enough in advance of the season to incorporate revisions and possibly retest.

After an exercise, consider the lessons learned and make certain any necessary changes to the plan are incorporated into the document. Major changes may require another exercise. Occasionally, the results of an exercise may warrant not only another exercise. You may also discover a higher level of testing than originally thought was needed. For instance, a business that originally decided that a walkthrough was a sufficient exercise may discover that a partial or full simulation is now needed because the walkthrough was inadequate to thoroughly test the plan.

It is extremely important to document each exercise. The tests should have a script that describes each situation or scenario, who should participate, how it is to be conducted, the expected results, and a place to record the actual results. The expected results are compared to the actual results at the conclusion of the exercise. The extent to which the expected results match the actual results determines the level of success of the exercise.

Every business can encounter an emergency situation that could disrupt or cease operations. By taking the time and making the commitment to plan for the unexpected, you are not only protecting your business, employees and customers, you are helping to protect your community and local economy.